

The Contemporary Australian Emergency Manager

**An examination of the demographics, qualifications, training,
education, experience, knowledge, competence and
confidence of Australian emergency management
practitioners**

School of Geosciences

Faculty of Science

THE UNIVERSITY OF SYDNEY

11 August 2020

This thesis is submitted in fulfilment
of the requirements for the degree of

Doctor of Philosophy

TABLE OF CONTENTS

TABLE OF CONTENTS	i
TABLES	vii
FIGURES	ix
ABSTRACT	xii
THESIS DECLARATION	xiii
ACKNOWLEDGEMENTS	xiv
LIST OF ACRONYMS	xv
GLOSSARY OF KEY TERMS AND CONCEPTS	xvii
CHAPTER 1: INTRODUCTION	1
1.0 Chapter introduction	1
1.1 Quick overview of the central issues this thesis seeks to explore	1
1.2 Australia – a disaster prone place in need of experienced emergency managers	2
1.3 Emergency management as an industry	4
1.4 What is an emergency manager?	6
1.4 The continued evolution of emergency managers	9
1.5 Personal context, perspective and motivation	10
1.6 Positionality	13
1.7 Summary of gaps	15
1.8 Study aims and research questions and structure of the thesis	17
1.8.1 Study aims	17
1.8.2 Research questions	17
1.8.3 Structure of this thesis	18
1.9 Chapter summary	20
CHAPTER 2: EMERGENCY MANAGERS – LITERATURE REVIEW	21
2.0 Chapter introduction	21
2.1 A brief introduction to the emergency and disaster	22
2.2 Emergency management industry and its evolution	22
2.1 Introducing the emergency manager	26
2.2.1 Entering the new millennium	28
2.2.2 The contemporary emergency manager	34
2.3 Identifying issues	41
2.4 Examining the demographics and knowledge of the emergency management practitioner	44
2.4.1 Demographics	44
2.4.2 In search of qualification, training, education, experience and knowledge of practitioners	46
2.4.3 The competence and confidence of emergency management practitioners	56
2.5 The productivity of the emergency manager	59
2.5.1 In pursuit of a theoretical lens	62

2.6 The physicians journey to becoming a discreet role – a comparative case to that of the ‘emergency manager’	69
2.6.1 An historical overview of the physician	71
2.6.2 Comparing the medical profession in Australia against Beaton’s criteria for a profession	77
2.6.3 An emergency managers overview	92
2.7 Key research questions	94
2.8 Chapter summary.....	94
CHAPTER 3: APPROACH AND METHODS	96
3.0 Chapter introduction	96
3.1 An overview of the research design.....	96
3.1.1 The location of emergency management within the disaster literature	96
3.1.2 In search of knowledge – an ontological and epistemological discourse	98
3.1.3 Triangulation.....	99
3.1.4 Mixed methods research	100
3.2 Methods utilised in the research	101
3.2.1 Secondary document analysis – analysis of job advertisement, government legislation and reports into disasters across Australia.....	109
3.3 Governance.....	117
3.3.1 Ethics	117
3.3.2 Questionnaire instruments	117
3.3.3 Data management	118
3.3.4 Software	118
3.3.5 Personal bias	119
3.4 Chapter summary.....	119
CHAPTER 4: QUESTIONNAIRE SURVEYS AND INTERVIEWS – RESULTS, ANALYSIS AND DISCUSSION	120
4.0 Chapter introduction	120
4.1 Practitioners baseline	121
4.1.1 Practitioner cohorts for the emergency manager questionnaire.....	121
4.1.2 Practitioners versus interviewees	121
4.1.3 The employment capacity of practitioners	121
4.1.4 Primary versus secondary roles	123
4.1.5 Discussion.....	124
4.2 Context and background.....	127
4.2.1 Context and background – results	127
4.2.2 Context and background – discussion.....	130
4.3 Qualifications.....	136
4.3.1 Qualifications – results.....	136
4.3.2 Qualifications – discussion	139
4.4 Training.....	140
4.4.1 Training – results	140
4.4.2 Training – discussion.....	142
4.5 Education	144
4.5.1 Education – results	144
4.5.2 Education – discussion.....	147
4.6 Experience	152
4.6.1 Experience – results	152
4.6.1 Experience – discussion	158
4.7 Knowledge	160
4.7.1 Knowledge – results.....	160
4.7.2 Knowledge – discussion	160

4.8 Competence and confidence	165
4.8.1 Competence and confidence – results	165
4.8.2 Competence and confidence – discussion	166
4.9 Industry overview	167
4.9.1 Industry overview – results	167
4.9.2 Industry overview – discussion	174
4.10 A tale of two industries: An ongoing debate between emergency service and emergency management	183
4.10.1 A tale of two industries: An ongoing debate between emergency service and emergency management – results	183
4.10.2 A tale of two industries: An ongoing debate between emergency service and emergency management – discussion	188
4.11 Chapter summary	190
CHAPTER 5: JOB ADVERTISEMENT DISCOURSE – RESULTS, ANALYSIS AND DISCUSSION	193
5.0 Chapter introduction	193
5.1 Context	194
5.1.1 Context – results	194
5.1.2 Context – discussion	196
5.2 Qualifications	197
5.2.1 Qualifications – results	197
5.2.2 Qualifications – discussion	203
5.3 Training	205
5.3.1 Training – results	205
5.3.2 Training – discussion	209
5.4 Education	210
5.4.1 Education – results	210
5.5.2 Education – discussion	214
5.5 Experience	215
5.5.1 Experience – results	215
5.5.2 Experience – discussion	223
5.6 Knowledge	225
5.6.1 Knowledge – results	225
5.6.2 Knowledge – discussion	229
5.7 Competence	230
5.7.1 Competence – results	230
5.7.2 Competence – discussion	233
5.8 Confidence	234
5.8.1 Confidence – results	234
5.8.2 Confidence – discussion	235
5.9 Chapter summary	236
CHAPTER 6: GOVERNMENT LEGISLATION DISCOURSE – RESULTS, ANALYSIS AND DISCUSSION	238
6.0 Chapter introduction	238
6.2 Australian emergency management legislation	239
6.3 Qualifications	240
6.3.1 Qualifications – results	240
6.3.2 Qualifications – discussion	241
6.4 Training	243
6.4.1 Training – results	243
6.4.2 Training – discussion	245
6.5 Education	246

6.5.1 Education – result	246
6.5.2 Education – discussion.....	246
6.6 Experience	247
6.6.1 Experience – results.....	247
6.6.2 Experience – discussion	249
6.7 Knowledge	251
6.7.1 Knowledge – results.....	251
6.7.2 Knowledge – discussion	251
6.8 Competence.....	252
6.8.1 Competence – results.....	252
6.8.2 Competence – discussion.....	253
6.9 Confidence	254
6.9.1 Confidence – results.....	254
6.9.2 Confidence – discussion	254
6.10 Chapter summary.....	254
CHAPTER 7: DISASTER REPORT DISCOURSE – RESULTS, ANALYSIS AND DISCUSSION	256
7.0 Chapter introduction	256
7.1 Disaster reports.....	257
7.2 Qualification.....	258
7.2.1 Qualification – results.....	258
7.2.2 Qualification – discussion.....	259
7.3 Training.....	260
7.3.1 Training – results	260
7.3.2 Training – discussion.....	262
7.4 Education	263
7.4.1 Education – results	263
7.4.2 Education – discussion.....	264
7.5 Experience	265
7.5.1 Experience – results.....	265
7.5.2 Experience – discussion	267
7.6 Knowledge	268
7.6.1 Knowledge – results.....	268
7.6.2 Knowledge – discussion	271
7.7 Competence.....	274
7.7.1 Competence – results.....	274
7.7.2 Competence – discussion.....	276
7.8 Confidence	278
7.8.1 Confidence – results.....	278
7.8.2 Confidence – discussion	280
7.9 Emergency Managers.....	280
7.9.1 Emergency Managers – results	280
7.9.2 Emergency Manager – discussion.....	282
7.10 Chapter summary.....	284
CHAPTER 8: THESIS CONCLUSIONS	286
8.0 Chapter introduction	286
8.1 Implications	287
8.2 Evaluating against aims and research questions	288
8.2.1 Key research question one - what are the demographics, qualifications, training, education, experience, knowledge, competence and confidence of existing emergency managers?.....	288

8.2.2 Key research question two - how do Australian emergency managers compare against the existing literature and Blanchard's new generation model?	288
8.2.3 Key research question three - what factors might impede Australian emergency managers?	289
8.2.4 Key research question four - what recommendations may be made to improve the operational effectiveness of emergency managers?	289
8.2.5 Key recommendations	290
8.3 Limitations of the thesis	293
8.3.1 Sample size	293
8.3.2 Rate of return	295
8.3.3 Practitioner Database	295
8.3.4 Lack of details in job advertisements	295
8.3.5 Limited and inconsistent scope of disaster reports	296
8.3.6 A brief reflection on human capital theory	296
8.4 Further research	296
8.5 Chapter summary	299
CHAPTER 9: APPENDICES:	300
Appendix A: Participant contact details by state and organisation	300
Appendix B: Recruitment advertisement	343
Appendix C: Ethics approval email	344
Appendix D: Letter Of Introduction (LOI)	345
Appendix E: Participant Information Statement (PIS)	346
Appendix F: Participant Consent Form (PCF)	347
Appendix G: Practitioner's Questionnaire Survey Instrument	348
CHAPTER 10: REFERENCES	354

TABLES

Table 2.1 – The principles of emergency management	24
Table 2.2 – Blanchard’s ‘stereotypical’ and ‘new generation’ emergency manager...	29
Table 2.3 – Top ten competencies for professional emergency managers	31
Table 2.4 – Top 10 core competencies and courses.....	32
Table 2.5 – Differentiating educational programs in emergency management	52
Table 2.6 – Beaton’s Criteria for Becoming a Profession	71
Table 3.1 – Contrasts between qualitative and quantitative research	100
Table 3.2 – Research methods used to answer each research question (also located in the thesis road map shown in Figure 1.2)	101
Table 3.3 – Advantages and limitations of surveys	102
Table 3.4 – Questionnaire survey instrument composition	105
Table 3.5 – List of targeted participant categories.....	105
Table 3.6 – Telephone interview – alignment with the primary survey categories...	107
Table 3.7 – Advantages and limitations of content analysis.....	110
Table 3.8 – Four primary recruitment platforms for identifying job advertisements	112
Table 3.9 – Emergency management legislation in alphabetical order by state/territory	114
Table 5.1 – Emergency services/response thematic group	200
Table 5.2 – Other thematic groups.....	201
Table 5.3 – Emergency management thematic group.....	201
Table 5.4 – Business thematic group	202
Table 5.5 – Job-specific thematic group	202
Table 5.6 – Discipline thematic group.....	203
Table 5.7 – Other thematic groups.....	207
Table 5.8 – Emergency service/response thematic group.....	208
Table 5.9 – Business thematic group	208
Table 5.10 – Emergency management thematic group.....	209
Table 5.11 – Job-specific thematic group	209
Table 5.12 – Business thematic group	212
Table 5.13 – Emergency services/response thematic group	212
Table 5.14 – Discipline thematic group	213
Table 5.15 – Emergency management thematic group.....	213
Table 5.16 – Other thematic group	213
Table 5.17 – Job-specific thematic group	213
Table 5.18 – Management thematic group	218
Table 5.19 – Business thematic group	219
Table 5.20 – Other thematic group	220
Table 5.21 – Emergency management thematic group.....	221
Table 5.22 – Discipline-specific thematic group	221
Table 5.23 – Governance-specific thematic group.....	222
Table 5.24 – Emergency services/response-specific thematic group.....	222
Table 5.25 – Governance thematic group	226
Table 5.26 – Business thematic group	227

Table 5.27 – Emergency management group	227
Table 5.28 – Other thematic group	228
Table 5.29 – Emergency services/response thematic group	228
Table 5.30 – Discipline-specific thematic group	228
Table 5.31 – Business thematic group	231
Table 5.32 – Emergency management thematic group.....	232
Table 5.33 – Emergency services/response thematic group	232
Table 5.34 – Other thematic group	233
Table 6.1 – Australian emergency management legislation by state and territory	239
Table 8.1 – Entire list of thesis recommendations	290

FIGURES

Figure 1.1 – Road map of the thesis	18
Figure 2.2 – A visual representation of the concepts and components of emergency management in Australia and their relationships.....	25
Figure 3.1 – Evolution of philosophical paradigms, concepts and approaches to the study of hazards and disasters during the 20th-21st century	97
Figure 3.2 – Content analysis process.....	111
Figure 4.1 – Road map of thesis for Chapter Four partially addressing research questions one, two and four.	120
Figure 4.2 – Breakdown of participant cohorts	121
Figure 4.3 – Validation of full-time emergency manager practitioners.....	122
Figure 4.4 – Time practitioners have been in their primary role	123
Figure 4.5 – Number of hours practitioner devote per week to their primary role....	124
Figure 4.6 – The gender of practitioners.....	127
Figure 4.7 – The age of practitioners	128
Figure 4.8 – The religious affinity of practitioners.....	129
Figure 4.9 – Practitioners according to their geographic location based on state or territory within Australia.....	130
Figure 4.10 – Primary employment industry of practitioners.....	130
Figure 4.11 – Practitioner’s highest level of qualification obtained in emergency management.....	137
Figure 4.12 – Practitioner’s highest qualification obtained in emergency management normalised by percentage and cohort	137
Figure 4.13 – Major areas of study for tertiary education	144
Figure 4.14 – Number of years of previous experience in emergency management.	152
Figure 4.15 – Practitioner’s level of satisfaction with regards to their competency in emergency management.....	165
Figure 4.16 – Practitioner’s level of satisfaction with regards to their confidence in emergency management.....	165
Figure 4.17 – An examination of related and non-related titles for the practitioner’s primary role.....	167
Figure 4.18 – An examination of related titles for the practitioner’s emergency management role	168
Figure 4.19 – Who should be responsible for regulating the emergency management industry?.....	170
Figure 5.1 – Road map of thesis for Chapter Five partially addressing research questions three and four.	193
Figure 5.2 – Number of advertisements by year – between 2011 and 2018.....	194
Figure 5.3 – Job advertisements according to their geographic location within Australia.....	194
Figure 5.4 – Job advertisements by sector	195
Figure 5.5 – Job advertisements by employment status	195
Figure 5.7 – The priority of qualification	198
Figure 5.8 – Level of qualification	199

Figure 5.9 – Qualification by thematic groups	199
Figure 5.10 – Job advertisements with training requirements	205
Figure 5.11 – Training by thematic groups.....	206
Figure 5.12 – Education specified by job advertisements	211
Figure 5.13 – Education by thematic groups	211
Figure 5.14 – Experience specified by job advertisements.....	215
Figure 5.15 – Job advertisements that required experience	215
Figure 5.16 – Experience listed by years	216
Figure 5.17 – Experience listed by an adjective	216
Figure 5.18 – Job advertisements requiring experience by a thematic group.....	217
Figure 5.19 – Knowledge specified by job advertisements	225
Figure 5.20 – Knowledge by thematic groups	226
Figure 5.21 – Competence by thematic groups	231
Figure 5.22 – Confidence thematic groups	234
Figure 5.23 – Total thematic groups	237
Figure 6.1 – Road map of thesis for Chapter Six partially addressing research questions one, three and four.	238
Figure 6.2 – Qualifications	240
Figure 6.3 – Training	244
Figure 6.4 – Education.....	246
Figure 6.5 – Experience	247
Figure 6.6 – Knowledge.....	251
Figure 6.7 – Competence	252
Figure 7.1 – Road map of thesis for Chapter Seven partially addressing research question four	256
Figure 7.2 – Qualification	258
Figure 7.3 – Training	261
Figure 7.4 – Education.....	263
Figure 7.5 – Experience	265
Figure 7.6 – Knowledge.....	269
Figure 7.7 – Competence	274
Figure 7.8 – Confidence.....	278
Figure 7.9 – Emergency Managers	281
Figure 8.1 – Road map of thesis for Chapter Eight partially addressing research questions one, three and four	286

*I love a sunburnt country,
A land of sweeping plains,
Of ragged mountain ranges,
Of **droughts and flooding**¹ rains,
I love her far horizons,
I love her jewel–sea,
Her beauty and her terror,
The wide brown land for me*

(Dorothea Mackellar, 5 September 1908)

¹ Emphasis added

ABSTRACT

An increase in the number and type of disasters has seen a steady rise in human and financial losses to various communities in Australia. In response to these hazards, during the 1950s many communities implemented civil defence programs. These programs have evolved into technically complex emergency/disaster management disciplines, which are often supported by emergency/disaster managers. In Australia, there are various types of industries that employ emergency managers including business, and various levels of government.

There is a paucity of research into the emergency manager and the individuals who fill this role in Australia. To fulfil this fundamental gap, this thesis examines the qualifications, training, knowledge, competence and confidence of emergency managers across Australia. It reviews the existing literature and then compares this through the triangulation of interviews, surveys, job advertisements, legislation and recent disaster reports.

The findings from this study indicate that the role of the emergency manager within Australia lacks social cohesion, identity and governance. Underlying these factors are several key issues that include lack of support, financial and physical resources, time restrictions, apathy, industry-specific tertiary qualifications and misunderstandings of the role that often includes emergency services and response as synonyms.

Furthermore, it revealed a lack of engagement by organisations to include appropriately qualified emergency managers in the development of key materials, including job advertisement, legislation, and disaster reports. All of which can act as barriers to effective disaster risk reduction and increase costs to communities. Despite the growth and complexity of the emergency manager's role, there are currently no standards or qualifications required for this position.

THESIS DECLARATION

I hereby declare that this submission is my work and to the best of my knowledge it contains no materials previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at The University of Sydney or any other educational institution, except where the acknowledgement is made in the thesis. Any contribution made to the research by others, with whom I have worked at The University of Sydney or elsewhere, is explicitly acknowledged in the thesis.

I understand that, if the candidature is successful, this thesis will be lodged with the Director of University Libraries and made available for immediate use.

I also declare that the intellectual content of this thesis is the product of my work, except to the extent that assistance is from others in the project's design and conceptions in style, presentation and linguistics expression is acknowledged.

- I have submitted a digital copy of this thesis.

Word Count excluding references, table and captions: 90,251

(Signed) _____ Date August 11, 2020

Thesis committee (names, not signatures):

ACKNOWLEDGEMENTS

My completion of this thesis was in large part, due to the support and patience of a great number of people. To these individuals: I would like to express my sincere gratitude in this part of my academic journey.

This study would not have been possible without the participants, of which there were many and the various emergency managers whose responses formed this study, I greatly appreciate the time taken out of their busy schedules.

To the University of New South Wales, the Faculty of Science, School of Biological, Earth and Environmental Sciences: Thank you for facilitating my honours year and providing me with a truly educational and informative experience. The University of Sydney, which provided my team and me a place to call home and allowed me to finish the second half of my candidature.

Special thanks go to my two supervisors who nursed me through my first foray into research. Dale: you once mentioned that there would be times that I would love doing this and times that I would hate it. Wendy, your support through my stay at UNSW, particularly while Dale was travelling across the globe conducting field research during my honours years was tremendous. Of course, I need to thank Dale during my honours and now, my PhD. The last several years have been trying for us both and I am sure it is time to move on to the next project. Thank You.

Last but not least, I would like to thank my parents and the many other people who provided significant help and support throughout this process including , who kept me honest with my writing and the many others who assisted in this journey by editing and reviewing my work including ,

. I am indebted to all those involved as they have made this a great journey in my search for answers and improvements in the emergency management body of knowledge. I cannot thank everyone enough.

LIST OF ACRONYMS

ACT	Australian Capital Territory
AEMI	Australian Emergency Management Institute
ABS	Australian Bureau of Statistics
ACTU	Australian Council of Trade Unions
AFAC	Australasian Fire and Emergency Service Authorities Council
AGD	Attorney Generals' Department
AHPRA	Australian Health Practitioner Regulation Agency
AIES	Australian Institute of Emergency Services
AIDR	Australian Institute of Disaster Resilience
AIIMS	Australasian Inter-Service Incident Management System
AMA	Australian Medical Association
AMC	Australian Medical Council
ANAO	Australian National Audit Organisation
APS	Australian Public Service
ARC	Australian Red Cross
ASMOF	Australian Salaried Medical Officers' Federation
ASQAC	Ambulance Service Quality Assurance Committee
AUD	Australian Dollar
AustLII	Australasian Legal Information Institute
AWPA	Australian Workforce and Productivity Agency
BMA	British Medical Association
BNHCRC	Bushfire and Natural Hazards Cooperative Research Centre
BTE	Bureau of Transport Economics
CALD	Culturally and Linguistically Diverse
Cth	Commonwealth
CEM	Certified Emergency Manager
CFA	Country Fire Authority
CPD	Continued professional development

CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSO	Chief Security Officer
CDU	Charles Darwin University
CSU	Charles Sturt University
DHS	Department of Homeland Security
DoLS	Department of Labor Statistics
DRR	Disaster Risk Reduction
EM	Emergency Management
EMA	Emergency Management Australia
EMAI	Emergency Management Australia Institute
EMAP	Emergency Management Accreditation Program
EMC	Emergency Management Commissioner
EO	Executive Officer
Fed Govt.	Federal Government
FEMA	Federal Emergency Management Agency
FEMO	Federal Emergency Management Organisation
FESA	Fire and Emergency Service Agency
GDP	Gross Domestic Product
IGEM	Inspector-General Emergency Management
NEMA	National Emergency Management Association
OECD	Organisation for Economic Cooperation and Development
SEMC	State Emergency Management Committee
SES	State Emergency Services
VicPol	Victoria Police

GLOSSARY OF KEY TERMS AND CONCEPTS

TERMS	DEFINITIONS	SOURCE/S
All Agencies Approach	This approach involves a comprehensive list of all levels of government and organisations in the management of emergencies.	2009 Victorian Bushfires Royal Commission—Interim Report (2009, p. 262); Emergency Management Australia. (2004, p. viii)
All Hazards Approach	Recognises the multitude of hazards and the requirement for processes to be flexible to compensate.	Queensland Government. (2019); Australian Institute for Disaster Resilience. (2015, p. 106); 2009 Victorian Bushfires Royal Commission—Interim Report (2009, p. 262); Emergency Management Australia. (2004, p. viii)
Comprehensive Approach	Encompasses the four elements of prevention, mitigation, preparation, response and recovery.	Australian Institute for Disaster Resilience. (2019, p. vi); Queensland Government. (2019); Emergency Management Australia. (2004, pp. viii; 3)
Disaster	A condition or situation of significant destruction, disruption and/or distress to a community	Emergency Management Australia. (2004, p. ix)
Disaster Management	See emergency management	Queensland Government. (2019); United Nations Disaster Risk Reduction. (2017); Emergency Management

		Australia. (2004, p. 9)
Emergency	An event that threatens or endangers life that can be handled by the local authority.	United Nations Disaster Risk Reduction. (2017); Emergency Management Australia. (2004, p. ix)
Emergency Management	A disruption to the community that involves death or injury that is beyond the daily scope of respective authorities. The process of managing various aspects of an emergency, incorporating four key approaches: the all agency approach, comprehensive approach, all hazards and prepared community.	Queensland Government. (2019); United Nations Disaster Risk Reduction. (2017)
Emergency Response	Also known as ‘response,’ is one of four elements outlined as part of the comprehensive approach. Used synonymously with emergency service organisations.	United Nations Disaster Risk Reduction. (2017)
Emergency Services	An organisation with a focus on emergency response.	United Nations Disaster Risk Reduction. (2017)
Hydrometeorological	Disasters that are based on weather and climate and include, fire, flood, drought.	United Nations Disaster Risk Reduction. (2017); World Meteorological Organization. (2013)
Integrated Approach	Recognises that emergency management requires the dedication and engagement of various stakeholders for the effective implementation of emergency management. Stakeholders that include the general public, utilities, emergency services and business.	Emergency Management Australia. (2004, pp. 4–6)
Meteorological	A type of disaster: atmospheric, hydrological or oceanographic in nature.	McGregor, K. (2007, pp. 15–31)
Public Good	Something in which its benefits cannot be easily attributed to a single individual and has a flow on effects to the wider community.	Kitchen & Thrift, (2009, p. 501)

CHAPTER 1: INTRODUCTION

*Know from whence you came. If you know whence you came,
there are absolutely no limitations to where you can go.*

(Attributed to James Baldwin, 1924–1987)

1.0 Chapter introduction

This thesis highlights the need for the formalisation and recognition of a unique emergency management role. It does this firstly, through identifying the increasing natural and anthropogenic disasters highlighting the critical requirement of a professional emergency manager profile for effective risk management that can minimise social and financial impact and ensure effective disaster risk reduction and advance the narrative surrounding risk creation. It then introduces emergency management and the role of the emergency management practitioner. It reveals my role as a researcher and practitioners, and finally, the gaps in the literature, the aims and objectives, and the research questions underlying this thesis.

1.1 Quick overview of the central issues this thesis seeks to explore

This thesis seeks to do the following:

- Note that Australia has been regularly affected by a variety of disasters – natural and anthropogenic – many of which have led to significant losses and to recognise that it is expected that the future frequency, intensity and impacts of a range of disasters – especially those associated with climate change will increase presenting challenges to Australia and its communities;
- To recognise ‘emergency managers’ working across a range of sectors and industry are at the sharp end of leading disaster risk reduction efforts and sit at the heart of helping to keep Australia’s communities safe;
- Demonstrate that ‘emergency management’ as a sector continues to evolve and change highlighting the characteristics of a profession (reflecting the evolution of other industries such as ‘medicine’ which is used as a comparative case);
- That emergency management continues on a necessary path towards formalisation and recognition as a unique and distinctive sector/industry

comprised of dedicated ‘experts’ who hold a specific role entitled ‘emergency manager’;

- Analyse the current state of the emergency management practitioner through a description of the current and recommended skills, practices and experience that emergency managers ought to possess in order to be effective at the tasks asked of them;
- Ask the question – what do contemporary Australian emergency management professionals look like in terms of the demographics, qualifications, training, education, experience, knowledge and competence? and benchmarks these against those deemed current ‘best practice’;
- Examine current Australian legislation, job advertisements and recent national and state-based post-disaster reports to explore whether in the case of the first two, the specific qualifications, training, education, experience, knowledge and competence are explicitly outlined and in the case of the latter, what those reports found lacking in contemporary emergency managers; and last
- Use the results of the analysis to make a series of recommendations to shape the evolution, recognition and formalisation of the role of emergency manager to meet future needs.

1.2 Australia – a disaster prone place in need of experienced emergency managers

Australia regularly experiences a range of natural and anthropogenically triggered disasters that cause significant loss of life, damage to infrastructure and economic loss (Emergency Management Australia: EMA, 2012a). During the 1980s, annual losses from disasters across Australia exceeded 11 billion AUD; between 1990 and 1999 it had increased to 13 billion AUD, and from 2000 to 2012 economic losses exceeded 17 billion AUD² (Insurance Council of Australia: ICA, 2011³). Events such as the 1999 Sydney Hail Storm (EMA, 2012b; Henri, 1999, p. 16), the 2009 Victoria Black Saturday Bushfires (EMA, 2012b; Teague, 2010, p. 1), the 2011 Queensland Floods (Holmes, 2012, p. 32) demonstrate the significant adverse impact disasters can have on Australian communities.

In Australia, notable events including the Thredbo Landslide disaster in 1997 (Middelmann, 2007, p. xix), Longford Gas Explosion in 1998, the Varanus Island gas

² These values have not been altered from the referenced publication

³ The author was unable to locate more recent findings of this report by the ICA for direct comparison.

explosion in 2008 (Emergency Management Australia Institute: EMAI, 2014a), the Sydney hailstorm of 1999 (EMAI, 2014b), the Victoria Black Saturday Bushfires of 2009 and the Queensland Floods of 2011 (Geoscience Australia, 2012), the 2019/2020 smoke and bushfires across the eastern states and the 2020 global Novel Coronavirus (COVID-19) pandemic have revealed the effect disasters have on communities. Following several recent high-profile disasters in Australia, a series of government reports have commented upon a range of systemic issues with current emergency management arrangements across Australia (Holmes, 2012, pp. 102, 413; Keelty, 2011, pp. 9, 28, 96, 167; Teague, 2010, pp. 4, 8) (see Chapter 7 for further information).

The economic costs from disasters have continued to increase over the past seven years, according to the 2018 report by The Australian Institute...

Natural disasters are estimated to currently cost Australian's over \$9 billion every year on average, which is expected to increase to \$33 billion by 2050, more than Australia's entire current Defence budget.

(Bennett, 2018, p. 18)

These findings highlight some of the impacts disasters have on the Australian community and the critical role that the emergency management industry and its practitioners have in the prevention/mitigation, preparation, response, and recovery phases of the disaster cycle (Commonwealth Scientific and Industrial Research Organisation: CSIRO, 2018; EMA, 2012a). The comment by Bennett (2018) is further supported by the CSIRO (The Australian, 28 December 2014; Sturmer, 11 December 2014⁴), that asserts that the damage caused by extreme weather could cost Australia more than 1 trillion AUD by the end of this century due to poor planning and...

that by 2070, the value of buildings in Australia exposed to climate-related events will exceed five trillion dollars. However, carefully planned and timed adaptation can reduce the damage and cost impact of climate change on businesses and our economy by up to half, and in some cases more.

(CSIRO, 2018)

⁴ Due to the age of the article, the news articles briefly referenced could not be located, and the original reporter was unable to provide further detail, including the name of the report.

1.3 Emergency management as an industry

Emergency management established its foundations within the civil defence movement of the 1950s and is also known as ‘disaster management’ and ‘emergency planning’ (Wong, 2019, p. 12; Coles, 2014, p. 22; Anderson & Adey, 2012, p. 24; Conway, 2012, p. 53; Phillips, Neal & Webb, 2012, p. 7; Haddow, Bullock & Coppola, 2011, p. 253; United States Army, 2009, p. 1; Norman & Coles, 2003, p. 98; Alexander, 2002, p. 209; Crews, 2001, p. 1; EMA, 1998a, p. 3). The evolution of the industry has seen the transition of emergency management from the military to emergency service, while it has also experienced a shift in the responsibility of emergency management to the various levels of government (Australian Institute for Disaster Resilience: AIDR, 2019a, p. 4; Phillips, Neal & Webb, 2012, p. 7; Smith, 2008, p. 58; Britton, 1999, p. 1), business (Parker & Handmer, 1992, p. 59) and the community (EMA, 1998b).

The placement of emergency management within Australia is predominantly located within an emergency service but this is inconsistent with emergency management concepts where it is deemed as a very distinct and separate discipline requiring different skillsets (Waugh & Streib, 2006, p. 131; EMA, 1998a). The complexity of emergency management has seen the industry develop predominantly by contributions from over 30 academic disciplines including but not limited to, political science, geology, meteorology, and social science (Coles, 2014, p. 22; Waugh & Tierney, 2007, p. 330; Pine, 2007, p. 202; Moseley, 2004, p. 28; Alexander, 2000, p. 189). Consequently, the various definitions of emergency management have been widely discussed and debated, both within the industry and externally (Cwiak, 2011, p. 8; Choi, 2008, p. 1; Stehr, 2007, p. 37; Waugh, 2007, p. 15; Harper, 2006, p. 3). In 2007 key agencies, including the largest body of emergency managers attempted to resolve one of the outstanding issues by defining emergency management as...

the managerial function charged with creating the framework within which communities reduce vulnerability to hazards and cope with disasters.

(Federal Emergency Management Agency: FEMA, 2007)

In Australia, emergency management works in tandem with numerous stakeholders, and in partnership with government agencies at the local, state and federal level (AIDR, 2019, p. 4) to implement disaster risk reduction (DRR). Emergency Management Australia (EMA, 1993, p. v) has previously declared that its

mission was “to promote and support effective emergency management in Australia”, however, there are currently no Commonwealth legislative arrangements for emergency management at the Australian federal level, or governing those tasked with the role (EMA, 2004b, p. 7; Robinson & Vidler, 2000, p. 41). In reality, the federal government places the responsibility with each state and territory for developing and managing their own emergency management arrangements (Robinson & Vidler, 2000, p. 14).

Emergency management in Australia is predominantly located within the emergency services, including fire and police due to their response experience in responding to emergencies and disasters (ACT Fire & Emergency Agency, 2019; FEMA, 2011, p. 3.12; NSW Police, 2011). However, this has not always proved effective due to differences in knowledge and culture (Waugh, 2019, p. 6) and required a call for an improved national emergency management system within Australia (Teague, 2010, p. 280). Furthermore, recent reports have also identified significant other issues.

The Commission... concludes that the state-level emergency management arrangements still faltered because of confusion about responsibilities and accountabilities and some significant deficiencies of leadership.

(Teague, 2010, p. 8)

The Special Inquiry heard consistent and wide-ranging criticisms of FESA's [Fire and Emergency Service Agency] management as has been evidenced throughout this report.

(Keelty, 2011, p. 167)

Despite the local issues, a restructure of EMA (Jay, 2015, March 25) in 2015 saw many of its functions outsourced to the Australian Institute of Disaster Resilience (AIDR, 2019b) and its partners that includes the Department of Home Affairs, the Australasian Fire & Emergency Service Authorities Council (AFAC), the Australian Red Cross (ARC) and the Bushfire and Natural Hazards Cooperative Research Centre (BNHCRC) (AIDR, 2019c). Despite these agencies listing emergency management as one component of their responsibilities, many believe that managing an emergency, for example, fire fighting or responding to storms is synonymous with emergency management (AIDR, 2019c).

Current Australian emergency management processes are reactive, with confusion and misunderstanding about the role of the ‘emergency manager’ and its specific responsibilities that include poor decisions by leadership; deficiencies and dishonesty in leadership; and the existence of apathy within organisations responsible for contemporary emergency management (Holmes, 2012, pp. 102, 413; Keelty, 2011, pp. 9, 28, 96, 167; Teague, 2010, pp. 4, 8). These findings indicate the need for a unique and dedicated emergency manager role, one that is formally trained and educated to ensure a holistic approach to emergency management process rather than one that is reactive, ad-hoc and predominantly focused on response.

So what are the critical differences between emergency management and emergency services/ response, and what are the essential elements that comprise these two functions? Emergency management is a comprehensive system and framework that drives overarching DRR across an organisation or community. This system requires the emergency management practitioner to have a broad understanding of how these systems interact with each other. Contemporary emergency management recognises that there may be underlying issues that may inhibit effective DRR, and that response is only one small part of this system. Chapter two and Figure 2.2 highlights the specifics of the framework in more detail.

In contrast, an emergency services organisation is predominantly limited to response and is generally trained in one specific type of hazard.

Emergency services and other agencies at the local level are usually the first organised response to an emergency.

(Australian Institute of Disaster Resilience - AIDR, 2019, p.5)

It is important to recognise that emergency service agencies may undertake some activities that fall within prevention and mitigation through initiatives such as backburning or smoke detector deployment in the fire service, in essence, they require different skillsets and require vastly different knowledge and abilities.

1.4 What is an emergency manager?

The role of the emergency manager today has evolved and is very different from the role that emerged as part of the 1950s civil defence era (Grist, 2007, p. 104) when the “image of emergency managers as ‘air raid warden-type’ officials with little natural disaster experience” was the prevailing understanding of the industry (Stanley & Waugh, 2001, p. 697). The role of the emergency manager was first acknowledged as

integral to the development of a comprehensive approach to emergency management in the early 1980s (Labadie, 1984, p. 489) and an examination of the literature acknowledged the need for individuals holding the role of an emergency manager to obtain appropriate competencies (Corriveau, 2009, p. 3; Blanchard, 2005, p. 1).

Although very little was initially understood about the role (Labadie, 1984, p. 489), it was not redefined until 15 years later when the complexity of the position was recognised (Britton, 1999, p. 1). As part of this redefining process, Britton (1999, p. 4) acknowledged that effective emergency management was “reliant on expertise through knowledge” and that university-level programs were introducing a systematic risk management approach. Adopting a combined approach incorporating practical skills-based training and knowledge-based programs was deemed to better serve the emergency management industry than one based purely on experience (Britton, 1999, p. 6).

The formulation of the *new generation* emergency managers identified by Blanchard (2001) indicated a ‘changing of the guard’ that was considered unsettling to the established or *stereotypical* emergency manager (Cwiak, 2007, p. 2). In his typology, Blanchard identified the stereotypical emergency manager as someone who did not possess a degree, had a knowledge base that was experiential, was response focused, did not read emergency management literature, obtained their role other than with emergency management skills, worked predominantly with emergency services, had not done a mitigation plan or strategic plan, had multiple roles and conducted emergency management in a part-time capacity (Blanchard, 2001, pp. 7–8).

The new generation of emergency managers have been identified as individuals who possess an emergency management degree, are professional, knowledgeable, have a knowledge base utilising science and research, are technologically proficient and adept, pursued emergency management as a career of first choice and are lifelong learners who keep current in their reading of the disaster and emergency management literature (Blanchard, 2001, pp. 7–8). Despite recognising that a change is in progress, there is a lack of awareness of emergency management as an evolving industry that is beginning to require professional and educational certificates and degrees for industry certification, thereby distinguishing the professional from the amateur, or the *stereotypical* emergency manager as outlined by Blanchard (IAEM, 2019b; Dilling, 2009, p. 16). Furthermore, it is possible that the community may not realise that there is a difference between these two generations (Grist, 2007, p. 16) identified by Blanchard (2001).

Emergency managers take a lead role in developing, implementing and enacting policies, procedures, protocols, and plans within particular jurisdictions. However, disasters and their propensity to require non-routine responses from the community are a “complex policy problem that span all levels and most functional areas of government” (Tarrant, 2006, p. 9). It is also plausible that “the very name of the field... is a misnomer. Emergency managers are not really concerned about emergencies; they are instead interested in larger events that have a community-wide impact” (Drabek & Hoetmer, 1991, p. 121), supporting the theory that emergency services agencies and personnel, no matter their rank, are not emergency managers. Despite the existence of the *Principle of the Emergency Management* (FEMA, 2007), the lack of formal knowledge and industrial educational requirements in emergency management has likely contributed to a widespread belief that the practitioners’ role remains largely undefined (McArdle, 2017, p. 5; Eburn & Dovers, 2011, p. 32).

While some individuals believe that emergency management is a distinct profession (Alexander, 2008, para. 1; Talbot & Jakeman, 2008, p. 272) and unique position requiring extensive knowledge (Tarrant, 2006, p. 6) a number of stakeholders recognise it as a sub-function of other areas and fall short of identifying it as a unique professional discipline (Bumgarner, 2008, p. 1; Kendra, 2007, p. 25; Alexander, 2000, p. 189). These beliefs suggest a lack of awareness around the complexity and knowledge required of the role. It is plausible that this belief may add to a continued misunderstanding and increase confusion regarding the various emergency management concepts, principles and terminology (Cwiak, 2011, p. 8; Choi, 2008, p. 1; Waugh, 2007, p. 15; Stehr, 2007, p. 37; Harper, 2006, p. 3) that were identified previously.

*Ideally, a professional emergency manager is an individual who has attained a graduate degree in emergency management, has passed a state-regulated emergency management association exam, and occupies an emergency manager’s position. The latter implies different statutory job-related positions within that field. In other words, emergency managers are those who manage emergencies and disasters **and have at their command all the other personnel who support emergency management functions**⁵.*

(Wilson, 2001, p. 237)

⁵ Emphasis added

1.4 The continued evolution of emergency managers

Despite the debate concerning the proper roles and responsibilities for emergency managers (Sutkus, Cauley & Ugarte, 2011, p. 1) and an increase in emergency manager accreditation programs developed and executed in the United States (IAEM, 2019a; Kansas Emergency Management Association, 2019; Missouri Emergency Management Association, 2019), the individual holding the role of the emergency manager has not been the subject of extensive study in Australia or internationally (McArdle, 2017, p. 30; Wybo & Lonka, 2002, p. 7; Labadie, 1984, p. 489). The growth of certification programs, literature and research would suggest a desire to identify a critical skill set and a level of knowledge and competence required for individuals seeking to assume and perform the role of an emergency manager.

Notwithstanding the growth in emergency management literature, there is still very little research into the demographics, knowledge and competence of emergency management practitioners. Furthermore, this lack of professional identity (Creuss & Creuss, 2018, p. 239), governance, regulation and registration of practitioners contributes to a scarcity of information (McArdle, 2017, p. 29). In light of the various complexities and differences between communities and the hazards they potentially may encounter in the future, the emergency manager's role is a continually changing and evolving one that "provides benefit to the community" (Choi, 2008, p. 16). Where the emergency manager must be...

able to think critically in order to identify and anticipate [emergency or disaster] situations, solve problems, [and] make judgements and decisions effectively and efficiently, in order to effectively and successfully assume and manage risk.

(Peerbolte & Collins, 2013, p. 48)

There is an increase in the call for greater knowledge, experience and level of responsibility by emergency managers who are frequently expected to accomplish more with fewer resources (Beaulieu, 2012, p. 20). Despite pertinent information including definitions, principles, concepts and knowledge available to the practitioner and the greater community, it is of concern that government reports into disaster events continue to reveal similar outcomes across events (see Chapter 7 for further information on this). Where dubious standards and requirements for the position, a

lack of resources, and limited awareness and expectations of the position by practitioners, organisations and stakeholders continue to compound existing issues (Holmes, 2012, p. 413; Keelty, 2011, p. 14, 28, 96, 167; Teague, 2009, pp. 8, 208). It is plausible that a lack of formal education exacerbated by these issues will result in a further reduction of standards and a continued increase in community vulnerability if not addressed (Beaulieu, 2012, p. 20). These findings further suggest the need for emergency management to be studied by someone intimately involved in the industry with an understanding of the complexities.

1.5 Personal context, perspective and motivation

By education, training and vocation, I am a professional ‘emergency manager’, and my contributions to emergency management have spanned 25 years and will continue into the indefinite future. Beginning with my work as a volunteer surf lifesaver and instructor on Australia’s famous Bondi Beach, I returned to the United States to become a qualified Firefighter, Hazardous Materials Technician and Specialist, Emergency Medical Technician, Rescue Specialist and Paramedic working for various state and local departments. In these roles, I was actively involved in emergency services in both a voluntary and professional capacity, and where I have responded to numerous anthropogenic and natural disasters throughout my career.

As my career progressed, so too did the emergency management industry around me, from a predominantly emergency services industry focused on responding to emergencies to one that has become significantly more complex and deserving of recognition as a fully-fledged industry. Despite the title, as an Emergency Services Coordinator for the City of Sydney local government in 2007/08 my role was less about emergency response and more about strategically developing the local council’s emergency management processes through the comprehensive, all-hazards, all agencies, and the prepared community frameworks. In this role, I was required to engage and collaborate with various stakeholders to develop, implement and maintain emergency management policies, procedures and plans.

During my time in this role, I witnessed emergency plans, risk assessments and risk registers of varying quality, from plagiarised and impractical documents that were not fit for purpose, to those lacking scientific evidence. I also witnessed practitioners supporting disputed myths, such as a public panic during a crisis and

widespread looting after a disaster. In this role I found that there was a propensity for practitioners to believe that the role was to support emergency services, and that the community, was expected to ‘fall in line and do what they were told’. These observations indicated that there were emergency managers who lacked the necessary knowledge and skills required to effectively and efficiently fulfil the position and who also lacked a fundamental understanding of the role. The lack of quality control surrounding the emergency managers’ role led me to question the effectiveness of these documents as well as the demographics, knowledge, training, education and knowledge of many “emergency management” practitioners.

My search of knowledge was a belated one, despite my family being in education, and my father having a PhD in Education, my early education was not typical. When I started working within emergency services, I struggled with the conflict that espoused experience over education and the limited opportunities available for those seeking formal qualifications in emergency management. During the 1990s there were limited opportunities for emergency management tertiary education in the United States and what existed at the time was predominantly response focussed. At the time, I did not know any better, like many others, I still saw emergency services and emergency management as being synonymous. It was not until I was able to undertake extensive studies into emergency management at the university level that I developed a true understanding of the area, started to critically evaluate the existing processes and realised that there was a significant variances between these two very different but related professional disciplines.

Over the past 15 years, my education specific to emergency management ranged from an Advanced Diploma in Public Safety (Emergency Management), Bachelor of Social Science (Emergency Management), to a Masters of Community Development (Emergency Management). In addition to my education, I have also obtained extensive practical experience, as an emergency manager across private industry, and local and state government organisations. In my current role, I am responsible for managing emergency management (amongst others) across Australia and New Zealand. Despite my background in emergency management, I have always recognised the limitations of practices that solely focus on either experience or education. Limitations that divide the two areas and highlights the lack of a holistic and inclusive structure required for advancing the industry into a formal profession.

Across my career, I realised that many programs and processes that were developed to support emergency management were predominantly based on the limited knowledge of an individual, or a small group of individuals. Knowledge that was either based on education or experience, but where these individuals seldom recognised the importance of a holistic foundation grounded in both education and experience. It was a logical progression on my part, therefore, to assume that the best way to make changes to the industry was to examine the people responsible for developing the reports and policies that underpin emergency management from within, as an 'insider'. Recognising the emergency manager as a unique role with dedicated educational and career pathways, was, and remains my overall goal.

It is therefore, my belief, that there are several key component required to be deemed an emergency manager that includes meeting Blanchard's (2001) criteria for 'contemporary emergency management and that the practitioner have...

- A degree in emergency management;
- Experience based on emergency management principles and tenets;
- Continuing education specific to emergency management.

I would also suggest that there are several criteria that do not make an individual an emergency manager and are not transferable. These include

- Competence in own area or industry of expertise (electrician, soldier, engineer, researcher, academic);
- Likability;
- Managing an emergency (response);
- Proximity to emergency management (such as emergency services);
- Time in service (years in emergency management or related field without any formal assessment of knowledge or experience); and
- Rank (such as Commissioner of a fire brigade or police force).

During the course of my studies, my supervisor asked me if I believed that Commissioner of the NSW Fire Brigade (Shane Fitzsimmons) was an emergency manager. Based on these criteria and the limited transparency availability of his qualifications, education and experience I responded that I did not believe that he was. I informed him that just because he is well-liked and may be a great firefighter with extensive experience in his discipline, does not automatically equate to competence or

knowledge that extends beyond this area. I would be doing a disservice to those who had spent their time meeting those criteria and dedicating their careers to contemporary emergency management practice, as opposed to firefighting. But my supervisors comment continues to highlight the strong belief by many that emergency services and response is synonymous with emergency management, and the need for tertiary qualified emergency management practitioners to drive research and education in this space.

1.6 Positionality

It is my education and experience over the past 25 years that has led me to develop my knowledge of emergency management and to propose this thesis. Not just as a curious academic researcher, but as a member of that industry being examined.

Being an insider has the potential to introduce personal bias and preconceptions (Rabbitt, 2003), but it is my qualifications, training, education, experience, knowledge and competence in these areas that allows me to understand the context and to ask the right questions (and answer them). There are significant benefits in my role as a professional emergency manager and industry ‘insider’ (Robson, 2002, p. 382). Benefits that include being able to share...

the deepest concerns of the group or at the least being thoroughly aware of them, will so direct their inquiries as to have them be relevant to those concerns.

(Merton, 1972, p. 16)

Individuals from within a particular group can offer invaluable insight that those external to the group do not and could not possess and therefore, can be regarded as a strength (Sherry, 2008, p. 433). As an insider, I am familiar with the culture, having established relationships and access to information and knowledge that may not be available to outsiders (Rabbitt, 2003). This relationship also allows for a greater level of comfort by participants who may feel more inclined to talk openly with someone who understands the concerns of the industry (Tierney, 1994, p. 110).

My career in emergency management started when there were limited educational programs available for practitioners and experience was the accepted norm. It is from this perspective that I understand the ambivalence of those

practitioners who do not possess the formal tertiary level evidence-based training, as I was once one of them.

As global climate change, technology, and population growth increases (Fitzgerald, et al., 2017, p. 22), there has never been a need for greater knowledge or the ability to use that knowledge to greater advantage. As an industry that is trying to evolve into a fully-fledged profession, there has been a steady reliance on other industries to build the underpinning knowledge base. Often this has been done at the exclusion of experienced practitioners who appear to be considered end-users rather than active participants and who are often not “treated with the gravitas or respect” as others at the “table of decision-makers” (McArdle, 2017, p. 24).

The lack of research conducted about and by the emergency management industry suggests the need to broaden the pool of information accessed and reviewed that includes ‘grey literature’ that is often overlooked by academia but is not without value (Norcup, 2015, pp. 61–62, 64, 74; Carver, 2011, p. 19). This unorthodox use of literature in emergency management research introduces a concept where...

the engaged researcher should explore every possible source of information that might shed light on how nature or the particular principle in focus works. Many great scientific discoveries illustrate the power of integrating information from diverse, unconventional sources and gaining a broader understanding of how nature works.

(Belas, 2019, p. 197)

I am the composition of my experience and education, and it is this combination that has taught me to not only value experience but to also realise that this may limit my abilities as a researcher to advance the industry at a fundamental level without evidence-based knowledge. Developing a career in an industry that has extensive authority in the ‘real world’ as a member of various frontline emergency services, I was often regarded automatically as an expert. It was not until I started the educational process that I realised that a lot of what I thought and believed in emergency management was limited or incorrect and that there was a need for me to obtain knowledge external to my own experience. As my career has grown and I shifted away from the emergency services, I rarely espouse this background and yet I

often feel that I have to justify my opinions on emergency management through that lens, as without this my emergency management credibility is often attacked.

As a critical realist, I have identified an important issue that needs to be explored, to advance emergency management. However, throughout my career, I have also come to value positivism as a tool that allows me to embrace the value of personal experience supported by reason, logic and quantification (Paley, 2008, p. 646). It was during my education that I better understood the saying ‘you don’t know what you don’t know’ or the illusion of explanatory depth where...

most people feel they understand the world with far greater detail, coherence, and depth than they do. The illusion for explanatory knowledge—knowledge that involves complex causal patterns—is separate from, and additive with, people’s general overconfidence about their knowledge and skills.

(Rozenblit & Keil, 2002, p. 2)

1.7 Summary of gaps

The existence of various emergency management definitions highlights the value of a well-defined and unified industry supported by a dedicated manager replete with a specific set of qualifications, training, education, experience, and knowledge. A practitioner whose primary responsibility is to protect...

communities by coordinating and integrating all activities necessary to build, sustain, and improve the capability to mitigate against, prepare for, respond to, and recover from threatened or actual natural disasters, acts of terrorism, or other man-made disasters.

(FEMA, 2007, p. 4)

Despite the lack of a globally accepted definition for what the role of the emergency manager entails, nor a clear set of standards for their education, skills, capabilities or competencies, the United States notes that the demand for quality emergency managers is on the rise (United States Department of Labor Statistics: DoLS, 2018). According to the DoLS (2018), the job growth rate for emergency managers in the USA is increasing by approximately 8% per annum, whereas authorities in Australia do not appear to track this data in any meaningful manner.

In many cases, the ambiguity of a practitioner’s position stems from the role being largely undefined (Sutkus, Cauley & Ugarte, 2011, p. 1) with uncertainty

leading to emergency managers losing their jobs for failing to meet community or politically acceptable standards that were never made explicit at the time of the individuals hiring (Eburn & Jackman, 2011, p. 59). This phenomenon has also been identified within workshops and training programs wherein the convenor is “without a clear understanding” of the functions of the emergency manager’s role, raising concerns about the future of the very position itself (Stehr, 2007, p. 38).

Australia is prone to significant disasters, both anthropogenic and natural in origin, and that hydrometeorologically triggered disasters associated with climate change. As these hazards are expected to increase in both frequency and magnitude in the future (Sewell, Stephens, Dominey–Howes, Bruce & Perkins, 2016, p. 10), it is germane to explore the current education, skills, experience and competence of Australian emergency managers in order to determine if they are fit for the challenges ahead?

Despite the recognition that an increase in knowledge was vital to the growth of the industry, Nirupama and Etkin (2009, p. 3) recognised that barriers existed to the effectiveness of emergency management. The barriers identified by Nirupama and Etkin (2009) include the existence of practitioners who subscribed to “common disaster myths” (p. 14), failure of organisations to apply existing knowledge (p. 15), and emergency managers who do not feel the need for additional education or experience (p. 14).

Understanding the education, skills, capabilities, experience and competencies of emergency managers is critical because when successful, the actions undertaken by these managers increase community resilience to disasters, decrease costs associated with disaster events and achieves meaningful DRR. Therefore, emergency managers are the lynchpin in supporting communities to achieve a pathway to increased resilience to future disasters of all kinds, and as such, they represent a worthy ‘object’ of study and research. As a Public Good⁶ that is funded by the taxpayer’s purse, it is not unreasonable to expect that the emergency manager is suitably educated and experienced in all the concepts and underpinning knowledge required and has the

⁶ A *Public Good* can be defined as any area or industry in which its benefits cannot be easily attributed to a single individual and has a flow-on effect on the broader community. For example, in emergency services or emergency management, the benefits can be realised by more than a single individual (Cox, 2009, pp. 501–505).

practical experience and an adequate level of competency required for the role or has suitable guidance.

The growing importance of emergency managers and the recognition that there is value in conducting research on emergency managers (McArdle, 2017, p. 5; Bird, 2013, p. 25; Springer, 2009, p. 198; Glassey, 2008, p. 3; Blanchard, 2005, para. 7), there has been remarkably little focus on examining the individuals currently acting in the role (Nirupama & Etkin, 2012, p. 599; Cwiak, 2009, p. 22), especially in Australia – with the exception of McArdle (2017, p. 30). Where deficits are identified, research will point towards knowledge and skills enhancement useful for ensuring an appropriate emergency management workforce for the future. Such work may also help to influence community confidence in the emergency managers that seek to keep them safe. Furthermore, better understanding the emergency manager will...

provide insight to the current and future state of professionalization of emergency management... add value to the existing body of knowledge on the subject matter and provide a baseline for further research... for comparative study and analysis... over time.

(Bird, 2013, p. 12)

1.8 Study aims and research questions and structure of the thesis

1.8.1 Study aims

A review of the existing literature on emergency management (globally generally, and in Australia specifically) reveals that few studies have paid attention to the individuals holding the role of an emergency manager, their demographics, qualifications, training, education, experience, and knowledge. To address this gap, this thesis examines the role of the emergency manager as a discreet position within emergency management. In light of this context this thesis seeks to:

- critically review the Australian emergency manager and to identify factors that may contribute to the overall success, effectiveness and productivity of the role.

1.8.2 Research questions

The emergency management profession requires a unique dedicated individual with appropriate qualifications, training, education, experience, knowledge and competence. To better understand the profession across Australia, four questions will

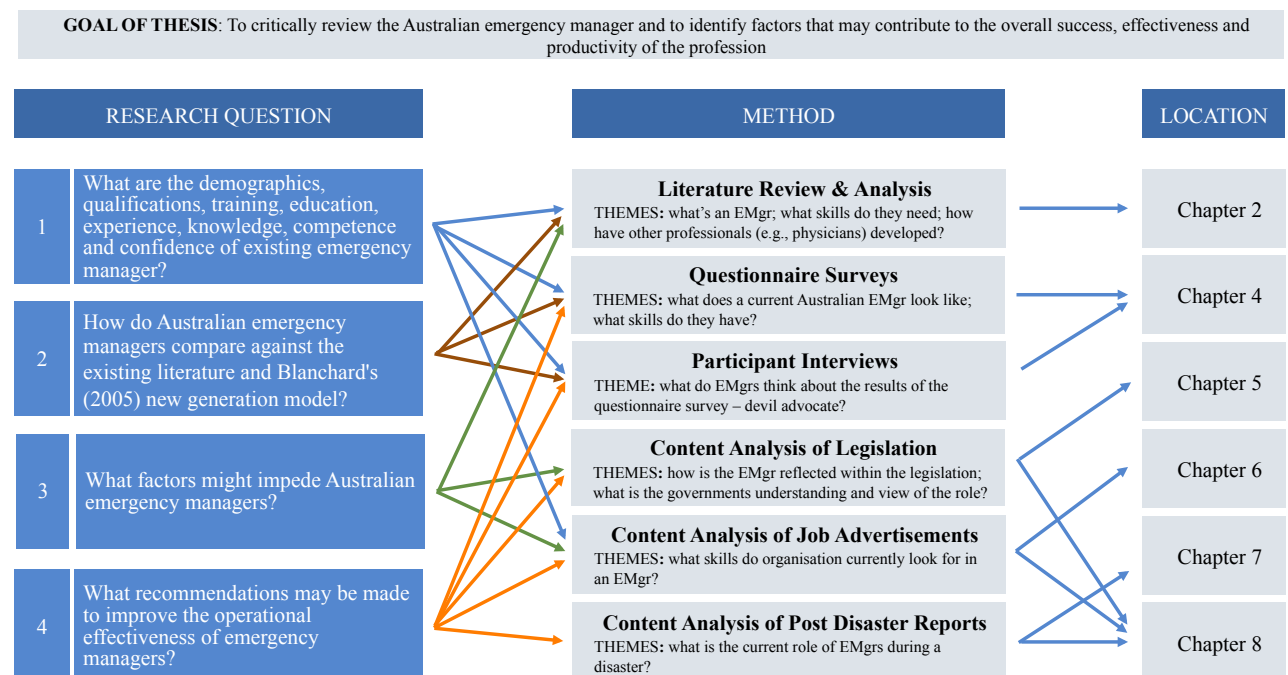
be utilised to guide the research detailed in this thesis. The four research questions are articulated based on the gaps within the existing literature. These are:

1. what are the demographics, qualifications, training, education, experience, knowledge, competence and confidence of existing emergency manager?
2. how do Australian emergency managers compare against the existing literature and Blanchard's new generation model?
3. what factors might impede Australian emergency managers? and
4. what recommendations may be made to improve the operational effectiveness of emergency managers?

1.8.3 Structure of this thesis

In alignment with my practical experience and desire to make real change in an area that is progressing towards a distinct profession, I will address these gaps, not as traditional scholarly thesis through theoretical content but as a policy-and-practice oriented PhD. Figure 1.1 provides a road map for the thesis and its structure, providing an overview of the fundamental research questions, the methods used to address them and identifies those chapters where the results are presented and discussed.

Figure 1.1 – Road map of the thesis



Chapter One provides an overview of the central issues this thesis seeks to explore, and introduces Australia as a disaster prone place in need of experienced emergency managers, before introducing emergency management as an industry and the role of the emergency manager in the provision of more effective emergency management practices. Finally it discussed my personal context, perspective and motivation, positionality, a summary of gaps, the study aims, research questions and thesis structure.

Chapter Two examines the literature, highlighting seminal works and the importance of demographics, qualifications, training, education, experience knowledge in developing an effective and efficient emergency manager in the prevention, mitigation, preparedness, response and recovery from disasters and provides a partial answer to research questions one, two and three.

The ability for others to understand, review and validate the study is vital in any scientific exploration. The approach and methods utilised in this research will be discussed in Chapter Three. It details the various steps undertaken, from the research design and methods employed, the identification of appropriate participants, data collection, analysis and discussion, to the researcher's bias and ethics approval.

Chapter Four examines the results of a practitioner's survey and telephone interviews with key emergency management informants, followed by an analysis and discussion of these findings. The chapter also examines the context and demographics of the surveyed emergency managers, their qualifications, training, education, experience, knowledge, their competence and confidence and provides a partial answer to research questions one, two and four.

Chapter Five utilises a longitudinal study of job advertisements to examine the profession of emergency managers across Australia, conducted between January 2012 and December 2018. This survey examines the qualifications, training, education, experience, knowledge, competence and confidence of emergency managers that employers have been seeking over these six years. This chapter provides greater insight into the profession, and identifies factors that may impede Australian emergency managers while providing a partial answer to research question three and four.

Chapter Six utilises an empirical review conducted on various Australian emergency management legislation across Australia. This review will examine the demographics, qualifications, training, education, experience, knowledge, competence and confidence of existing emergency managers required by each state/territory from

a legislative context to provide partial answers to research questions one, three and four.

Chapter Seven will examine five government reviews into contemporary disasters across Australia to provide further insight into current practice of qualifications, training, education, experience, knowledge, competence and confidence of existing emergency managers and provide a partial answer to research question four.

Chapter Eight integrates the findings of Chapters Four through Seven to synthesise the recommendations identified throughout the thesis and to address the four research questions of this thesis. It then compares these findings to the contemporary emergency management outlined in the literature. Finally, it examines the ongoing debate between emergency service and emergency management as vital driver across the industry.

1.9 Chapter summary

Disaster frequency has increased over the past 25 years, with the number and frequency of events expected to escalate. There are many complex causes attributed to increases in disasters, but the role of improved reporting of data related to hazards plays an integral part in this process. These two factors reveal the importance of employing professional individuals with specific evidence-based knowledge dedicated to the management of disasters. These individuals if adequately educated and experienced can assist communities to conduct threat analysis, determine appropriate preventative, mitigation, and treatment options based on scientific evidence, identify appropriate resources and to engage and collaborate with stakeholders to develop effective and efficient disaster risk reduction processes based on scientific evidence and proven research techniques.

The emergency management literature reveals an industry in turmoil with debates surrounding terminology and responsibility (McArdle, 2017, p. 5), and the progression of the industry towards recognition as a profession (Choi, 2008, p. 15; Wilson & Oyola-Yemaiel, 2001, p. 124). This thesis seeks to improve our understanding of emergency management and emergency managers across Australia by examining the industry and the personnel responsible for fulfilling these roles. Chapter two will now discuss the placement of the emergency management practitioners within the literature and their role in evolving emergency management towards a profession.

CHAPTER 2: EMERGENCY MANAGERS – LITERATURE REVIEW

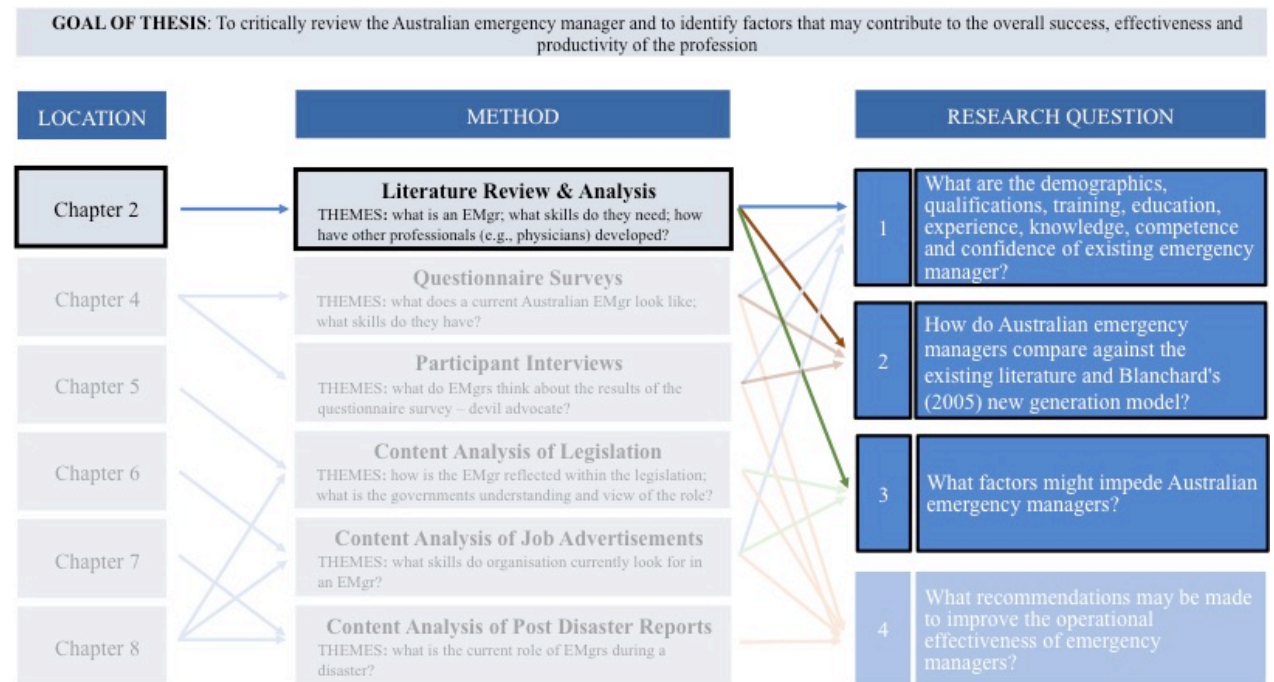
*If I have seen further than others,
it is by standing upon the shoulders of giants.*

(Attributed to Bernard of Chartres, c.1070 – 1130)

2.0 Chapter introduction

Disasters are complex events that regularly affect communities across a range of spatial and temporal scales. In Australia most disasters are hydrometeorological and climate change is expected to lead to increases in frequency and intensity (see section 1.2). Emergency managers are the societal lynchpin that support communities to prevent/mitigate, prepare for, respond to and recover from these disasters. Chapter One introduced the role of the Emergency Manager, Chapter Two will discuss them in more detail along with their demographics, qualifications, training, education, experience, competence, and confidence of practitioners. It then introduces the role of productivity as a requirement of an effective position. Finally, emergency managers will be compared against physicians as established professionals for which lessons can be learned and applied to the position to partially address research questions one, two and three (Figure 2.1).

Figure 2.1 – Road map of thesis for Chapter Two partially addressing research questions one, two and three.



2.1 A brief introduction to the emergency and disaster

There has been significant debate over the definition of what constitutes a disaster since the 1940s when American Geographer Gilbert White (1945) published his seminal work *Human adjustment to floods: a geographical approach to the flood problem in the United States* as part of his PhD thesis. Despite the ongoing debate, the definition remains contested within academia (Choi, 2008, p. 1; Cwiak, 2011, p. 8; Stehr, 2007, p. 37; Harper, 2006, p. 3) and emergency management (McArdle, 2017, pp. 36–38; Phillips, Neal & Webb, 2012, p. 32; Rohn & Blackmore, 2009, p. 1; Bumgarner, 2008, p. 11; Birkland, 2006, p. 4; Matthews & Herbert, 2004, p. 268; Wilson & Oyola–Yemaiel, 2001, p. 118; Alexander, 2000, p. 7; Parker & Handmer, 1992, p. 5).

The various interpretations recognise an emergency as a serious and unexpected event that is actual or imminent, that endangers or threatens to endanger life, property or the environment and requires a significant and coordinated response, but does not disrupt the community and can be managed by local resources (EMA, 1998a, p. 32; Waugh, 2007, p. 160; Oxford University Press, 2003a; Phillips, Neal & Webb, 2012, p. 478; FEMA, 2011, p. 5.1). A disaster, however, can be defined as a serious disruption that threatens death, injury, financial loss, general services, and overwhelms the community, agency, or organisation, and requires outside assistance and is greater in scale than an emergency (Phillips, Neal & Webb, 2012, p. 146; Coppola, 2011, p. 29; Haddow, Bullock & Coppola, 2011, p. 378; Bumgarner, 2008, p. 268; Waugh, 2007, p. 160; Oxford University Press, 2003b; EMA, 1998a, p. 27).

2.2 Emergency management industry and its evolution

Despite early literature with a focus on emergency management originating from the United States, Australia was an early adopter of emergency management frameworks and concepts that included the *comprehensive approach* (prevent/mitigate, prepare, respond and recover), the *all-hazards approach*, the *integrated approach* (all-agencies) to emergency management, and the *prepared community* Figure 2.2 (EMA, 1998a). Based on the literature, the Emergency Manager should be responsible for the management of disasters and the various frameworks previously identified in Figure 2.2 in the long-term pursuit of meaningful DRR.

The interdisciplinary origins of emergency management have created its own issues, that has range from the failure to address industry-specific skills, a lack of integration of terminology utilised by these various academic disciplines (Pine, 2007, p. 202; McEntire & Marshall, 2003, p. 124; Alexander, 2000, p. 189) to a lack of industry agreed definitions (Choi, 2008, p. 1; Cwiak, 2011, p. 8; Harper, 2006, p. 3; Waugh, 2007, p. 15; Stehr, 2007, p. 37). Despite the negative effects of the interdisciplinary involvement, it has also significantly assisted emergency management continue to evolve and embrace its own set of frameworks and concepts (FEMA, 2007, p. xiii; Tarrant, 2006, p. 9). Table 2.1 outline eight key principles to guide the activities of the industry where it specifically references the role of the emergency manager, as a role that embodies community engagement and coordination, and is professional and risk-driven (FEMA, 2007, p. xiii).

Until 2007, a definition eluded the industry when a roundtable conducted by the Federal Emergency Management Agency (FEMA) produced the first widely accepted document outlining an *Emergency Management Definition, Mission, Vision, and Principles* (Beaulieu, 2012, p. 20; FEMA, 2007). These principles provide the industry with a definition, vision and mission for practitioners. Key signatories of these principles include the United States Department of Homeland Security (DHS), the National Fire Protection Association (NFPA), the Emergency Management Accreditation Program (EMAP), the National Emergency Management Association (NEMA⁷) and the most extensive global group of emergency managers, the International Association of Emergency Managers (IAEM).

In 2007, in Australia, Elsworth and Anthony–Harvey–Beavis (2007a, p. 34) requested local government executives or senior managers with overall responsibility for emergency management to “undertake a stocktake of local government’s roles and responsibilities”. In this study, they found that 23% of the councils who participated in their research “indicated that roles in emergency management were not clearly defined, or that council did not have an emergency management responsibility” (p. 17). This finding was contrary to the emergency management literature, even within Australia, which outlines the requirements of a ‘prepared community’ as a fundamental concept within emergency management (EMA, 1998a).

⁷ NEMA is a professional association of and for emergency management directors from all 50 states and territories across the United States of America

Table 2.1 – The principles of emergency management

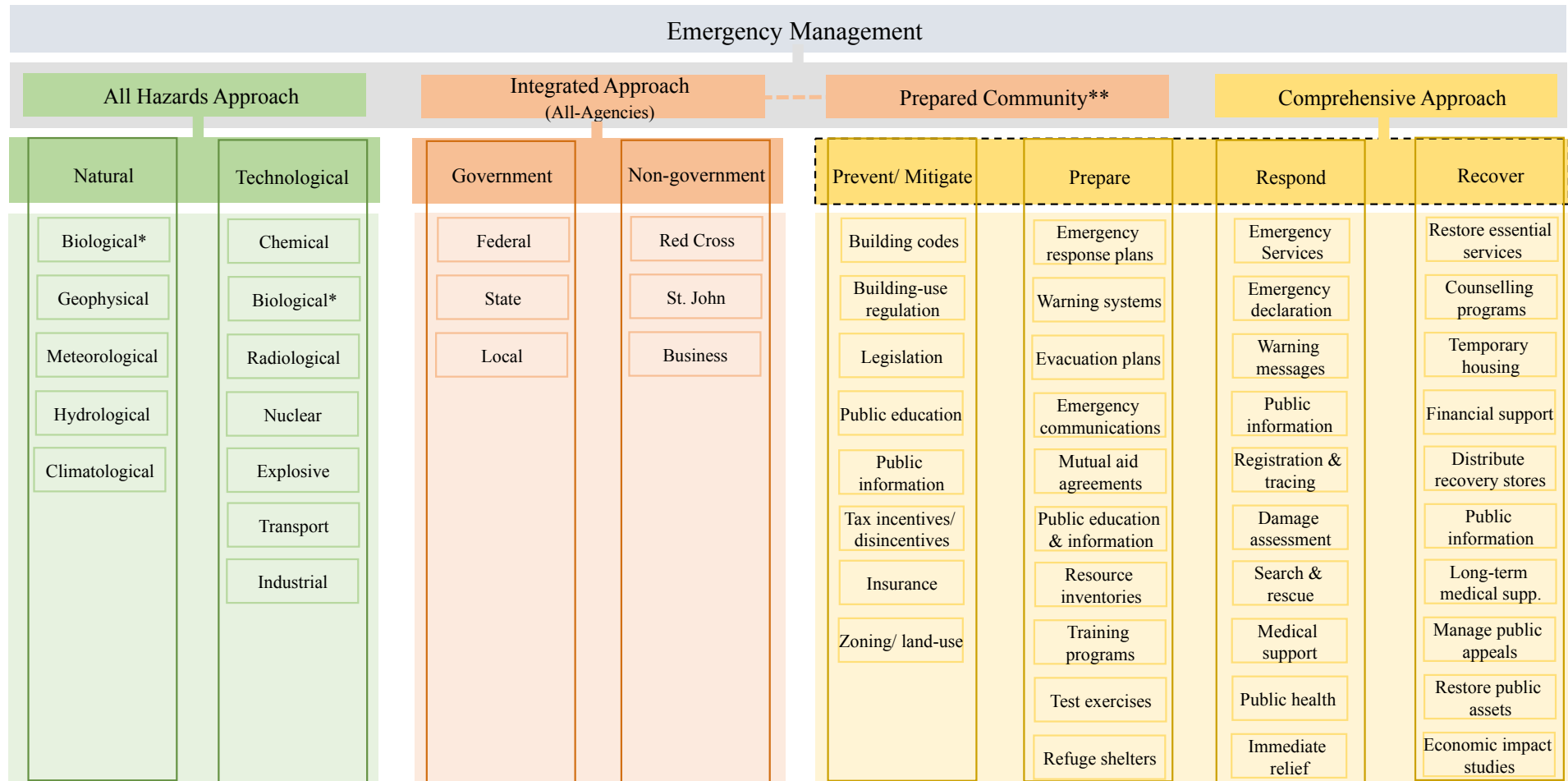
1	Comprehensive: emergency managers consider and take into account all hazards, all phases, all stakeholders and all impacts relevant to disasters.
2	Progressive: emergency managers anticipate future disasters and take preventive and preparatory measures to build disaster-resistant and disaster-resilient communities.
3	Risk-driven: emergency managers use sound risk management principles (hazard identification, risk analysis, and impact analysis) in assigning priorities and resources.
4	Integrated: emergency managers ensure unity of effort among all levels of government and all elements of a community.
5	Collaborative: emergency managers create and sustain broad and sincere relationships among individuals and organisations to encourage trust, advocate a team atmosphere, build consensus, and facilitate communication.
6	Coordinated: emergency managers synchronise the activities of all relevant stakeholders to achieve a common purpose.
7	Flexible: emergency managers use creative and innovative approaches to solving disaster challenges.
8	Professional: emergency managers value a science and knowledge-based approach based on education, training, experience, ethical practice, public stewardship and continuous improvement.

Note: Adapted from FEMA. (2007). Principles of Emergency Management. Retrieved from [https://training.fema.gov/hiedu/docs/emprinciples/0907_176%20em%20principles12x18v2f%20johnson%20\(w-o%20draft\).pdf](https://training.fema.gov/hiedu/docs/emprinciples/0907_176%20em%20principles12x18v2f%20johnson%20(w-o%20draft).pdf)

The findings of this section do not reflect a holistic contemporary emergency management profession but presents a system where ‘partner’ organisations that are predominantly response, emergency services and recovery oriented drive emergency management under the guise of resilience. Although education and research in response/mitigation and recovery are vital components they must be managed within a holistic emergency management system. It is likely that a continued emphasis on response and recovery will negatively impact effective disaster risk reduction (DRR) and supports the need for a dedicated emergency manager.

The current lack of a common, shared national legislation and standards in Australia (McArdle, 2017, p. 25), a lack of clear guidance, and an undefined standard underpinning emergency management (Eburn and Dovers, 2011, p. 32) (see Chapters Five and Six for more detail on this) provides opportunities to evaluate the effectiveness of current emergency management practice and those that act as emergency managers. This is further supported by inconsistencies in emergency management knowledge, programs and government disaster reports into disasters across Australia (Holmes, 2012, p. 413; Keelty, 2011, pp. 28, 96, 167; Teague, 2009, pp. 8, 208).

Figure 2.2 – A visual representation of the concepts and components of emergency management in Australia and their relationships



Adapted from EMA (1998a). Manual 3 – Australian emergency management: Glossary. Australian emergency manuals principles and reference series. Tasmania, Australia: and EMA. (2004). Emergency Management in Australian: Concepts and Principles. Manual Number 1

Note: There is overlap in some areas including *Biological within natural and technological areas of the All-hazards approach and the **integrated approach and the prepared community where the All-agencies also comprise various government and non-government agencies as well as the general community. 2.1 Introducing the emergency manager

2.1 Introducing the emergency manager

In this seminal work, Labadie (1984, pp. 489–494) examined the importance of the emergency manager within government and emergency management through the hierarchical placement, attitude, and policy surrounding the role. Labadie (1984) addressed concerns that had plausibly contributed to poorer outcomes within emergency management and identified several barriers. Barriers that included the location of the emergency manager's role within an organisation (p. 490); communities unwilling to pay for a position that is technically qualified in emergency management and general management (p. 490–491); apathy of elected officials, department heads and the general public (p. 491); inefficient laws (p. 492); the structure of local emergency organisations and the disconnect of these services from each other (p. 492–493). Labadie's work raises several critical areas of importance in relation to the role of the emergency manager.

In response to these findings, Labadie (1984, p. 493) indicated that further research into the role of the emergency manager was necessary for its advancement. However, not everyone agreed that the role of the emergency manager was pivotal in the disaster risk reduction process. There are emergency managers, politicians, decision-makers, and members of the general public who still believe that the core role of the emergency manager revolves around the response phase of emergency management. That it is only responsible for supporting the various police, fire and emergency services (TAS State Emergency Service, 2016; Britton, 1999, p. 5). However, it is plausible to argue that having one role with advanced knowledge across disciplines and industries can better guide the narrative around disaster risk creation (DRC) and DRR.

In a *FEMA National Emergency Training Center* text '*Some emerging issues in emergency management*', emergency management was recognised as "no longer the exclusive territory of... military officers" but as a newly emerging "group of emergency management professionals... [that] will bring new levels of expertise" (Drabek, 1986, p. 6). However, individual practitioners were bringing their interpretations and perspectives to emergency management leading to an industry that was considered fragmented and uncoordinated (Drabek, 1986, p. 9). While individual interpretations can bring new ideas, they need to be based on a recognised body of knowledge by individuals with an understanding of the core tenets and principles of

that discipline. Failure to do so means information may be duplicated, or poorly framed, leading to a lack of productivity in an area already struggling with funding and certainly falls short of the expertise envisioned by Drabek (1986).

Although the role of the emergency manager requires specific knowledge that would be beneficial to the industry, Drabek (1986, p. 15) indicated that he was not advocating the adoption of a standardised curriculum, predominantly because the job requirements and functional requirements of the role may differ according to the organisation. However, these differences and a lack of standardisation may be further contributing to the fragmentation of the industry in which no group can strategically influence its direction and make significant advances for its growth and development. Drabek's (1986) comments are inconsistent with disasters that require multi-jurisdictional coordination, something that is harder to accomplish if concepts and definitions are organisation specific and do not allow a consistent approach.

The United States preference for a decentralised government may be the foundations of Drabek's argument. This view does not take into account the need for emergency managers to understand the complex environment in which they work (Darlington, 2008, p. 11, Britton & Clark, 1999, p. 5), the impact caused by global climate change (Pachauri & Meyers, 2014, p. v), advances in technology (Blanchard, 2007, p. 231), population growth and geopolitical (e.g. emergency response, terrorism, war) and economic influences (Foster, Whittaker, Handmer, Keating & Lowe, 2013, pp. 51–53).

The 1980s saw an increase in the literature focusing on the emergency management industry, but few academics and practitioners explicitly recognised the critical role that emergency managers occupied in this process. In-depth discussions about the role did not occur until nearly two decades later in 1999, when Britton, in response to Drabek's 1986 text *'Human System Responses to Disaster: An Inventory of Sociological Findings'* identified the need to revisit the role of the emergency manager in light of the increasing knowledge required. This text was used to justify “an opportunity to reflect on the practice of emergency management and the evolving role of the emergency manager” (Britton, 1999, p. 1). Furthermore, according to Britton (1999, p. 1), “effective emergency management is reliant upon expertise through knowledge, augmented by expertise... skill and experience” and this increase in knowledge was “leading to a re-definition of the task-set and a re-evaluation of the emergency manager's job parameters” (Britton, 1999, p. 4).

Britton's analysis revealed the complexities of emergency management and recognised that the continued development of the industry has led to "college-level programs and other knowledge-based accreditation courses... becoming a prerequisite" (Britton, 1999, p. 1). Britton (1999, pp. 4–5) further recognised that the industry was moving forward and that there was:

- a more realistic context for emergency management,
- knowledge-based education programs,
- effective links between research and practice,
- heightened interest in uncertainty,
- systematisation, and
- a multi-disciplinary orientation.

While the industry continued to evolve, it was not all positive, Britton (1999, pp. 5–6) also identified areas which required further attention, and that there were barriers to the effective development of the industry. Barriers that included:

- a response orientation,
- a focused recruitment,
- an open season on the all-hazards approach,
- information sensitivity,
- a lack of accepted terms, and
- a lack of quality control.

2.2.1 Entering the new millennium

The first decade of the 21st century experienced a significant rise from a shallow base in the volume of literature published in this field, either directly discussing the role of the emergency manager, or referencing it as a component of emergency management. In 2001, Blanchard, classified emergency managers into two distinct categories as part of FEMA's Higher Education Project that includes the "stereotypical" and the "new generation" emergency manager (Table 2.2). Blanchard's work was to become a seminal document within the industry and remains the current paradigm that has been used as a benchmark to evaluate the industry's progress. This classification identified 19 indicators of a stereotypical emergency manager and 15 for the new generation emergency manager.

Table 2.2 – Blanchard’s ‘stereotypical’ and ‘new generation’ emergency manager

The Stereotypical Emergency Manager	The New Generation Emergency Manager
Not college educated (4–year degree)	College–educated: many with emergency management degrees
An experiential knowledge base	Knowledge base: science and research
White	More diverse and culturally sensitive
Emergency management is a second or third career	Emergency management is a career of first choice
Middle to late middle–aged	Younger
Spend emergency management career in one jurisdiction	Upwardly and geographically mobile
Does not read disaster research literature	Lifelong learner: reads disaster literature
Not well–paid or funded	Better paid
Has not joined an emergency management professional association	Joins professional associations
Job obtained other than with emergency management Knowledge, Skills and Aptitude	More professional and knowledgeable
Works primarily with emergency services	Plans with jurisdiction stakeholders
Bureaucratic	A broader range of working contacts
Disaster response planning oriented	Proactive
Plans for jurisdiction (primarily disaster response–oriented)	Better funding for emergency management programs
Has not done a risk assessment	Technologically more proficient/adept
Has not done a mitigation plan	
Has not done a strategic plan	
Frequently wears other hats	
Many part–time and volunteer positions	

Note: Adapted from Blanchard. (2001). FEMA Higher Education Project Manager Discusses The New Generation of Emergency Managers. In Thompson, An interview by International Association of Emergency Managers (IAEM) Bulletin Editor Karen Thompson with Wayne Blanchard, PhD., CEM, Manager of the Higher Education Project for the Federal Emergency Management Agency. The International Association of Emergency Managers (IAEM) *Bulletin Special Focus Issue*. 18(5) May. pp. 7–8, 10.

One of the most important documents related to the role of the emergency manager is from the dissertation published by Wilson in 2001. *The State of Emergency Management 2000: The Process of Emergency Management Professionalization in the United States and Florida* identified the need for the industry to better define the role of the emergency manager (Wilson, 2001, p. 2).

Wilson (2001, p. 29) recognised that through becoming a profession, emergency management would be able to better control the work performed, control membership and definitions of tasks performed and “impose professional definitions of the tasks on competing professions”. In addition to being similar to Beaton’s *Criteria for Becoming a Profession*, Wilson (2001, p. 2) recognised that certification and accreditation of practitioners were two primary factors to accomplish the professionalisation of the industry but acknowledged that the industry had not achieved this at the time of publication (p. 6).

It is clear that Wilson (2001, p. 237) was an advocate of higher education as a core requisite for emergency managers, but he also recognised a need for this to be supported by a “state-regulated emergency management association exam” and that the person occupy a “position as an emergency manager” (p. 237). In addition to identifying the role of the emergency manager and the underlying process practitioners should undertake, Wilson (2001, p. 237) provided examples of job titles, how those correlate to the practitioner, their level of experience, and identifies those who are not emergency managers but who support emergency management functions, such as “planners, legal advisors, social workers, and law enforcement”.

Blanchard is considered an essential figure within the industry, with over thirty years of service in the capacity of emergency management in his role as FEMA’s higher education project manager. He was very proactive in developing a substantial body of work dedicated to the role of the emergency manager (Davis, 2011). In 2003, Blanchard and the University of Colorado sponsored a workshop to investigate the skills and knowledge required by emergency managers, recognising that “today’s hazard managers must possess some distinctly different characteristics from more traditional emergency managers” (Blanchard, 2005, p. 9). This document was designed to assist academics responsible for teaching emergency management programs at a college or university level and identified the *Top ten competencies for professional emergency management* (Table 2.3) and resulted in a broad list of skills and knowledge required to function efficiently as an emergency manager.

Table 2.3 – Top ten competencies for professional emergency managers

1	The ability to adopt a comprehensive emergency management framework or philosophy
2	Good leadership
3	Good management
4	The ability to network and coordinate with a broad range of organisations
5	The ability to integrate emergency management into all aspects of the business
6	The ability to understand and utilise the various emergency management functions
7	The ability to work within political, bureaucratic, and social contexts
8	A thorough understanding of technical systems and tools
9	An understanding of the social vulnerability reduction approach
10	Experience within an emergency management role

Note: Adapted from Blanchard, B. W, (2005). *Top ten competencies for professional emergency management*. Accessed 25 July 2012 from [www.training.fema.gov/EMIWeb/edu/docs/Blanchard percent 20– percent 20Competencies percent 20EM percent 20HiEd.doc](http://www.training.fema.gov/EMIWeb/edu/docs/Blanchard%20percent%20Competencies%20EM%20HiEd.doc)

As one of the more comprehensive document outlining competencies for emergency management practitioners, Blanchard (2005, pp. 10–18) expanded on the ten requirements to include eight pages of bulleted points providing a more in–depth explanation of each and provided examples to assist academics. In this text, the role of the emergency manager is explicitly mentioned six times, although on one occasion he appeared to use it synonymously with ‘*hazard manager*,’ recognising that today those holding the role...

must possess some distinctly different characteristics from more traditional emergency managers. Hazard managers must develop a body of knowledge that goes beyond incident response to include expertise in social science and technology.

(Blanchard, 2005, p. 7)

Blanchard’s document supported Britton’s (1999) text and highlighted the complexity and breadth of knowledge required by emergency managers in contemporary society. This document further supports the requirement for practitioners to have extensive knowledge of the emergency manager’s role. It is highly unlikely that this knowledge will be gained through practical experience or ad–hoc in–house training programs, experience in a single response focused agency, but rather, through intensive study and tertiary education.

One would think it apparent by now that emergency managers at all levels of government need to have emergency management competencies when obtaining their positions. It should no longer be accepted that anyone, at any level of government, be put into a lead emergency management position without having such competencies as those described herein.

(Blanchard, 2005, p. 1⁸)

Similar to Blanchard’s desire to provide a body of knowledge for practitioners, and address the changing priorities within the emergency management industry, IAEM sought to develop a list of competencies for the Certified Emergency Manager (CEM) program (Spiewak, 2005, p. 1). The *Top 10 Core Competencies and Courses as Selected by Practicing Emergency Managers* (Table 2.4) was the output of 18 months of work surveying emergency managers on what they believed were “critical skills or competencies that a person working in emergency management should possess” (Spiewak, 2005, para. 3).

Table 2.4 – Top 10 core competencies and courses

Competencies	Courses
Planning	Professional Development Series
Hazard identification, risk assessments and impact analysis	Incident command system (ICS)
Direction, control and coordination	National incident management system (NIMS)
Laws and authorities	The professional in emergency management
Exercise, evaluations and corrective actions	Recovery from disaster: the local government role
Communications and warnings	The emergency manager
Hazard mitigation	Principles of emergency management
Resource management	Advanced professional development series
Continuity of operations/continuity of government	Disaster basics
Mutual aid	Role of voluntary agencies in emergency management

Adapted from Spiewak, D. L. (2005). *Top 10 Core Competencies and Courses as Selected by Practicing Emergency Managers*. International Association of Emergency Managers. Retrieved from <http://training.fema.gov/EMIWeb/downloads/Daryl%20Spiewak>

⁸ Footnote

However, as Spiewak (2005, p. 5) highlights, this document is purely illustrative and does not utilise any “scientific analysis of required tasks and job skills”. Although it is a simple representation of the industry, it does highlight the need for emergency management to invest in developing industry-specific programs and identify what is required for practitioners to be competent in the role. Due to the low maturity level of the industry, it is highly plausible that the responses provided by the practitioner will change and evolve as more emergency managers acquire higher levels of tertiary education to support their practical experience and that this will lead to greater insight into the role.

In 2006, Etkin identified the importance of an educated practitioner when he drafted a document linking the education level of practitioners to their level of experience. For example, an emergency management technician/practitioner would attend community college to obtain core competencies, at the manager level they would continue to gain ‘critical understanding’ with a university certificate. Senior policy makers requiring integrated solutions would obtain a masters degree and a researcher would be required to obtain a PhD (Etkin, 2006, p. 2). Despite the need for education linked to a specific role, Etkin did not specify whether this degree should be intrinsically linked to emergency management or whether it should be a combined degree (for example, emergency management and policy).

In 2007, FEMA under the guidance of Blanchard “convened a working group of emergency management practitioners and academics to consider principles of emergency management” and address the gaps in the industry (FEMA, 2007, p. 3) under the guidance of key stakeholders. The United States Department of Homeland Security (DHS), National Fire Protection Agency (NFPA), Emergency Management Accreditation Program (EMAP), the International Association of Emergency Managers (IAEM), and the National Emergency Managers Association (NEMA) were members of the 2007 FEMA working group. While FEMA’s (2007, p.4) focus was on emergency management, the explicit reference within each of the principles to the role of the emergency manager suggests the critical role the practitioner has in ensuring their practical application.

Based on this definition of emergency management, and the language used outlining each principle, it is reasonable to infer that the emergency manager is the

position responsible for achieving these outcomes. As a result of this workshop, Blanchard (FEMA, 2007, p. 4) recognised that the industry should be...

*Professional – [where] **emergency managers**⁹ value a science and knowledge-based approach based on education, training, experience, ethical practice, public stewardship and continuous improvement.*

The early 2000s triggered a crucial evolution in the literature surrounding the emergency manager as the role started to gather momentum as a critical component within emergency management. The current research indicates that the industry is progressing (albeit slowly) towards a body of knowledge that is no longer limited to that of academics from various disciplines but incorporates the knowledge of emergency management practitioners.

2.2.2 The contemporary emergency manager

One of the first studies applied to the function of the emergency manager was by Cwiak in (2007, p. 2) who utilised Blanchard's (2001) *stereotypical* and *new generation* classifications of emergency management professionals. Cwiak (2007, p. 2) used this classification to examine various topics within emergency management, including the characteristics deemed essential for emergency managers.

Cwiak's (2007) results supported Blanchard's earlier (2001) findings on the direction of the industry and the *new generation* emergency manager. She found many of her participants had emergency management degrees, were professional and knowledgeable, had a knowledge base utilising science and research, were technologically proficient and adept, and pursued emergency management as a career of first choice. She also concluded that most emergency managers were lifelong learners who kept current in their reading of the disaster literature.

This study seems to suggest changes from the earlier literature about the emergency managers' level of education, but it is essential to note that there may be several causes for this. These changes may be due to the seven years between studies, the small sample size of 36 participants (Cwiak, 2007, p. 3), or both. It is also plausible that individuals with higher levels of education may appreciate and participate more in research than those who have not pursued formal education, or bias on the part of the researcher who selected more educated participants. Cwiak

⁹ Emphasis added

(2007, p. 32) further recognised the potential for “perceived bias” on the part of the researcher when designing the study.

In Australia, Elsworth and Anthony–Harvey–Beavis (2007a, p. 2) identified a growing awareness in the critical role of emergency management and “was designed to show the current state of development of emergency management and preparedness in local government areas throughout Australia”. While this study did not specifically target emergency management practitioners, it highlighted the growing importance of emergency management and the need for understanding its role within local government. Elsworth and Anthony–Harvey–Beavis (2007a) found that 50 per cent of participants indicated that emergency management was “a very important function” (p. 12) with over 63 per cent regarding their level of knowledge as excellent or good (pp. 21–22) but also noted that “there were clear variations in the perceived quality of the emergency management system” (p. 32). Despite representatives from local governments indicating a growing awareness of the importance of emergency management (p. 8) and where ...

most councils envisaged a very wide–ranging role in emergency management for local government, there were reported to be few senior council officers who, while responsible for emergency management planning and activities, held this responsibility on a full–time basis. Indeed, over 50% of the responsible managers appeared to work for less than 10% of their time on emergency management.

(Elsworth & Anthony–Harvey–Beavis, 2007a, p. 31)

In New Zealand, Glassey (2008) reviewed the educational pathways for emergency management. Glassey (2008, p. 14) found that although there was a lack of “domestic research on emergency management competencies... the globalisation of emergency management ensures that such research is equally valid and applicable within Oceania as it is elsewhere”. Glassey (2008, p. 14) also suggested that the internationalisation of emergency management had increased the need for practitioners to be more “adaptable, practical and educated” and that improving industry credibility required a combination of practical skills and “strong academic subject knowledge”. Furthermore, Glassey (2008, p. 7) found that the stereotypical emergency manager identified by Blanchard in 2001 is slowly approaching retirement age, leaving a current demand for new, experienced, and more qualified personnel. Unfortunately, a lack of research in local practices and

emergency management practitioners limits the ability to determine whether this has occurred with any certainty over the last 12 years.

In 2009, Cwiak revisited the role of the emergency manager in her doctoral dissertation '*Strategies for success: The role of power and dependence in the emergency management professionalisation process*'. Cwiak (2009, p. 1) found that emergency managers occupied positions of modest pay, marginal status, considerable responsibility, little authority and operated within an imbalance in the power relationship between the emergency manager and the legislative community (See Chapter Seven for more details). She also found that "there was not strong support in the emergency management community for coalition formation" (Cwiak, 2009, p. iii). It is plausible that this fragmentation (Cwiak, 2009, p. 61) will hinder the development and growth of the role, as evidenced by the lack of standards, minimal input by practitioners into legitimate research and working groups, and inconsistent use of terminology that leads to the existence of numerous barriers.

In 2009, Nirupama and Etkin (p. 15) highlighted several barriers to the advancement of Canadian practitioners that included a lack of funding, political apathy to emergency management and a failure of organisations to apply existing knowledge. They also found that the understanding of "common disaster myths" was not based on years of experience but the level of education of practitioners. It is likely that 'positive bias' exists on behalf of emergency managers in which they do not feel the need for additional education or experience and a tendency to rate their organisation higher than others (Nirupama & Etkin, 2009, p. 14). This finding supports the Ikea Effect identified by Norton, Mochon and Ariely (2011, p. 454) in which individuals rate processes more highly the more closely they are involved, and the more work they have personally contributed. It is plausible that the existence of the Ikea effect may further exacerbate any underlying barriers, as individuals may be reluctant to recognise their own shortcomings in relevant knowledge.

Four years later, Nirupama and Etkin continued their study into Canadian emergency managers "to explore the minds and thoughts of emergency management professionals in Ontario in order to better understand the institution" of emergency management (Nirupama & Etkin, 2012). In this study Nirupama and Etkin (2012, p. 601) found that a significant number of practitioners felt that a more coordinated federal approach was required to strengthen emergency management due to what they believed was a lack of oversight, direction, and resources (p. 605). As part of the key

outcomes, practitioners recognised that “clearly defined responsibilities at every level of the government and attracting and retaining staff with adequate education and training” was necessary to improving emergency management (p. 602). Nirupama and Etkin (2012) study found that the majority of participants felt that politics and a lack of understanding of roles were barriers to progress and revealed several...

interesting ideas for the improvement of the institution [emergency management] ... includ[ing] ... having field staff with credibility, eliminating duplicate efforts, clearly defined responsibilities at every level of the government, and attracting and retaining staff with adequate education and training.

(Nirupama & Etkin, 2012, p. 601)

The previous studies focused on emergency management from several countries, but common themes emerged that recognised the growing complexity of the industry and the need for practitioners to be educated for effective DRR. These themes supported Blanchard’s (2001) *stereotypical* and *new generation* emergency manager and included:

- requiring an increase in knowledge of practitioners,
- a knowledge base founded on science and research, and
- a growing awareness of the importance of emergency management.

Despite the positives associated with modern emergency management, it was also noted that there were substantial barriers to its growth. This finding supports Glassey’s (2008, p. 14) assertion that the globalisation of emergency management means that research conducted elsewhere is equally valid within Oceania and included:

- minimal agreement on a fundamental set of emergency management principles,
- lack of domestic research into competencies governing the role,
- positions of modest pay, marginal status, considerable responsibility, little authority,
- a lack of support for coalition formation,
- fragmentation across the industry,
- lack of funding and political apathy,
- failure to apply existing knowledge,

- understanding disaster myths based on the level of education,
- suffering from a ‘positive bias,’ and
- rating their organisation higher than others.

In 2013, a student at the Royal Roads University in Canada sought to better understand what the “face of emergency management” looked like in Canada (Bird, 2013, p. 11). As part of her Masters dissertation, *‘The face of the profession: contributing to a benchmark profile of the emergency management profession in Canada,’* Bird (2013, p 2) utilised quantitative research to capture benchmarking demographic data via an online survey of 415 respondents. Bird (2013, p. 95) found that the Canadian emergency management professionals were middle to late middle-aged, were on their second or third career, had an experiential knowledge base, was response planning-oriented and frequently wore other hats. Bird (2013, p. 95) also found that participants were college-educated, upwardly and geographically mobile, better-paid¹⁰ and joined professional associations. It is important to note that Blanchard’s characteristics were of emergency managers, whereas Bird’s (2013, p. 10) study examined the industry as a whole including support roles and as such, it is likely that this does not accurately represent the emergency management practitioner.

No research, however, is more relevant to the emergency management industry and the Australian context than the recent work undertaken and completed by Dudley McArdle as part of his masters thesis *‘Australia’s Emergency Managers – Towards Professionalisation’*. In his dissertation, McArdle combined a mixed-method (p. 49), non-probabilistic and convenience sampling (p. 51) approach to gathering data from 859 “individuals” (p. 54) across an online survey and structured interviews. McArdle (2017, p. 30) sought to investigate “in what ways do the profile, background, experience and qualifications of Australia’s emergency managers constitute a discrete emergency management profession” and thus closely relate to the research questions posed in this thesis.

Recognising that there was no “clear existing profile of who is an Australian emergency manager, McArdle (2017, p. 51) “wanted to reach out to as wide an audience as possible... to be as inclusive as possible he “defined them [Emergency Managers] as **anyone involved**¹¹ in helping to prepare for, respond to or recover from

¹⁰ Bird does not define “better-paid”, but it is likely she means better paid than previous generations of emergency managers.

¹¹ Emphasis added

emergencies, in any capacity”. There is currently no widely agreed-upon definition of an emergency manager, but it is possible to surmise from the literature, what activities they undertake or should be undertaking. This sampling approach used by McArdle (2017) encapsulated individuals who had a role in emergency management but were not necessarily an emergency manager, with peripheral roles that included firefighters and emergency services personnel (p. 62). Further highlighting the theme previously identified where emergency services personnel often believe that they are emergency managers, and suggest that more work is required to differentiate the role and the need to review the ‘Emergency Manager’ title, creating confusion and further complicating the role.

In this study, McArdle utilised 39 questions to examine various aspects of the emergency managers role. These 39 questions include the demographics, qualifications, training, education, and experience, as well as salary, title, type of employment, jurisdictions, and years in the role (pp. 13–14). When examining the demographics of participants, McArdle found that the majority were male 67% (p. 60), and more than 70% were greater than 40 years of age (p. 60). When examining the level and type of training, McArdle found that the top five training areas including Introduction to Emergency Management (77.9%), Basic Emergency Management (69.9%), Incident Control System (65%), Emergency Operations/Control Centre (56%) and Risk Management (48%) (p. 74).

Despite the majority (82%) of participants in McArdle’s study indicating that they were “highly or moderately educated” (p. 75) only 48% had attained a bachelor or post-graduate degree (p. 64). Interestingly, 67% of participants also “thought it was quite important (or greater) to gain a higher level of EM [emergency management] qualifications”, with only 65.43% (p. 64) having a qualification in EM, and of these, 34.57% only held in-house, non-award qualifications (p. 65). Based on these findings...

an observer might be forgiven for concluding that it smacks of an element of smugness, or self-satisfaction by a number of participants at ‘where they are’ in their level of education.

(McArdle, 2017, p. 75)

More notable was the number of participants who believed that formal education had played no role in their current position (4.71%), had very little

significance (12.41%) or was not applicable (11.55%) (p. 79). These figures stand in direct contrast to how participants valued in-house training and non-award qualifications, with 58.92% considering it an “important asset” and 11.70% stating that it was their most valuable asset (p. 79).

When experience was compared to education, the most significant percentage of participants, at 86%, believed that experience was their “greatest asset” (p. 80) and 76% “reported a high level of experience” (p. 76).

The positive aspect of the fact that EMs [Emergency Managers] see themselves as, and are, an experienced workforce means that a wealth of corporate knowledge is available in the sector. The downside is that there may be a reluctance to change and to grasp new initiatives. The general longevity of EMs in the sector triggers similar considerations. Interestingly, the fact that there is generally considerable mobility within the sector rather than outside it is something of a mixed blessing.

(McArdle, 2017, p. 96)

This statement by McArdle, should be treated with caution as there are weaknesses with self-reporting (Dunning, Heath & Suls, 2004, p. 69) that include the potential for positive bias (Nirupama & Etkin, 2009, p. 14) and the Ikea Effect (Norton, Mochon & Ariely, 2011, p. 454). Furthermore, McArdle provided no definition of what “high level of experience” entailed and at no point was the participants experience verified by an objective third party “expert” in emergency management. As part of this study, McArdle (2017, p. 5) found that...

There is no standard profile of an emergency manager in terms of age, gender, background, expertise, skills or experience. Within the sector, there is no clear career path, no clearly defined standard training or education pathways for them to follow, no universal standards of performance and no generally accepted certification or entry-test to qualify an emergency manager as a professional.

Australia’s emergency managers generally believe that the creation and maintenance of a profession would be a ‘good thing’. There is a general understanding of the essential characteristics of an emergency management profession, but there is no agreement as to who might qualify for membership, what it might look like, how it might operate or how or by whom it might be established.

McArdle's (2017) work is one of the largest studies examining the personnel that comprise emergency management undertaken anywhere in the world and is undoubtedly the largest ever undertaken in Australia. It highlights the evolution of the emergency manager's role from one predominantly located within the emergency services to encapsulating a higher number of personnel from a variety of areas (McArdle, 2017, pp. 39–40). However, if the definition utilised in this study was applied to an existing profession like medicine and Australian physicians, it would have included, orderlies, nurses, first aid officers and other support staff. While important, it is essential not to confuse support staff, or all members of an industry, with a specific role. This finding highlights the complexity and subtle nuances between emergency managers, emergency management support personnel and emergency services and the need to better define and target the role of the emergency manager.

2.3 Identifying issues

Despite ongoing requests for a unique and dedicated emergency manager position existing since the early 1980s (Labadie, 1984, p. 492) this has been largely ignored by governments, emergency services, and academics. The Australian government defined emergency management as early as 1989 as part of a series of manuals (EMA, 2004, p. IX; EMA, 1998a, p. ix), but this definition did not address the need for a distinct position to develop the concepts identified, let alone define the role. As such, the knowledge required for emergency management was reliant on prior experience in emergency services or the military (Bruce, Donovan, Hornoff & Barthos, 2004, p. 13). It could also be argued that failure to recognise and identify such a position has contributed to the slow progression of the industry and ad-hoc approaches to DRR.

Existing issues can be traced back to the origins of emergency management within the emergency services and is exacerbated by poorly designed definitions and a lack of standards and awareness. An example of this is where Australia exchanged *disaster management* for *emergency management* in the late 1990s (EMA, 1998a, p. X¹²), thereby making it easier for individuals to confuse emergency services with emergency management. In New South Wales Health, they designate their emergency management practitioners as a 'Disaster Manager' to reduce the association and avoid

¹² Page number is Roman Numeral X

confusion with the hospitals' emergency department and emergency medicine (Nilsson, personal communication, June 13, 2016¹³).

A similar argument is currently being made by medical Anaesthetists who are arguing a name change due to concerns that the general public and “lesser trained medical professionals” who do not understand the level of education and skill required of the role, and that the title of the role perpetuates this misunderstanding (Dow, A, March 2, 2018). These comments further support the link that emergency managers, manage emergencies or provide support to emergency services. However, the knowledge and skills required to manage and respond to an emergency incident, such as a house fire, bush fire or motor vehicle accident are very different from those required for managing a disaster.

In 1999, Carter (p. 127) asserted that a definition of responsibility was “a necessary prerequisite to the framing of a disaster management organization”, while Grist (2007, p. 16) stated that the evolving improvement in professionalism brought on by embracing the new generation typology would not only benefit the emergency management industry but also the communities it serves by ensuring minimum standards. Despite the definition of emergency management being accepted by key stakeholders (FEMA, 2007, p. 4; EMA, 1998a, ix), some practitioners, researchers and members of the public believe that defining the role of the emergency manager is a challenge (Farris & McCreight, 2014, p. 83) and there remains a lack of clear guidance and an undefined standards for objectives for emergency managers that plausibly increase the confusion surrounding the role (Eburn & Jackman, 2011, p. 59). However, not everyone agreed and in 1993 a FEMA training coordinator defined the role of the emergency manager as...

an individual assigned with the role to manage risks associated with the prevention, protection, mitigation, response and/or recovery efforts of any hazard and is able to lead and adapt while operating in unique environments with limited information.

(Stevens, 2013, para. 11)

Emergency management is an industry that has frequently been divided by issues that are not addressed jointly by its various stakeholders and include “the

¹³ Nilsson was a Disaster Manager for NSW Health at the Royal Prince Alfred Hospital in Camperdown, NSW at the time of the conversation.

diversity of identities and cultures in subgroups, the placement of the emergency management function in agencies with disparate or loosely linked missions, divides between academics and practitioners, and multi-layered governmental disconnects” (Cwiak, 2009, p. 98). A division that occurs due to issues that often compete against each other and which may contribute to the “inconsistent approaches to the selection, experience, and qualifications used in the hiring and placement of emergency managers in the profession” (Cwiak, 2007, p. 1). While there is a current emphasis on experiential-based learning and a complete lack of regulation that is not meeting the knowledge requirements of the position (Wilson, 2001, p. 22), having academics without an accurate understanding of emergency management further compounds these issues.

Part of the challenge in defining and describing the role of emergency management... is the absence of any clear understanding of what that constitutes and what the appropriate responsibilities of an... emergency manager are.

(Farris & McCreight, 2014, p. 83)

To avoid further confusion and to ultimately resolve any area of ambiguity between emergency management and emergency services, Grist (2007, p. 102) suggests that organisations must reserve the title of ‘Emergency Manager’ for those who perform the role. These individuals must be adequately informed of their responsibilities, be well educated in the field of emergency management and be thoroughly trained in the position by an external organisation (Grist, 2007, p. 102). Limiting the use of the emergency manager title, however, may be harder to enact when some emergency services personnel think they are automatically qualified as an emergency manager because they wear a uniform and have response-based experience (Cwiak, 2009, p. 58). This further supports a need to review and revise the role in an effort to distance it from its origins and the preconceived notions of what the role used to be 50 years ago (Stanley & Waugh, 2001, p. 697) and to address the vastly different requirement of the industry today (Paramedics Australasia, 2014; Dow, A, March 2, 2018).

2.4 Examining the demographics and knowledge of the emergency management practitioner

Employing a dedicated educated and experienced emergency manager to develop robust emergency management systems and processes across communities and throughout the nation is characterised as both prudent and necessary by organisations, government agencies and academics (Corriveau, 2009, p. 3; Blanchard, 2005, p. 1; Labadie, 1984, p. 492). Furthermore, understanding the demographics, qualifications, training, education, experience, competence and confidence of practitioners is imperative in developing the emergency management industry and progressing meaningful DRR. The following sections provide a partial answer to research question one.

2.4.1 Demographics

Demographics have long been utilised to examine, understand, and address the needs of the community (Ferrier, 1999) that varies across different groups (Kotler, Brown, Burton, Deans & Armstrong, 2010, p. 267) and can encompass numerous types of information in research. It is commonly used to provide a baseline of a specific community, to add context, and enrich the information presented (FEMA, 2013a, p. 39; Cwiak, 2009, p. 46; Cwiak, 2007, p. 5; Grist, 2007, p. 33). Areas frequently examined in demographics include age, gender, ethnicity, and religious beliefs (Ferrier, 1999, p. 2). The demographics of a practitioner has been recognised as “directly affect[ing] the predecisional stages of disaster response” (Lindell & Perry, 2004, p. 87) and that demographic data from practitioners is needed to “monitor the growth and development of EM as a profession” (McArdle, 2017, p. 45).

Emergency Management Australia (2007a, p. 1) asserts that “Australia is one of the most culturally and linguistically diverse (CALD) countries in the world with over 26% of the population being born overseas (Australian Bureau of Statistics: ABS, 2012a). Due to the diversity of groups, cultures, traditions and viewpoints that comprise Australian society, there is a call for practitioners to either reflect or be educated in the demographics exhibited by the communities’ citizenry to minimise misunderstandings of other cultures (Darlington, 2008, p. 12).

In addition to cultural differences, there are also differences in perception of hazards and risks by gender that may not only affect their attitude but their behaviour towards mitigation and preparedness (Lindell & Perry, 2004, pp. 159–160; Mulilis,

1998, p. 41). A sentiment further expressed in contemporary research in which Ericksen (2014, p. 23) found that there was “growing evidence of gender-specific risk and gender differences in willingness to plan for emergencies”. While these researchers were referring to general members of the public, not trained, paid (or volunteer) emergency management/service personnel, it is likely that this predisposition is carried across to the role of the emergency manager.

In a U.S. study, Gonçalves, Sousa, Pereria, Pinto, and Sousa (2018, p. 85) “sought to understand the predictive role of personality attributes and risk perception”. The findings of this study supported previous literature and revealed that men had higher mean scores across sensational seeking and physical safety behaviour participation, suggesting that men have a higher tolerance to risk than women. It is also plausible that a male dominated industry will lack insight into the needs of female population. This is important as females make up approximately half of the Australian population.

Diversity within the workforce “can have a significant [positive] impact on business outcomes if the skills of different groups are better utilised” (Head, 2012, p. 30). Despite the susceptibility of individual communities to hazards, and risk perceptions that vary according to demographics in what Beck (1997, p. 23) refers to as social risk positions, minorities have been identified as not adequately represented in either the practitioner or researcher workforce (Trainor & Subbio, 2014, p. 437). Farris and McCreight (2014, p. 90) supported these findings and assert that “significant work must still be done to attract women and minorities to the field”.

Perception and cognitive differences are pertinent to the role of the emergency manager and demonstrate how an increase in diversity across the industry can better affect meaningful DRR through greater inclusion and awareness of cultural and gender issues. It is plausible that if the demographics of emergency managers are not representative of their communities, they may not be able to meet the needs of the various CALD groups (EMA, 2007, p. 3) resulting in a less diverse and efficient emergency management industry.

Improving community representation and understanding the individuals within the position is vital in coordinating resources, and in providing oversight of the various complex issues surrounding emergency management (Hosseini & Izadkhah, 2010, p. 191; Springer, 2009, p. 208). While it is preferable to have first-hand

diversity, due to the size of organisations or departments it may not be possible to be completely representative, as such, it is vital that all emergency managers are appropriately trained across these areas to better anticipate and address the needs of these groups. Something that may be easier to include in academic coursework as part of a formal program than in ad-hoc, workplace training sessions lacking in structure and with instructors of unknown qualifications.

2.4.2 In search of qualification, training, education, experience and knowledge of practitioners

In an attempt to address the increasing complexity of the industry, emergency management has acquired knowledge from various disciplines to establish a body of knowledge (Pine, 2007, p. 198). This diversity underscores the necessity of practitioners to have the ability to obtain, understand and apply this information critically to the industry (Grist, 2007, pp. 14–15). One way to do this is through the requirement of standardised qualifications for all emergency management practitioners.

Qualifications

The qualification of practitioners has become the subject of much debate within the emergency management industry and where obtaining a qualification has become increasingly important (IAEM, 2019a; Waugh & Tierney, 2007, p. 21; Parker & Handmer, 1992, p. 52). However, it has been identified that possessing a qualification does not automatically make an emergency manager competent to fulfil a role (Glassey, 2008, pp. 10, 14) and that an...

advanced education and specific knowledge is not enough for an occupation to become a profession. The same is true for standards of performance. Closure is reached when accreditation and certification are interrelated so that performance of individual practitioners meets or surpasses the minimum standards for the practice.

(Wilson, 2001, p. 141)

Qualifications specific to the role of the emergency manager is subjective and vague, even within the legislation (see Chapter Five for more on this). An example is the New Zealand, *Civil Defence Emergency Management Act (2002)* that requires emergency managers to be “competently trained” (Glassey, 2008, p. 8). However, the

legislation provides no insight into what that training may entail (and expectedly so), but this then leaves qualifications open to broad interpretation. Obtaining a formal qualification has been highlighted as providing potential benefits to the public safety through an increased likelihood of success within emergency management while decreasing the difficulties associated with liaising and obtaining the cooperation of stakeholders (Admin, 2011).

The level of qualification required in emergency management to train practitioners, the content of courses, and if this needs to be industry-specific was (Alexander, 2003, p. 113) and remains unclear. The move to qualification-based employment has been recognised as an essential factor in the transition of emergency management towards becoming a profession (Alexander, 2008, p. 122) with numerous qualifications beginning to emerge across the United States, New Zealand and Australia (Goss, 2011, p. 1; Glassey, 2008, p. 10; McArdle, 2001, p. 1). New Zealand, as part of an overhaul of its educational pathways in emergency management, has produced a document that aligns specific qualifications with job titles (Glassey, 2008, p. 3).

Training

The training of employees has been identified as leading to an increase in their effectiveness (Haddow, Bullock & Coppola, 2011, p. 172; Phillips, Neal & Webb, 2012, p. 271), capacity (Britton, 2001, p. 53), and profile of the industry (Clarke & Rowlands, 2008, p. 52), resulting in greater community confidence (Bumgarner, 2008, p. 190). Training has, therefore, been identified as a critical component in the development of the emergency management industry (National Integration Center, 2008, p. 1; Waugh, 2007b, p. 281; Parker & Handmer, 1992, p. 52; Cwiak, Cline & Karlgaard, 2004, p. 14). Furthermore, as training has expanded (Darlington, 2008, p. 2; Haddow, Bullock & Coppola, 2011, p. 172) practitioners are being increasingly recognised as a valuable asset (Choi, 2008, p. 14) to organisations and the community.

While proper training is beneficial, inadequate training only serves to increase and reinforce bad habits (Smith, 2008, p. 63). Previously, there has been an emphasis for those with prior work experience “emphasizing short-term training instead of long-term education” (Feldmann-Jensen, Hackerott, Knox, Ramsay, McEntire, & Jerolleman, 2019, p. 29). It is this lack of unqualified personnel that has been

identified as the main contributor to the suboptimal management of disasters - more on this can be found in Chapter Seven (Waugh & Tierney, 2007, p. 21; The World Bank & United Nations, 2010, p. 1). Currently, it is possible for ‘anyone’ to start a training program in emergency management as there are no criteria to evaluate the effectiveness, judge the quality, or specify the minimum level of training across the industry (Alexander, 2003, p. 113). Despite the age of Alexander’s comment, it remains important and as such, the findings from Australian government into disasters are unsurprising (see Chapter Seven).

The historical focus on skills-based training (Britton, 1999, p. 4) appears to remain applicable as “credible emergency managers need to have... practical skills” (Glassey, 2008, p. 14) but there is a lack of criteria evaluating the quality of training programs (Alexander, 2003, p. 113). The literature suggests that an increased level of support by training programs in the form of education could be beneficial to more contemporary emergency managers by connecting them with the literature in the field and the research community (Bruce et al., 2004, p. 13).

Education

While training has its role within the emergency management industry as “a building block of professions” (Waugh & Goss, 2019, p. 7) there is a need for higher education by those wanting to become an emergency manager. An education that is consistent with findings by key stakeholders in government, who “believe that emergency managers need certification, and... that a quality and sophisticated educational program of studies is required in the future as ever higher expectations of the role continue to grow and evolve” (Verbeek, 2009, p. 33). In addition to being tied to advancing as a profession (Cwiak, 2019, pp. 61-62; Feldmann-Jensen, Hackerott, Knox, Ramsay, McEntire, & Jerolleman, 2019, p. 27), higher education is deemed essential due to community expectations that emergency managers understand the myriad of social, physical and natural systems including DRC (Alexander, 2016, pp. 5, 8; Lewis, 2012, pp. 1-2; Handmer, 2008, p. 531) and DRR, to offer appropriate long-term solutions to various anthropogenic and natural hazards (Grist, 2007, p. 15).

The growing recognition that education is important, if not essential, to emergency management (Haddow, Bullock & Coppola, 2011, p. 107; Blanchard et al., 2007, p. 4) is likely due to the increase in issues very rarely seen before due to climate change, and changes in technology (Darlington, 2008, p. 11; Blanchard et al.,

2007, p. 8; Wybo & Lonka, 2002, p. 123). Issues that are increasing in regularity and scale but also continue to reveal the growing complexity of emergency management (Moseley, 2004, p. 28). Emergency managers who pursue higher education were identified as younger, earned more money, serviced larger populations and worked in more urban and suburban settings (Weaver, et al., 2014, p. 5). Furthermore, due to the complexity of emergency management, there can be more than one solution to a given issue, as such the emergency manager must be able to wisely and judiciously choose not only the most efficient solution but also the one preferred solution with the highest chance of being effectively implemented (Blanchard et al., 2007, p. 7). They, therefore, must have an extensive base of knowledge and strong critical thinking skills.

A study conducted in the United States, *‘Disaster management and the critical thinking skills of local emergency managers: correlations with age, gender, education, and years in occupation’* recognised that critical thinking, and sound decision-making was imperative for emergency managers (Peerbolte & Collins, 2013, p. 49). The Watson–Glaser Critical Thinking Appraisal-Short Form (WGCTA-S) and database (WGCTA-D) is “a well validated critical thinking skills appraisal tool” that is often used “for the selection of employees, the appraisal of employee development, and for the evaluation of critical thinking skills” (Peerbolte & Collins, 2013, p. 50). By using the WGCTA Peerbolte & Collins was able to examine the critical thinking skills of emergency managers.

Historically, there has been little regard for the formal education of emergency managers (Coles, 2014, p. 26; Blanchard, 2001, p. 7) and despite the importance of these skills, Peerbolte & Collins (2013) found that emergency managers scored below the mean management score (p. 58). The exceptions to this finding were emergency managers with a combination of higher education and experience of greater than ten years (p. 59). Despite these findings identifying the importance of education, there are still individuals that do not believe the role requires higher education. That...

there is no evidence that individuals with a formal education in emergency management are any more or less capable than those emergency managers without a college degree or certification.

(Farris & McCreight, 2014, p. 79)

Although Peerbolte & Collins (2013) highlighted one potential benefit of formal tertiary education, there are others that include demonstrating a passion and dedication for the field of study, an exposure to knowledge that is outside of one's area of interest, and knowledge that has been reviewed by established specialists through examinations and testings at a tertiary level. All of these areas are much harder to prove when emergency management is not the primary role, or the individual has no formal education or qualification, and where their knowledge is obtained purely by experience that has not been tested for validity and accuracy.

However, the fault does not rest solely with practitioners, as academic deficiencies also have an important role in the education of practitioners. Tertiary education is essential in “developing the capability of those tasked with leading efforts to improve emergency and disaster management” (Fitzgerald et al., 2017, p. 22). Despite the growing need for educated emergency management practitioners, there is a myriad of tertiary emergency management programs that are a compilation of generally available courses deemed appropriate by academics that do not address the specific requirements of the emergency management practitioner. Of these courses, some do not align with contemporary emergency management literature (Cwiak, 2009, pp. 97–98; Burrell, 2007, p. 63; Wilson, 2001, p. 22) and have plausibly contributed to...

- academia being out of touch with contemporary emergency management (Cwiak, 2009, pp. 97–98),
- the placement of emergency management within other academic disciplines (Wilson, 2001, p. 223),
- the identification and stipulation of specialities not suitable for emergency management (Wilson, 2001, p. 223),
- a plethora of university programs that currently “lack structure, consistency and standardization” (Wilson, 2001, p. 223),
- a lack of intellectual rigour (Coles, 2014, p. 34),
- the lack of “scientific study, analysis, and scrutiny to raise knowledge” (Grist, 2007, p. 11), and
- a lack of quality control (Britton, 1999, p. 6).

In the United States the emphasis of education continues to increase with greater investment in research, a greater number of practitioners and education programs, and where professional bodies such as IAEM, continues to make professional education a

requirement for its members seeking certification (Waugh & Goss, 2019, pp. 10, 11; Tops, 2019, pp. 45, 47). More recently, in 2019 the Australian Journal of Emergency Management ran a three-part special covering emergency management education (Waugh, 2019). Despite this emphasis, it is important that educational programs and their facilitators recognise and address the concerns raised by practitioners if the emergency management industry is to accept higher education as a critical component and partner in the evolution of the role.

Experience

The experience of practitioners has been the cornerstone of emergency management despite indicating support for a myriad of false beliefs and myths. A Canadian study into emergency management practitioners found that most practitioners believed they had sufficient education and training (Nirupama & Etkin, 2009, p. 16). These false beliefs and disaster myths included dazed and apathetic survivors, looting, and antisocial behaviour (p. 16), an inferred understanding that “any relief is good relief”, and an ill-advised reliance on mass evacuation from the affected areas (p. 14). Nirupama and Etkin (2009, p. 14) also supported work conducted by Fischer who found that education was more important than experience when dispelling myths (1998, p. 227).

It is plausible that these out-dated beliefs indicate that the practitioners’ belief in their experience and their underlying confidence in their knowledge of emergency management is overestimated, and supports the argument for further education specific to emergency management. While it is accepted that there may be gaps in the knowledge of emergency managers, the prevalence of misconceptions and false beliefs (Nirupama & Etkin, 2009, p. 3) underpins claims that developing curriculum specific to emergency management is one of the most critical issues for the emergency management industry (Woodbury, 2005, p. 93; Britton, 1999, p. 1; Schneider, 1993, p. 14) and reveals weaknesses with the experience over education argument.

The increasing complexity of emergency management has necessitated organisations to “professionalise their staff” through the introduction of higher education programs (Manock, 2001, p. 5), the “scientization of risk [sic]” (Beck, 1997, p. 56) and DRC underpinned (Alexander, 2016, pp. 5, 8; Lewis, 2012, pp. 1-2; Handmer, 2008, p. 531) by “strong academic subject knowledge” (Glassey, 2008, p. 14). These findings require emergency management degree programs to expand their

coursework from a purely theoretical exercise to a program that allows students to obtain practical exposure to the various areas of emergency management.

Practitioners who did not pursue a tertiary degree were consistent with Blanchard's (2001) stereotypical emergency managers who often developed their entire career in the field, or one jurisdiction "often experienced limited exposure to newly developed methodology based on sound research and analysis" (Stevens, 2013, para, 3) and other risks associated with the post-modern risk society (Beck, 1997).

Although education is essential in the development of the emergency management industry, it is not the only source of knowledge or human capital for emergency managers. Experience is also considered an essential factor in emergency management (Phillips et al., 2012, pp. 61, 149, 252; Britton, 1999). However, barriers arise if that experience does not include having the emergency manager as an active and essential participant in dealing with disaster events throughout all the phases of the comprehensive approach (Coppola, 2011, p. 346). Despite the recognition that experience is essential, however, some individuals believe "the relationship between past experience and preparedness is tenuous" (Chen, 2009, p. 75).

In an attempt to mitigate the argument between experience and education, Etkin (2006) developed a pathway aligning the various types of degrees with the level and type of employment in emergency management (Table 2.5). As part of this pathway, Etkin (2006) embedded qualifications into all levels, starting at the lowest entry-level position, while Wilson (2001, p. 237), stated that the prerequisite of experience should be folded into an ongoing professional development program as the novice manager progresses through the field.

Table 2.5 – Differentiating educational programs in emergency management

	Core Competencies	Critical Understandings	Integrated Solutions	Creative Research
	Technicians/ Practitioners	Managers	Senior Policy Makers	Researchers
Community College (TAFE)				
University Certificate				
BA Degree				
Masters Degree				
PhD Degree				

Note: Adapted from Etkins, D. (2006). Emergency management core competencies. Toronto, Canada: York University. Retrieved from training.fema.gov/EMIWeb/edu/EMCompetencies.asp

Although Etkin's (2006) work is brief, he does provide definitions for core competencies, critical understandings, integrated solutions, and creative research. Where Etkin (2006) defines *Core competency* as the "the fundamental knowledge and basic skill set needed for practitioners to perform competently", he does not provide any details as to what this knowledge should entail. *The critical understanding* component identified appears to be more tailored towards the practitioner's supervisors. According to the accompanying text, managers should have "knowledge of the theoretical underpinnings of the set of core competencies, and their limitations in terms of how they should be applied" and the "ability to identify gaps in knowledge and understanding, and the implications of these gaps" (Etkin, 2006).

The second last role that corresponds to policy, *Integrated Solutions* requires the individual to have "the knowledge and ability to put EM [emergency management] issues into a larger social and environmental context and being able to apply this within a comprehensive emergency management framework". Finally, the research role listed under *Creative Research* asserts that the individual should have "in-depth knowledge of the theory and **practice**¹⁴ of emergency management and of research methods" and "the ability to conceptualize research questions and carry out research projects designed to test them". Currently, it is unclear if this is occurring within Australia, and more research is required to understand this gap better.

Etkin's (2006) definitions seem to suggest that the level of knowledge required of a position should build upon the previous role but clarity is required to understand this better and why some of the highlighted markers in the table that align education levels with the manager, senior policymakers and researcher roles do not traverse the entire width of the column. It is plausible that the highlighted section is more of a question in which Etkin has not either, formed a solid conclusion as to the merits of having a lower level of education allocated to the role, or is allowing the reader some level of flexibility.

It is plausible that Etkin's (2006) definitions may be utilised to better understand the costs of employing appropriately qualified individuals, as opposed to the response and recovery costs. The ongoing costs associated with disaster events (Insurance Council of Australia: ICA, 2011, pp. 6–7) indicate that few communities can "afford to entrust their safety and property to untrained, inexperienced administrators" (Stanley & Waugh, 2001, p. 697). This is supported by Tierney (2007,

¹⁴ Emphasis added – in this context practice is assumed to mean experience

p. 4) who asserts that the ability of an emergency management organisation can be severely hampered by “appointing non–experts and inexperienced personnel to key positions for which they are unqualified” and raising the question of the practitioners level of competence, confidence and overall level of knowledge specific to emergency management.

Knowledge

Knowledge comes from two primary sources: education and experience (McEntire & Marshall, 2003, p. 125; Woodbury, 2005, p. 61), although ‘research’ has recently been added as a requirement (Phillips, Neal & Webb, 2012, p. 442). The pursuit of knowledge is considered vital as it increases credibility (Cwiak, 2011, p. 8), effectiveness (Britton, 1999, p. 4; Cwiak, 2011, p. 8; Darlington, 2008, p. 11; Waugh, 2007a, p. 18; Parker & Handmer, 1992, p. 62; Witt, 2011¹⁵) and the authority of the industry (Yates, 1999, p. 68). Research can also increase community resilience (Apan, et al., 2010, p. 5) and improve preparedness levels (Phillips, Neal & Webb, 2012, p. 61). Although previous research conducted into the role (Blanchard, 2005; Spiewak, 2005) identified that an extensive comprehension across a broad array of areas is required (Feldmann-Jensen, Hackerott, Knox, Ramsay, McEntire, & Jerolleman, 2019, p. 28; Tyler & Sadiq, 2019, p. 35; Topp, 2019, p. 47; Waugh & Tierney, 2007, p. 322), the debate over what knowledge is required by an emergency manager continues (Waugh, 2019, pp 1-78).

Knowledge, specific to emergency management is vital in understanding the complexity of the industry (McEntire, 2007, p. 1; Mosely, 2004, p. 29) and in ensuring the industry is built upon a strong foundation (Waugh, 2007b, p. 167). The knowledge and experience of the practitioner can determine the accuracy and success (Coppola, n.d., p. 38), or failure of a community response to an emergency (Labadie, 1984, p. 489). However, considerable knowledge is required for emergency management, as plans and policies are only as good as the knowledge that created them (Mosely, 2004, p. 29; Schneider, 1993, p. 1), supporting the need to review key governance documents.

Lucus (2007, p. 3) argues that the amount of knowledge required to implement all elements effectively is too vast for one person. However, is plausible that the current understanding by some practitioners that the position is too great for one person stems from a lack of integration between academic and practical knowledge

¹⁵ Quote

(Wilson, 2001, p. 223) with no one qualification within Oceania encompassing all ten competencies identified by Blanchard (2005, p. 1). It is also possible that the origin of the industry in emergency services that has historically had a limited educational requirement is intimidating to some individuals, or where the role is a second career choice, requiring further education.

Decision-makers and emergency managers have a crucial role in “lessening the consequences of disasters”, but it is unclear how stakeholders can fulfil their responsibilities when the acquisition of “knowledge and expertise has not been professionally adequate and up-to-date” (Hosseini & Izadkhah, 2010, p. 185), or “when the emergency manager has obtained knowledge haphazardly and not in context or relationship to the big picture” (Alexander, 2000, p. 247). This is further supported by organisations that do not apply existing knowledge (Nirupama & Etkin, 2009, p. 1) as evidenced by the findings of government reports into recent Australian disasters that include the Queensland 2011 floods, Victorian 2009 bushfire, the Perth Hills 2011 bushfire and the 2016 Waroona fire (Ferguson, 2016, p. 11; Holmes, 2012, p. 413; Keelty, 2011, pp. 28, 96, 167; Teague, 2009, pp. 8, 208). See Chapter Seven for more details on the Waroona Fire and other disaster reports. These reports found significant deficiencies in the knowledge of emergency services organisations to understand and implement effective emergency management processes.

There is a call for a body of knowledge specific to emergency management (Cwiak, 2011, p. 8; Cwiak, 2007, p. 107; Waugh & Tierney, 2007, p. 322) as new courses are developed and add to the knowledge base of the industry (Alexander, 2008, p. 8; Waugh & Tierney, 2007; Manock, 2001, p. 1; Britton, 1999, p. 1). Historically, Australia has been weak in its use of research institutes to increase knowledge in emergency management (Harper, 2006, p. 17). However, in 2013, the Australian Commonwealth government expanded the Bushfire Cooperative Research Centre to include other natural hazards (BNHCRC, 2013) under the renamed Bushfire and Natural Hazards Cooperative Research Centre (BNHCRC) in partnership with the Australian Institute of Disaster Resilience (AIDR). As part of this BNHCRC initiative the federal government pledged AU\$47 million over eight years to...

draw together all of Australia and New Zealand's fire and emergency service authorities with the leading experts across a range of scientific fields to explore the causes, consequences and mitigation of natural disasters.

(BNHCRC, 2017, p. 8)

Despite changes to the industry and the role, it is important that any research undertaken in the name of emergency management is in context with the contemporary industry practices. That this research is not simply a composition of ad-hoc, reactive or ill-advised responses to various emergencies or events pushed out under the guise of emergency management and managed by organisations that traditionally are not emergency management focussed but merely components of a greater system, or academics specialised in the physical or social sciences.

Pettit (2009), in discussing the role of the security manager highlights similar issues to those currently experienced within emergency management. Issues in which there is a propensity of those holding the security managers position to predominantly be ex-police or ex-military who have little interest in upgrading their skills as they await retirement with little “commitment to ongoing professional development” (Pettit, 2019, para 5). This lack of professional development is the most significant impediment to the lack of professionalism in the industry and something that a four-year degree can assist in addressing (Pettit, 2019, para 6). A four-year degree promotes the value of knowledge and ensures that only suitable persons, those interested in developing their knowledge and improving the industry through qualifications are selected.

2.4.3 The competence and confidence of emergency management practitioners

The continued evolution and changing environment of emergency management highlights the importance of competent practitioners and the use of objective and measurable performance management systems of personnel and processes (De Cieri & Kramer, 2008, p. 372). Incorporated into legislation (Britton, 2004, p. 4; Glassey, 2008, p. 8), government reports (Clarke & Rowlands, 2008, p. 3), and various emergency management texts (Smith, 2008, p. 28; EMA, 1998a, p. 23), competence has been defined as having the necessary knowledge, skills and ability to perform a particular task successfully (Barbera et al., 2005, p. 1; EMA, 1998b, p. 23; Etkin, 2006, p. 3). However, the use of the term and its derivatives are used subjectively within the literature and do not provide a clear understanding or definition as to what this means for the emergency manager (Glassey, 2008, p. 14). A sentiment that is further supported by McArdle (2017, p. 5, 36) and Choi (2008, p. 15) who asserts the need for more clearly defined terminology within emergency management.

According to Broadwell (1969, p. 3), there are four levels of competence escalating from the “Unconscious Incompetent” the “Conscious Incompetent”, the “Conscious Competent” and the “Unconscious Competent”.

- 1) The *unconscious incompetent* is someone who does not know how to do something and does not recognise the deficiency;
- 2) The *conscious incompetent*, this individual is bad and recognises the deficiency and is attempting to address the deficit;
- 3) The *conscious competent* is an individual who understands how to do something and can articulate why they are good; and
- 4) The *unconscious competent*, this individual understands how to do something but does not know why and may be a good practitioner but a bad teacher.

While a government’s “definition of competent performance may be... different”, communities have the right to expect a competent performance that is demonstrated in the form of favourable outcomes by those individuals holding the emergency manager’s position (Green, 2000, p. 123). Anecdotal evidence suggests that many of the individuals holding the position of emergency manager are in public office and have their salary and resources paid for by the public purse. The lack of clear guidance, and national view of the role, as well as recent disaster reports, and a history of holding emergency managers to undefined and ambiguous standards is inconsistent with the existing literature raise questions about existing definitions, the competence of current emergency management processes, practitioners, their level of competence, and benchmarks for assessment and measurement.

With a premium on efficiency and competence, the hierarchical organisation of expertise and responsibilities ensures that you seek assistance from those most qualified, an expertise that is certified or credentialed by an external, objective authority based on rational evaluative criteria of competence... We see much public evidence of certification (itself a rational process to help us avoid wasting time seeking unqualified help or faulty services/products).

(Dillon, 2009, p. 138)

The development of improved job descriptions and the outlining of core competencies in line with appropriate emergency management standards can be expected to have a positive effect on emergency management and its role within the community (EMA, 1998a, p. 23; Parker & Handmer; 1992, p. 66). However, the use

of untrained personnel and senior officials can create “misperceptions based on disaster mythology and creates stress, leading in many cases to hesitation in decision making” (Choi, 2008, p. 15). These misperceptions are...

compounded by the fact that once people make their initial judgments, they believe with overwhelming confidence that they are correct. This phenomenon, called the ‘overconfidence heuristic,’ states that people often are unaware of how little they know about risk, and how much more information they need to make an informed decision.

(Coppola, 2011, p. 198)

The confidence by the emergency manager in their ability to fulfil the role is vital and should increase as emergency managers become more knowledgeable through training and certification processes (Bumgarner, 2008, p. 190). However, it is essential not to confuse a belief in one’s ability as being synonymous with competence. According to Moore and Schatz (2017, p. 1), the *overconfidence heuristic* is often simplified and utilised as a single construct that often neglects to compare beliefs and reality. Confidence relates to an individual strength of belief, but it may not equate to an individual’s actual ability. Furthermore, overconfidence can be problematic and may lead individuals to prepare inadequately and therefore, perform worse than they would have otherwise (Moore & Schatz, 2017, p. 3).

Of the researchers that have examined beliefs and reality in overconfidence, Moore and Schatz (2017, p. 3) assert that they have generally utilised three distinct conditions that include *overestimation*, *overplacement* and *overprecision*. Where...

*Overestimation is thinking that you are better than you are,
Overplacement is the exaggerated belief that you are better than others, and
Overprecision is the excessive faith that you know the truth.*

(Moore & Schatz, 2017, p. 1)

Despite Moore and Schatz (2017, p. 8) stating that there “does not appear to be a unifying personality trait that explains variation in overconfidence the ability to overcome cognitive biases is not difficult and only requires “a willingness to test one’s own intuitions (analytic cognitive style)” (Bialek & Domurat, 2017, p. 124). Through increasing the education of practitioners, it is possible to mitigate the misperceptions and overconfidence heuristic as tertiary education exposes students to

knowledge outside their comfort zone, and where their assumptions, beliefs and knowledge are challenged, ideally leading to an increase in self-efficacy.

Several of the most important traits of an emergency manager were “being aware and knowledgeable and [inspiring] confidence” in the community (Springer, 2009, p. 208). This further supports Cwiak (2007, p. 14) who stated that emergency management must not only be perceived as adding value but needs to be “consistent with community values and visions of the future” (Choi, 2008, p. 16). However, it is vital that false confidence is not provided, merely to satisfy one’s ego at the expense of true and effective DRR. A lack of transparency in response to an event by government organisations, and an initial negative perspective by the community to risk management (Coppola, 2011) has the potential to affect the general public’s confidence in emergency management. According to FEMA (2007) and Blanchard (2001), emergency management is a structured science within a risk management framework that is evolving to become more “globally transportable” (Glassey, 2008, pp. 6–7). However, this is unlikely to occur if practitioners have only worked within one organisation and have limited education specific to emergency management,

As emergency management has developed in the United States and Oceania, so too has the role of the emergency manager (Waugh, 2007a, p. 15; Labadie, 1984, p. 489). Specific to the New Zealand context, Glassey (2008, pp. 6–7) suggests that the communities’ expectation has accompanied this increase for a more educated, adaptable, practical and knowledgeable emergency management practitioner. In Australia more work is required to understand the social expectations of emergency management better, specifically, outside that of emergency services and emergency response. The confidence of practitioners has the added benefit of inspiring confidence on the part of the general public (Bumgarner, 2008, p. 190) and will increase the productivity of the role (Ernst & Young, 2013, p. 2). However, this should be viewed with caution due to the potential of false confidence based on positive bias (Nirupama & Etkin, 2009, p. 15) and the Ikea Effect (Norton, Mochon & Ariely, 2011, p. 454).

2.5 The productivity of the emergency manager

Productivity is vital to the economic growth of a nation as it allows organisations to increase output while maintaining a similar level of input (Australian Workforce and Productivity Agency: AWP, 2013, p. 4). Despite the importance of productivity, one-third of Australia’s workforce falls below national productivity average, with a

resultant cost to Australian businesses of AU\$41.3 billion each year (Ernst & Young, 2013, p. 1). When examining the Australian workforce, only 23 per cent were “highly productive”, and these are the “people whose skills are well aligned to their jobs, work in a supportive culture and are valued for their contribution”. Employing an individual that is formally trained, educated and experienced in emergency management for an emergency management role would support this concept. Furthermore, as a public good with limited funds, this has severe repercussions for the ability of practitioners to provide adequate services to the community.

There are four reasons to measure organisational productivity that include assessing the efficiency of the organisation; identifying where to make improvements; assisting in investment decisions, and fostering relative competitiveness (Ernst & Young, 2013, p. 11).

The key is to focus on the areas where productivity can be influenced the most. In other words, if we move or retrain workers, so their skills are better aligned with their roles, create high-performing and supportive team environments, streamline processes and cut red tape, and continue to work on staff engagement, productivity can and will increase.

(Ernst & Young, 2013, p. 2)

Despite the AWP (2013, p. 23) identifying a positive correlation between learning and productivity, the Australian Bureau of Statistics (ABS) asserts that there is more to productivity than education and knowledge alone (ABS, 2010, p. 6). The increase in productivity includes how effectively education and knowledge are utilised and managed by practitioners and how well the knowledge, skill and competency of personnel correlate to a particular job. This further supports the need for all emergency managers to have emergency management competencies, qualifications and experience when obtaining their positions (Blanchard, 2005, p. 1; Corriveau, 2009, p. 3).

Although education does not guarantee improved performance by the practitioner (Glassey, 2008, p. 24), it can act as a proxy by identifying specific attributes of productive workers and can act as a signal (Wößmann, 2003, p. 253) for improved productivity, work ethic, effort and motivation (AWP, 2013, p. 26; Kjelland, 2008, p. 73) on the part of the emergency manager. These findings suggest that employing an emergency manager with an education, experience, skills and knowledge specific to emergency management and determined by an appropriate

independent emergency management body, will increase productivity (ProHR, 2013) and confidence by the sector and the general public.

Other methods identified within the literature that assist in increasing productivity include screening potential employees for a good fit with an organisation's values and culture (Duncan, 2013), investing time and resources in employees (ProHR, 2013) and recognising personnel as an asset (Barclays, 2014; Deloitte, 2014; J.P.Morgan¹⁶ 2014; ProHR, 2014; Rio Tinto, 2014; Duncan, 2013; McGrath, 2012). The need to improve productivity highlights the need for more efficient personnel, and introduces the need to employ the right person, for the right role.

Individuals need to maximize human capital... because there is a scarcity of resources in society... Those who get to maximize utility... will be those who are best able to use their human capital.

(Dillon, 2009, p. 249)

It is only through the dedication of hard-working individuals who hold themselves to very high standards that organisations can generate long-term value and contribute to an organisation's success (Goldman Sachs, 2014; J.P.Morgan, 2014; Duncan, 2013). Many organisations recognise employees as their most significant asset (Gabčánová, 2011, p. 1; Amabile & Kramer, 2011) that can provide them with a "competitive advantage" over other organisations (ProHR, 2013), but not all people are created equal and offer the same or even similar benefits to an organisation as...

some people should not be working in their current roles. In all industries, there are floaters [employees] who have stopped caring – or have been forced to stop caring by bad corporate policy – and that need to find another area of focus.

(ProHR, 2013)

Not everyone agrees that organisations are putting employees first and question if the public recognises the limitations in management practices that impede the productivity of workers (Amabile & Kramer, 2011; Benayoune, 2013, December 20). Increasing productivity is reliant upon the human capital of practitioners within a given work environment, and in ensuring the most appropriate person with suitable education, experience and knowledge is selected (ProHR, 2013). It is plausible that

¹⁶ J.P.Morgan is the official designation and name of the largest bank in the United States of America

emergency managers and organisations that do not value higher education may also not value their employees as an asset or hold themselves to as high a standard, and as such, they will not exhibit the returns as those that do value higher education specific to emergency management.

2.5.1 In pursuit of a theoretical lens

The divergence of emergency management from various academic disciplines has seen a growth in the various theories and paradigms influenced by social science, human and physical geography, political science, and engineering (Coles, 2014, p. 26). The application of theory within emergency management is considered necessary as it contributes to the effectiveness of the position and serves as essential concepts and precepts for emergency management practitioners and enhances their effectiveness (Boone, 2010, p. 17; Pine, 2007, p. 197; Drabek, 2004, p. 3) due to their ability to predict narrow ranges of behaviour (Drabek, 2004, p. 3). As the emergency management industry develops as a profession, a formal education process requiring exposure to various theories and concepts with relevance to emergency management must be supported (McEntire, 2007, p. 197).

Despite the growth of theories utilised within emergency management (Waugh, 2007b, p. 165) that include chaos theory (Hepple, 2009, p. 78); high reliability theory from business (Turoff, et al., 2009, p. 15; Shrivastava, Sonpar, & Pazzaglia, 2009, p. 1363); and social constructionism from sociology (Barnes, 2009, pp. 690–91). High-Reliability Theory is used to examine the management of processes within post-incident reviews. Shrivastava, Sonpar & Pazzaglia (2009, p. 1363) view it as “the ability to maintain and execute error-free operations”. The study of previous events is imperative to the narrative of emergency management and the knowledge of practitioners but falls outside the scope of this thesis. Social constructionism from sociology is defined by Barnes (2009, pp. 690–91) as the “the idea that the social context of individuals and groups constructs the reality that they know, rather than an independent material world.” This theory has the potential to inform the thesis in such a way as to reinforce the need for the higher education of practitioners to ensure they have a broader understanding of the world, not one that is limited by their experiences.

These theories all provide important narratives that capture components of this thesis, but they are not the most appropriate or relevant to advance the area of knowledge. Organisational (Barzilai, 2010, p. 1), social capital (McEntire, 2007, p.

66), and human capital (Putnam, 2000, p. 4) theories better align with this thesis. Organisational theory is defined as “the study of organizations [*sic*] for the benefit of identifying common themes to solving problems, maximizing efficiency and productivity, and meeting the needs of stakeholders” (Barzilai, 2010, p. 1). Social capital theory (McEntire, 2007, p. 66), however, provides a conceptual understanding of how an organisation can increase productivity (both individually and collectively) and recognises the value of social networks and building relationships. While organisational theory and social capital theory investigate methods to address efficiency and productivity within organisations, neither of these theories appropriately addresses the emergency management practitioner as a knowledge worker and the value that education and experience bring to the position.

Of the numerous theories presently available throughout the emergency management literature, human capital theory (HCT) is the most prudent and appropriate method to explore the education, training, experience, and competence of emergency managers and whether any, or all these, were pertinent in developing a unique position. Human CT identifies people as valuable assets who can improve the overall efficiency and productivity of an organisation in a way that is similar to physical assets (Putnam, 2000, p. 4). Human CT emerged from economics (Banks, 2010, p. 12; Kwon, 2009, p. 3) and was first identified by economists in 1776 (Preston, 1997, p. 5; Sweetland, 1996, p. 342; Machlup, 1982, p. 2; Kiker, 1966, p. 481; Schultz, 1961, p. 2; Mincer, 1958, p. 241). Economists cited Adam Smith as the first person to address the importance of human capital in his article ‘*An inquiry into the nature and causes of the wealth of nations*’ (Smith, 1776, p. 48). However, it was not until Harold Boag’s post–World War I examination of *Human Capital and the Cost of the War* in which the term ‘human capital’ was first utilised.

*The valuation as a form of capital of the skill and knowledge embodied in the workers of a country ... any excess of wages over the cost of necessities is the reward of his industry, or the profit on his **human capital**.*¹⁷

(Boag, 1916, pp. 7–8)

Early human capital theorists indicated that “age, station in life (as affecting the cost of maintenance and rates of remuneration), sex [gender], mortality and interest” (Boag, 1916, p. 17) were critical factors in determining human capital. The majority

¹⁷ Emphasis added

of initial research into HCT focused on wages (Bowles & Ginitip. 1975, pp. 74–75; Schultz, 1961, p. 8; Boag, 1916, p. 14), transferability of skills (Fine, 1957, p. 938) and farming (Quiggan 1999, p. 2). Lewis (1954, p. 411) expanded the discussion of wages, indicating that wages may be further affected by “grades of skill, of education, of responsibility or of prestige” and that “differences in literacy, forms of government, attitudes to work, and social relations generally may make a big difference” (p. 430).

Higher levels of human capital have been associated with higher levels of productivity and more efficient workforce participation, but it does require an investment of time and resources (Banks, 2010, p. 14). The Australian Public Service (APS) Commission (2011, p. 2) has also “emphasised the need for a greater focus on the role of human capital in public sector regeneration”. The growth and development of human capital has recognised the increasing complexity of the theory with some theorists arguing that it is more than the amount of education an individual possesses but the type of education.

In essence, the quality of education and the type of knowledge was not equal. For example, knowledge in accounting does not increase the human capital of that individual if put towards carpentry, or within the different quality of teaching within that discipline across different schools. Something that is readily acknowledge in the Australian schools system where students and schools are annually ranked based on performance against a set of national criteria (Walsh & Jolly, 2018, p. 81; Bolton, 2018, December 27).

It is not just the quantity of education, i.e. the average years of schooling... embodied in the labour force, which differs across countries, but also the quality of each year of schooling, i.e. the cognitive skills learned during each of these years. One year of schooling is not the same everywhere because one unit of \$ [sic] may reflect different amounts of acquired knowledge in the various countries. Estimated development effects of human capital based on merely quantitative measures may be strongly misleading if qualitative differences do not vary with years of education. Therefore, differences in the quality of teaching should be introduced into the human capital measure in addition to differences in the mere quantity of education to account for how much students have learned in each year.

(Wößmann, 2003, p. 253)

The past several decades have seen HCT expand into other industries as they endeavour to capitalise on the potential benefits or understanding the key drivers

behind the organisations greatest asset. In this time HCT has been investigated by numerous industries including government (Barnes, 2001, p. 30); geography (Morales, 2002, p. 30); project management (Cabano, 2006, p. PM.02.2¹⁸); engineering (Coates, Duffy, Hills & Whitfield, 2007, p. 1255); human resources (De Cieri & Kramar, 2008, pp. 190); security (ASIS International, 2008, p. 8); education (Mihm–herold, 2010, p. 56); media (Lateral Economics, 2011, p. 32); law (Leichter, 2015); private research institutions (Gallup, 2015, pp. 6, 9, 36–40, 50; Aon, 2013, p. 54; Gallup, 2013, pp. 63, 71, 86; World Economic Forum, 2013, pp. 37, 39); government municipal departments (Somers, 2007, pp. 459–460), and emergency services (Barnes, 2001, p. 30). Although these documents did not specifically discuss human capital or people as an asset, they did highlight the importance of quality staffing as important to the success of the organisation.

HCT is predominantly focused on gross domestic product (GDP) in response to an ever–growing economic demand. The APS has adopted the Organisation for Economic Cooperation and Development (OECD) definition of “human capital as the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well–being” (AWPA, 2013, p. 4) and ABS (2010) defines human capital as the “compositional changes in the workforce due to factors such as changes in educational attainment and workforce experience”.

It is arguable that the fascination with HCT is because “monetary returns are easier to measure” and based on this, “most empirical studies have focused on monetary returns rather than on broader definitions of the benefits of education” (Quiggan, 1999, p. 2) and how this contributes to the financial returns of the organisation. However, it has been noted that our success in innovation and adaptation depends on the “effectiveness of the specific programs adopted and how well they are implemented” (Banks, 2010, p. 16). Although HCT has been predominantly employed to measure GDP and the total value of goods produced and services provided, it highlights the complexity of applying HCT to non–wage focused industries and introduces the possibility of using it within emergency services and emergency management.

¹⁸ PM.02.2 is the page designation

Human capital first appeared in the emergency services and emergency management literature in Barnes (2001, p. 86) who examined the public's perception of risk and the contrasting views between safety regulators and the public. In particular, the changing role of the fire services from a primary response role to include prevention. In this context, Barnes implied that human capital was more about the number of people able to fulfil the regulatory requirements of the role rather than the knowledge, education, or experience identified within the previous literature and did not provide a definition or an in-depth review.

In his manuscript '*The importance of social capital in disaster response*,' Dynes (2004, p. 2) examined the vulnerability of communities, their social systems and how they can be "modified to deal with disaster[s]". Unlike Barnes (2001), Dynes (2004, p. 2) explicitly references the "conventional economic view" that recognises the various types of physical, social and human capital as tools to promote economic growth. Dynes (2004) identified the differences between social and human capital. Where social capital is focused on the external environment and the relationships and personal networks of individuals (p. 4), human capital is developed internally from the combination of an individual's entire exposure to education and training (p. 2).

In 2007, Somers examined *continuity of operations planning* (COOP) from the perspective of the town's public works department as an essential service for emergency services under the guise of good business practice for local government (p. 451). Continuity of operations planning is a US government initiative developed to ensure that essential functions of an organisation, usually government, continues to operate during a wide range of emergencies, including disasters, accidents and technological emergencies. Somers (2007, p. 459) utilised HCT to briefly examine the staffing requirements of the organisation through "personnel notification and callback [*sic*], employee communication, pay flexibility, staffing flexibility, benefit issues, employee roles and responsibilities, and telework, among others".

The majority of areas examined by Somers in this brief examination of HCT significantly expanded beyond the areas traditionally identified in the earlier literature. Somers recognised the role, responsibilities, the value of key personnel, and the importance of education in highly specialised skill sets. However, Somers

reference to human capital does not conform to the traditional definitions of earlier works stating that it was not about individual workers, but rather a position.

Although this may be the case in a select few education-intensive, highly specialized skill sets. Key positions need to be identified, and the organization must maintain information about these positions, including current occupants, work requirements of the position, and the location of the key position in the organizational structure.

(Somers, 2007, p. 459)

The various interpretations of HCT throughout the literature serves to reinforce the need for consistent industry wide terminology across the emergency management industry. In 2007, Blanchard released the ‘*Guide to Emergency Management and Related Terms, Definitions, Concepts, Acronyms, Organizations, Programs, Guidance, Executive Orders & Legislation*’ that originated as part of “a student handout in an Introduction to Emergency Management college course taught by the author in 1999” (p. 1). Although this text is a compilation of terms garnered over a decade, Blanchard (2007, p. 1) recognises the importance of language and indicates that a shared understanding or consensus on key terminology will drive emergency management as a profession. Despite Blanchard’s recognition that terms were essential to the development on industry, the “*Department of Homeland Security, Principles: Guiding Principles of Homeland Security*” is the only reference to provide context regarding HCT as an asset.

*Our **most valuable asset** is not new equipment or technology, but rather our dedicated and patriotic **employees**¹⁹. Their contributions will be recognized and valued by this Department. We will hire, **train** and place the very best people in **jobs to which they are best suited**.*

(Blanchard, 2007, p. 231)

In 2008, ASIS International and the American National Standards Institute, Inc. created an organisational standard to govern the role of the Chief Security Officer (CSO). As part of this standard, ASIS recognised the importance of human capital within the security industry. However, while ASIS provided a definition, this was

¹⁹ Emphasis added

inconsistent with previous works in the area (AWPA, 2013, p. 4; APSC: 2011, p. 2; Wößmann, 2003, p. 253). According to ASIS (2008, p. 18), the CSO should understand “human capital skills”, where they define human capital as “organization staff (leadership, directors, managers, employees), customers, and any others the organization has a duty to protect”.

Despite the increased use of HCT within the emergency management literature, there are some issues concerning *human capital*, HCT and the economic definition that utilises traditional economic key performance indicators of wages, profits and the wealth of the individual (Mincer, 1958, p. 301; Boag, 1916, p. 7). It is plausible that the role of the emergency manager may be attached to a primary role, separate and distinct from emergency management and this may either eliminate or complicate the wage aspect of human capital. Other issues identified by the use of the HCT include the various types and levels of education and the quality and quantity of this education, which often vary across institutions (Wößmann, 2003, p. 253).

Despite the difficulties identified, attempts by the Australian Bureau of Transport Economics (BTE) to address the issues of applying HCT within a non-wage focused industry such as emergency management indicate that HCT can “be used to value non-paid work in the form of service to family and community” (BTE, 2001, p. 129). This may be useful in determining the intangible, or indirect losses caused by a disaster event, but this report does not indicate how this is done nor identify which methods should be employed to accomplish this task.

Emergency management’s unique attribute as a public good, which is predominantly administered by government organisations, means that emergency management does not base its operations on the cost of wages and the accumulation of profits, but rather on the community services offered by its personnel, such as, fire protection, law enforcement and public safety. Despite these concerns and the limitations of HCT, when applied to emergency management and the role of the emergency manager, there is enough evidence to justify an investigation into the non-pecuniary productivity of an individual and their larger organisation.

The benefits to embracing HCT within the emergency management model include the provision of improving services to the community, the transportability of knowledge (or the ability of the emergency management practitioner to transfer

knowledge across geographical boundaries or from one organisation to another), assimilating information, and in understanding and applying more complex and abstract theories. Boag (1916, p. 16) identified several issues with calculating human capital as...

actual figures for costs are as difficult to obtain as correct estimates of average future earnings... because there are such differences [between the various methods used to calculate human capital] that we find it difficult to give any very definite answer to our second question: On what basis should human capital be valued?

Due to the various complexities, there is no one preferred method utilised to calculate human capital, with numerous methods identified depending on the various outputs desired (Keeley, 2007, p. 116). Human capital is already considered difficult to apply within the predominantly wage-centric industries for which it was initially designed and suggests that its application within non-wage focussed areas, such as volunteer or public good organisations, would be even more challenging. Aligning HC with emergency management may rely more on the length and type of education and experience than the costs associated with wages. However, we can assume for the purposes of this thesis, that an individual with a degree has higher capital than someone without a degree, and that someone with a degree specific to emergency management has greater human capital (in emergency management) than an individual with a generic degree. This can then be scaled to type and level of degree, just as an individual's qualifications, training, education, experience, knowledge and competence would be evaluated for other professions and roles, such as... medicine, law, architecture and engineering.

2.6 The physicians journey to becoming a discreet role – a comparative case to that of the 'emergency manager'

The value of an industry specific role can be identified through examining its placement within a recognised profession. A review of websites conducted by the researcher of recognised professions and their industry specific roles such as medicine (physician), law (lawyer), architecture (architect) and engineering (engineer), reveal mandatory study periods at the tertiary level for the individual to be considered a

professional. A physician takes ten years of study (McNamara, 2012, p. 528), becoming a lawyer takes four years (Good Universities, 2019); architecture takes five years (Australian Institute of Architects, 2016), and engineering takes four years (Prepare for Australia, 2016). According to the Australian Medical Association (Australian Medical Association; AMA, 2016), there are over 64 medical specialities that physicians can pursue and requires a substantial amount of additional training and education, on top of their primary medical degree.

In this section, I identify several professionals and introduce the idea that the journey of the development of medicine generally and the physician specifically, serves as a parallel case to that of the emergency management industry generally and the emergency manager specifically. Medicine and the physician were selected based on the amount of study/knowledge required and the strong theoretical and practical components of these programs, addressing the concerns from practitioners that an academic course can meet the needs of practice-based industry.

This section will examine the history of the physician and its role in developing medicine as a profession, from its origins a thousands of years ago on the island of Cos, through the middles ages, the Renaissance and the enlightenment, to its role in England and finally, Australia. This will seek to better provide an overview of the physicians' journey from a trade lacking in structure and standing in the community to one that is well regarded as a unique dedicated role, acknowledged for its educational requirements that encompasses both strong theoretic and practical achievements.

As there are a variety of definitions for 'profession', Beaton's (2010, p. 4) eleven "*criteria for becoming a profession*" will be employed to examine and better understand the contemporary physician within the Australian medical profession (Table 2.6) and will allow emergency management to be draw parallels against medicine and the physician. Due to the paucity of research in emergency management within Australia, it is currently unclear whether the Australian emergency management industry meets these criteria.

Table 2.6 – Beaton’s Criteria for Becoming a Profession

• Confers status within society
• Has collective influence within society
• Offers autonomy within the job role
• Is informed by an ethical code
• Organises itself into a professional body
• Is altruistic (orientated towards service rather than profit)
• Is non-commercial
• Is self-regulatory
• Is collegial
• Is client-focused
• Is learned – i.e., requires prolonged and specialised training and education

Note: Adapted from Beaton, G. R. (2010). Why professionalism is still relevant. University of Melbourne Legal Studies Research Paper, (445).

2.6.1 An historical overview of the physician

The “historically obscure” and ill-defined nature of the medical profession and the physician makes it difficult to locate its origins with accuracy, but its roots can be traced back to c.450–370BC (Gelfand, 1993, p. 1119). Initially, medicine and the physician did not hold much status in society with medical schools having a poorly organised and arranged systems lacking structure (p. 1120). There was also a belief that physicians could be educated in as little as six months, creating a fragmented industry. It was not until 368AD that the Emperor of Rome established a body to oversee the selection of public physician and their licensing and regulation.

Middle Ages and the Introduction of the Physician

It was not until the middle ages and the sixth century under the Benedictine order that medical knowledge started to become more structured. The Benedictine order utilised the works of philosophers Hippocrates, Dioscorides, Galen and Aurelianus as the basis of medical knowledge (Gelfand, 1993, p. 1120). As formal schools started to develop, so did the terminology and the distinction between physicians, surgeons, and apothecaries. It was during this time that medicine was attached to academia and started to gain the familiar structure of these institutions (Gelfand, 1993, p. 1121). A structure that included a graded curriculum, “examinations, theses, fees, and ceremonies to mark advancement from bachelor, to licentiate, to doctorate or master”, all of which “conferred a sense of professional identity”.

The professional identity of medicine grew in conjunction with the physician's knowledge, along with the...

codes of etiquette governing relationships with patients and colleagues, versions of what became known as the Hippocratic Oath for graduating student, and other deontological conventions applying to autopsies, plagues, and the public's responsibility of physicians strengthened the professional project.

(Gelfand, 1993, p. 1121)

In 1140AD, the upper class (Norman King Roger and Holy Roman Emperor Frederick II) promoted statutes for “the examination and licensure of medical practitioners”. During the late 13th century, the medical profession increased medical theory and debate, introduced natural science, surgery and anatomical dissection, Galenic works (the four humors) and the Canon of Avicenna as part of the degrees at several key universities (Gelfand, 1993, pp. 1121–1122) for physicians. These changes increased industry status and enabled physicians to access wealthy clients of the upper class who could afford their fees (Gelfand, 1993, p. 1121).

To address the inequality introduced by these changes, there was an increase in other “professional” medical services that included “barber–surgeons, apothecaries, midwives, and various empirics or ‘specialists’, including bone–setters, oculists, hernia experts, [and] tooth–drawers” who organised themselves into “craft guilds”. These craft guilds were the primary source of medical services to the majority of the population and although they were “subordinate to medical faculties... in practice, they had a good deal of autonomy”. Despite the autonomy of these guilds, they did enact statutes that dealt with medical practices and included apprenticeships, examinations, requirements for transitioning from “journeyman to master”, licensing standards, levels of training, and the security and protection of guild member families.

Despite these advances, until the 15th century, medicine operated under the auspices of the church and physician were “formally prohibited” from engaging in any procedure that involved bloodshed or could result in death (Gelfand, 1993, p. 1123). Under the church, physicians were members of the clergy, were excluded from marriage, and were required to swear an oath of celibacy. It was not until the mid–15th and the end of the 16th century that these expectations changed.

Renaissance and modern medicine and the physician

The Renaissance saw an increase in the cognitive process of physicians and innovation in dissection led to the development of several vital publications in

anatomy and physiology (Gelfand, 1993, p. 1124). It was not until the turn of the fourteenth century that there was a growing relationship between organised medical practitioners and the governments. In Italy “boards of medical men” were appointed by the crown to manage the entire medical practice, including the examination, licensing, and policing of the industry. It was around this time that the College of Physicians, separate from universities and guilds, were provided with the authority for licensing.

During the seventeenth century, the funding model for physicians changed in Italy, with public and private salaried positions, and university-trained physicians supported by public funds. The numbers of physicians increased to ten per 10,000 inhabitants in Italy, compared to two per 10,000 in other urban centres such as Paris and London. By increasing the number of physicians, this created greater opportunities for communities to access medicine.

English medicine

Medical practice in London, although not nearly as successful as in Italy, started during the 16th century with parliamentary legislation passed in 1511 (Gelfand, 1993, p. 1125). This legislation asserted that the regulation of the profession “was the responsibility of the bishops in each diocese, aided by medical and surgical examiners”. The government hoped that regulating this industry would decrease the “great multitude of ignorant persons” from practising medicine. In 1518, King Henry VIII chartered the London College of Physicians, but it lacked control over the licensing of practitioners and the guilds, that continued to remain autonomous. However, due to its royal relationships, it maintained “considerable professional power”.

The Barber–Surgeons’ Company was established in 1540, renamed as the Royal Company of Surgeons in 1745, and then to the Royal College of Surgeons in 1800. As the Royal College of Surgeons, it expanded to provide a more holistic service that included diagnosis and the treatment of diseases. The free competition of medicine at the time created difficulties that were exacerbated by the College of Physicians’ firm stance on Galenic medical theory that supported comprehensive knowledge based on theory and scholarships at the exclusion of experience.

The enlightenment

The 18th century saw further changes in medicine, as clinical training in hospitals became an increasingly accepted part of medicine (Gelfand, 1993, p. 1129) and the

physician. There were also opportunities for training in military hospitals where physicians were able to obtain informal but valuable experience, and a proliferation of medical schools (p. 1130). Despite a belief that a “superior education” in medicine could be obtained outside of official schools, an increase in “medical corporations to the license, regulate, or... define a profession” were considered problematic as some believed they undermined the power and autonomy of medical guilds (p. 1130).

19th Century Britain

The political revolution that had occurred in Italy did not transpire in Britain and this lack of revolution hindered the ability of British medicine to reinvent and unify itself, and resist industry reform (Gelfand, 1993, p. 1134). The 19th century saw the introduction of the General Practitioner, Surgeon–Apothecaries and legislation under the Apothecaries’ Act (1815). Acknowledging the need for “progressive modes of education”, the Apothothecaries’ Act (1815) was considered an effort to downgrade the role and lacked any regulatory protection.

The Medical Act of 1858 introduced the requirements for a medical register for all practitioners, and the standardisation of training but the council created to enforce the Act “remained dominated by representatives of the elite corporations” (Gelfand, 1993, p. 1134). Furthermore, it...

failed to establish a single portal of entry into the profession, continued to accept a variety of licensing authorities for the separate practice of medicine and surgery, and did not abolish the unlicensed practice, merely making it illegal for a practitioner to misrepresent himself.

(Gelfand, 1993, p. 1135)

It was not until the 1880s that the unification of medicine and surgery occurred, and physicians were able to gain “control over medical matters formerly decided by lay administrators”. Change in medical practice across the nation was due to individual politics and the relationship of the medical profession with the state.

Medicine and the role of the physician in Australia

Early Australian medical care to the growing colony was through the Colonial Medical Service (CMS), which provided surgeons (Lewis, 2014, p. 5). The early 1900s introduced the English “tripartite medical system of apothecaries, surgeons, and (a few) physicians” to Australia, but it was not until 1815 that the colonies received their first full–time private physician (Willis, 1988, p. 172). Although their successors

were predominantly British trained, local universities also contributed to their numbers.

In 1838, one of the first pieces of medical legislation sought to “define the qualifications of medical witnesses at coroners inquests and inquiries held before Justice of the Peace in the colony of New South Wales” (Lewis, 2014, p. 5). This legislation created a register for anyone “licensed by a medical college in Great Britain or Ireland” under “regular” (trained) and “irregular” (untrained) physicians. Despite the overarching goal of the legislation to articulate who was and was not appropriately trained, the theoretical application was more successful than in practice (p. 6).

To create solidarity and provide security, the trained (regulars) physicians created the Medico–Chirurgical Association of Australia (MCAA) in 1844. While ‘regulars’ attempted to ban the unlicensed practice, due to the perception of many, including politicians who did not believe that ‘regulars’ were more effective than ‘irregulars’ this proved to be impossible. In 1846 the Australian Medical Journal was created by the MCAA but was short–lived when a lack of support forced the closure of both the journal and association in late 1847.

It was not until higher population density, wealth, urbanisation and the growing belief in medicine, that the effectiveness of professional associations and journals became successful in the 1850s and 1880s, respectively. The Medical Society of Victoria (MSV) was the second medical association, but the first colonial association founded in 1855. In 1879, the British Medical Association (BMA) followed the MSV, opening a branch in Victoria. The BMA aggressively pursued growth to extend its “status and influence in Britain”, and by the 19th century, the status of medicine and the physician was becoming more widely accepted by the community.

Despite the increased acceptance of medicine, internal politics between physicians who could dispense drugs, and chemists who could provide medical advice as well as dispense drugs, created conflict between the two disciplines (p. 8). Physicians perceived the conflict between physicians and chemists, not only as unfair competition, but also as a danger to patients due to the lack of diagnostic skills of chemists (p. 9). During the late 1870s, legislation in Victoria was developed to better control access to what was deemed “easy access to poisons through chemists” and led to the establishment for a new society dedicated to pharmacists.

Despite an increase in immigration and a more diverse range of medical speciality qualifications for physicians during the 1880s that included “pathology, obstetrics and gynaecology, dermatology and ophthalmology”, primary medical care in regional areas remained the vestige of the “omnicompetent” military surgeons and “medically competent ex-convicts”. During the early to mid-1900s, the BMA sought to change the existing system that they “denounced as requiring too much work for too little remuneration and turning the doctor into a common tradesman” creating disunity amongst the various divisions of medicine (Willis, 1988, p. 172).

In 1938, senior physicians formed the Royal Australasian College of Physicians (RACP) in an effort to create “a body of some standing” (Evans, 2008, p. 58). These physicians believed that the establishment of a college would increase their status in the medical professional and the general public more than an association (Evans, 2008, p. 58). In the 1940s, Australia had one physicians per 1,200 people, and by the mid-1990s, this had significantly increased to one physician per 400–500 people (White, 2000, p. 295).

In 1958 the Royal Australian College of General Practitioners (RACGP) was established with a mission...

to improve the health and wellbeing of all people in Australia by supporting GPs, general practice registrars and medical students through its principal activities of education, training and research and by assessing doctors' skills and knowledge

(RACGP, 2019).

In 1962, the British Medical Association branches merged, and the AMA was established (RACGP, 2019). The goal of the AMA is “to promote and protect the professional interests of physicians and the health care needs of patients and communities” (AMA, 2019a). Over the next 50 years, the AMA would invest significant resources into advocacy and “self-promotion”, so that it is “one of the first sources journalists call for further information on health issues” (Wardle, 2013, p. 110).

In 1985, the Australian Medical Council (AMC) was established for the accreditation of all medical training programs including “medical student education, postgraduate training and, through the medical colleges, continuing medical education” (Smallwood, Frank & Walters, 2010, p. 566). The AMC is also

responsible for ensuring funding is available for programs, the consolidation of state-based standards, accreditation, defining competencies and ensuring that physicians “maintain their knowledge, skills and professionalism throughout their careers”.

Chapter 2.6.1 introduced the history of medicine and the physician, it revealed the struggles and issues that arose over the development of western medicine that ranged from the training and the education of members, the rights to be recognised as an independent industry, to the intrusion of politics and how this changed the course of the sector in Italy, and how the lack of political change impeded medicine in the UK. It revealed the symbiotic relationship between the growth of medicine as a profession and the role of the physician as unique role. Furthermore, it revealed a similar journey that emergency management and the emergency manager is currently experiencing and as such, can be considered a useful guide to the development of the industry as a whole and the emergency manager, specifically.

2.6.2 Comparing the medical profession in Australia against Beaton’s criteria for a profession

Based on its wide acceptance as a profession and its practical and theoretical nature that is similar to that of emergency management, medicine was chosen for this comparative analysis. By comparing emergency management against an established profession using Beaton’s 11 criteria as a benchmark, it is possible to learn from and apply these lessons to advance the role of the emergency manager, specifically, and the emergency management industry, generally.

Confers status within society:

Until the early 20th century, the “state patronage of doctors” was limited and that a “lack of effectiveness in treatment” meant that they were seen as no different to homoeopaths (Willis, 1988, p. 172). The introduction of Victorian medical legislation in 1908²⁰ saw improvements in this status (Willis, 1988, p. 172) that was further reinforced by improved patient care and supported by the greater use of scientific knowledge after World War II (Evans, 2008, p. 60) and the introduction of the Community Health Program during the 1970s. The Community Health Program was instigated by the Labour government to provide preventative care, encourage local community morale and educate the community (White, 2000, p. 300).

²⁰ Willis does not specify the exact title of the 1908 legislation.

Throughout the 1960s and 1970s the medical profession “was seen as all-encompassing in terms of class and inequality” (White, 2000, p. 303) and was considered the expert of everything health-related (Willis, 1988, p. 171). In 1989, the Federal Senate Select Committee on Health Legislation and Health Insurance was established to report on reforms to General Practitioners (GPs) that resulted in the amendments to the Health Insurance Act of 1973 and a Medicare Benefits Schedule Book (White, 2000, p. 291). Although the goal was to expand the services of GPs, the government hoped these changes would address the cost of pharmaceuticals, specialists, and hospitals. Despite initial consultation with the RACGP and the AMA, the RACGP pulled out early in the process, and there was extensive opposition by the medical profession that resulted in “an unfavorable impact on the profession’s public standing” (White, 2000, p. 292).

Despite the overall increase in the status of the medical profession and the physician brought on by the professionalisation of medicine, technological developments and an educated public (White, 2000, p. 289), Willis (1988, p. 178) believed that medical dominance in Australia peaked during the 1960s. However, public opinion polls conducted throughout the 1980s recognised that the status of physicians as perceived by the community remained relatively stable in the top occupations across Australia.

While “the trust that society places in doctors may well reside... on the basis of their deep understanding of the underlying science” (McGregor & Moriarty, 2003, p. 1425), it is also likely that any negative issues are not related to medicine per se, “but that it isn’t delivered well enough or fast enough” (White, 2000, p. 297). However, a more recent Roy Morgan survey into professions has revealed that physicians were rated second (89%)²¹ as the most regarded health profession (Roy Morgan²², 2017).

Has collective influence within society:

Early Australian medicine, and therefore the physician, was primarily controlled through the British military and the BMA, and struggled to be recognised as an independent profession (Lewis, 2014, p. 5–6). However, during the 1830s, control started to change with the advent of ‘friendly societies’ that sought to enable manual workers to maintain their financial independence during illness or accident, by

²¹ The Roy Morgan survey did not specify who was rated first

²² Australian consumer, industry and market research company

offering various services covering funeral benefits, widows and orphans, travel for employment and medical care for members (Green, 1984, pp. 71–72). The friendly societies expanded during the 1860s and exercised significant influence over the pay and contracts of physicians in the early colony (Green, 1984, p. 87).

The socialisation of the profession was not well received by everyone. In 1861, the President of the Medical Society of Victoria formally objected to the friendly societies model, citing issues with payment of medical officers (physicians), and the membership of higher-income earners that they believed should pay full medical fees (Green, 1984, p. 74). The 1900s experienced more changes to the medical profession and the increasing influence of physicians with the amalgamation of the Medical Society of Victoria and the Victorian Branch of the BMA (Green, 1984, p. 78). In 1922 the physicians claimed victory over the ongoing debate over medical fees and contract prices further cementing their influence within society (Green, 1984, p. 87).

In 1991, the federal government, the AMA and the RACGP reached an agreement that allowed for the independent and voluntary accreditation practice of GPs to improve their standards in regions. Despite practitioners viewing this process as “improving the standing of the profession”, the voluntary nature of the accreditation process was less than effective (Green, 1984, p. 87).

Although medicine, and therefore the physician, continued to deliver greater services during the early 2000s including improved life expectancy and quality of life, there was a “more critical attitude towards doctors” (Tallis, 2006, p. 7). The community’s attitude towards the medical profession was highlighted by increased reports of patient dissatisfaction by the media and interference by the legal profession suggesting a “crisis in confidence” (Tallis, 2006, p. 7). Despite this crisis of confidence, it did not appear to diminish the power of the AMA even though the division of practitioners and decreasing membership created issues for the industry to “deliver on agreements it reaches” (Duckett, 2016).

Offers autonomy within the job role:

While the level of independence increases proportionately to the experience of physicians, this has been affected by rising workloads, inefficient new technology and reduced medical autonomy (Baigent & Baigent, 2018, pp. 471–472). Reduced medical autonomy of the physician in the medical profession has included numerous instances of government interference over the years ranging from the development

and enforcement of legislation, the introduction of Medibank and Medicare, and reforms to General Practitioners.

In 1880, the Supreme Court of South Australia (SA) passed legislation that required the state Medical Board to register any person who possessed a medical qualification that would allow them to practice as a physician (The British Medical Journal: TBMJ, 1889, p. 994). However, when the Medical Board refused a person holding the degree of M.D.²³ from the United States to practice, the SA Supreme Court overruled this decision (TBMJ, 1889, p. 995). In response, the South Australian Branch of the British Medical Association “was summoned to consider the present unsatisfactory condition of the laws regulating the practice of medicine in that colony” and that new legislation was required (TBMJ, 1889, p. 995).

It was not until the 1930s, that the Victorian government “granted full autonomy for internal regulation to the profession through the medical board” (Willis, 1988, p. 173). However, several changes occurred that negatively impacted on the autonomy of physicians (Willis, 1988, p. 174) that included the growth of the consumer movement, the women’s health movement, and the national health insurance schemes – Medibank and Medicare (Willis, 1988, p. 175).

The consumer movement and the women’s health movement saw the appointment of public representatives attached to various medical committees and bodies, while the Victorian government sought to ensure consumer representatives were appointed to the ‘medical board’ as part of new medical legislation (p. 174). The 1970s and 1980s introduction of Medibank and Medicare were perceived as a threat to the autonomy of physicians as it was believed that they would “make doctors vulnerable to charges of overservicing patients” (Willis, 1988, p. 175).

Autonomy is accepted as part of being a profession but a lack of teamwork (White, 2000, p. 302; Ebert, Hoffman, Levett–Jones & Gilligan, 2014, p. 454) has been identified as “frequently leading to adverse patient outcomes” (Ebert et al., 2014, p. 454). An increase in patient dissatisfaction (Tallis, 2006, p. 7) and an “increasingly knowledgeable public” (White, 2000, p. 296) had created the need for greater transparency in the role of the physicians and suggested that there was a gap in the oversight of the position by the medical profession and relevant professional bodies (Elkin, Spittal, Elkin & Studdert, 2012, p. 1027).

²³ The Medical Profession in South Australia does not clarify this abbreviation but it is highly likely, that based on context that it stands for Medical Doctor (M.D.).

The medical “profession’s stance has always claimed to be far removed from government support, and certainly from what it saw as government interference in its clinical autonomy and practice” (White, 2000, p. 287). Furthermore...

professional autonomy and clinical independence is an essential component of high – quality medical care as well as medical professionalism. Doctors must have the freedom to exercise their professional judgement in the care and treatment of patients without undue influence by individuals or outside parties, including industry.

(AMA, 2018)

There is no clear answer to the autonomy and the governance of the medical profession without affecting the professional status of the role. While there is a desire to have better control over the behaviour of some physicians who “fail to conform” to “administrative and bureaucratic control”, the commitment of physicians to their patients (Correia, 2013, p. 262) introduces ethical considerations that need to be fully understood.

Is informed by an ethical code:

Ethics has been identified as an important component within the medical profession (Pryor, 2010, p. 198; Rogers & Ballyntine, 2010, p. 250) with “medical ideology [that] is... based on the ethics, responsibility and wisdom of the Hippocratic Oath” (Correia, 2013, p. 262). Ethics is not only involved in the “professional responsibilities and obligations of physicians” (Radtke, 2008, p. 284) it also has a role in earning the confidence of society (Evans, 2008, p. 58). The American Medical Association Code of Medical Ethics articulates “the values to which physicians commit themselves as members of the medical profession” (American Medical Association, 2019), and Roy Morgan (2017) uses ethics as a key performance indicator in their *Image of Professions Survey*.

Ethics has been contributed as driving physicians “to go beyond the call of duty” but it is possible that ethics “co–exists with other more personally oriented behaviours that may not reflect the patients’ interests” (Correia, 2013, pp. 262, 264). Behaviour that includes the unethical (or illegal) prescription of drugs (Elkin, Spittal, Elkin & Studdert, 2012, p. 1031), the mistreatment of medical students (Scott, Caldwell, Barnes & Barrett, 2015, p. 185), opposition to managerial control (Correia, 2013, p. 264) and the overcharging and over–servicing of patients (Willis, 1988, p.

175). Although opposition to hospital managerial control is counterintuitive when examined against the “medical autonomy and authority” of the physicians as a professional, it also prevents hospital management and the medical body from understanding the underlying behaviour of physicians (Correia, 2013, p. 264).

Despite the recognised importance of ethics and the necessity of it being a distinct area with topics that include conflict of interest and social justice, it is often attached to ‘professionalism’ and is “intermingled with clinical competences” (Correia, 2013, pp. 250– 251). However, it is highly likely that greater control will be required by professional medical bodies to ensure that the ethics of the profession are addressed.

Organises itself into a professional body:

Professional associations are responsible for organising a code of ethics, professional behaviour, and that member’s work in the interest of the people and these have “strengthened the bonds between members and facilitated the sharing of knowledge” (Evans, 2008, p. 58). There are currently two central professional bodies for medical practitioners within Australia – the AMA and the Australian Salaried Medical Officers’ Federation (ASMOF). The AMA was established in 1962/3 and represented approximately 30,000 or one-third of physicians across Australia and was considered a “very powerful lobbyist” by the Grattan Institute (Duckett, 2016). The second professional body identified, the Australian Salaried Medical Officers’ Federation – ASMOF (Duckett, 2016), is the “principal union for salaried medical practitioners” and is affiliated with the Australian Council of Trade Unions: ACTU (ASMOF, 2014).

The AMA and the ASMOF are supported by speciality subgroups, including the first speciality subgroup established in 1899, Ophthalmology (Evans, 2008, p. 65), this was followed by Gynaecology in 1900, the Royal Australasian College of Surgeons in 1927 (Evans, 2008, p. 64), and the Royal Australasian College of Physicians in 1938 (Duckett, 2016; Evans, 2008, p. 65) with over 40,000 members (RACGP, 2019). The Royal Australasian College of Physicians (RACP) was established and modeled on the Royal College of Physicians, London. In addition to developing a Royal Charter, strict entry requirements and professional conduct, the RACP also employed other symbols of status including armorial bearings, mottos and

presidential robes to increase respectability and their status within the medical profession and the general community (Evans, 2008, pp. 58–59).

Membership of the RACP comprised two groups, fellows and members. Fellows were elected based on several criteria including their standing in the RACP, contributions to literature and science, academic honours, public appointments, tenure of membership, and professional eminence (Evans, 2008, p. 59). Members were required to sit an examination in internal medicine to demonstrate their competence to the ‘Board of Censors’. However, in 1948, a senior paediatrician asserted that the “censors had no knowledge of the differences between adult and child physiology and pathology, and little awareness” thereby creating internal conflict (Evans, 2008, p. 62).

Paediatrics has been recognised as a specialty within the United States since the 1880s (Evans, 2008, p. 54). However, there was still a perception by Australian physicians that the discipline was not different enough from other fields of medicine to justify it becoming a discreet specialty. Other internal barriers included competition amongst medical disciplines, the lack of a defined image (Evans, 2008, p. 53), the obstruction of specialties such as paediatrics becoming a recognised field of knowledge (Evans, 2008, p. 49) with authority, control over work, autonomy and specialised skills and expertise within Australia (Evans, 2008, p. 50). Although the RACP represents medicine as a professional body, the late 1950s saw paediatric physician numbers increase enough to support their own specialty association as they did not feel that the RACP was able to meet their needs (Evans, 2008, p. 59). However, there was reticence by a number of the RACP membership to transition to the Australian Paediatric Association due to the prestige and security of the RACP (Evans, 2008, p. 62).

In the 1960s, the Australian Paediatric Association (APA) was established (Evans, 2008, p. 63) but it had poor policy processes, management and organisation, leading to a joint RACP/APA. This joint committee was developed to improve the MRACP²⁴ (an extensive examination requiring the candidate to have more detailed knowledge than that of the Bachelor of Medicine exam) and “avoid dividing internal medicine” (Evans, 2008, p. 63). In 1978 the APA became the Australian College of

²⁴ The author did not define this acronym but an online search suggested that one possibility was “Member of the Royal Australasian College of Physicians”

Paediatrics (Evans, 2008, p. 62) but in 1998 the APA was disbanded, and the RACP was restructured and expanded to include subspecialties (Evans, 2008, p. 63).

Is altruistic (orientated towards service rather than profit):

Altruism forms an integral part of a profession (Baigent & Baigent, 2018, p. 472; Rogers & Ballyntine, 2010, p. 250; Glannon & Ross, 2002, p. 68) and the “traditional values of medicine” (Pryor, 2010, p. 53), one that is expected by the community (Pryor, 2010, pp. 43–54). Professions have an idealistic view that their “professional’s actions are directed not primarily at the betterment of the individual... professional’s interests, but at the betterment of those of his or her client and ultimately, society as a whole” (Brien, 1998, p. 396).

Some practitioners felt “the notion of ‘altruism’: its implicit claim to moral superiority might lead to complacency or worse” (Tallis, 2006, p. 8), while others assert that the application of altruism in the medical field is misguided and misunderstood (Glannon & Ross, 2002, p. 68). Where medical professionals operate more in alignment with a “moral obligation to act in the benefit of others”, as opposed to acting in the interest of others, with whom the person has no attachment and, therefore, “no obligations” (Glannon & Ross, 2002, p. 68).

Is non-commercial:

Friendly Societies were developed to provide health care to lower socioeconomic groups at a reduced cost as the majority of medicine in the early 1900s operated under ‘contract medical care’ and were controlled by commercial organisations (Green, 1984, p. 72). This transition to a socialised system was not initially well-received (Green, 1984, p. 74) and the introduction of the national health insurance schemes drastically changed medicine by the 1980s (Pryor, 2010, p. 53).

The introduction of Medibank, and Medicare in the 60s and 70s, and the 2015/16 federal budget proposal to remove bulk billing from several medical disciplines including GPs (Brill, 2014) and pathology (Duckett, 2016) added complexity to the medical profession. The federal budget proposal instigated a lot of support and debate by the medical profession (Brill, 2014). However, the Grattan Institute, health economist Stephen Duckett acknowledged that the “Future Fund”, and the related “A\$7 copayment” was a “political ploy” by the government of the day.

There were several responses to the federal governments' proposal in which the Royal College of Pathologists of Australia developed a marketing campaign titled "Don't Kill Bulk Bill" (Duckett, 2016), while General Practitioners "launched a campaign called "CoPayNoWay" (Brill, 2014). Something unlikely to be supported by the organisation had they been commercially focused, as they could command higher fees if they elected to oppose bulk billing. It is also plausible to argue that the outrage by GPs is equally about the likelihood of practices to lose money.

While it was initially perceived that Medibank and Medicare could "make doctors vulnerable to charges and overservicing patients" only a few occasions of physicians being prosecuted for overservicing were identified (Willis, 1988, p. 175). Despite these findings, overcharging has resurfaced several times over the last few years especially with services offered by surgeons (Correia, 2013, pp. 262–263; McDonald, 2019, May 28). Professional associations look after the interests of their members as they have a "stronger mandate... to protect the interests of those they serve and of society itself" (Beaton, 2010, p. 4). However, it is plausible that with the increase in commercialism, it is highly unlikely that there will be a consensus by all physicians, and that there are physicians who may be divided by loyalty to their employer, who may be a commercial organisation (Pryor, 2010, p. 13; p. 73).

Is self-regulatory:

The medical profession expects and is dedicated to the self-regulation of the profession (Frank, 2005, p. 23), but this comes with the requirement of the medical practitioner to "uphold high standards of professionalism" (Pryor, 2010, pp. 13, 54). The self-regulation of the medical profession was not always the case. In 1862 a medical board was established under the Victoria Medical Practitioners Act (Victoria Government Gazette, 1862, May 24) and provided partial autonomy and limited internal regulation (Willis, 1988, p. 172). The limited autonomy and power of the medical profession proved less than ideal and in 1889 the South Australian Branch of the British Medical Association conducted a meeting to address "unsatisfactory condition of the laws regulating the practice" and need for "fresh legislation" after the supreme court overruled their internal selection processes (TBMJ, 1889, p. 995).

In 1908, Victoria developed legislation "according greater state patronage for doctors than had previously been the case enabling better regulation of physicians, the

end of “foreign” registration²⁵, and greater control over “other modes” of medicine that included homoeopathy (Willis, 1988, p. 172). However, it was not until the 1930s that the physician achieved complete control over their work and in 1933, Victoria developed additional legislation that granted “full autonomy for internal regulation to the profession through the medical board” without external influence (Willis, 1988, p. 173).

The introduction of the AMC in 1985 gave greater autonomy and self-regulation to the medical profession in Australia and an ability to regulate the training of physicians. The AMC is comprised of medical professionals and represents the standards of the industry and interests of the community (Pryor, 2010, p. 288). It accomplishes its mission through regulating, monitoring and evidence-based practice that requires “adherence, compliance and reduced variability in the clinical work of its members” (Furler et al., 2007, p. 6). However, it does this “at the cost of reducing the clinical autonomy of its members”.

In 2010, Australia moved to a national registration system and the regulation and accreditation of all health professions under the Australian Health Practitioner Regulation Agency (AHPRA) (Duffield et al., 2011, p. 46; Australian Government, n.d.). This national system transferred the control of the medical profession from each state and territory to a central body. It was expected that this transfer of authority would highlight a “lack of uniformity and comparability in the use of roles, titles and responsibilities across the country” and will address the issues of inconsistency (Duffield et al., 2011, p. 46). It is unclear whether this transpired as a result of these changes.

The regulation of allied health professions currently occurs under the auspices of the *National Registration and Accreditation Scheme* – NRAS (Australian Health Practitioner Regulation Agency: AHPRA, 2019a), and is represented by a national board of representatives from various medical disciplines in order to protect the public (AHPRA, 2019b). However, not all medical practitioners expressed a desire for these changes, according to the “AMA president Rosanna Capolingua, doctors don’t want a national registration system but rather a national register of doctors and a continuation of the current state-based regulation and registration system” (The Lamp, 2008, p.10).

Despite autonomy and the ability to self-regulate (Willis, 1988, p. 173), there are examples where tribunals have not addressed poor professional behaviour. Where

²⁵ Willis does not define “foreign” registration. It is plausible that due to significant influence by the BMA, it means physicians having to be registered in the UK or foreign control over the profession.

tribunals exist that have remove physicians from practice, this is more based on “character flaws and lack of insight, rather than behaviours exhibiting errors in care delivery, poor clinical judgement or lack of knowledge” (Elkin, Spittal, Elkin & Studdert, 2012, p. 1027) and further supports the requirement for some level of external oversight (Brien, 1998, p. 394).

Is collegial:

A collegial environment has been identified as an important component of a profession, but this has not always been the case in medicine. In the past, there was a greater “dependency of practitioners on clients rather than collegial bonds between practitioners” (Gelfand, 1993, p. 1131). However, concerns remained during the 1990s with calls for the medical professional “to be more integrated and collegiate” (Calman, 1994, p. 1143).

The increased specialisation of the profession (Calman, 1994, p. 1143) where negative stereotypes of specialities have compromised collegial attitudes and teamwork that discouraged “students from pursuing a particular career” (Pryor, 2010, p. 91) also added to the image of fractured collegiality within the medical profession. Adding to these issues was a “misplaced sense of collegiality and professional autonomy...[that] allowed poor practice to be tolerated” (Hillis & Grigg, 2015, p. 294) and where organisational values superseded professional values (Evetts, 2003, p. 406–407).

The establishment of professional bodies (Hillis & Grigg, 2015, pp. 294, 297; Wardle, 2013, p. 110; Pryor, 2010, p. 288), positive media (Wardle, 2013, p. 110), and “supervisor support and regular catch-ups between peers” (Baigent & Baigent, 2018, p. 472) have been identified as increasing the ability of the medical profession to be more collegiate. However, it has been suggested that this will require greater ownership by the discipline, through a supportive, rather than hierarchical management system (Hillis & Grigg, 2015, p. 296; Evetts, 2003, p. 407).

Is client-focused:

Medicine has a reputation that is largely based around physicians’ values (Correia, 2013, p. 262) and being client/patient focussed (Calman, 1994, p. 1142). In this descriptor of patient-focus, the interest of patients comes before everything else (Baigent & Baigent, 2018, p. 417; Rogers & Ballantyne, 2010, p. 250) and is further supported by the AMA (2019a) and the RACGP (2019).

The AMA website states that the organisation “exists to promote and protect the professional interests of physicians and the health care needs of patients and communities” (AMA, 2019a) and the RACGP’s (2019) mission statement is “to improve the health and wellbeing of all people in Australia”. It is difficult to ascertain how the AMA and RACGP can meet the needs of both patients and medical professions at the same time, as they are not mutually inclusive. For example, reducing or eliminating fees may be beneficial for the patient but not for the practitioner, and suggests a potential conflict of interest.

The AMA is adept at dressing up its concerns in high-sounding rhetoric about the public interest. It is also skillful at concealing its weakness in terms of representing a united medical profession.

(Duckett, 2016, p. 5)

Despite the medical professions history based on positive patient focus, there is conflict within the profession and the belief that a “commitment to the patients... are found in fewer physicians” (Correia, 2013, p. 264) with ASMOF explicitly stating that it acts in the interest of salaried physicians (ASMOF, 2014). While this may appear to be a conflict of interest, by looking after the health and wellbeing of physicians it is possible to reduce the likelihood of physician burnout that can lead to physicians distancing themselves from their patients (Baigent & Baigent, 2018, p. 417). Other factors that contribute to poor patient focus includes, the expectation of patients (Tallis, 2006, p. 7), the values²⁶ of the practitioner (Correia, 2013, p. 262), lack of teamwork (White, 2000, p. 302; Ebert, Hoffman, Levett-Jones & Gilligan, 2014, p. 454), and poor policy (Cootes, 2018, p. 4; Furler et al., 2007, p. 2; Tallis, 2006, p. 7).

There is an increasing disconnect between patients and physicians “between what some patients want and what they get” (Tallis, 2006, p. 7), and the increase in technology and transparency (Atkinson, 2014, p. 222; Pryor, 2010, p. 13). There are also “inconsistencies regarding expectations and realities” for various disciplines, including pathology (Pryor, 2010, p. 35). The evolving role of the physician and medicine has also seen the values of practitioners change (Pryor, 2010, p. 35) and these values may not reflect the patients’ interests (Correia, 2013, p. 262).

²⁶ Values are defined as the reasons why physicians undertake the role, and why some “give more than expected” to patient care (Correia, 2013, p. 262).

There is also conflict between autonomy and client/patient focus due to the increasing reliance of specialities, while teamwork across disciplines is growing in importance in ensuring greater patient care (Ebert, Hofman, Levett-Jones & Gilligan, 2014, p. 544; White, 2000, p. 302). However, some physicians refuse to integrate, seeing this as an affront to their autonomy, as “no physician wants to know what is being done in the other groups, just as they will not accept any interference from their peers or the hospital management” (Correia, 2013, p. 262).

Further complicating issues in ensuring patient focus is the development and implementation of poor policy, where hospitals focus more on their interests than the patients through “out-of-date dogma, expressed in target setting, and strategic planning reflecting a naïve hyperrationalism” (Tallis, 2006, p. 10). It is not possible to ensure all physicians are acting in the best interest of the patient or the hospital (Correia, 2013, p. 262) but developing an environment that encourages these values is imperative. Forcing physicians to choose between adhering to policy or the provision of high-quality care (Correia, 2013, p. 262; Furler et al., 2007, p. 2; Tallis, 2006, p. 10) and the values and medical ideology of the medical profession and the Hippocratic Oath (Correia, 2013, p. 262) has not always worked.

Is learned – i.e., requires prolonged and specialised training and education:

During the early years²⁷ of Australia, medical students often started studying at 14 years of age under a traditional apprenticeship system (Lewis, 2014, p. 7). Students would complete their apprenticeships with physicians in Sydney or Hobart and go to Britain to undertake examination before returning to Australia to practice (Lewis, 2014, p. 7). Several attempts were made to provide training in Australia in the 1840s, with one at the University of Sydney, but these were initially unsuccessful (Lewis, 2014, p. 7).

During the early 1880s only about 37% of physicians in NSW had a university degree with the majority having a “college licentiate” and by the mid-1880s these figures increased, where over 50% of physicians in Victoria had a degree (Lewis, 2014, p. 7). However, these graduates did not receive a warm welcome from the profession, as “the MB²⁸ was considered professionally insufficient” and replaced

²⁷ Lewis (2014) did not specify exact dates.

²⁸ Bachelor of Medicine

with a BS²⁹. Other issues included poor relationship and clinical instruction with the hospitals, medicopolitico struggles, inadequate funding, gender prejudice and control over public hospitals. Despite a lack of direct influence by the federal government, this changed in the late 1980s through a variety of policies across remuneration, education, practice organisation, and distribution of general practice (Cootes, 2018, p. 4).

In 1995 the registration of physicians transitioned from Britain to Australia, and the AMC took over the regulation of all training and education of physicians (Smallwood, Frank & Walters, 2010, p. 566). The influence of the government continued as part of the 1996 budget, where the Howard government made general practice the focus in the “delivery of primary health care” (White, 2000, p. 296). As part of this reform, the government “made vocational training mandatory before a medical graduate can enter general practice” and “affirmed its commitment to the Better Practice Programme, the Divisions of General Practice “an independent and voluntary system of practice accreditation” controlled by GPs³⁰, and the Coordinated Care Trials” (White, 2000, p. 296).

The role of education is an essential component of the medical profession (RACGP, 2019; Maestri & Aletti, 2008, p. 158; Calman, 1994, p. 1140) for ensuring “public confidence in medical practice and in retaining credibility” (Calman, 1994, p. 1140). Education is multifaceted in which physicians have an ethical obligation that must be “updated and replenished” due to changes in technology, research and development (Calman, 1994, pp. 1141–1142), and where continue professional development (AMA, 2019b; Pryor, 2010, p. 57; Calman, 1994, p. 1141) and training (Pryor, 2010, p. 295; AMC, 2018; Evetts, 2003, p. 401; White, 2000, p. 296; Calman, 1994, p. 1142) is mandatory. This was not always the case, medicine as a profession has come a long way from its infancy, when some believed “that an adequate physician could be trained in a relatively brief tenure of six months” (Gelfand, 1993, p. 1120) and even in the 1990s, continuing professional development was considered neglected (Calman, 1994, p. 1142).

The 2000s identified conflict across the various medical specialities due to levels of education, length of experience, age, gender, and a lack of interdisciplinary training, and lack of training for teamwork (White, 2000, p. 302). In 2004, the

²⁹ Bachelor of Science

³⁰ General Practitioners (medical)

Australian government developed the National Health Workforce Strategic Framework to address a shortfall in the supply and distribution of the health workforce. However, this framework failed due to a “lack of national leadership and lack of integration across health and education bureaucracies, governments, and public and private training sectors” (Armstrong, Gillespie, Leeder, Rubin & Russell, 2007, p. 486). More recently, the current processes have revealed the need to “develop effective and feasible models for each [medical] speciality” (Pryor, 2010, p. 295).

Current Australian physicians require extensive training and education with an initial university education between four (postgraduate) and six years (undergraduate) (Fazio, 2015) and courses that “integrate theory and practical components with clinical experience” (AMA, 2019b). After completing university, a medical practitioner becomes a Junior Medical Officer that requires them to undertake an Internship (one year), and Residency (one+ years), before becoming a Registrar (two plus+ years – depending on speciality) for a minimum of eight years (Fazio, 2015). The career path of a physician continues with a Fellowship and a transition from Junior Medical Officer to Senior Medical Officer, where the practitioners can pursue further specialities with additional educational requirements (Fazio, 2015). The AMA further requires practitioners to meet a minimum of 50 hours per year continued professional development (CPD) with more hours required depending upon the physicians’ speciality (AMA, 2019c).

There is also a lack of a “properly resourced credible economic and health policy research unit”, managed external to “ambitious universities” that have left the profession “playing second fiddle” (Cootes, 2018, p. 4). Investing in the education of physicians serves to improve not only patient care but improves physicians’ satisfaction (Maestri & Aletti, 2008, p. 158), and forms a key component of their professional identity (Evetts, 2003, p. 401). However, it is also essential that this education is well organised with appropriate external control overseeing quality (Evetts, 2003, p. 155) with clear strategies “to address these aspects of education and training (Pryor, 2010, p. 295) that continue to drive and promote medicine as a profession.

2.6.3 An emergency managers overview

Over the previous 20 years, numerous disasters including the US 2001, terrorist attack; the 2004 Indian Ocean tsunami; the 2011 Japanese tsunami and Fukushima nuclear reactor event, 2019/2020 Fires in Australia and the 2020 global pandemic have revealed the complex nature of disaster events and the technical and theoretical knowledge required to manage them. The increasing complexity of emergency management and the depth of knowledge required for the field have some academics and practitioners suggesting that emergency management is more about a collection of people rather than an individual position (Lucus, 2007, p. 3; Tarrant, 2006, p. 9; Britton, 2001, p. 45).

Despite the recognition that established professions such as medicine require extensive study and skill development, are professionally recognised with assessed competencies and professional accreditation, there has been a paucity of research and in-depth discussions into the experience and education of emergency managers. It is plausible that this lack of discussion and research is because emergency management as a profession is “currently out of vogue” (Coles, 2014, p. 24). It is also reasonable to attribute the conflict between the education and experience of practitioners, and the value of a single position driving emergency management to the value–action gap, where an individual’s values or attitudes do not align with their actions (Blake, 1999). For example, a person may say that they value education, but they do not have a degree, have no interest in obtaining one and hire individuals with experience over education. Based on the action–value gap it is possible that people believe emergency management is a profession but that they may not understand what is required for emergency management to progress to this status. It is also plausible that it indicates a lack of dedication or commitment by practitioners to their occupied position (J.P.Morgan, 2014) and that an interest in one area does not equate to suitability for another role (ProHR, 2013).

There are also suggestions that the position of the emergency manager not only requires experience but extensive knowledge (Phillips, Neal & Webb, 2012. p. 61), must be appropriately positioned within an organisations or institution, must take a holistic approach to emergency management and should not be marginalised (Moseley, 2004, p. 28). Anything else is counterproductive and reduces the importance of the role (Moseley, 2004, p. 28). Emergency management is an industry that is still struggling with its experience–centric historical operations, rather than one

interested in embracing higher education to enhance its knowledge base and the potential effectiveness of the role.

Emergency management is a rapidly developing industry that provides knowledge and specialist skills associated with disaster events – that is, throughout the disaster cycle of prevention/mitigation, preparedness, response and recovery and the risk management process of hazard identification, risk analysis, and impact analysis (FEMA, 2007, p. 6). However, limited knowledge of concepts and frameworks, such as all hazards, all communities and the comprehensive approach, as outlined previously and the Principles of Emergency Management (FEMA, 2007), reveals significant impediments to emergency management and the role. It is now becoming essential for organisations to employ emergency management practitioners with an education in the various concepts, principles and practices that underpin this industry and its professional practice (Blanchard, 2007, p. 4; Blanchard, 2005, p. 1) if they are to manage the complex events, to which the world is currently being exposed.

It is possible the emergency manager could exist and work in isolation, but this is inconsistent with the literature and can impact its effectiveness (Moseley, 2004, p. 3). As with physicians, lawyers and their respective industries, that employ a network of staff, the emergency manager also requires support to fulfil its role effectively, engage the community and collaborate with stakeholders (FEMA, 2007; Blanchard, 2005). The role of the emergency manager within an organisation is to ensure “unity” among stakeholders, something that is more likely to occur if there is one person with responsibility and accountability for the strategic direction of the emergency management function (Blanchard, 2007, p. 6). Someone who is educated, experienced and supported by an independent body dedicated to emergency management similar to medicine.

Although it is possible to argue that an individual may act professional without actually being part of a profession, this section has highlighted what a well-established and recognised profession requires to develop and maintain that status and the role it plays in developing a discreet role and how their success is intertwined. Based on a high-level overview, it is highly unlikely that emergency management and the emergency management practitioners in Australia would meet the requirements of a profession, but they do have the potential to become one.

2.7 Key research questions

The common theme identified across the literature was the need to improve the understanding of the emergency manager's position in the community, as increasing awareness and ensuring collaboration is critical to the realisation of emergency management and the emergency manager (Farris & McCreight, 2014, p. 77; Keelty, 2013, p. 28; Beaulieu, 2012, p. 2; Labadie, 1984, p. 490). By examining the human capital of the role including the knowledge, qualifications, training, and experience, the industry is better positioned to understand the gaps and progress towards a profession.

In this thesis four research questions are articulated based on the gaps within the existing literature. These research questions are:

1. What are the demographics, qualifications, training, education, knowledge, competence and confidence of existing emergency managers and how do Australian emergency managers compare against the existing literature?;
2. What factors might impede the productivity of Australian emergency managers?; and
3. Based on the answers to questions one and two, what recommendations may be made to improve the operational effectiveness of, emergency managers?

2.8 Chapter summary

Disasters are complex events that regularly affect communities across varying temporal and spatial scales, and emergency managers are the societal lynchpin that supports communities to prevent/mitigate, prepare for, respond to and recover from these events. The past two decades has seen an increase in the number of courses and university qualifications offered within the emergency management domain allowing practitioners and academics alike to benefit from the nascent emergency management body of knowledge (Charles Darwin University: CDU, 2019; Charles Sturt University: CSU, 2019a; CSU, 2019b; Edith Cowen University, 2019; Manock, 2001, p. 4). An analysis of the literature has identified concerns with existing research including the limited use of scientific methods, and a dearth of research specific to the emergency manager's role in the current literature that attempts to characterise it.

The findings identified in this chapter indicate that the emergency management industry, and therefore the role of the emergency management practitioner, is immature and that there remains an ever-growing need for an adequately educated,

experienced and dedicated emergency management position within all levels of government and across organisations. Despite ever-increasing demands of the position, if an individual is to effectively and efficiently undertake the role and responsibilities of an emergency manager, they must possess both education and experience. However, the qualifications and experience required to hold this critical position are yet to be formally defined and described in Australia. By using the journey of the physician, emergency management can better understand the various challenges involved and proactively address these to advance the role and the industry. Chapter Three will now provide details of the approaches and methods employed to address the research questions listed above.

CHAPTER 3: APPROACH AND METHODS

*The greatest obstacle to discovery is not ignorance,
it is the illusion of knowledge.*

(Boorstein, 1984, January 29)

3.0 Chapter introduction

Chapter Three has reviewed the various approaches and methods used within this thesis, the location of this research within the literature, the ontological and epistemological approaches, and the qualitative and quantitative research methods. This chapter will examine the various methods utilised in the questionnaire, interviews, job advertisement, legislation, and disaster reports – all outlined in the thesis road map shown in Figure 1.2. An analysis using a mixed methods approach ensures that the integration of various sources of information allows for the triangulation of data and provides greater insight and depth into the research (Flick, 2017, p. 47). Finally, this chapter provides an overview of the thesis governance, including ethics, the role of personal bias, and the management of the data.

3.1 An overview of the research design

One of the critical requirements of fulfilling a PhD. is the requirement of the candidate to add new and significant knowledge to the field of study. I am not ashamed to admit that identifying the manner to which I would be obtaining this knowledge has been a struggle. This struggle was partly due to the nature of the industry but it was also partly due to my desire to solve all the problems of the industry.

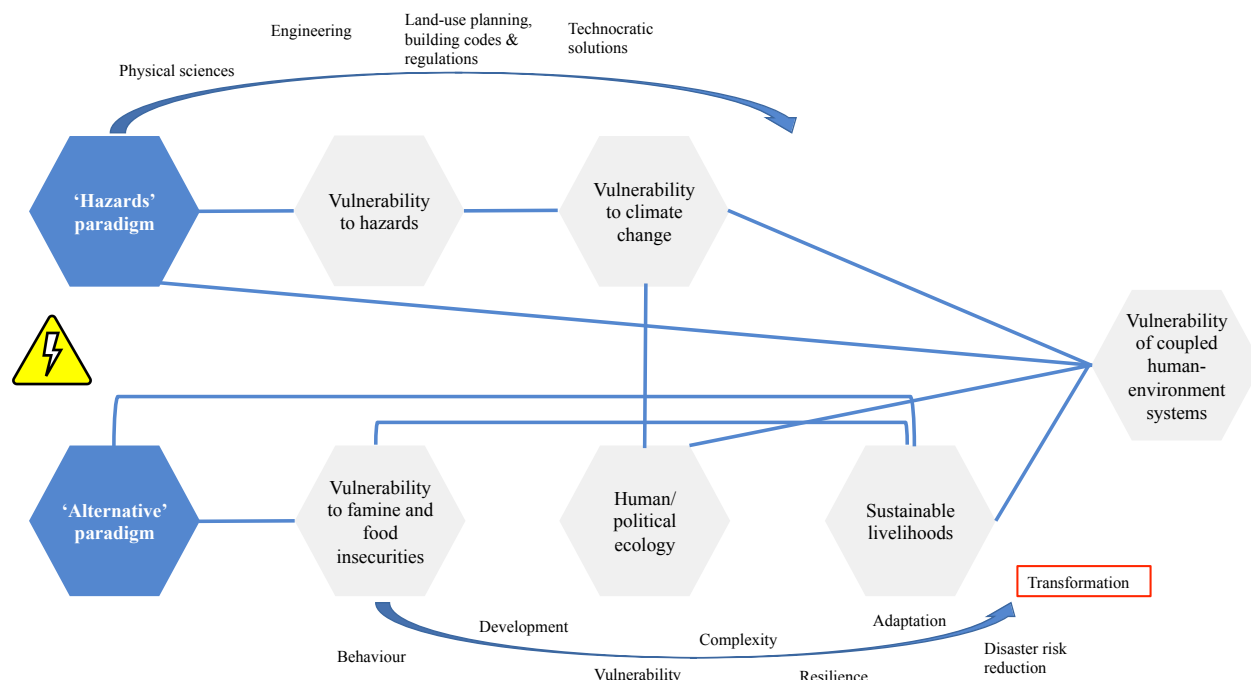
3.1.1 The location of emergency management within the disaster literature

Emergency management suffers from various “theoretical problems” due to the myriad of views and general lack of consensus over definitions and processes (McEntire & Marshall, 2003, p. 119). The development and input of various academic disciplines and the theories and paradigms influenced by social science, human and physical geography, political science, and engineering (Dominey-Howes, 2018, p. 5; Coles, 2014, p. 26) identified in Chapter Two have likely contributed to these problems.

Problems identified in the literature include the multidisciplinary nature of emergency management that involves both the physical (floods, fires, earthquakes, tsunami) and the social (why people behave the way they do, how do we change behaviour) sciences. There is also a growing belief that there is no such thing as a natural disaster (McKinnon, Gorman–Murray & Dominey–Howes, 2017, p. 127; McEntire & Marshall, 2003, p. 119). These issues raise a greater question, where does the role of the emergency manager (specifically) sit within the greater literature of hazards/disasters?

The application of theory within emergency management is considered necessary as it contributes to the effectiveness of the position and serves as essential concepts and precepts for emergency management practitioners and enhances their effectiveness (Boone, 2010, p. 17; Pine, 2007, p. 197; Drabek, 2004, p. 3) due to their ability to predict narrow ranges of behaviour (Drabek, 2004, p. 3). According to Dominey-Howes (2018, p. 5), “the mid-20th century the field of hazard and disaster research splintered into two major paradigms” that includes ‘hazards’ and ‘alternate’ (figure 3.1).

Figure 3.1 – Evolution of philosophical paradigms, concepts and approaches to the study of hazards and disasters during the 20th-21st century



Note: Adapted from Dominey-Howes, D. (2018, p. 6). Hazards and disasters in the Anthropocene: some critical reflections for the future. *Geoscience Letters*, 5(1). <https://doi.org/10.1186/s40562-018-0107-x> (Figure 3). Evolution of philosophical paradigms, concepts and approaches to the study of hazards and disasters. 20th-21st century.

Where the ‘hazards’ paradigm addresses the physical sciences, the ‘alternate’ paradigm focuses on “behavioural, development, and complexity sciences” (Dominey-Howes, 2019, p. 5). Despite the benefits of these theories and paradigms, the hazards paradigm with an “emphasis on the physical environment with earth scientist, physical geographers, physicists, mathematicians, and other closely related disciplines” has been unable to stem the losses to both life and property (p. 5). The 1970s saw an increase in theoretical models and approaches but it was the “newly emerging field called ‘transformation’” (Dominey-Howes, 2018, p. 5; Pelling, O’Brien, Matyas, 2015) that suggests an alternative pathway. According to Pelling, O’Brien, and Matyas (2015, p. 113), transformation...

as an adaptive response to climate change risk opens a range of novel policy options... describes non-linear changes... that may appear as radical shifts, directional turns or step changes... [that may be] either intentional or unexpected.

It is plausible that the complex nature of hazards and the relationship between the physical and social sciences requires a more holistic understanding and application of various theories and paradigms (Dominey-Howes, 2018, p. 5). As such, it is through this, not well-developed theory (transformation) where that I will contribute (as an offshoot) to the emergency management body of knowledge.

3.1.2 In search of knowledge – an ontological and epistemological discourse

I have previously identified my positionality and perspective as an “insider” and how this provides me with a unique insight into emergency management. It is this knowledge that provides me with a comprehensive understanding of the industry and enables me to identify and target specific areas of research that may be overlooked or not considered important for various reasons by others less well informed. As an insider, my ontology as ‘critical realist,’ and my subjective, ‘pragmatic’ epistemological approach is dictated by this positionality.

Despite my positionality as an insider, intrinsically, I am a believer in realist philosophy – “realities can be represented but should be interpreted critically/reflexively” (Donovan, 2019, p. 19). For example, I cannot see the wind, yet I know it exists because I can feel it, and I can see its impact on the environment (trees and flags move with the wind) (Bryman, 2012, pp. 28-29). Furthermore, I utilise pragmatism as I believe, at least in this instance, that the “main focus should be on usefulness not theory” (Donovan, 2019, p. 19).

My ontological and epistemological approaches support the use of both qualitative and quantitative research in a mixed methods approach (Donovan, 2019, p. 19). These methods are further supported by the immature nature of the emergency management industry in which there is a dearth of quantitative and scientific research (albeit growing) into the role of the practitioner. In addition to a mixed methods approach, I have also utilised various sources of information to better triangulate and add robustness and rigour to the data.

3.1.3 Triangulation

Commonly utilised within the social sciences (Heesen, Bright & Zucker, 2016, p. 3076; Ndanu & Syombua, 2015, p. 49; Mertens & Hesse-Biber, 2012, p. 75) as part of a mixed-methods (qualitative and quantitative) research (Flick, 2017, p. 54; Ndanu & Syombua, 2015, p. 49; Kern, 2018, p. 166), triangulation can be traced back to Campbell and Fiske in 1959 (Flick, 2017, p. 47). Triangulation has various definitions, which range from Bryman's (2012, p. 392) "using more than one method or source of data in the study of social phenomena", to Kerns' (2018, p. 167) "combination of qualitative and quantitative methodology... [that] may occur as a result of a planned or unplanned strategy" (Bryman, 2012, p. 635).

Triangulation was initially utilised to validate research (Mertens & Hesse-Biber, 2012, p. 75) because it allows results to be cross checked (Ndanu & Syombua, 2015, p. 49; Bryman, 2012, p. 392), to corroborate findings (Bryman, 2012, p. 635), balance the weaknesses of different research methods and provide a "richer and hopefully truer account" (Ndanu & Syombua, 2015, p. 49) that is more robust (Bryman, 2012, p. 635). Not everyone agreed with the benefits of triangulation, as some researchers believe that due to the multiple meanings and lack of clarity it should be removed from mixed methods research (Morgan, 2019, p. 6).

Triangulation has predominantly been used in human geography and social sciences and reached its peak during the 1970s and 1990s when it was considered the primary reason for mixed methods research (Morgan, 2019, p. 10). Although triangulation is currently not as popular as it was during its peak, in 1997, Flick (p. 49) identified 232 articles between 1994 and 2003 that used this method. In 2012, constitutional-legal texts, surveys, and in-depth interviews were used as part of a review into triangulation (Kern, 2018, p. 166). Recent research into triangulation did "not show that science would be better off if all scientists were triangulators"

(Heesen, Bright & Zucker, 2016, p. 3077) or that it guaranteed convergence of measurement (Kern, 2018, p. 167), but the value of triangulation within mixed-methods research has been considered vindicated and still retains strong support by the research community (Heesen, Bright & Zucker, 2012, p. 3076).

3.1.4 Mixed methods research

Qualitative research methods are regularly utilised within the social sciences, including human geography, to investigate human environments, individual experiences, social processes, and in analysing social structures (Winchester, 2010, pp. 3–5) due to its ability to provide richer and deeper data (Bryman, 2012, p. 21). Quantitative research, however, is any data in a numerical form (Given, 2008, p. 713) that emphasises the collection and analysis of data (Bryman, 2012, p. 566) and includes statistics, percentages and research scales, like the Binary, Likert, and Gutman scales (Bryman, 2012, pp. 160–181; Jones, 2007, p. 73).

Quantitative research is often employed due to the ease of use and the speed of completion and analysis (Siniscalco & Auriat, 2005, p. 23). Table 3.1 highlights the differences between qualitative and quantitative research methods and reveals the value in utilising both to complement the strengths and weaknesses inherent to each method (Winchester, 2010, p. 8, 17).

Table 3.1 – Contrasts between qualitative and quantitative research

Qualitative	Quantitative
Point of view of participants	Point of view of a researcher
Researcher is close	Researcher is distant
Theory emergent	Theory testing
Process	Static
Unstructured	Structured
Contextual and understanding	Generalisation
Rich, deep data	Hard, reliable data
Micro	Macro
Meaning	Behaviour
Natural settings	Artificial settings
Strong reliability	Strong validity

Note: Adapted from Bryman, A. (2012). *Social research methods*. (4th ed.). Oxford University Press and Winchester, H. P. M. (2010). *Qualitative research and its place in human geography*.

In this thesis, a mixed–methods approach was utilised as the primary method of investigation to address the four research questions identified in Chapter One (Table 3.2) and to provide a greater understanding of the emergency manager. The following sections detail the methods utilised in this research.

Table 3.2 – Research methods used to answer each research question (also located in the thesis road map shown in Figure 1.2)

Methods	Research questions			
	One	Two	Three	Four
Exploratory literature review	X	X	X	
Emergency Manager’s questionnaire	X	X	–	X
Structured telephone interview	X	X	–	X
Analysis of state and territory legislation	-	-	X	X
Analysis of job advertisements	X	–	X	X
Analysis of government reports into disasters	-	-	-	X
Combined review and analysis of results	X	-	X	X

3.2 Methods utilised in the research

To address the unknown number of practitioners across a geographically dispersed area (Australia), several research methods were adopted. Research methods included an online questionnaire, a questionnaire survey (see Chapter 4) and an analysis of job descriptions (see Chapter Five). These methods allowed for the gathering of data on research question one and two, and will contribute to questions three and four.

Surveys using qualitative research ranged from single–person interviews that can be structured, unstructured or semi–structured (Bryman, 2012, pp. 212–213; Dunn, 2010, p. 102). Structured interviews are considered to be valuable for collecting data and describing a population that is difficult to observe directly due to its wide dispersal (McGuirk & O’Neill, 2010, p. 192). This is particularly pertinent with emergency managers that are geographically dispersed across Australia.

Structured interviews are frequently used within mixed–method research (McGuirk & O’Neill, 2010, p. 191) and include responses that can be counted and statistically analysed, and border on quantitative research (Winchester, 2010, p. 9). Structured interviews follow a predetermined set of questions that are conducted in nearly the exact manner and order for each participant where they receive the “exact same stimulus” (Bryman, 2012, p. 210; Dunn, 2010, p. 102).

As with other forms of research, surveys have limitations (Table 3.3) that include being “weak on validity and strong on reliability” (Babbie, 2004, pp. 274–

275). The validity of a survey is considered inferior to other research methods because an individual's opinion is rarely able to be described explicitly in this type of scaled approach (e.g., strongly agree, agree, disagree or strongly disagree) and therefore, must be "regarded as approximate indicators" (Babbie, 2004, p. 275).

Table 3.3 – Advantages and limitations of surveys

Advantages	Limitations
Flexible: many questions can be asked on a given topic, and they can be combined effectively with complimentary, more intensive forms of qualitative research, such as interviews and focus groups.	Inflexible: typically require that an initial study design remain unchanged.
Popular: for social research.	Standardisation: "fitting of round holes into square pegs"
Administration: through self-administered questionnaires, face-face interviews, or telephone interviews.	Measurement: not easy to apply the same definitions uniformly to all subjects.
Provides insight: into relevant social trends, processes, values, attitudes, and interpretations.	Context: rarely develops the feel for the total life situation.
Practical: they can be cost-effective, enabling extensive research over a large or geographically dispersed population.	Superficial: in their coverage of complex events.
	Artificiality: survey cannot measure social action.
	Major undertaking: that can take several months or even a year.
	Sampling error: unlikely that one will end up with a truly representative sample.
	Non-sampling error: arising from activities or events that are related to the sampling process.
	Poor question-wording: in self-completion questionnaires or structured interviews.
	Poor interviewing: techniques.
	Flaws: in the administration of research
	Data processing error: faulty management of data... errors in the coding of answers.

Note: Adapted from Babbie. (2004). *The practice of social research*, pp. 274–275; Bryman. (2012). *Social research methods* (4th ed.). pp. 205–206; and McGuirk and O'Neill, (2010). *Using questionnaires in qualitative human geography*, p. 192.

Pilot study – questionnaire

Pilot studies are often utilised to gauge the usefulness and effectiveness of a survey that has been recently developed before conducting the full study (Bird & Dominey–Howes, 2008, p. 105), and are commonly undertaken to reduce the likelihood of errors and ambiguities, and to determine the appropriateness of the questionnaire (Bryman, 2012, p. 264; Bird & Dominey–Howes, 2008, p. 105; Babbie, 2004, p. 256). Questionnaires have previously been used in the emergency management context to examine local government (Elsworth & Anthony–Harvey–Beavis, 2007a, p. 2), and tsunamis (Bird & Dominey–Howes, 2008).

The pilot questionnaire was available from 15 May 2013 to 15 June 2013. Five emergency managers were identified from the researchers' contact list and were approached by the researcher via email asking if they would be interested in participating in a pilot study to examine emergency manager across Australia. The researcher informed practitioners that participation in the pilot would exclude them and their results from the final study and that they could remove themselves from the study at any point by not completing the survey. Participants were provided with access to the URL as part of the on-boarding process for the questionnaire once the researcher obtained formal consent.

The responses obtained from this pilot revealed several ambiguities and inconsistencies that were addressed and used to improve the questions, layout and functionality of the survey.

Online Questionnaires

After the pilot study was completed, reviewed and adjusted based on the feedback of participants, a better-informed full-scale questionnaire was undertaken. Chapter Four utilises qualitative research as it allows “surveys [interviews] of personal information, attitudes, and behavior” (Winchester, 2010, p. 9) to enrich data, and enable a range of open-ended, dichotomous and multiple-choice questions to investigate the thoughts and opinions of participants.

A survey was conducted to improve the understanding of the practitioner and to address the various research questions. Surveys utilise data that is “collected predominantly by questionnaire or by [a] structured interview on more than one

case... and at a single point in time in order to collect a body of quantitative or qualitative data” (Bryman, 2012, p. 60). The Emergency Manager’s questionnaire is expected to take 30 minutes to complete and was available between, 1 July 2013 and 31 October 2013. The purpose of the questionnaire was to provide data into the demographics of the surveyed emergency managers and to address the first part of research question one...

what are the demographics, qualifications, training, education, experience, knowledge, competence and confidence of existing emergency managers?

The emergency manager’s questionnaire comprised 45 questions across four groups (Table 3.4). Questions include multiple-choice, ‘select all that apply,’ and free text areas across a variety of descriptive, opinion and structural questions, and a seven-point Likert scale to examine the participants level of satisfaction (Dunn, 2010, p. 106). For example, in the emergency manager’s questionnaire, practitioners will be asked a series of ‘multiple choice’ questions to determine the number of hours they dedicated to emergency management and their employment status. These questions include;

- Is the role of an emergency manager performed in addition to the practitioners’ primary role?
- What percentage of the practitioners’ working week is dedicated to emergency management?
- How many hours per week did practitioners commit to emergency management?

All questions were expected be answered unless specified otherwise (such as broadening a response). This format enabled the development of a comprehensive overview of emergency managers and allowed for comparisons against secondary data sets to be made, such as the Australian Bureau of Statistics, as well as previous studies reviewed in Chapter Two, literature and general research.

Table 3.4 – Questionnaire survey instrument composition

1	EMPLOYMENT CAPACITY OF PRACTITIONERS: Is emergency management performed in addition to your primary role, Percentage of week dedicated to emergency management, Hours per week dedicated to emergency management, Length in primary position, Hours per week dedicated to main role?
2	CONTEXT AND BACKGROUND: Gender, Age group, Ethnic or cultural background, Religion, Geographic location and industry sector
3	HUMAN CAPITAL – QUALIFICATIONS, TRAINING, EDUCATION, EXPERIENCE, COMPETENCE AND CONFIDENCE: Qualifications, training, education, experience, knowledge, competence, confidence
4	INDUSTRY OVERVIEW: Location of emergency management, title, emergency management as a profession, industry regulation, mentor programs, national register

The questionnaire targeted more than 900 organisations across Australia (see Appendix A) that were identified through various government state and local emergency plans (by titles or general reference), and organisations with crisis, emergency and disaster management responsibilities. The agencies identified were grouped according to the eight categories listed in Table 3.5 and were contacted either directly or through their organisations' main phone line.

Table 3.5 – List of targeted participant categories

1	Emergency service organisations (e.g., rural and metropolitan fire services, police, ambulance, state/territory emergency services)
2	Public utilities (e.g., gas, water, power)
3	Industry bodies (e.g., local government associations, International Association of Emergency Managers: IAEM, Australian Institute of Emergency Services: AIES)
4	Mining companies (e.g., Rio Tinto)
5	Business continuity associations (e.g., Risk Management Institute of Australia: RMIA).
6	Humanitarian aid organisations (e.g., St. Johns, Red Cross)
7	Telecommunication organisations (e.g. Telstra)
8	Government – federal, state, and local (e.g., including all local government across Australia)

Note: The identification of participants is through various legislative and emergency management documents as having a role in emergency management.

Although it is reasonable to consider targeting specific emergency managers, some factors made this difficult, if not impossible, as the exact number of emergency managers and their location (geographically or by an organisation) is unknown within Australia (McArdle, 2017, p. 29). There is currently no national database of emergency managers, and there are various definitions, titles, roles, qualifications and descriptions of emergency managers across industries and organisations. To control for these limitations and to increase the sample size, a non-probabilistic sampling method (snowball/chain sampling method) was utilised to expand the search parameters and to supplement existing information (Bryman, 2012, p. 203; Minichiello, Aroni & Hays, 2008, p. 172).

Criteria for inclusion in the online questionnaire included a formal emergency management role within Australia as separate and distinct from emergency services. However, due to a lack of definition surrounding the role, and the historical context of emergency management and emergency services, being more specific might have a deleterious effect on recruiting participants. Potential issues include either discouraging or confusing potential participants and detracting from the aims of the research question one and understanding the knowledge of existing practitioners.

Personnel with emergency management responsibilities were initially contacted via email through their parent organisations, as well as through industry bulletins and social media that included two Facebook pages (EMSOC³¹ and IAEM³²), LinkedIn (personal account³³) and Twitter (personal account³⁴). An advertisement was also placed online through the International Association of Emergency Managers (IAEM) website, and their Online Bulletin newsletter. See Appendix B for a copy of the *Recruitment advertisement*.

Telephone Interviews

Telephone interviews are considered an excellent method of gaining access to information about events, opinions, and experience, as well as attitudes, norms, beliefs, and values (Bryman, 2012, p. 209; Dunn, 2010, p. 102) and align with my ‘insider’, emic epistemological approach. Telephone interviews have been chosen to supplement the initial practitioners’ questionnaire survey in Chapter Four based on the different strength of these two research methods. Interviews also enable further

³¹ Emergency Management Society – <https://www.facebook.com/Emergency-Management-Society-354479578000336/>

³² International Association of Emergency Managers – <https://www.facebook.com/search/top/?q=international%20association%20of%20emergency%20managers>

³³

³⁴

investigation into areas identified from the initial questionnaire as noteworthy, and to review any discrepancies with the initial results. However, they can present difficulties. For example, interviews are better at reducing bias as they are administered precisely the same way each time but are harder to master and may not provide greater insight if not developed or appropriately conducted (Dunn, 2010, p. 104).

Structured interviews (undertaken by phone) were conducted between 24 November 2014 and 24 December 2014. These questions were designed to provide greater depth and insight by allowing the respondent to provide “impressions, feelings, assertions and guesses” about the subject without the interference or distraction of the interviewer (Dunn, 2010, p. 106). Avoiding distraction is vital in order to provide the researcher with a more in-depth understanding of research questions one and two.

The interview was comprised of eight structured ‘opinion’ questions that Dunn (2010, p. 106) refers to as structural questions or ‘devil’s advocate’. Questions one through six of the telephone interviews were developed based on the initial emergency manager’s questionnaire results but were adjusted to reflect the information and results provided by practitioners. After analysis of the questionnaires, interviewees will receive the results that will be followed up with a question pertinent to those results to evoke a thoughtful and considered response (Table 3.6).

Table 3.6 – Telephone interview – alignment with the primary survey categories

Area #	Main Topic Statements and Questions
EMPLOYMENT CAPACITY OF PRACTITIONERS	
1	STATEMENT: The primary survey revealed that 97% of participants were employed full-time. Of this 97%, 60% of participants indicated that they were not employed full-time in emergency management.
	QUESTION: Do you believe that the employment status of emergency managers has an impact on the industry and the ability for communities to be adequately prepared for potential hazards?
CONTEXT AND BACKGROUND	
2	STATEMENT: The average Australian is a woman (51%), 37 years old, and speaks English at home (81%). This finding is in contrast to the Australian emergency management practitioner, who is someone born in Australia, White/Caucasian, male, Christian, between the ages of 45 and 54, and married with children.

QUESTION:

Do you think that the demographics of practitioners have any impact on the needs of the various Culturally and Linguistically Diverse (CALD) groups within the community?

EDUCATION AND TRAINING

STATEMENT:

- 3 Sixty-two per cent of participants indicated that they had completed a bachelor's degree. Twenty-seven per cent of the practitioners with bachelor degrees indicated that they held formal education in emergency management. This education included an advanced diploma and a master's degree.

QUESTION:

Do you think that a specific degree in emergency management is necessary, and why?

EXPERIENCE

STATEMENT:

- 4 Experience was the primary consideration of employers (at 92%) when hiring staff for emergency management positions.

QUESTION:

Why do you think that experience is so important and do you think its relative importance in the hiring process would change if a practical requirement were added to an emergency management degree?

KNOWLEDGE

STATEMENT:

- 5 Ninety-one per cent of participants stated that they had an interest in further developing their emergency management knowledge. However, 75% did not have a membership in a professional body, and only 50% subscribed to a professional journal.

QUESTION:

Why do you think there is such a low level of uptake in professional development, particularly journal subscriptions and membership to professional industry associations by practitioners³⁵?

SATISFACTION

STATEMENT:

- 6 Of the four main areas examining the level of satisfaction by participants regarding resources, support by stakeholders, individual attributes and surrounding personnel, the average score was 4.56 out of 7, with a score 7 representing the highest level of satisfaction.

QUESTION:

What effect do you think the practitioners' level of satisfaction has on the various stakeholders; including the practitioner, the industry and the community?

³⁵ These two areas were chosen as a review of continuing education requirements in the various professions previously identified listed these as two key components of this process.

EMERGENCY SERVICES AND EMERGENCY MANAGEMENT

7 QUESTION:

Do you believe that there is a difference between emergency services and emergency management, and if so, what are these differences?

ADDITIONAL COMMENTS

8 QUESTION:

Do you have any additional comments?

Based on the structured interview process identified by Bryman (2012, pp. 212–213) and Dunn (2010, p. 102), interviewees are able to start and stop responses of their own accord, and the interviewer will only respond to clarify the question if requested by the participant. Dunn (2010, p. 102) discusses the use of “prompts” to guide the interview and recognised the disadvantages of this approach. Disadvantages included asking the prompt in the “same way and in the same order to each participant” while allowing the discourse to occur naturally (Dunn, 2010, p. 104). The use of prompts and probing for additional information is purposely excluded to avoid inserting personal bias (either directly or indirectly), or directing responses (Dunn, 2010, p. 104).

I am acutely aware of my insider status and personal opinions that have led me to study this area and I am conscious of introducing bias into the interview and purposely attempted to mitigate these.

Transcribed interviews will be referenced to the original practitioner survey and key data aligned with the relevant research questions to provide greater depth and background information. This will allow each question to be analysed and allow me to determine where participants agreed, disagreed or were neutral in response to the questions.

3.2.1 Secondary document analysis – analysis of job advertisement, government legislation and reports into disasters across Australia

The majority of qualitative research is documented and includes various official public records and everyday documents, secondary document (memorandums, case record, emails) (Coffey, 2013, p. 367). Coffey (2013, p. 369) refers to secondary documents as a “version of reality”, and while important they should not replace other data. It is also essential that these documents be reviewed in the greater context of the organisation and with a view into what they were created for, as they are written to benefit the organisation and to convey a particular impression (Coffey, 2013, p. 369; Bryman, 2012, pp. 554–556). For example, in the case of meeting minutes...

disagreements may be suppressed and actions to be taken may reflect a desire to demonstrate that essential issues are to be addressed rather than because of a genuine desire for acting on them. Also, the minutes are likely to be connected either explicitly or implicitly to other documents of that organization, such as previous meetings, mission statements, job definitions, organizational regulations, and various documents external to the organization (for example legislation)

(Bryman, 2012, p. 555).

Document analysis has increasingly become part of qualitative analysis due to its ability to provide insight into an organisation, such as culture or ethos (Coffey, 2013, p. 357; Bryman, 2012, p. 554). Coffey (2013) also noted that it is essential to look beyond text as individual documents by using semiotic analysis to better understand these documents “in terms of style, structure and language” (Coffey, 2013, p. 371) and their relationship to other documents (Coffey, 2013, p. 373). Document analysis “yields data... that are then organised into major themes, categories... specifically through content analysis” and is often used with other forms of research “as a means of triangulation” for research in the same area in which at least two sources of evidence are utilised (Bowen, 2009, p. 28).

Content analysis has been widely utilised within health studies as it is a flexible method for analysing text (Hsieh & Shannon, 2005, p. 1277) that can be used to supplement other data (Bowen, 2009, p. 30) and often treats text within documents as primary data (Williams, 2015, p. 199). Content analysis allows for the assessment of key phrases or words, while an epistemic approach enables the identification of objective criteria for missing or hidden text (Williams, 2015, p. 199). Table 3.7 reveals the various advantages and limitations of content analysis.

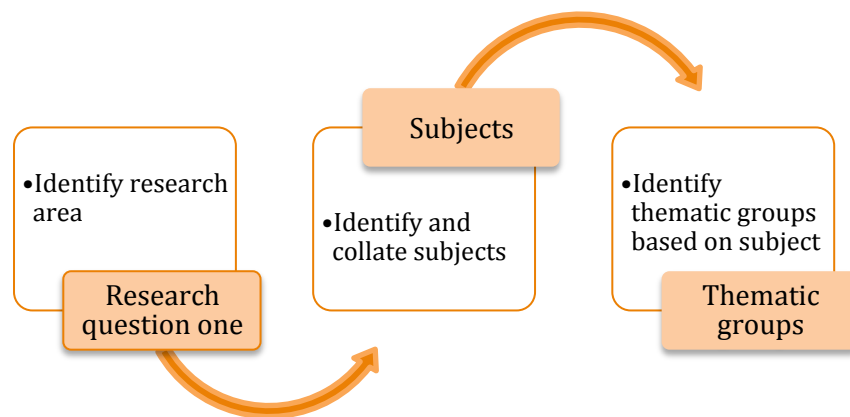
Table 3.7 – Advantages and limitations of content analysis

Advantages	Limitations
Efficient research method	Insufficient detail (not designed for research)
Availability of documents	Low retrievability (access may be difficult)
Cost-effective	Biased selectivity
Lack of obtrusiveness and reactivity	
Stability (not affected by the researcher)	
Exactness (inclusion of details)	
Coverage	

To provide a holistic view of emergency management across Australia, this thesis utilised the triangulation of several documents that included surveys of practitioners to provide direct insight into the thoughts and practices of practitioners, and a secondary document analysis into legislation, job advertisements and government reports in recent disasters to strengthen the results. Triangulation is considered valuable in qualitative analysis as it “helps the researcher guard against the accusation that a study’s findings are simply an artefact of a single method... or... bias” and increases the credibility of the research (Bowen, 2009, p. 28).

A content analysis will be undertaken by utilising a directed approach “guided by a more structured process” (Hsieh & Shannon, 2005, p. 1281) into job advertisements, legislation, and government reports. As part of this process, the keywords identified in research question one (qualifications, training, education, experience, knowledge, competence and confidence) will be identified within each document before the subjects are identified and categorised into thematic groups and reviewed for context (Figure 3.2)

Figure 3.2 – Content analysis process



Job Advertisements

Chapter Five will examine job advertisements to provide insight into specific roles (MacQueen, 2009, p. 26). It provided insight by utilising an overview of the duties, and a position description, including the education, experience, responsibilities, tasks, skills, knowledge and attributes required to do the job efficiently (Western Australia Department of Training and Workforce Development, 2016). Job advertisements also provide additional insight into the organisation’s understanding of emergency management and the level of importance it places on the role. Forty-eight per cent of all job vacancies are located on the Internet and 32% are not formally advertised.

The remaining 20% of advertisements comprise employment agencies (15%) and social media (5%) (Australian Department of Employment, 2015). Due to the number of organisations with emergency management responsibilities across Australia it is likely that by including all potential avenues of job advertisements will introduce the law of diminishing returns. As such, the focus of this research was on Internet and social media (53%). Of the Internet and social media sites available, sixteen sites were identified and sorted into four thematic platforms, including government employment agencies, private recruitment companies, professional industry bodies and social media (Table 3.8).

Of these platforms, each state and territory government employment agencies have a job site. The four private online recruitment platforms include SEEK, CareerOne, Careerspot and Adzuna. These private sites were the most significant employment online providers relevant to the Australian employment market. Professional Bodies had less sophisticated static ‘job boards’. Social media, including LinkedIn and Facebook, were also identified as relevant due to their potential networking and employment opportunities.

Table 3.8 – Four primary recruitment platforms for identifying job advertisements

Platforms	Government websites	Private online recruitment sites	Professional industry bodies	Social media
Sources	Australian Government – Jobactive	SEEK	International Association of Emergency Managers	LinkedIn
	Jobs ACT	CareerOne	Continuity Central	Facebook
	I Work For NSW	adzuna		
	Northern Territory – Employment Opportunities Online	CareerSpot		
	Jobs SA			
	Jobs WA			
	Careers Victoria			
	Jobs Tasmania			

The majority of recruitment sites allow users to create ‘job alerts’ by selecting key terms. The key terms utilised in the search parameters and collected for analysis

include *emergency*, *disaster*, and *resilience*. The recruitment sites then utilised these keywords to locate jobs that matched the criteria and forwarded these results to the user at regular predefined intervals such as daily or weekly (daily was selected) via Rich Site Summary (RSS) and push notifications system.

The International Association of Emergency Managers and Continuity Central sites used static platforms that required their users to access the website and conduct searches of their databases manually. These two sites were reviewed sporadically as job listings were not removed immediately and remained available for access to members.

Job advertisements were collected between 1 January 2010 and 31 December 2018 utilising descriptions that explicitly contain the terms *emergency management* and *disaster management*, or their synonyms, in their title or description. The remaining advertisements will be assessed individually to determine whether they meet the inclusion criteria with any duplicates removed.

Legislation

Although legislation sets out what we must do, “legislation seldom explains why it was enacted” and this may be either explicit or implicit (Parliamentary Counsel’s Office, 2011, p. 16). Policy analysis is often developed with an aim to understand societal conditions and “reshape society” (Sinclair, 2016, p. 10), ensure underlying policies are logical, coherent and consistent with external evidence (Sinclair, 2012, pp. 6–7). Analysing policies also enables self-criticism, public scrutiny and determine whether there are other ways of resolving issues (Head & Crowley, 2015, pp. 11–12).

Chapter Six will utilise a key word analysis of legislation to provides insight into government views and improve the understanding of emergency management roles, responsibilities and priorities (South Australia Attorney General’s Department, 2009, p. 5). Despite increased expectations from non-government sectors regarding the relative importance of policy analysis, there has been a reduction in the capacity of the Australian government to conduct policy analysis (Head & Crowley, 2015, p. 6). Policy analysis of emergency management legislation was utilised to provide clarification of the research questions three and four.

This section examined the emergency management legislation for each state and territory (Table 3.9). There is no legislation at the Commonwealth level as they have categorically stated that it is the responsibility of the individual states and territories to

manage emergency management process. The relevant emergency management legislation was accessed through the Australasian Legal Information Institute (AustLII), a joint facility of the University of Technology Sydney (UTS) and the University of New South Wales (UNSW), Faculties of Law (AustLii, 2019) or the relevant state/territory online legal platform.

Table 3.9 – Emergency management legislation in alphabetical order by state/territory

State/Territory	Legislation
Australian Capital Territory (ACT)	Emergencies Act 2004–28
Commonwealth (Cth)	Not applicable
New South Wales (NSW)	State Emergency and Rescue Management Act 1989 No 165
Northern Territory (NT)	Emergency Management Act 2013
Queensland (QLD)	Disaster Management Act 2003
South Australia (SA)	Emergency Management Act 2004
Tasmania (TAS)	Emergency Management Act 2018
Victoria (VIC)	Emergency Management Act 2018
Western Australia (WA)	Emergency Management Act 2005

Disaster reports

Post-disaster reports are also known as After Action Reports (Blanchard, 2007, p. 12), Post Incident Analysis (Angier, 2017; Melbourne Metropolitan Fire Brigade, 2014), Post Incident Reports (Morgan, 2019), or Lessons Learned (Blanchard, 2008, pp. 683–684). These documents often report on the findings of the actions leading up to an incident, the response, and the subsequent actions to better understand the events that occurred, the methods utilised during the response, and how the actions of the organisation, emergency services, members of the public, and vendors contributed to the eventual outcome. Analysis of government reviews into selected Australian disasters should permit insight into emergency management practices and processes, i.e.:

- Investigating specific aspects of a disaster in order to identify areas of weaknesses and improve [emergency management] processes (Bardach, 2012, p. 151);

- The role and competence of emergency managers in situ; and
- Impediments to operational effectiveness and productivity (research questions three and four).

This section will examine several recent reports into major disasters to better understand the role of the emergency manager across Australia during these events (Table 3.10). Six reports were selected across a wide array of events. An effort was made to reduce the duplication of event types and ensure that these reports were relatively recent. Although a meta-analysis of each event type would most likely increase rigour, due to the laws of diminishing returns, and the nature of this study, additional reports are not expected to add further value to this thesis.

As part of this study, I initially searched the EMA/AIDR Disaster Database, the University library, and google for Royal Commissions, state/territory commissions, inquiries and reports into disasters. These searches yielded 22 reports across seven states/territories with results that ranged from the 1939 Victorian Bushfires to the Lindt Café Siege (2017). Of these, every state and territory, except for the NT, had at least one report. I did this firstly by selecting one report from each state and territory (where possible) utilising the Australian Disaster Management knowledge hub. This search revealed multiple reports across each state and territory except for the NT and the ACT. The ACT had only one report, which was for the Canberra Firestorm (2003), due to the age of this report (greater than 5 years) it was excluded. Furthermore, there were no reports were identified for the NT; it is unclear why this was the case.

Secondly, I selected the most recent disaster first in order to follow the premise of ‘lessons learned’, which is considered a vital component of emergency management (FEMA, 2007). Using this fundamental tenet, I expected that the key learnings from previous reports and disaster would have been embraced and utilised by the various states and territories. As such, I limited this review to those reports published within the past five years. It felt it was more pertinent to review these, as older reports may not accurately reflect current practices. Based on these criteria, it is important to note that several key events have been excluded such as the Victorian Bushfires (2009) and the Queensland Flood Inquiry (2011).

Third, where states and territories had similar events, for example, bushfires, I went to the next most recent event, where possible. I acknowledge that this meant that

more significant incidents might have excluded. However, it was used to reduce the potential of bias, where I may purposely or inadvertently select reports based on my knowledge of their contents. Finally, where a disaster was too old or similar to a more recent event, they were excluded.

Table 3.10 Government disaster reports in alphabetical order by state/territory

State/Territory	Disaster Event
Australian Capital Territory (ACT)	The Canberra Firestorm (2003)
New South Wales (NSW)	Lindt Café Siege (2017)
	Wambelong fire (2016)
	Thredbo landslide Report (2000)
Northern Territory (NT)	Unable to locate any reports
Queensland (QLD)	Cyclone Debbie (2017)
	Queensland Floods (2011)
South Australia (SA)	Blackout inquiry (2016)
	Bushfire Inquiry (2011)
Tasmania (TAS)	The Tasmanian Flood (2016)
	Tasmanian Bushfires (2013)
	Beaconsfield Mine Disaster (2006)
Victoria (VIC)	Hazelwood Mine Inquiry Report (2014)
	Victoria Floods (2011)
	Victorian Bushfire (2009)
	Esso Gas Plant Explosion (1999)
	Ash Wednesday Fires (1983)
	West Gate Bridge Collapse (1971)
	Bushfire (1939)
Western Australia (WA)	Waroona Fire (2016)
	Perth Hills Bushfire (2011)
	Linton Fire (1998)

Note: Disaster events listed in **bold** are the reports examined in Chapter Five

3.3 Governance

Section 3.4 outlines the governance process undertaken as part of this thesis, including the ethics, personal bias, and questionnaire instruments that were used and the management of data collected during the research of this thesis.

3.3.1 Ethics

Throughout the course of this research, the research team of which this candidate was part of has undertaken significant changes. Initially located as part of The University of New South Wales – School of Biological, Earth and Environment Sciences, due to the key supervisor taking a role with The University of Sydney – School of Geosciences, a number of students within the research team also transitioned across. Due to these circumstances, ethics approval was initially pursued and obtained through the University of New South Wales, School of Psychology, Human Research Ethics Advisory Panel. Ethics approval was granted May 3, 2013. The UNSW Ethics approval number was 2023. See Appendix C for a copy of the official *Ethics approval email*.

In compliance with Ethics requirements, participants were provided with a number of documents. These documents included the *Letter of Introduction* (LOI) (Appendix D), a *Participant Information Statement* (PIS) (Appendix E), and a *Participant Consent/Revocation Form* (PCF) (Appendix F). These documents provided participants with an outline of the research, the researcher's contact details, and details about their right to refuse or revoke their consent to participate in this study at their discretion. The researcher also utilised structured questions in the telephone interviews to minimise the likelihood of inadvertently introducing personal bias into the interview process.

3.3.2 Questionnaire instruments

Letter of Introduction (LOI)

A *Letter of Introduction* (LOI) outlining the goals of the research was emailed to each respective participant or their organisation. If an expression of interest was received, an email was sent containing the *Participant Information Statement* (PIS), and *Participant Consent Form* (PCF) along with inclusion criteria and a URL (<http://www.surveys.unsw.edu.au/survey/157280/12f4/>) link to the survey.

Practitioners were encouraged to forward the *Letter of Introduction* along with the study details to any person in an emergency management position that they felt would meet the inclusion criteria. The last question of the practitioners survey requested practitioners to indicate their interest in being contacted for a more detailed

telephone interview. This consent enabled the researcher to establish a primary contact list of practitioners for the telephone interviews.

The LOI was a one-page document to be emailed to all 900 organisations identified as having some responsibility for emergency management. The LOI introduced the researcher as a university student conducting post-graduate research. The LOI further outlines the nature of the study, anticipated outcomes, permission for participation, and links to the online platform. The LOI was used to minimise disruption to the participants' routine and reduce the possibility of participants inadvertently disclosing their email address through correspondence. The LOI was emailed to each organisation along with the *Participant Information Statement* (PIS) and the *Participant Consent Form* (PCF). See Appendix D for a copy of the LOI.

Participant Information Statement (PIS)

The PIS provided the participants and their organisations with an outline of the study and comprised five sections. These five sections included participants' selection, the purpose of the study, description of the study and the risks, confidentiality and disclosure of information, consent forms and information for inquiries. The PIS used a university letterhead with the ethics approval number attached. See Appendix E for a copy of the PIS.

Participant Consent Form (PCF)

The PCF highlighted in the PIS provided participants and their organisations with a copy of their consent, and revocation of consent, to participate in the study. The PCF was attached to the PIS, and was not required to be returned by the participant. Completion of the online questionnaire survey was accepted as informed consent. Incomplete questionnaires were automatically excluded from the study. The LOI, PIS, and PCF were be emailed to participants or the organisation identified in the initial selection process. See Appendix F for a copy of the PCF.

3.3.3 Data management

All data collected through this research was solely maintained and managed by the primary researcher on a secured laptop and backed up to secure drive until the research was submitted and finalised. All data will then be transferred and securely stored on a university storage drive system as per university policy.

3.3.4 Software

Key Survey Enterprise Software – version 8.2 was the primary software used in the development of the questionnaire and allowed for “data collection, data analysis and data presentation” (WorldAPP, 2013). This software enabled the researcher to tailor

the questionnaire for either qualitative or quantitative data collection and for reports to be compiled and analysed (WorldAPP, 2008). Participants are able to login to the site remotely via a 'uniform resource locator' (URL) that is generated by Key Survey. To enable the management of the survey, there is an autosave function of individual responses, in which Key Survey was stored on the participants' computers Internet Protocol (IP) for the duration of the study. The IP addresses are automatically deleted at the completed of the study by the software.

3.3.5 Personal bias

The *objectivity* and *dispassionate interpretation* on the part of the researcher has been identified as vital in minimising bias (Dowling, 2010, p. 36). This is acknowledged as difficult, if not impossible, to eliminate due to the personal history of the researcher (Bryman, 2012, p. 39; Dowling, 2010, p. 35) and is a risk of being an industry insider. To mitigate the potential conscious and subconscious bias of the researcher, it is important that *conscious partiality* is obtained through partial identification of the topic (Dowling, 2010, p. 40).

To further mitigate the potential biases of the researcher, processes were developed as part of the participant selection, the analysis of the various documents, and questionnaire and interviews. The researcher kept the selection of participants as broad as possible and included anyone who felt they met these criteria. In the analysis of the various legislation, disaster reports and job descriptions, the researcher utilised the keywords from research question one as the search criteria. In the questionnaires and interviews, the researcher avoided biased terms (Babbie, 2004, p. 249) by utilising structured interviews and a series of standardised quantitative questions (Binary, Likert, and the Gutman scales) based on the evidence within the literature.

3.4 Chapter summary

Chapter Three provided an overview of the processes and procedures underlying this thesis (research design and methods), which enables other researchers to recreate the processes, utilised within the study. The materials used in the construction and development of the study, including software, procedures for recruitment, and the collection and analysis of data were also identified. Chapter Four will now introduce Australian emergency management practitioners and utilise questionnaires to better understand these individuals.

CHAPTER 4:

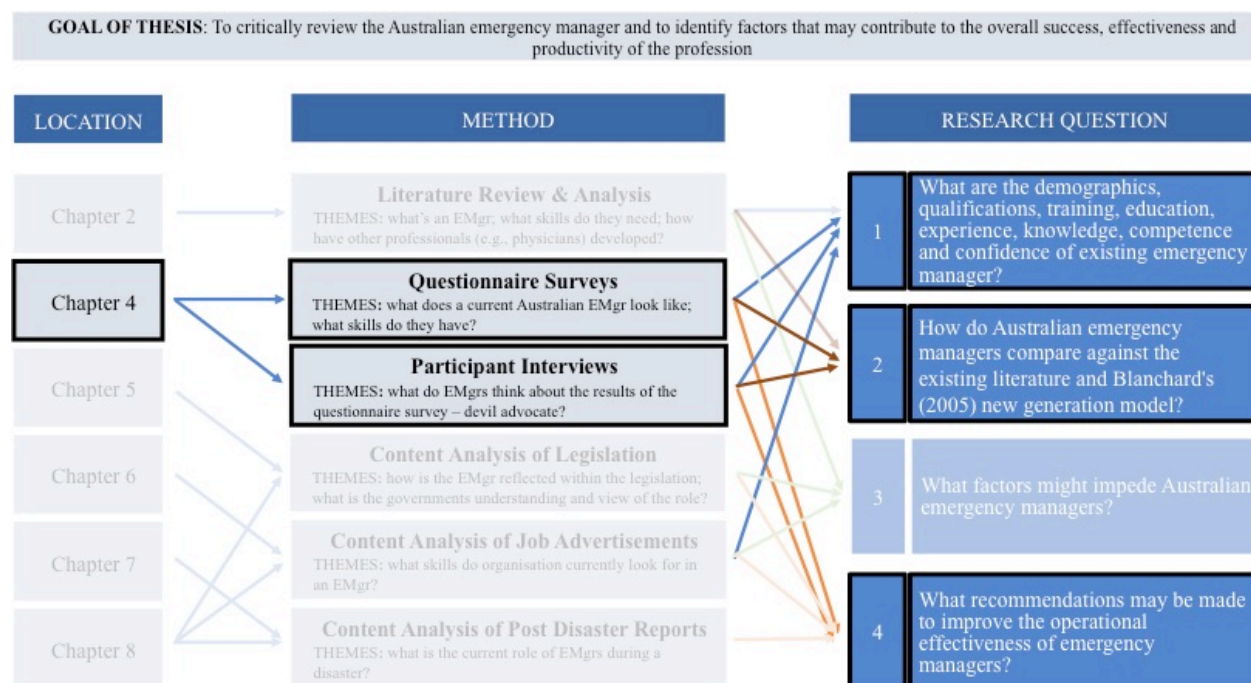
QUESTIONNAIRE SURVEYS AND INTERVIEWS – RESULTS, ANALYSIS AND DISCUSSION

*Research is to see what everybody else has seen,
and to think what nobody else has thought.*
(Szent-Gyorgyi, 1957, p. 56)

4.0 Chapter introduction

This chapter presents the results of the emergency managers questionnaire and telephone interviews in order to provide partial answers to research questions one, two and four (Figure 4.1). The questionnaire examines the current state of Australian emergency managers utilising a number of key questions to examine their demographics, qualifications, training, education, experience, knowledge, competence and confidence, while the interview section, expands on these findings. Each section will be presented with the results, followed by a separate section to analyse and discuss the data.

Figure 4.1 – Road map of thesis for Chapter Four partially addressing research questions one, two and four.

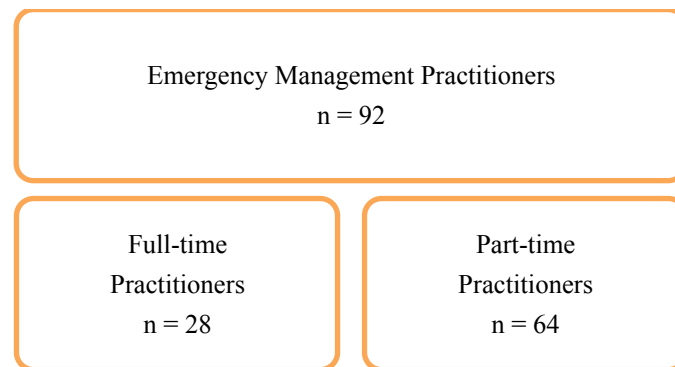


4.1 Practitioners baseline

4.1.1 Practitioner cohorts for the emergency manager questionnaire

The number of practitioners that participated in the emergency manager questionnaire was $n = 92$. Existing emergency management research revealed that the emergency management industry was compromised of a mix of full-time and part-time practitioners (McArdle, 2017, p. 28; Blanchard, 2001, p. 7). For more in-depth analysis, the total population was further divided into full-time ($n = 28$) and part-time cohorts ($n = 64$) (Figure 4.2). When these cohorts were analysed as a percentage, the results were normalised for that group.

Figure 4.2 – Breakdown of participant cohorts



Practitioners as a cohort are presented first, followed by the division into full-time and part-time cohorts. All figures and references within this thesis regarding full-time and part-time practitioners are consistent with this unless otherwise specified. See Appendix G for a copy of the emergency management *Practitioner's questionnaire survey instrument*.

4.1.2 Practitioners versus interviewees

Chapter Four presents the results from both the emergency managers questionnaire and subsequent telephone interviews. The term 'practitioner' will be used to denote the results of the emergency manager questionnaire and 'interviewee' will be reserved for those responses supplied by practitioners as part of the telephone interview only.

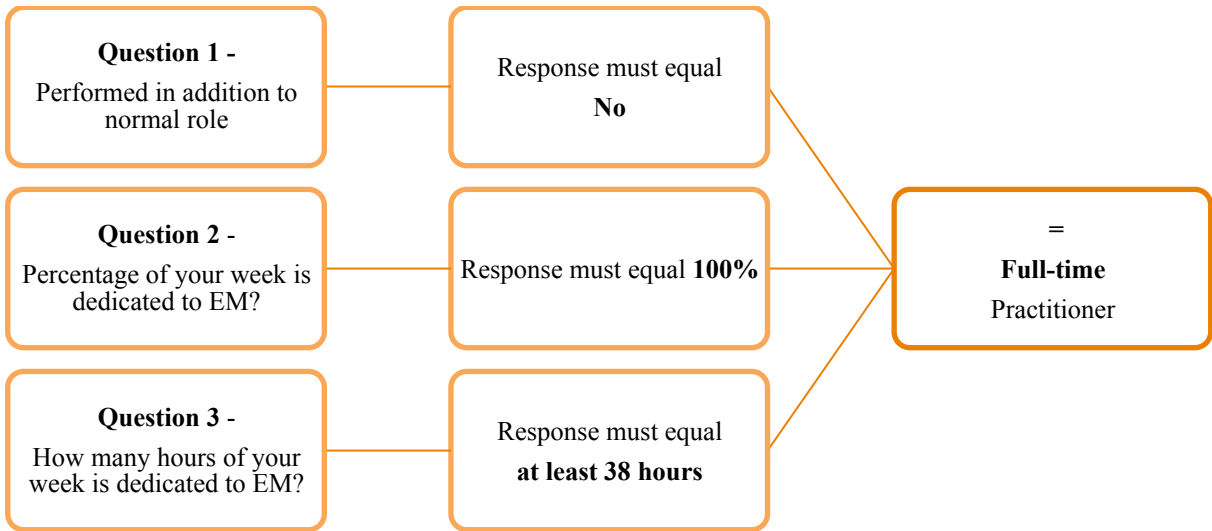
4.1.3 The employment capacity of practitioners

When examining the full time capacity of practitioners, of the 92 practitioners, 47 (51.09%) indicated that emergency management was added to their primary role. A 'no' response was required in this question to meet the criteria of a full-time

emergency manager as it was expected that a full–time emergency manager would not share their role (Figure 4.3).

The second question asked practitioners what percentage of their working week was dedicated to emergency management. This question was utilised to validate question one. A 100% allocation to emergency management was required in this question to meet the selection criteria. Of the 92 practitioners, 32 (34.78%) indicated that they dedicated 100% of their time to emergency management.

Figure 4.3 – Validation of full–time emergency manager practitioners



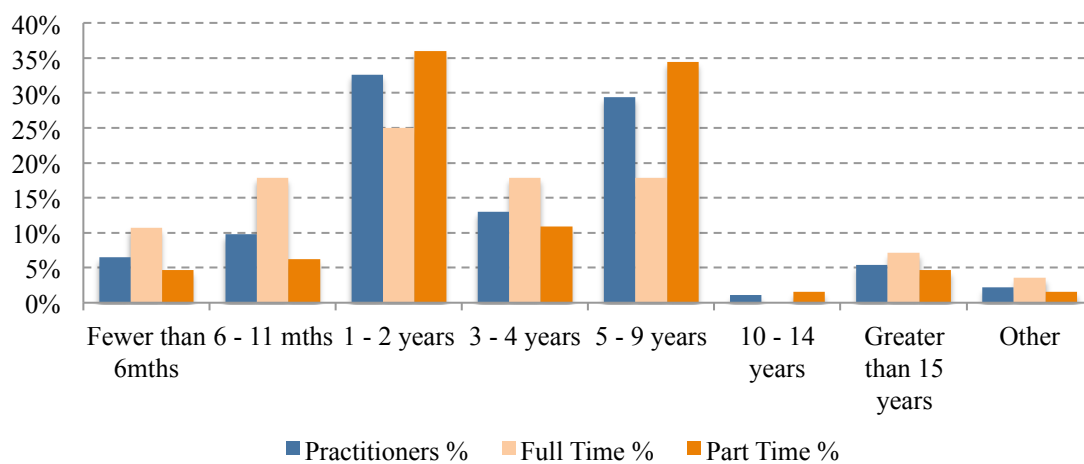
The third question was similar to question two and was utilised to validate the respondent’s earlier statement further. This question asked practitioners how many hours per week they dedicated to emergency management. A minimum of 38 hours per week dedicated explicitly to emergency management was required to meet the selection criteria. Of the 92 practitioners, 37 (40.22%) indicated that they dedicated 38 hours per week or more to emergency management.

It is important to note that there were discrepancies between these questions and the findings were cross-referenced against each for consistency. Of the 92 practitioners, only 28 were able to meet the criteria of all three questions. Based on the correlation of responses, only these 28 practitioners were included in the full–time category. The remaining 64 were considered to be employed part–time within an emergency management role.

4.1.4 Primary versus secondary roles

In this question, practitioners were requested to indicate how long they had been employed in their current primary position (Figure 4.4). Of the 92 practitioners, the majority of responses were divided between the '1 - 2 years' (32.61%) and the '5 - 9 years' (29.35%) groups. Further analysis of the full-time (n = 28) and part-time (n = 64) cohorts revealed the largest group of practitioners was within the part-time cohort in the '1 - 2 years' (35.94%), and '5 - 9 years' (34.38%). The full-time practitioners were relatively stable at 17.86% across the '6 - 11 months', '3 - 4 years,' and '5 - 9 years' groups with an increase (7.61%) in the '1 - 2 years' group.

Figure 4.4 – Time practitioners have been in their primary role



Of the 92 practitioners, eight chose to submit comments, and while there was not enough data to draw any meaningful conclusions, they did provide insight into the roles. These comments included:

I manage the funeral business on an as needs basis under agreement with my full-time employer
(practitioner, #12)

30 years policing and in disaster management [sic]
(practitioner, #52)

Fixed term government funded position – 2 years
(practitioner, #68)

In position 2007 and left for 18 months before returning [sic]
(practitioner, #73)

Have been employed by the Shire in other roles for seven years

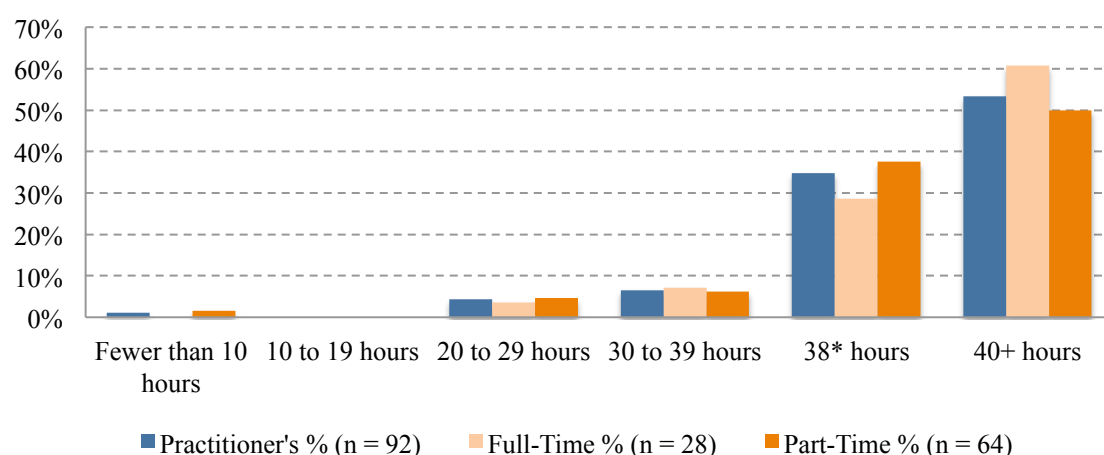
(practitioner, #53)

Previously held other positions with... City Council

(practitioner, #91)

When examining the number of hours practitioners worked in their primary roles (Figure 4.5), of the 92 practitioners, 32 (34.78%) indicated that they worked 38 hours per week (full-time equivalent) and 49 (53.26%) worked greater than 40 hours per week. In this study, 38 hours is considered the standard number of hours in a working week and is therefore considered full-time employment.

Figure 4.5 – Number of hours practitioner devote per week to their primary role



When analysing the full-time (n = 28) and part-time (n = 64) practitioner cohorts, it was not unexpected to find that full-time (n = 28) practitioners were less likely to work a 38-hour week (28.57%) and more likely to work greater than 38 hours per week (60.71%) than their part-time counterparts. However, it was surprising to find that of the 64 (37.50%) part-time practitioners, indicated that they worked a 38-hour week, and 50.00% stated they worked greater than 40 hours per week.

4.1.5 Discussion

The conflict between hours worked and the percentage of time dedicated to emergency management made determining the respondent's employment status impossible with any accuracy. When asked if emergency management was performed

in addition to their primary role, two practitioners provided inconsistent responses. Practitioners #6 and #56 listed their primary and secondary functions with the same title but indicated that emergency management was performed in addition to their primary role.

Practitioner #20 stated that he was employed as a 'Disaster Management Officer', but he only dedicated '75 to 99%' of his time to emergency management. It was unclear why he did not dedicate a full 100% to the role, and this may be due to a misunderstanding of the role where practitioners think duties outside supporting emergency services is not emergency management.

Practitioner #24 indicated that he worked full-time hours in his primary and secondary emergency management role as a Security and Emergency Management Specialist, but that emergency management was not performed in his primary role. This practitioner also indicated that he devoted '25 to 49%' of his time to emergency management. It is plausible to draw the conclusion the location of the specific function within the title relates to the priority of work. In this instance, Security is listed first in the title and is the core area of work. It would be interesting to determine if placement is indicative of priority but further research would be required to determine if this is the case.

Practitioner #30 stated that he dedicated 100% of his time to emergency management and that he worked more than 50 hours per week. However, he also stated that he only spent 10 hours per week in his secondary, emergency management role. Due to the discrepancies and conflict within their responses, practitioners #6, #20, #24, #30 and #56 were excluded from the full-time category. This could suggest that practitioners are confused about what emergency management actually entails or that these individuals believe emergency management is about responding to an emergency or supporting emergency services. It is also possible that any activities outside of this scope is not emergency management and raises the need to delve deeper into practitioners understanding between the two areas.

When examining the number of hours practitioners worked in their primary role, it was expected that part-time practitioners would be required to work longer hours to support the dual nature of their role and the out of hours work required when accommodating volunteers and disaster events (Drabek, 1987, p. 246). However, a

significant number of full-time practitioners (40.22%) indicated that they dedicated fewer than 10 hours per week to emergency management. This is concerning as it is more consistent with the stereotypical emergency manager as opposed to the new generation practitioner (Blanchard, 2001, p. 7) and could be an indicator of how organisations prioritise emergency management, how they comply with contemporary practices and how resilient they are to disasters.

This finding may indicate that emergency management is either not well understood or is not a priority to the organisation and raises the question as to how practitioners can be effective with less than 25% of their time dedicated to emergency management? The ability of communities or organisations to be adequately prepared only increases in difficulty when using part-time or volunteer practitioners. Part-time or volunteer staff may find it difficult to “establish legitimacy and credibility with department heads, other local governments, or the private sector” (Labadie, 1984, p. 491). It is also plausible that a lack of time dedicated to emergency management may affect their standing in the emergency management community, particularly for full-time practitioners, or practitioners with degrees and formal qualifications in the area.

The researcher expected that any respondent who indicated that they held the emergency managers position in a full-time capacity would dedicate 38 hours per week or greater to emergency management in alignment with Australian working hour standards (Fair Work Ombudsman, 2019). Additional questions were included to ensure this data was accurate but these did not shed light on why several practitioners’ indicated they were full-time emergency managers but dedicated less than full-time hours to the function. Two possible theories for this include the location of emergency management within the emergency services (FEMA, 2007, p. 5), where members automatically think they do emergency management (practitioner #30, interviewee #4). The other theory is that confusion remains with regards to the roles and responsibilities of the emergency managers’ position (Teague, 2010, p. 8), part of which is the belief that managing an emergency is synonymous with emergency management.

It is likely that due to the limited number of hours dedicated to emergency management, part-time practitioners are not as effective as their full-time counterparts (Chen, 2009, p. 74). The data support the conclusion that more full-time

practitioners are needed to address the complex workload of emergency management and to reduce the need for ‘over–time’ hours by practitioners, thereby providing them with better work–life balance (De Cieri & Kramar, 2008, p. 328). It is plausible that this imbalance could be detrimental to the role and the ability of organisations to fill positions.

Recommendation # 4.1: Establish minimum standards for entry to the role

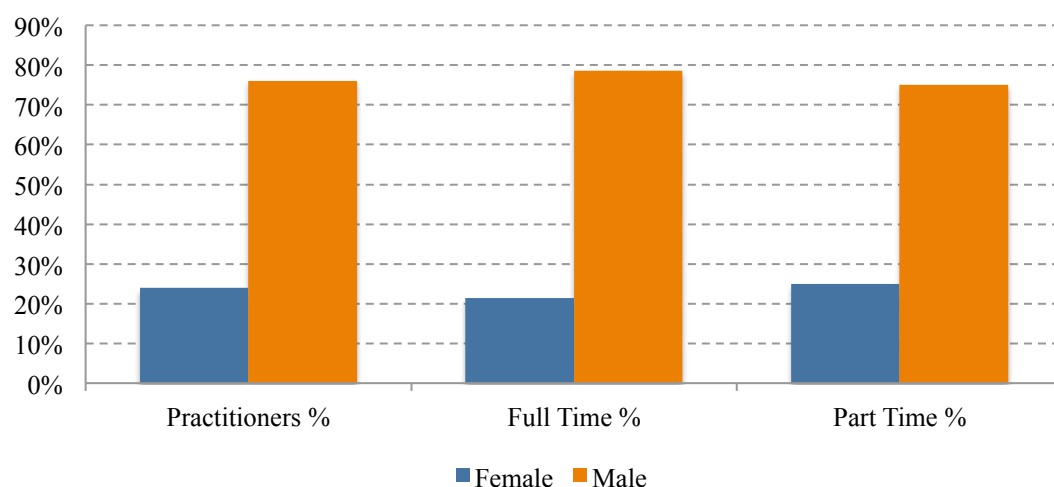
By establishing minimum standards to those who can hold the position of the emergency manager, it is likely that this will decrease the number of individuals holding the role in a part time capacity. Especially, those who hold the role in addition to a primary non-related role.

4.2 Context and background

4.2.1 Context and background – results

Of the 92 practitioners who participated in the survey, 70 (76.09%) were male, and 22 (23.91%) were female (Figure 4.6). When considering gender and employment status as an emergency manager, 22 males (78.57%), and six females (21.43%) were full–time, when compared to 48 males (75.00%) and 16 females (25.00%) that were part–time. These findings indicate that the role was a largely male–dominated, but that the difference in the employment status of the emergency manager was consistent between genders.

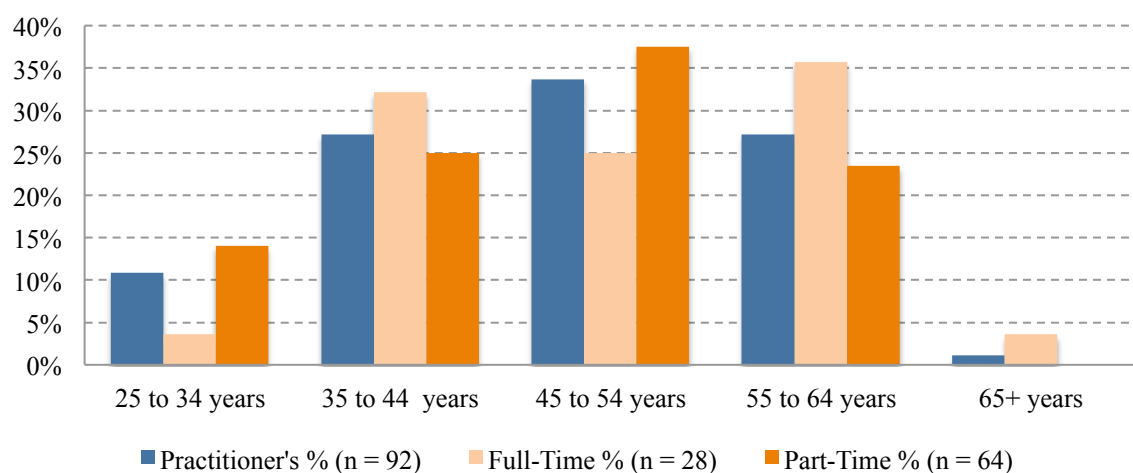
Figure 4.6 – The gender of practitioners



Seven interviewees highlighted gender as an important issue in addressing the needs of the community. Several respondents recognised that there was a gender imbalance in the emergency management industry (interviewees, #20, #3) where women are underrepresented (interviewee, #28). However, while “women are making their way into that arena [response] it’s still a way... from equality (interviewee #3), and at least one interviewee asserted that the gender issue was more significant in emergency management (interviewee, #12) as there are problems with attracting women into a predominantly male industry (interviewee, #26). Despite these assertions, there are practitioners who hold beliefs that do not support gender equality in the role, as “middle-aged people would be better and males [better] than females” (interviewee, #16) and “I certainly don’t want to get into ... the gender debate as to why that is, perhaps males are more suited to the role” (interviewee, #25).

Figure 4.7 shows the percentage distributions of all practitioners compared to full-time and part-time practitioners. The average age of the practitioners was 49.6 years, with the largest group of respondents (n = 31; 33.70%) in the ‘45 to 54’ age group. When comparing full-time (n = 28) and part-time (n = 64) practitioners, the largest group of full-time practitioners was in the ‘55 to 64’ age group (n = 10; 35.71%) followed by the ‘35 to 44’ age group (n = 9; 32.14%). The largest part-time practitioners were located within the ‘45 to 54’ age group (n = 24; 37.50%). Interestingly, there were no part-time practitioners in the 65+ age group.

Figure 4.7 – The age of practitioners



When examining the ethnicity of practitioners, the majority of the 92 practitioners indicated that they were White/Caucasian (n = 78, 84.78%). The next

largest group practitioners were European (n = 11; 11.96%), followed by Asian (n = 2; 2.17%), while one (1.08%) practitioner indicated ‘Other’ in which they wrote Australian.

Five interviewees indicated that the overwhelmingly Caucasian make-up of the emergency management industry was not an issue with regards to the effectiveness of emergency management. Interviewees reported that this stemmed from the industry’s origin (interviewees, #4, 19) and that being Caucasian was not a disadvantage (interviewee, #1), particularly in rural areas with limited immigration (interviewees, #11, 27). Interviewee #19, a 55 to 64-year-old Caucasian male who held a postgraduate certificate and was employed by the NSW State Government with the NSW Police as a ‘Regional Emergency Management Officer’ commented that...

there are reasons why that classic practitioner is [such] a narrow band, and we go back to the thing about the experiential issue for employment or involvement, and you know, if you take a look at... emergency management in the 80s, [it] was a male, white, dominated industry.

When investigating the religious affinity of practitioners (Figure 4.8), the majority of the 92 practitioners indicated they were Christian (n = 62; 67.39%). Under ‘Other,’ practitioners identified “my own” (practitioner, #27), “Jedi” (practitioner, #43), “Orthodox” (practitioner, #54), and “Humanist” (practitioner, #85).

Figure 4.8 – The religious affinity of practitioners

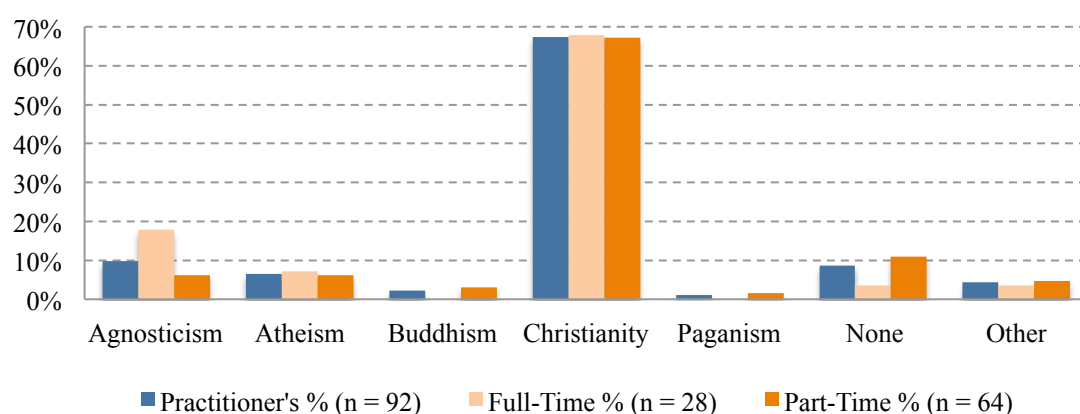
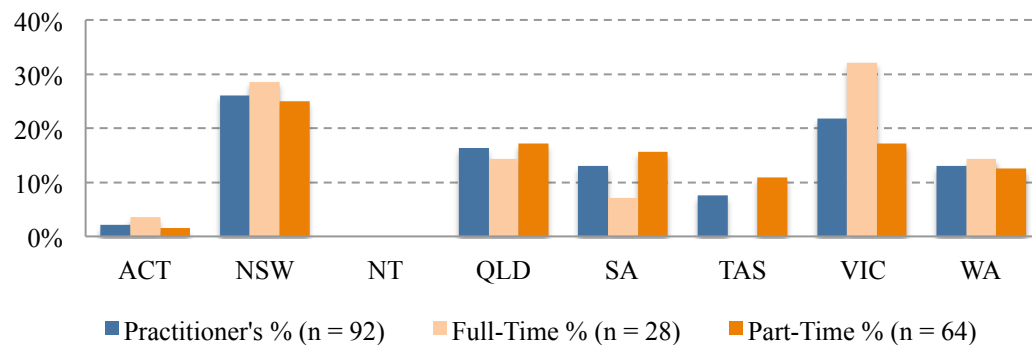


Figure 4.9 depicts data for the geographic location of practitioners. The largest group of practitioners were located within NSW (26.09%), followed by VIC (21.74%). It was interesting that no practitioners from the NT chose to participate (see below for further information).

Figure 4.9 – Practitioners according to their geographic location based on state or territory within Australia



When determining the practitioner's industry of employment, the majority of the 92 practitioners (n = 52; 56.52%) were employed by a local government³⁶ followed by a state government (Figure 4.10).

Figure 4.10 – Primary employment industry of practitioners

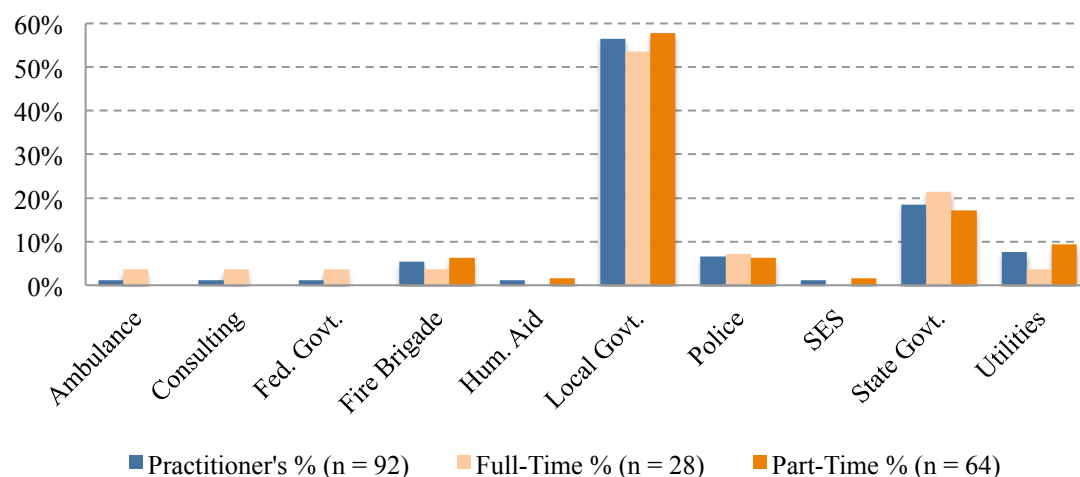


Figure 4.10 identifies the various industries using abbreviations to allow them to fit within the figure. Abbreviations include Fed. Govt. = Federal Government, Hum. Aid. = Humanitarian Aid, Local Govt. = Local Government, SES = State Emergency Service, and State Govt. = State Government.

4.2.2 Context and background – discussion

Understanding the demographics of emergency managers is essential for establishing the background of emergency managers and providing insight into the industry. This study revealed that practitioners were predominantly male (76.09%), older (49.5 years), white (84.78%), and Christian (67.39%). However, based on the sample size and lack of clarity surrounding the exact number of practitioners within Australia, it is difficult to ascertain whether this was an accurate representation of emergency

³⁶ Local government are also defined as councils.

management practitioners across Australia. Further research with a larger dataset would be required to improve validity.

Elsworth and Anthony–Harvey–Beavis (2007a, p. 5), Parle and Brown (2005, p. 3), and McArdle (2017, p. 60) supported the findings of this research and identified that the gender of emergency management practitioners was predominantly male, with 90.3%, 84.3%, and 67% respectively. Despite males accounting for 49.25% of the Australian population (ABS, 2017a), the similarity across these studies reveals that the gender divide in emergency management is still active and disproportionately favours male over females. It is plausible that the lack of gender diversity will have an impact on developing more meaningful DRR efforts due to variations in risk perception in which Eriksen (2014, p. 23) noted that there was growing “evidence of gender-specific risk and gender differences in willingness to plan for emergencies”.

Although several practitioners recognised the gender imbalance within emergency management, many respondents did not believe that being male was necessarily a problem or that it had an impact on dealing with different members of the community. Despite the Australian population of men and women being nearly equal (ABS, 2017a), and literature recognising that gender does have an impact on perspective, risk perception, attitude and behaviour towards mitigation and preparedness (Lindell & Perry, 2004, pp. 159–160; Mulilis, 1999, p. 41), this does not appear to be occurring within the emergency management industry. The lack of gender diversity in emergency management has been identified as increasing the potential for misunderstandings between different groups in society and the emergency manager (Darlington, 2008, p. 12) and that significant work must “be done to attract women and minorities to the field” (Farris & McCreight, 2014, p. 90). A view that is further supported by McArdle’s (2017, p. 92) recent study into the Australian emergency management industry.

When examining the age of practitioners, studies conducted to date revealed that although these groups were not identical, they were consistently within the ‘40 to 60’ year age group. For example, Parle and Brown (2005, p. 3) found that 48.6% of practitioners were within the ‘50 to 60’ age group, Elsworth and Anthony–Harvey–Beavis (2007a, p. 5) found that 75.7% were between ‘40 to 59’ years of age, and McArdle’s (2017, p. 60) larger study indicated approximately 60% were in this age bracket. These findings suggest that this study is consistent with previous work and reinforces an industry that favours older members of society. However, it is unclear

whether this is due to a belief that maturity and experience was required for the role or whether some other factor is involved.

Although maturity is important in dealing with senior stakeholders, if practitioners are the only person in their department or organisation responsible for emergency management, how do new and younger emergency management practitioners enter the industry? It also raises the question of succession planning for the role and the organisation. It is likely that this approach is severely limiting the ability of the emergency management industry to grow, as university educated practitioners are more likely to be far younger than the industry average age. Leaving the future of the industry with no way to gain the practical experience that many practitioners have indicated is necessary and supports lateral entry. Where the individual has neither the experience nor education specific to emergency management.

The majority of practitioners in this study identified as being White/Caucasian (84.78%). However, this is inconsistent with the actual demographics of the Australian community (Australian Bureau of Statistics, 2017b) that identified 69.8% of Australians were born in Australia. The 2016 Census revealed that 4.2% were English, 2.2% were from New Zealand, 1.5% were from China, and 1.4% were from India (ABS, 2017c). An increase in migration to Australia over the past 15 years suggests that the proportion of White/Caucasians will continue to decrease and that the ethnicity of emergency managers is not representative of Australian society. It is plausible that this discrepancy is due to several factors, including the negative perception of many recent migrants towards emergency management or emergency response organisations (McLennan, 2008).

The ethnicity of practitioners is considered vital because it has the potential to provide insight into the individual's "beliefs, values, and social norms" (Lindell & Perry, 2004, p. 16). Something unlikely to occur without representing CALD groups within emergency management, or practitioners receiving an education that examines the role of various cultures in the context of emergency management. As such, emergency management practitioners are likely to rely on their personal beliefs, opinions, values and experiences that may be inconsistent with the needs of the diverse groups that make up Australian society or the community they represent.

Half of the interviewees indicated that CALD groups were an essential element within the community and was consistent with the federal government's assertion that "the Australian Government remains committed to policies and services that enable

migrants to integrate into life” (EMA, 2007a, p. 7). However, the number of CALD members within emergency management suggests that that this is more theoretical and is not being applied in practice and it is possible to suggest that this is lip service to an important issue. Interviewees identified several issues that included a lack of services available to these communities, the different perspectives of practitioners and a lack of consultation and engagement by practitioners. A more representative sample of the general population may be found with a larger sample of emergency managers.

Despite the inconsistencies across age and gender, the religious affinity of practitioners is also dissimilar to ABS (2017c) data, with the majority of practitioners indicating that they were Christian (69.39%) compared to the Australian average (52%). It is plausible that these findings are due to the age of respondents: with 28.66% of respondents in this study identifying as being 55 years or over, which according to the ABS (2004) is an age group more likely to affiliate with a religion. It is noteworthy that practitioners who chose ‘Other’ presented responses, such as “my own” (practitioner, #27), “Jedi” (practitioner, #43), and “Humanist” (practitioner, #85).

Although it is not necessary to be a member of a specific group to understand or to represent their interests (Merton, 1972, p. 13; Jones, 2000, p. 466), it is plausible that if emergency managers are not representative of their community (EMA, 2007a, p. 1), they may be less effective than if they had otherwise been. This would be even more pronounced if the practitioner has not received specific education or training on these groups and their cultural differences. Furthermore, it raises the question as to how emergency managers would fair if government policy on immigration changed that required new immigrants to settle in more remote areas. Notably, lower socioeconomic groups have been identified as more prone to disaster events (Sewell, Stephens, Dominey–Howes, Bruce & Perkins, 2016, p. 6; Trainor & Subbio, 2014, p. 437) and that age, religion, gender and ethnicity (Gautam & Mishra, 2014; Ferrier, 1999, p. 4) has a role in the impact of risk perception (Lindell & Perry, 2004, pp. 159–160).

Despite the benefits of inclusivity and diversity, interviewees indicated that they believed an individual’s demographics had little to no effect on their ability to work effectively as an emergency manager. Interviewee #27 was a 55 to 64–year–old Caucasian male who held a postgraduate certificate and was employed by the NSW State Government (Police) as a ‘Regional Emergency Management Officer’ stated that these people were looking for someone in authority to tell them what to do. While

this may be the case in some instances, particularly during the response phase, it is entirely inconsistent with the emergency management literature that asserts practitioners must engage, integrate, and collaborate with their communities (FEMA, 2007, p. 4; EMA, 1998a).

The comment from interviewee #27 highlights an underlying belief that while more diversity within emergency management may be beneficial, it is not necessary, as most people have the same needs during an emergency. Whilst this comment relates to CALD groups, the need for recognition of difference goes much further as research reveals that “all sorts of ‘different’ people” e.g., older people, children and people with a disability (Ronoh, Gaillard & Marlowe, 2015, p. 91; MacQueen, 2009, p. 6; Ferrier, 1999, p. 2), and sexual and gender minorities (McKinnon, Gorman–Murray & Dominey–Howes, 2017, p. 122) have different needs during an emergency. This also fails to take into account that response is only a small part of emergency management but one that is vital to how people perceive an event based on how they were treated.

This finding may be detrimental if immigrants come from a country where there are different standards for a response, where they have different dietary and religious requirements, and where people in uniform are not always trusted or respected (Australian Institute of Family Studies, 2008). Emergency management is not solely focussed on response and that diversity, and integrated communities are complex social constructs. Constructs that need to be well understood by practitioners “to better target their efforts and work with community leaders and members to develop appropriate engagement strategies” (EMA, 2007a, p. 13). Furthermore, to be successful, “local policy development and programme implementation need to be fully inclusive across many social dimensions including gender, ethnicity, religion, age” (Coles & Buckle, 2004, p. 11).

It is plausible to argue that diversity in all its forms extend beyond performance but are an indicator of the health of an organisation. It is plausible that AFACs participation the “Male Champions of Change” initiative (AFAC, 2018) and the University of Western Australia’s survey into the mental health and wellbeing of police and emergency services (Lawrence, Kyron, Ridders, Bartlett, Hafekost, Goodsell & Cunneen, 2018, p. 84) reveal a positive change in the industry. However, these reports are overshadowed by the stark contrast of the numerous news articles that highlight the depth and extent of bullying across emergency services and emergency management. Reports that identify a lack of gender diversity (Maddison,

2020, March 8), and the presence of bullying (Mazzoni, 2019, November, 26; Younger & Willingham, 2018, October 4; Wahlquist, 2018, August 7; AAP. (2017, November 30; White & Here, 2017, November 30), sexual discrimination and harassment (Reddie, 2019, November 29).

What is even more concerning is when reports into an organisations culture are suppressed (Younger & Willingham, 2018). While a report may be fundamentally flawed, it is also possible that the organisation is not open to feedback or change. While the vast majority of articles were about emergency services, Emergency Management Victoria was not immune from bullying claims with both employees (White & Here, 2017, November 30) and leadership claiming to have been bullied (AAP, 2017, November 30). It is likely that as long as reports suggest intolerance in the workplace, diversity will stagnate.

Recommendation # 4.2: Employ a more diverse and representative workforce

Employing a more representative and diverse workforce across demographics (age, gender, ethnicity, religion and sexuality).

Despite the geographical size of Australia, there are only eight states and territories. Logic suggested that utilising these predefined boundaries was the most appropriate method to determine the location of practitioners. McArdle (2017, p. 61) as part of his study into the Australian emergency management industry also examined the location of practitioners across Australia utilising states and territories as predefined logical boundaries. The use of existing geographic boundaries also enables primary research to be more readily compared against secondary research, enabling richer insights.

Although, numerous emails were sent to various organisations, advertisements via Facebook, Twitter, and LinkedIn, and through Industry body (IAEM), the majority of states and the Australian Capital Territory (ACT) participated in this study, with the exception of the Northern Territory (NT) who chose not to participate. This finding was similar to the Elsworth and Anthony–Harvey–Beavis study (2007a, p. 4) that noted that there was a lack of engagement by emergency managers within the NT towards emergency management.

It is difficult to ascertain why the NT chose not to participate in this study, but it may be due to the location of emergency management within the NT Police. It could be the case that the police officers responsible for emergency management more

closely associate their role with law enforcement and policing and that emergency management is not being considered a priority. This may contribute to a lack of social cohesion and professional identity (Cwiak, 2009, pp. 56–57). Unfortunately, it is impossible to determine with any validity if they elect not to participate in research.

Of the 19 industries identified, only ten participated in this study and while the reasons for this are speculative, the participation of only 87.5% of states and territories and 52.63% of identified industries may support Cwiak's (2009, p. 57) industry fragmentation, identity and social cohesion theory. However, due to the limited size of this study, further research would be required to support this assertion. Over the past several decades emergency management has progressed from a predominantly government enterprise within emergency services to one that has been increasingly incorporated into various industries may play a role in their limited participation (Phillips, Neal & Webb, 2012, p. 7; Smith, 2008, p. 59; Stehr, 2007, p. 497; EMA, 2000; Alexander, 2000, p. 167; Britton, 1999, p. 1; Parker & Handmer, 1992, p. 59).

4.3 Qualifications

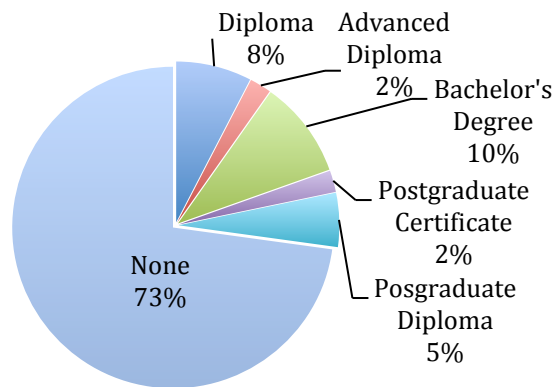
4.3.1 Qualifications – results

When practitioners were asked about their highest level of educational qualification, 89 practitioners indicated that they had obtained a formal qualification ranging from a school certificate (n = 1; 1.78%), Higher School Certificate (n = 2; 3.57%), certificate IV (n = 8; 7.14%), diploma (n = 11; 3.57%), advanced diploma (n = 10; 14.29%), bachelor's degree (n = 21; 17.86%), post graduate certificate (n = 8; 7.14%), post graduate diploma (n = 7; 3.57%), and master's degree (n = 21; 39.29%).

When practitioners were asked about their highest level of qualification in emergency management (Figure 4.11³⁷), of the 92 practitioners, 27.17% (n = 25) indicated that they possessed a qualification ranging from an undergraduate diploma to postgraduate diploma. Of these, practitioners indicated a variety of awards including diploma (n = 7; 7.61%), advanced diploma (n = 2; 2.17%), bachelor's degree (n = 9; 9.78%), postgraduate certificate (n = 2; 2.17%), postgraduate diploma (n = 5; 5.43%), and none (n = 67; 72.83%). A bachelor's degree was the most common qualification with practitioners (n = 9; 9.78%). However, the most common response was that practitioners had no formal emergency management qualification (n = 67; 72.83%).

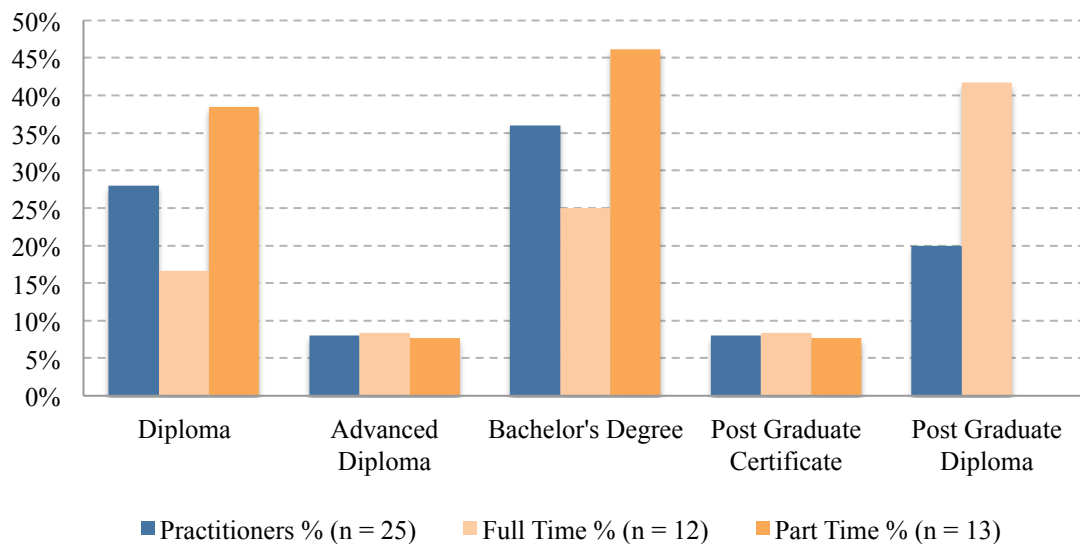
³⁷ Figure 4.11 has rounded the figures up to the nearest whole percentage.

Figure 4.11 – Practitioner’s highest level of qualification obtained in emergency management



Further analysis of the full-time (n = 12; 17.39%) and part-time (n = 13; 55.43%) emergency management qualifications of practitioners revealed that five (41.67%) full-time practitioners indicated they had obtained a postgraduate diploma followed by three (25.00%) with a bachelor degree. Of the 13 part-time practitioners with emergency management qualifications, six (46.15%) reported a bachelor’s degree, followed by five (38.46%) that had a diploma (Figure 4.12).

Figure 4.12 – Practitioner’s highest qualification obtained in emergency management normalised by percentage and cohort



Interviewees indicated that there was conflict on the topic of qualifications and that “a lot more work needs to be done in terms of qualifications” (interviewee, #16) as there is a need for practitioners to know what is important, with regards to the “situation, and in an organisation, and industry-specific” [sic] (interviewee, #12). At

least one interviewee supported the requirement for a tertiary degree specific to emergency management, indicating that it was essential to have the knowledge obtained through specific study (interviewee, #18).

Despite these comments, interviewee #4, a 45 to 54-year-old Caucasian male employed by a local government in VIC primarily as a ‘Manager, Risk Emergency Services and Local Laws,’ and as a ‘Municipal Emergency Resource Officer’ in his emergency management role observed.

[The] biggest impediment for emergency management planning is the... criteria for qualification is becoming tighter [sic].

However, Interviewee #25 reported that emergency management was a “largely strategic management role... having an engineering... or some sort of qualifications sets you up... to undertake a role”. Other interviewees stated that although the emergency management role did not require a high-level qualification, a minimum requirement was necessary to ensure everyone met the same standard or were on the same level (interviewees, #15, #22). Interviewee #11 recognised that the need for a degree before employment “could bring additional costs that smaller organisations cannot afford” associated with salary, and several interviewees indicated that there was a conflict in the desire to obtain formal qualifications.

Interviewee #15, a 45 to 54-year-old Caucasian male who was employed by a local government in QLD as a ‘Manager, Disaster Operations’ recognised that:

one of the biggest problems you’ve got with disaster management is there are a number of people who work in the area that view their workplace as being the total amount of information that they require to be able to do their job correctly... there are some people who simply know everything about everything and trying to teach them to think outside their own cohort of operation is extremely difficult.

Ten of the 32 interviewees indicated that a degree specific to emergency management offered benefits for practitioners and the community and that practical theory and experience improve planning processes, delivers a holistic viewpoint of emergency management (interviewee, #4), increased standardisation (interviewees, #1, #15, #22), “research and thinking skills” (interviewee, #13), improved community confidence (interviewee, #10), and provided practitioners with “a broader outlook” (interviewee, #3).

4.3.2 Qualifications – discussion

Interviewees recognised that the emergency management industry requires considerable work with regards to the qualifications of practitioners. While 93.48% of the 92 practitioners indicated that they possessed a tertiary qualification, only 23.17% had tertiary qualifications in emergency management. Despite the finding that formal qualifications, mainly tertiary education, increased the ability of practitioners to improve their critical thinking skills (Peerbolte & Collins, 2013, p. 48) and human capital (Wößmann, 2003, p. 253), enabling them to do more with less (Beaulieu, 2012, p. 20), at least one practitioner thought that having a qualification impeded effective emergency management (practitioners, #25).

Tertiary qualifications provide an emergency manager with more in-depth knowledge than traditional training and enabled them to keep up with competing demands of the workforce (Woodbury, 2005, p. 72). However, several interviewees indicated that having a qualification was beneficial as long as the person had skills in response (practitioner #5), that external knowledge was just as applicable as a qualification (interviewees #20, #26), and one interviewee cited issues with the practical component of emergency management (interviewee #6). It is plausible that a lack of qualifications may affect productivity, readiness, the emergency manager's standing within the community (Cwiak, 2009, pp. 59, 112; The Institute for Higher Education Policy, 1998, p. 20), the transferability of skills (Sgobbi & Suleman, 2015, pp. 395–396) and with the professionalisation of emergency management (Alexander, 2008; National Integration Center, 2008, p.1).

The results of this study (27.17%) are lower than those obtained by McArdle (2017, p. 64), in which 48% of practitioners indicated they possessed a bachelor degree or higher. It is plausible that this is due to the larger data set he had due to the inclusion of a broader range of roles associated with emergency management (however, remotely), as well as the time between the two studies 2013 and 2016 respectively, although this seems unlikely as only three years seems rather short to account for the differences.

It is also important to recognise that not all degrees are of equal standing and offer the same knowledge, having an engineering, medical, or law degree does not necessarily mean that you have the prerequisite knowledge required of an emergency manager and raises the question about transferability of skills and the assumptions that anyone can do “emergency management”. An assumption that may be hindering the growth of the industry and having a negative impact on effective and meaningful DRR.

4.4 Training

4.4.1 Training – results

When examining training, practitioners were asked four questions including whether practitioners had received any, the type of training, whether it had met their needs, and if they felt that they required any additional training. Of the 92 practitioners, 83 (90.22%) indicated that they had received vocational training in their role. When further analysing the full-time (n = 28) and part-time (n = 64) cohorts, the vast majority of full-time (92.86%) and part-time (89.06%) practitioners revealed that they had received some training.

Practitioners further identified a range of training and that this included “various vocational courses” (practitioner, #31), ranging from “intro at Mt Macedon³⁸ [sic]” (practitioner, #8), “evacuation training” (practitioner, #11), and “attendance at conferences” (practitioner, #39). Other practitioners chose not to specify what training they had received but indicated that they had received “a very significant amount” (practitioner, #50), while another stated that “probably more than those with university education” (practitioner, #43).

Of the 83 practitioners who indicated that they had received training, 76 (91.57%) indicated that this training had met their needs. These figures were consistent across the full-time (n = 28) and part-time (n = 64) cohorts, 25 (96.15%) full-time and 51 (89.47%). Despite indicating that this training had met their needs, of the 92 practitioners, 72 (82.61%) indicated that they were interested in more training in emergency management.

Of 14 practitioners that expressed an interest in obtaining more training, 12 noted the importance of training and remaining current with their knowledge. These practitioners recognised that “training is an ongoing requirement to keep up to date with changes within the industry” (practitioner, #2), and that “training is vital!” (practitioner, #31). The remaining two respondents indicated that they needed a “local EM RTO [registered training organisation] provider [sic]” (practitioner, #42), and “more (training) in the recovery side and less in the competency-based side” (practitioner, #43).

³⁸ At one point Mt. Macedon was home to EMAs training centre which offered a multitude of free training to those who worked in government.

Interviewee #23, a 55 to 64-year-old Caucasian male who held an MBA and was primarily employed as a ‘Municipal Emergency Resources Officer’ by local government in VIC asserted that...

realistically, the training a person needs to manage emergency management is able to be achieved through existing emergency service organisation sources such as the SES’s, CFA and VicPol. Actually, carrying out the function and doing the role in the emergency services sector provides better practical knowledge than any training course.

Interviewees further noted that an individual practitioner’s background or training in other areas was equally appropriate and that emergency services, the military (interviewee, #2), engineering (interviewee, #25) and response equated to emergency management (interviewee, #8).

One interviewee presented a conflicting viewpoint. Interviewee #26, a 65+ year old Caucasian male who held a diploma and was primarily employed as a ‘Manager, Technical Services’ by a local government in SA, and as a ‘Local Government Association Representative – State Response Advisory Group’ in his emergency management role cited his personal qualifications and “experience as an electrician as making him more than qualified for the role”.

I can go out and acquire another degree but in terms of the role or the skill sets that I actually bring to the business, I really don’t think in my particular role or my business that I will be actually adding a lot in terms of emergency management, but that said, because I’ve got so much formal qualifications... I would suggest that some roles in some places, I think some emergency management qualifications would be highly beneficial.

Not all interviewees agreed with these comments. Interviewee #11, a 25 to 34-year-old Caucasian male who held a diploma and was employed by a local government in QLD as a ‘Disaster Management Coordinator’ commented that:

I think the presence of a bright coroner, in a royal commissioner, will ask why was this person put into this position without adequate training; and for many of the key positions there is no training... this leaves people and organisations vulnerable.

4.4.2 Training – discussion

The literature recognises training as an integral part of a profession that enables personnel to adapt to the demands of the workforce (Blanchard, 2005, pp. 3–4; Britton, 1999, p. 4; Professions Australia, 1997). However, in emergency management, the education and training of practitioners are more likely to relate to a practitioner's primary employment role (e.g. town planner or engineer). This relationship highlights a potential obstacle to the effective and efficient application of the role, as differences “between the source and the destination industry lower the probability of inter-industry skill transfer” (Sgobbi & Suleman, 2015, pp. 395 – 396).

Despite practitioners indicating they did not require formal education in emergency management, the majority of practitioners indicated that they had received training in emergency management (91.57%) and were interested in developing their emergency management knowledge (82.61%). While the vast majority of practitioners indicated that they had received some non-university based training, the type of training varied considerably. The training identified ranged from individual subjects offered by recognised training organisations, and ‘in-house’ or organisation-specific training, to accredited courses such as a diploma or advanced diploma.

The nature of training and education for emergency managers has been and remains a controversial subject within the industry as inadequate or poor training only serves to increase and reinforce bad habits (Smith, 2008, p. 63). The results of this study are consistent with Elsworth and Anthony–Harvey–Beavis (2007a, p. 29) who found that some of “the most significant restrictions on effective emergency management activity within councils were perceived to relate to... staff with appropriate skills/experience”.

One full-time practitioner stated that they had not received any additional training as “no RTO [Registered Training Organisation] offers EM [Emergency Management] training in WA. Courses have to be done via correspondence or at EMA Mt Macedon, which means incurring extra travel costs” (practitioner, #42). Several practitioners identified the need for higher education, but they suggested that locating suitable programs was difficult (practitioner, #42). These findings are consistent with a recent report conducted into emergency management educational opportunities within Australia. In this report, the author found there were few RTOs to meet the needs of the practitioner (Crawley, 2016, p. 4).

Comments by practitioners suggest that although many emergency managers expressed an interest in developing their knowledge specific to emergency management, they are unable to or are unwilling to accept personal responsibility for pursuing this knowledge of their own accord. Findings from an Australian National Audit Organisation (ANAO) audit conducted into the Emergency Management Australia Institute (EMAI) found that of all the participants who started an emergency management program during 2005–2006, 39% did not complete the course (Clarke & Rowlands, 2008, p. 51). While the Clarke and Rowlands' ANAO report is dated, comments from participants, and the Federal Government's stance towards emergency management, that it is the responsibility of the individual states and territories, and the divestment of EMAI sets a negative example for the industry that emergency management is not a priority for the Federal government. It also raises the vital question as to who should be responsible for the training of practitioners?

Despite these findings, there are opportunities for training of practitioners, formal education offered by universities have been designed to make geographical distance less of an issue and enable some flexibility regarding study and workload for those currently employed in emergency management (CSU, 2019a; CSU, 2019b; Charles Darwin University, 2019). However, a lack of awareness or interest in paying for these programs indicates that practitioners do not value this as a priority and this may be due to the role being part-time (practitioners #1, #4, #21, #28 #29, #36, #49, #54, #68, #71, #81, #90) rather than the availability of educational opportunities. Comments from practitioners indicated an expectation that the organisation should bear the responsibility and costs of training and educating practitioners.

The expectation of practitioners with regards to their organisation being responsible for their training and education presents several problems, as training is an expense “that the public seldom understands or appreciates” and is more likely to be eliminated during times of financial crisis (International Association of Fire Fighters [IAFF] & the International Association of Fire Chiefs [IAFC], 2009. p. 9). In the vast majority of cases, non-university training was limited to vocational training that emphasised and valued practical experience over theoretical knowledge. Furthermore, practitioners who are self-taught or who have only received in-house training conducted by their organisation may not meet the complex knowledge requirements of the position (Wilson, 2001, p. 22). Informal training also introduces

consistency, validity and rigour issues of the program and the knowledge and qualifications of the instructors.

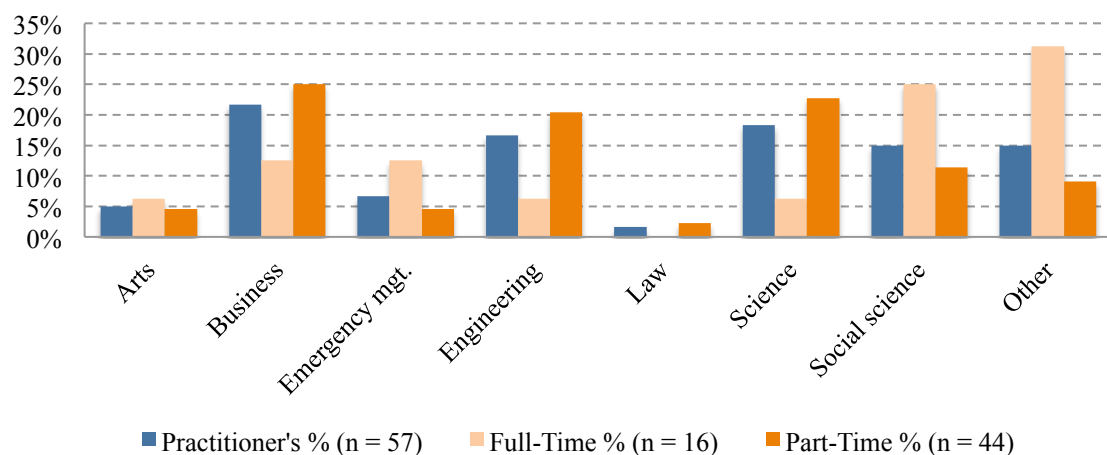
Tertiary qualifications are essential in developing industry-based skills. However, the continued training of emergency managers across their career is vital in ensuring that they are up-to-date with current legislation and that their skills are maintained (Crews, 2001). Professional development is a mandatory component for those who belong to professional bodies and it is plausible to speculate that professionalising the industry could address this issue. The interest in training and the practitioners' pursuit of training presents a paradox that appears to affect the Australian emergency management industry.

4.5 Education

4.5.1 Education – results

Of the 57 (61.96%) practitioners who indicated they had obtained a bachelor degree or higher, 13 (21.67%) reported *Business*, 11 (18.33%) *Science* and 10 (16.67%) selected *Engineering* as their major (Figure 4.13). When analysing the two largest areas for full-time (n = 16) and part-time (n = 44) cohorts, five (31.25%) full-time practitioners indicated 'Other' and four (25.00%) selected *Social Science*. Of the 44 part-time practitioners, 11 (25.00%) identified *Business*, 10 (22.73%) *Science* and nine (20.45%), *Engineering*.

Figure 4.13 – Major areas of study for tertiary education



Of the practitioners who indicated 'Other', nine (15.00%) listed specific programs that included veterinary science (practitioner, #5), management

(practitioners, #11, #13), public safety (practitioner, #23), emergency health (practitioner, #50), public policy and emergency management (practitioner, #52), police, management, and emergency management (practitioner, #56) and one practitioner indicated an “associate degree in business” (practitioner, #59).

Interviewee responses highlighted a range of perspectives on the necessity of a higher education degree in the field of emergency management. Interviewee expressed viewpoints that the education of emergency managers was more about their “overall knowledge and skills and ability” (interviewee, #18). Several interviewees stated that they did not believe a degree was necessary (interviewee, #24, #19), it was “nice to have, but I don’t think it’s necessary” (interviewee, #25), that it was dependent on the managerial level and performance required of the practitioner (interviewee, #14) and that according to one interviewee, he “wouldn’t actually need a degree in emergency management to do [his] job better” (interviewee, #23).

The interviewees that indicated a degree was important, statements included “worthwhile” (interviewee, #11), specific “training in emergency management [was considered] an absolute necessity” (interviewee, #10), “to be good at the role” (interviewee, #21). Other interviewees indicated that they did not have an opinion on this matter (interviewee #9) or were undecided (interviewees #16, #26) as to whether practitioners needed to have a degree in emergency management. Practitioner #27 stated that, as they had not completed a qualification in emergency management, they were not in a position to comment or determine if they were “equally able to do the job as others with the qualification”.

A review of comments made by 15 interviewees indicated that their belief was in conflict with their earlier reporting and ranged from the need for minimal standards, to a degree. These issues included a belief that a degree specific to emergency management was not necessary, but was helpful or beneficial (interviewees, #5, #8, #17) and “the more that you have studied in the area, the better” (interviewee, #18).

Interviewee #23, was a 55 to 64-year-old Caucasian male, who held an MBA and asserted that individuals were either suited to the role or not and a degree would not mean that they were competent (interviewee, #25). One participant admitted that they were going through the recognition of prior learning (RPL) process and that it “gives you an extra degree of confidence, that you know what you’re doing and you’ve been well trained in the role you take on” (interviewee, #27). Participant #13 commented that not all degrees are equal as “someone could have a degree in another discipline, but they definitely need to have tertiary level studies to add to that, that are specific to EM [Emergency Management]”.

Interviewee #28, a 45 to 54-year-old Caucasian male who held a Postgraduate Certificate in Emergency Management and was employed by a humanitarian aid organisation in VIC as a 'National Emergency Management Coordinator' stated that they had...

encountered an awful lot of people that have, shall we say, a good range of experience, but experience hasn't given them the depth of knowledge for some of the positions they occupy... tertiary qualification have given me insight into areas that I don't have specific experience in but still now bring those learnings to the table.

Despite the advantages of an emergency management education, interviewees recognised that there were also detriments to these programs. Current problems included gaps in courses offered by universities and other institutions (interviewee, #15), textbooks that do not provide practical knowledge (interviewee, #6), interviewees who were solely reliant on the training offered by their state government (interviewee, #11), and the cost of courses (interviewee, #19).

Not all interviewees implied that there were problems in pursuing a formal degree in emergency management with two interviewees (#14, #19) stipulating that the level of education should correspond to the level and role of the practitioner within the organisation. Interviewee #3 stated that although a tertiary degree "doesn't always guarantee good performance it "probably [provides] a broader outlook".

Interviewee #1 noted the importance of education in building consistency across the industry and was supported by interviewee #15, a 45 to 54-year-old Caucasian male who was employed by a local government in QLD as a 'Manager, Disaster Operations' who asserted that universities...

are losing sight of the fact that the base level of information should be the first requirement. Not simply that a person holds higher education in any particular field, but they should hold base level training at the advanced diploma level in disaster management or emergency management or community safety... So if a person came in and said that I've got a law degree, I still think the requirement should be that before you can go on any further in disaster management, it's necessary for you to complete the lower level of training, which is going to give you a greater understanding of what the disaster management sector and working in disaster management is all about.

Nine interviewees indicated that the education of practitioners was necessary, with an academic pathway adding value to the emergency management role (interviewee, #21). This pathway ranged from increasing the knowledge of practitioners (interviewees, #15, #16, #18) and the standard of the role (interviewee, #15) while providing a benefit to the practitioner's organisation (interviewees, #15, #16, #25), and that "having a bachelor's degree would go some way to easing that problem of people identifying with their past practices" (interviewee, #10).

Interviewee #13 was a 45 to 54-year-old Caucasian male who held a Bachelor of Emergency Management and was employed by the utility sector in NSW as a 'Manager, Emergency Management,' recognised that emergency management was a complex area that required both education and experience.

A large part of EM [Emergency Management] is really about risk assessment, community engagement, planning, [and] mitigation... actually, don't require extensive intuition and wisdom from years of experience... I think people doing a degree should have some experience in EM [Emergency Management]... I think as we focus more on the pre-event stuff... for that, experience is less important because doing analysis and research and continuing engagement which is as highly dependent on intuition and wisdom from exponential learning, and I think that the industry will shift to having a greater focus on... education skills or academic skills to be able to cope with report writing, researching, submissions, all those things that actually are nine-tenths of an EM [Emergency Management] person's role.

4.5.2 Education – discussion

Of the 92 practitioners, only 25 held any formal qualifications in Emergency Management, and while McArdle, (2017, p. 65) also examined the highest level of EM qualification he included in-house, and non-award qualifications, as well as Certificate I – IV qualifications. The certificates level qualifications were excluded from this study, as they are associated more with emergency response and not emergency management per se. It is likely McArdle (2017, pp. 5, 51) utilised these based on his broad definition of emergency management.

The common belief amongst several practitioners and interviewees that the knowledge required to be effective and productive in an emergency manager's role can be gained purely outside of a formal education specific to emergency management (practitioners #5, #19, #23, #24, #25; interviewees, #10, #43). It is

possible that this may be contributed to a lack of uptake in emergency management specific degrees, an experience centric model that has dominated the industry and industry roots within the emergency services that have predominantly trained its personnel in-house. Despite findings that some practitioners and interviewees did not see the benefits of a degree in emergency management, many recognised the need for some level of study and a minimum standard (practitioners #1, #13, #15, #28; interviewee #27). A review of the practitioners' level of education revealed that the majority of practitioners had some form of higher education, although few had a degree specific to emergency management. It is likely that a lack of education specific to emergency management by practitioners limits their ability to appreciate the substantial complexity of the role and the ability for it to fulfil its potential (practitioners #1, #13, #15, #28; interviewee #27), or to provide innovative solutions to complex problems.

Ten interviewees indicated that a degree specific to emergency management offered benefits for practitioners and the community. Interviewees noted that such training provided the practitioners with a broader outlook, improves planning processes, and community confidence, delivers a holistic viewpoint of emergency management, and increases standardisation, research and critical thinking skills. It is also plausible that by having an education pathway, supported by industry regulation as part of its professionalisation, many of the issues regarding education would be addressed.

Human capital indicates that a higher level of productivity can be achieved with more education and that it can act as a signal to those dedicated to pursuing a career in emergency management (Wößmann, 2003, p. 253). Despite studies finding the benefits of obtaining a tertiary education including improving the critical thinking skills (Peerbolte & Collins, 2013, p. 48) and reducing the belief in myths (Nirupama & Etkin, 2009, p. 3), comments by practitioners and interviewees indicated a belief that they could do the job without a degree (practitioner #19, #23, #24; interviewee #25). It is highly likely that despite the ongoing debate between education and experience (as independent criteria), without a clear identity, and formal educational requirements that include standardised emergency management terminology and definitions, the industry will remain fragmented and will not address the growing complexity of the role (Sutkus, Cauley & Ugarte, 2011, p. 1; Cwiak, 2009, p. 7).

Interviewee #12 asked the interviewer (as a point of reflection) “how many jobs can you think of, off the top of your head, [where a degree] would be an absolute prerequisite?” A review of several highly regarded professions that include but are not limited to medicine, law, architecture, and engineering reveals mandatory minimum qualifications before employment (Good Universities, 2019; Australian Institute of Architects, 2016; Prepare for Australia, 2016; McNamara, 2012, p. 528). Not only do they all require a degree pertinent to their industry, the individual generally bares the cost of this education (Ortlieb, 2015). It is plausible that the predominantly part-time nature of the role, its origin within emergency services that predominantly finances and conducts the training of personnel, and the lack of identity and professional status, has a significant impact on emergency management and impedes progress in this area.

Interviewees also indicated that many practitioners were coming from diverse backgrounds such as the military, emergency services, and engineering (interviewees #11, #20). While interviewees indicated a belief that those trained and experienced in these separate fields might possess transferable skills, it is highly unlikely that some overlap of training and knowledge is enough to make one qualified across all industries (Sgobbi & Suleman, 2015, p. 379). For example, no one would suggest that being a builder or plumber is equivalent to being an architect just because they are all located within the building industry, or that having a degree in criminal justice is equivalent to a law degree and should allow the holder to practise law, let alone transfer to another industry such as medicine. It is essential that when examining various roles for transferable skills, that opinion and belief are not mistaken as a substitute for peer-reviewed and evaluated knowledge unique to an industry.

Some practitioners recognised the importance of pursuing a degree specific to emergency management. However, weaknesses within academic programs contributed to the barriers in the development of the industry (practitioner #52). Issues identified included practitioners who were reliant on state-sponsored programs, to gaps in university programs and textbooks (interviewee, #12) and instructors who lacked practical knowledge (practitioner, #73). It is vital that academia addresses these issues if they wish to the gaps between research and application, as it is highly unlikely that a practitioner who has limited confidence in these programs will embrace and apply these lessons.

There is still some conflict in the pursuit of a degree, but the subtle shift within the industry from a predominantly experience focused background, to one that recognises the value of theory and knowledge, is an essential step in developing the emergency management as a professional and unique role – see Table 2.5 (Beaton, 2010, p. 4). However, not all interviewees implied that there were problems in pursuing a formal degree in emergency management (interviewee #3). Practitioner #1 noted the importance of education in building consistency across the industry a sentiment that was further reinforced by practitioner #15.

Professional bodies, such as the Australian Institute of Architects (2016), Engineers Australia (2019), and the International Association of Emergency Managers (IAEM, 2019a) require education as part of their registration and certification process (interviewee, #16). While there is a need for a better-educated and more knowledgeable industry (interviewee, #4), interviewees indicated that the cost of obtaining an education (interviewees, #4, 16) and the availability of emergency management training (interviewee, #4) was considered impediments to the industry. However, based on the increase in disasters and their associated costs with response and recovery, how can communities not afford to ensure they have appropriately educated practitioners responsible for this vital function?

Current literature around preparing the community for disasters have revealed that for every dollar spent, between two and six dollars on recovery is saved (MMC, 2018, p. i; MMC, 2005, p. iii; BTE, 2001, p. 1). This finding could be used to support the increase in funding for the better education of emergency managers, thereby increasing their knowledge and competence. It is important to note that many people would prefer to see the loss of the life prevented rather than focus on what a great response it was to a given incident and that a focus on response is unlikely to address this. Surely the family of those who lost their lives during the Victorian bushfires in 2009 would prefer to have their family members back rather than celebrate what a great response it was.

Further supporting the need for a dedicated emergency manager function is the finding that some interviewees indicated that the professional development workload was too high. Especially, when adding formal education to the emergency managers' requirements, and the additional costs associated with obtaining a degree, journal subscriptions and industry membership to their primary area of employment (practitioners #39, #58, #64). According to practitioner #10, the emergency

management industry is “competency-based, and we don’t have that... degree structure or education pathway in place and that seems a long way off” because it is not a priority and this is caused in part by emergency management functioning as a secondary role (interviewee, #16). Despite issues with existing programs, these comments are inconsistent with the literature (Glassey, 2008, p. 9) that reveals educational pathways that start with the advanced diploma and proceed up to a master’s qualifications and professional doctorate do in fact exist (CSU, 2019a; CSU, 2019b).

The literature clearly articulates the importance of prevention/mitigation, preparedness and recovery within the comprehensive approach to emergency management (EMA, 1998b). However, even interviewees that did not agree that emergency response was directly transferable to emergency management tended to focus on the response phase in their answers and few interviewees mentioned or alluded to prevention/mitigation, and preparedness. Despite a better financial return with prevention than with response (Multihazard Mitigation Council: MMC, 2018, p. i; Bouwer et al., 2007, p. 753; BTE, 2001, p. 1), a large number of interviewees indicated that response should play a significant role in developing an emergency management degree program, further supporting a response focus within the industry.

These findings reveal a systemic issue within the industry where stakeholders do not understand the differences between emergency services and emergency management (McArdle, 2017, p. 5, 51; Spiewak, 2012, p. 5; Chen, 2009, p. 82; Corriveau, 2009, p. 2; Crews, 2001, p. 2; Drabek & Hoetmer, 1991, p. 121), where practitioners associate response as emergency management. The current culture based on the response phase is unlikely to change the practices of hiring personnel. A culture based on emergency services lineage with a preconceived notion that emergency management and emergency services are synonymous; or where practitioners believe that emergency management exists to support emergency services; and that education is not as important as experience; will most likely inhibit the growth of emergency manager as a unique role.

Emergency managers... arrive at their positions for many different reasons. Some are appointed, some are elected, and unfortunately, some win the position by default because no one else is interested, available, or capable of doing the job.

(Springer, 2009, p. 205)

4.6 Experience

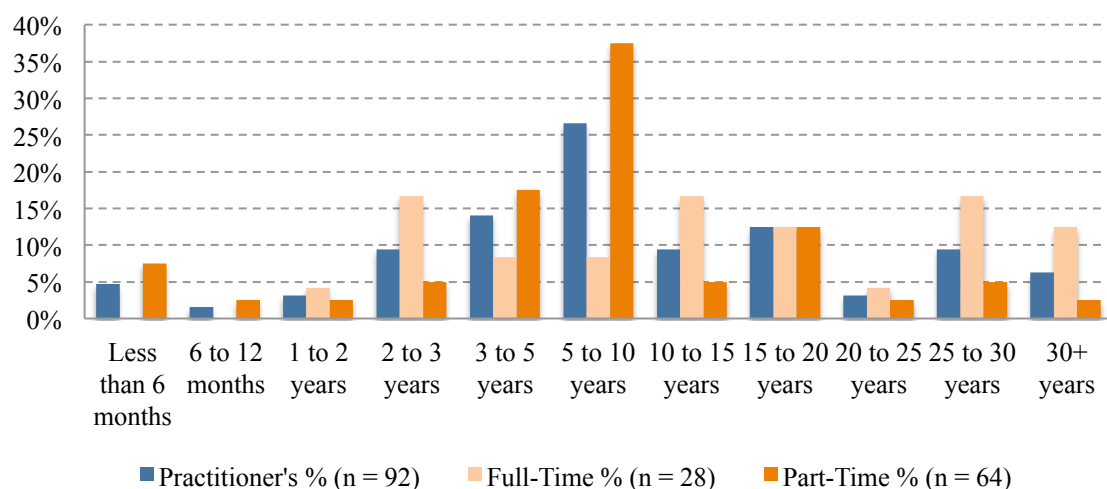
4.6.1 Experience – results

When the survey asked the 92 practitioners about their background in emergency management before their current position, 64 (69.57%) stated they had prior experience. When analysing these 64 practitioners who indicated prior experience, of the full-time (n = 24) and part-time (n = 40) cohorts, all 24 (37.71%) full-time and 20 (31.25%) part-time practitioners indicated that they had previous experience.

When the 64 practitioners were asked about the extent of their experience in emergency management (Figure 4.14), responses ranged from three (4.69%) who indicated ‘less than six months,’ to four (6.25%) who stated they had ‘greater than 30 years’. The largest group was the ‘5 to 10 years’ (n = 17; 26.56%), followed by ‘3 to 5 years’ (n = 9; 14.06%) and ‘15 to 20 years’ (n = 8; 12.5%). The ‘2 to 3 years’, ‘10 to 15 years’, and ‘25 to 30 years’ were equally represented (n = 4; 9.38%), followed by ‘15 to 20 years’, and ‘greater than 30 years’ (n = 3; 6.25%).

The majority of part-time practitioners reported ‘5 to 10 years’ (n = 15; 37.50%), ‘3 to 5 years’ (n = 7; 17.50%), and the ‘15 to 20 years’ (n = 5; 12.50%) groups of prior experience. When analysing the full-time (n = 28) and part-time (n = 46) cohorts, there was no consistency amongst the two cohorts or the various groups with the exception of the ‘15 to 20 years’ group.

Figure 4.14 – Number of years of previous experience in emergency management



When identifying the level of volunteer experience, 23 (25.00%) practitioners indicated that they had volunteered for other organisations. Twenty-three respondents

indicated that they volunteered for more than one organisation. Of these 23 practitioners, nine (39.13%) indicated that they volunteered for the ‘State Emergency Service’, five (21.74%) volunteered for the ‘Rural Fire Service’, two (8.70%) for ‘St John’s Ambulance’ and two (8.70%) identified Surf Life Saving Australia. The remaining practitioners indicated that they volunteered for a variety of organisations including the ‘Ambulance Service’, ‘Coast Guard’, ‘Red Cross’ and ‘Metropolitan Fire Brigade’, equally (n = 1; 4.35%), and ‘Other’ (n = 8; 34.78%).

When examining the results of the ‘Other’ category, practitioners commented that they volunteered for organisations that included ‘veterinary emergency management’ (practitioner, #5), ‘health services board’ (practitioner, #11), and ‘Country Fire Authority’ (practitioner, #27). The remaining four practitioners selected other community programs such as ‘Graffiti Hurts Australia’ (practitioner, #84), ‘Junior Rugby League’ (practitioner, #33), ‘Local Tennis Club’ (practitioner, #84), ‘Special Olympics Australia’ (practitioner, #51) and an ‘aged care association’ (practitioner, #15).

When questioned about their experience with large-scale³⁹ emergencies as an emergency manager, of the 92 practitioners, 56 (60.87%) indicated that they had experience with at least one significant event. When an analysis was conducted examining the full-time (n = 28) and part-time (n = 46) cohorts, 20 (71.43%) full-time practitioners and 36 (78.26%) part-time practitioners indicated experience with large-scale events.

Practitioners indicated that their level of experience with hazards ranged from floods (n = 45; 48.91%), fire (43; 46.74%), severe storms (n = 37; 40.22%), power outage (n = 22; 23.91%) and droughts (n = 14; 15.22%). Under ‘Other’, practitioners listed ‘reef related issues’ (practitioner, #50), ‘cyclones’ (practitioner, #24), ‘heatwaves’ (practitioner, #4), ‘high-risk incidents’ (practitioner, #57) and ‘search and rescue’ (practitioner, #57).

The prior experience of the practitioner was considered a significant factor in why individuals were employed (interviewee, #21), and that experience was necessary (interviewee, #25) because “disasters did not occur every day” (interviewee, #5)

³⁹ The definition of a large-scale event was left to the practitioners to determine.

making the practical exposure to events invaluable that set an individual apart from others (interviewees, #12, #26). Ten interviewees recognised that education could be beneficial but believed that the benefits obtained through practical experience were more significant (interviewee, #16), and that education could not replace the benefits of experience (interviewee, #2).

Interviewees indicated that “a lot of these skills [obtained through education] you can learn through experience” (interviewee, #5), and what matters is “practical, good experience and training... in the realities of what happens and what you need to do during those times” (interviewee, #7). Interviewees also indicated that practical experience, “interpersonal skills and interrelationship skills [were] more important” (interviewee, #24), and that a practical understanding of “organisational structure, policy and focus of their particular EM [Emergency Management] requirement is just as valuable” (interviewee, #3).

Interviewee #18, a 25 to 34-year-old Caucasian male who held a diploma and was employed by a local government in QLD as a ‘Disaster Management Coordinator’ stated that...

there are a lot of people out there that have skills, abilities, attributes, other knowledge in other fields... that in the disaster management sphere will also be of benefit when... they’re operating in that field.

Interviewees indicated that it was difficult to obtain experience dealing with emergencies (interviewee, #4), but it was this practical experience and exposure to emergencies that was important because it enabled a practitioner to better understand their roles and responsibilities (interviewee, #24). Interviewee #23 asserted that, “knowing how to use the tool [the emergency manager], and primarily that’s achieved through experience; and... building trust, networks in building relationships [sic]” was a crucial component in emergency management.

Interviewees indicated a preference for individuals with a particular background in emergency services because they believed that the skills obtained from these roles were equally transferable and could not be achieved by other means [such as formal education] (interviewees, #11, #20). The knowledge and skills identified as relevant to the role by interviewees included the ability to identify issues common to emergency management (interviewee, #22); awareness of the role and responsibilities of the job

(interviewee, #24); the ability to handle the stress of an emergency (interviewee, #26); intuition (interviewee, #27); capacity to think on their feet quickly, better decision making abilities (interviewee, #14); an improved ability in addressing the gaps that arise from textbook learning (interviewee, #12); networking opportunities (interviewees, #4, #23); and practitioners that can “be employed and utilised quickly” (interviewee, #20).

Interviewees asserted that the role of an emergency manager was not something that could be done by just anyone (interviewee, #17), because emergency management was “a complex environment... so you have people who can respond rather than react, engage in multiple tasking [sic] and generally operate under pressure, so experience helps provide that” (interviewee, #3). According to respondents, experience indicated that the emergency manager already had several skills for the role. Skills identified included networking and “the ability to communicate with **other emergency service**⁴⁰ professionals” (interviewee, #4). Experience means that the practitioner can “be employed and utilised quickly without the steep learning curve that can cause quite a few issues” (interviewee, #20). Because of this experience “you’ve got greater comfort and... faith in their abilities when... they are required to work under a bit of pressure” (interviewee, #7).

Twelve interviewees indicated that response should play a significant role in an emergency management degree. Interviewees asserted that practitioners should be able to understand and identify issues, as well as prepare for emergency events (interviewee, #22). Interviewees further indicated that having experience in response better enables practitioners to handle the high-pressure (interviewees, #3, #29), high-stress environment that cannot be replicated outside of practical day-to-day experience (interviewee, #26). That without practical response experience, “what benefit is he [the emergency manager]?” (interviewee, #6). That “it’s only by doing the job... having emergency situations arise and respond or react to those and building on the relationships that exist as a result of that emergency” (interviewee, #23), that one acquires practical experience. However, according to one interviewee, experience alone does not provide the practitioners with the array of knowledge required for the position (interviewee, #7).

⁴⁰ Emphasis added

Comments by other interviewees ranged from, the employment background of practitioners in emergency response is the equivalent to, and equally transferable to emergency management, to the ability to have a greater understanding of the particular event. Interviewee #11, a 25 to 34-year-old Caucasian, male who held a diploma and was employed by a local government in QLD, commented.

*I think it's desirable to have somebody that has an emergency background, my 'Disaster Management Coordinator' has a mixed background of engineering, being a soldier, and also being a rural firefighter, and those are a good balance... the **same skill sets [emergency response and engineering are] equally applicable**⁴¹ to that [emergency management].*

Interviewee #20, a 45 to 54-year-old Caucasian male who was primarily employed as a 'Local Controller' by a local government in QLD and as a 'Deputy Controller (Acting Controller)' stated that...

*[Emergency services] tend to have more experience in **emergency response and that transfers into emergency management**⁴²... I say a trust factor – having people that when it comes to the crunch, have some sort of experience... In regards to certain times, I'm not going to say beforehand, but during an event.*

Although interviewees had previously cited the importance of education, some indicated that it was not a good indicator of an emergency manager's ability to do the job (interviewee, #12). The emergency manager can lose some of their credibility if they do not have that practical experience to support their academic qualifications (interviewee, #1). Other respondents asserted that experience was necessary because "unless you have experienced it, you can't describe... it still can't... accurately give people the feeling of an experience of being within an emergency response" (interviewee, #8).

Interviewees indicated that the improved integration of emergency managers and academia was important (interviewee, #28), to balance practical experience and theoretical knowledge (interviewee, #21). A course needed to be "practically based" to be useful and to equip the emergency manager with the thinking, the knowledge, and the networks (interviewee, #25). It was this practical exposure to emergencies

⁴¹ Emphasis added

⁴² Emphasis added

(interviewees, #3, #16), and the gap between what was relevant to practitioners and taught by academia (interviewee, #2), that were seen as impeding this process, with interviewees unable to understand how academia would be able to integrate these components into a degree program (interviewees, #5, #28).

Interviewee #26, a 65+–year–old Caucasian male who held a diploma and was primarily employed as a ‘Manager, Technical Services’ by a local government in SA, and as a local government association representative – State Response Advisory Group in his emergency management role asserted that...

there should be a component of having some practical exposure before you actually learn theory, but I also think there needs to be opportunities for people to gain a bit of theory before they get exposed to... emergency management.

Interviewees provided various reasons why experience was deemed essential to an emergency management degree program. Interviewees cited the complexity of emergency management (interviewees, #3, #21), the historical background and the limited educational opportunities for practitioners (interviewee, #2). Other practitioners indicated a requirement for the practitioner to understand emergency services and disaster management (interviewee, #18) that had contributed to a history of experience being chosen over education (interviewee, #2).

Interviewee #14, was a 25 to 34–year–old Caucasian male who held an MBA and was primarily employed as a ‘Corporate Risk and Compliance Officer’ by a local government in NSW reported that...

the theory side is very pertinent, but putting those things into place where you have many variables in regard to human nature in those situations where there’s a high risk of injury... those practical aspects need to be looked at... see if they [the emergency manager] can handle a high risk or pressure situation.

Other interviewees expressed a more balanced view with emergency management needing to be a combination of education and experience (Interviewee, #15), to enthusiastic support for a degree program. Interviewee #10, a 45 to 54–year–old Caucasian male who held a bachelor degree and was employed by a local government in QLD as a ‘Resilience and Emergency Management Coordinator’ asserted that...

what tends to happen is [emergency managers bring] a lot of organisational baggage with them, and they replicate... the environment they used to work in... I think having a bachelor's degree would go some way to easing that problem of people identifying with their past practices. I think it would go a long way to ensuring a little bit more interoperability and to give people who participate in it a more... viable overview of and capacity for greater situational awareness.

Three interviewees recognised that there were underlying misconceptions that had the potential to affect the hiring process. Misconceptions that included a lack of understanding about higher education (interviewee, #23), that the possession of a degree does not guarantee an individual can do the job and the limitations of a degree program (interviewee, #12), and how practitioners perceive solving problems in a disaster as coming from experience (interviewee, #13).

Interviewee #17 was a 55 to 64-year-old Caucasian male was primarily employed by the NSW Police as a 'Regional Emergency Management Officer' asserted that he...

would like to see a practical side of it in any diploma course or anything like that just to give people the hands-on experience. We don't just give engineers a course and say there you go, and you can build anything you want. They've gotta have that practical experience to go with it, end of story [sic].

4.6.1 Experience – discussion

When comparing the age of practitioners and time in service, it is unclear why there is a disparity between the two groups. Of the 64 practitioners, 48.60% of practitioners in this study indicating an age range between 50–60 years and the largest group at 26.56%, indicating 5–10 years of experience. These findings suggest several possibilities that included practitioners may have come to the position later in their career, and the position is a second career or is attached to another role. It is also possible that the profession fell out of vogue (Coles, 2014, p. 24) and then had a renaissance. These findings may have implications in smaller organisations and for those who would like to pursue emergency management as a career of first choice.

McArdle (2017, p. 70) examined the length of time practitioners had been in emergency management. His study focused on the number of years in the current position. McArdle surmised that a combination of the older workforce and length of time in their current position indicated that they were "very internally-mobile body, changing positions relatively frequently" (p. 70). The lack of consistency of

practitioners holding the role across their career is a concern as findings from this study supports Blanchard's (2001) stereotypical emergency manager. McArdle has indicated that this brings a wealth of knowledge (p. 70) but it also raises the question as to whether emergency management is considered a tick-box approach to a current political issue where a 'warm body' is filling a vacancy, rather than emergency management being seen as a career. This mentality will highly likely decrease the ability of an organisation to meet the growing demands and knowledge required of the role and decreases any potential innovation required to address the complexities of the role.

Comments by interviewees that the position was all about the practical experience were inconsistent with contemporary emergency management (Phillips, Neal & Webb, 2012, p. 252; Spiewak, 2012, p. 5; Drabek & Hoetmer, 1991, p. 121; Crews, 2001, p. 2). Emergency responders, whether they are police, fire, or medical, are required to undertake theory as part of their respective training. For example, a firefighter, who has undertaken education in fire behaviour has an increased understanding of how a fire will react depending on the structure, fire suppression systems present and will be better predict fire behaviour (Fire & Rescue NSW, 2017, p. 9). Without being exposed to this theory they would have to wait to experience it first hand, potentially endangering themselves and others in the process. Furthermore, the comments expressed by many interviewees indicate a mindset that continues to emphasise response over the tenets of contemporary emergency management including science, research, sound risk management principles, collaboration, strategic planning, community engagement and evidenced based practice (FEMA, 2007).

According to McArdle (2017, p. 96) "the fact that EMs see themselves as, and are, an experienced workforce means that... there may be a reluctance to change and grasp new initiatives". The emergency management literature indicates that the kinds of disaster experience practitioners have previously obtained may no longer be relevant and that practitioners will need to gain new knowledge (Pachauri & Meyer, 2014; Stevens, 2013, para, 3; Chen, 2009, p. 75; Darlington, 2008, p. 11; Britton & Clark, 1999, p. 5). This finding presents a paradox for practitioners and the community. How can a practitioner prepare their community for an event, if the practitioner has neither the experience nor the education to fully appreciate and manage any new events?

The lack of experience and education also raises the question as to whether the community's existing confidence in the emergency managers is misplaced or bound to a sense of loyalty for what has traditionally been intertwined with volunteer roles within the emergency services. An area that is considered sacrosanct within the Australian psyche, despite the difference types of skills and knowledge required of these roles.

4.7 Knowledge

4.7.1 Knowledge – results

Of the 92 practitioners, unsurprisingly, 69 (75.00%) did not have a membership with a professional industry body or association. When analysing the full-time ($n = 28$) and part-time ($n = 46$) cohorts, only 10 (35.71%) full-time, and 13 (20.31%) part-time practitioners asserted that they possessed a membership with an emergency management industry body or association.

Of the 92 practitioners, 46 (50.00%) stated that they did not subscribe to any emergency management journals/magazines. Of the 46 that did subscribe to journals and magazines, 45 (97.83%) designated the 'Australian Journal of Emergency Management,' 11 (23.91%) the 'Journal of Emergency Management,' and seven (14.22%) indicated 'Other'. The subscriptions practitioners listed under 'Other' ranged from various organisation-specific bulletins (practitioner, #3), to industry journals (practitioner, #24), circulars (practitioner, #89), and generic magazines (practitioner, #10). Unsurprisingly, the full-time cohort ($n = 20$; 71.43%) was substantially more likely to subscribe to a journal than their part-time counterpart ($n = 26$; 40.63%).

Of the 92 practitioners, surprisingly, 84 (91.30%) indicated a level of interest in furthering their knowledge. When analysing the full-time ($n = 28$) and part-time ($n = 46$) cohorts, 27 (96.43%) full-time and 57 (89.06%) part-time practitioners were interested in furthering their knowledge.

4.7.2 Knowledge – discussion

De Cieri and Kramar (2008, p. 396) define professional development as "the acquisition of knowledge, skills, and behaviours that improve an employee's ability to meet changes in job requirements and in client and customer demands". Established professions utilise professional development as a tool to ensure that their membership maintains a contemporary level of knowledge specific to their profession (AMA, 2016; IAEM, 2019a; Engineers Australia, 2019; Law Society of NSW, 2019) and

further supports Beaton's (2010) 'Criteria for Becoming a Profession' identified previously in Chapter Two.

The majority of practitioners in this research indicated that they did not have a membership to a professional body and half of all practitioners did not subscribe to a professional journal. These findings are inconsistent with their assertions that they were interested in further developing their knowledge. Practitioners argued that the costs of training programs and subscribing to journals and industry associations are factors in a lack of professional development, but evidence suggests otherwise. However, many journals that are available are government funded including the *Australian Journal of Emergency Management* (AIDR, 2019) and the *New Zealand Ministry of Civil Defence & Emergency Management (MCDEM) e-Bulletin*, and are free of charge (MCDEM, 2019).

These findings were further supported by free emergency management courses offered until circa 2008/9 by the Australian federal government under the auspices of the EMAI that included individual subjects up to and including an Advanced Diploma in Public Safety (Emergency Management) to all government practitioners (Clarke & Rowlands, 2008, p. 51). However, it is likely that the low completion rate (60%) of practitioners who undertook these full funded programs at EMAI, as previously described', led to its decline and subsequent closure in 2015. It is likely that a lack of a national identity, educational requirements, and the part-time and volunteer nature of practitioners has contributed to a limited awareness regarding available resources and apathy with regards to continuing education and knowledge development that are consistent with findings from Cwiak (2011, p. 8) and Witherington (2011, para 7). The majority of practitioners indicated that there were advantages and disadvantages to journal subscriptions, several practitioners attributed the low subscription rates to several areas, including the maturity and perception of the industry, their limited availability, a lack of relevant journals and the costs associated with accessing journals (interviewee #64).

Interviewees have argued that the costs of training programs and subscribing to journals and industry associations are factors in the lack of professional development (interviewees #11, #47, #51, #61, #64). However, as with training and subscriptions, evidence suggests otherwise. Although sparse, there is also at least one professional association dedicated and available to Australian emergency managers, the International Association of Emergency Managers. This association can be located through a quick Internet search and has over 9,000 members across eight global regions. Membership with IAEM does not require any qualifications, costs 88 USD per annum and has regional representatives for Oceania (IAEM, 2019a; IAEM,

2019b). Additional benefits include access to an extensive global membership of emergency managers, a regular newsletter, bulletins and access to national and international events. The inability of practitioners to locate this readily available resource further reveals a systemic issue that suggests a level of apathy on the part of emergency managers to engage with the emergency management community and maintain the currency of knowledge.

Despite the majority of practitioners indicating a desire to increase their knowledge in emergency management, the results were consistent with the value–action gap identified by Blake (1999, p. 257) and Blanchard’s (2001) stereotypical emergency manager. These findings, along with reports into recent disasters (see Chapter 7 for more details) (Keelty, 2013, p. 26; Keelty, 2011, pp. 28, 96, 167; Holmes, 2012, p. 413; Teague, 2010, p. 8) suggest that employing practitioners with no formal education in emergency management and little interest, despite their assertions otherwise, in developing their professional knowledge are unlikely to have the necessary contemporary knowledge required to effect meaningful DRR.

The understanding of resources being expensive is misplaced and may be due to the consistent approach by organisations to appoint any individual into the position of emergency manager, merely because they were available (Springer, 2009, p. 205; Corriveau, 2009, p. 3). It is also plausible that organisations misunderstand the differences between emergency services and emergency management, contributing to a well–intentioned but misinformed system promoting unsuitable and ill–qualified individuals to the role (Eburn & Jackman, 2011, p. 1; Cwiak, 2009, p. 58; Corriveau, 2009, p. 3; Glassey, 2008, p. 26; Tierney, 2007, p. 4) that has been proven to exacerbate disasters (World Bank & United Nations, 2010, p. 1; Waugh & Tierney, 2007, p. 21).

Interviewee #28, a full–time formally educated emergency manager, believed that emergency managers who have not obtained membership to a professional body or subscribe to journals are “seat warmers”. This comment was reinforced by interviewee #17, a full–time practitioner without a formal education in emergency management, who did not know about existing resources and expressed a lack of interest in finding out about relevant professional bodies. While speculative, the level of education and lack of national identity may be defining factors in a practitioner’s level of interest in researching and obtaining available journals specific to emergency management.

It is also plausible that a ‘tick box’ approach to emergency management where people are placed into role without adequate training, education and resources, or where the role is an add–on to a more substantive and non-related role means that the

practitioner may be apathetic or does not have the necessary time to dedicate to effective DRR. These findings support the presence of signal theory in which the level of interest in emergency management through education communicates the value of the role to the community (Wößmann, 2003, p. 253) and value–action gap theory (Blake, 1999, p. 257).

Despite the availability of resources, practitioners indicated a lack of awareness about their existence, or a lack of interest in accessing them. In 2008, Clarke and Rowlands (p. 51) found that a large number of practitioners who undertook courses at the Australian Emergency Management Institute (AEMI) did not complete them. Clarke and Rowlands (2008, p. 50) recommended that future attendees of these programs be assessed based on “genuine need and personal commitment to build emergency management capability”. Practitioners indicated that it was highly unlikely that someone in a part–time capacity and regionally located would be available to take time off to attend training. In industries without any requirements for professional development, the continued education of practitioners will rely solely on the practitioner’s diligence and commitment to their role. It is highly plausible that this will not occur if practitioners do not see the field as a career path or where practitioners have not seen the need to undertake a degree specific to emergency management prior to their employment or see it and their role as a profession in its own right. These issues may also be exacerbated if the individual is a sole practitioner in an organization that is remote and cannot send the practitioner out of the area for training, which due to Australia’s geography is very plausible.

Many of the reasons cited by interviewees for limited membership in professional organisations, subscriptions to professional journals and participation in continuing education programs may be associated with the current part–time nature of the role and where the practitioner’s substantive role is not emergency management. This secondary, non–substantive role adds additional burdens including professional development and the financial hardship that could be considered unreasonable or intrusive (interviewees #39, #58, #64), as it does not hold the same level of priority as their primary role. This may be particularly relevant if the primary role has a robust regulatory framework, like medicine, law, architecture and engineering requires professional registrations and ongoing professional development (Good Universities, 2019; Australian Institute of Architects, 2016; Prepare for Australia, 2016; McNamara, 2012; Wilson, 2001, p. 231).

The growth of the Internet has seen an unparalleled increase in the quality and quantity of information available to practitioners. Practitioners may not feel the need to obtain information from a journal or association when the information is readily

available online (interviewee, #32). There are benefits to the amount of information currently available online but it is also likely that this abundance of online material can lead to information overload, misinformation via fake news or provide an individual with access to information that is uncensored, evaluated or peer-reviewed (UK Essays, 2018). Several interviewees indicated the need for greater levels of education and improved standards across the profession, along with a desire to improve the discipline's knowledge base (interviewees, #1, #13, #15, #28). However, the current system with a preference for experience over education does not appear to reward practitioners for the intellectual pursuit of knowledge and education and will not address changes in climate, technology or population.

Recommendation # 4.3: Mandatory defined educational pathway

Utilise existing professional bodies such as medicine and the AMC as a model, to develop an independent (of government) body supported by legislation and managed by practitioners to develop a minimum level of mandatory educational pathway in emergency management (not a peripheral degree in response or emergency services) and respective pathways/specialisation and level of practitioner.

Emergency management practitioners (not to be confused with emergency services) need to work with universities to identify core requirements of the role and develop educational standards and experience for each level of education. For example

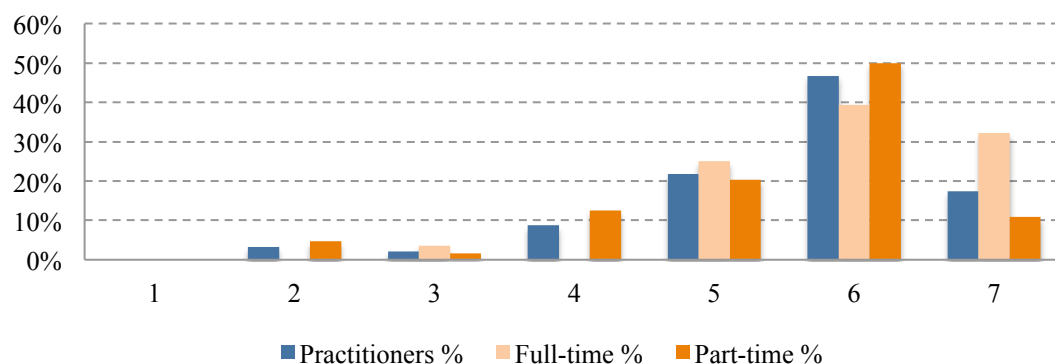
- A manager and above must hold a masters, and bachelor degree in emergency management.
 - A deputy manager must hold a bachelors degree in emergency management
 - A specialist must hold a bachelors degree in emergency management plus a recognised qualification (minimum diploma) in their area of specialisation, for example, prevention, media, or communications.
 - Other emergency management industry personnel must hold at least an advanced diploma.
 - A researcher must hold a research masters and bachelor degree in emergency management.
 - Non-emergency management qualified personnel (specialists) may be called to provide advice (police, firefighters, meteorologists, geologists, engineers) but are not a member of the committee or group and are not categorised as emergency managers.
-

4.8 Competence and confidence

4.8.1 Competence and confidence – results

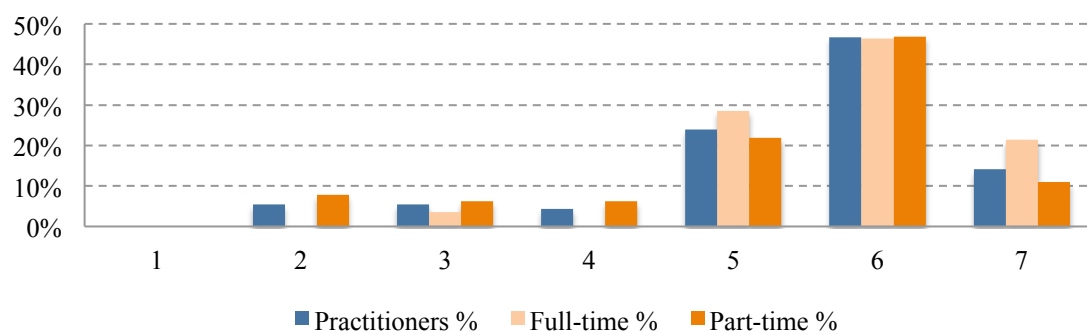
Practitioners were questioned about their level of satisfaction regarding their competency in emergency management (Figure 4.15), the mean score was 5.59 out of 7.00, with one being dissatisfied and seven satisfied. When analysing the full-time (n = 28) and part-time (n = 46) cohorts, there appeared to be little difference between the roles with the mean for full-time being 5.96 compared to 5.40 for part-time practitioners.

Figure 4.15 – Practitioner's level of satisfaction with regards to their competency in emergency management



When practitioners were questioned about their level of satisfaction regarding their level of confidence in their own competency in emergency management (Figure 4.16), the mean was 5.44 out of 7.00. There appeared to be little difference between those in the full-time (n = 28) and part-time (n = 46) roles with the mean for full-time being 5.80 compared to 5.30 for part-time practitioners.

Figure 4.16 – Practitioner's level of satisfaction with regards to their confidence in emergency management



4.8.2 Competence and confidence – discussion

Interviewees noted that fulfilling the competency of the role in a part-time capacity (interviewee, #2) and assessing policies and management systems accurately (interviewee, #20) as factors that had an impact on the ability of the practitioner to meet the demands of the role effectively. Practitioners also indicated that experience could increase competency due to its “ability to speed up the absorption of” information (interviewee, #2).

However, it is unclear how this is any different for a practitioner with a degree and theoretical understanding of contemporary emergency management and if this would increase the knowledge absorption further but if individuals are taught this as part of their degree program it is plausible to suggest that it would. Competence refers to the qualification of a person to a suitable position for a purpose, or the application of skills and knowledge that enable a person to act effectively in a job or situation (Macquarie Dictionary, 2019). Confidence can be defined as trusting in something or someone, in this instance, it is trust in the emergency manager (Landau, 1999).

In this study, practitioners self-rated their competence quite high, at 5.59 out of 7.00, with one being dissatisfied and seven satisfied. The competence of practitioners is questionable when only 50.00% subscribes to emergency management journals, 75.00% did not have a membership with professional body or association, and 72.83% of practitioners have no formal tertiary education in emergency management. Dunning, Heath, and Suls (2004, p. 69) supports this finding, stating that individuals often overrate themselves and their abilities in self-reporting questionnaires and that these should be used with caution, and further supports the Dunning Kruger affect (1999).

Response from interviewees and practitioners further reveal discrepancies in the practitioners' level of understanding regarding the basics of emergency management, and the comprehensive approach, including the role and benefits of prevention/mitigation, preparedness, response and recovery. The inconsistencies between the practitioners desire for developing their knowledge and their lack of education pursuit and ongoing professional development support Broadwell's (1969, p. 3) *unconscious incompetent* and Moore and Schatz's (2017, p. 1) *overconfidence* theory.

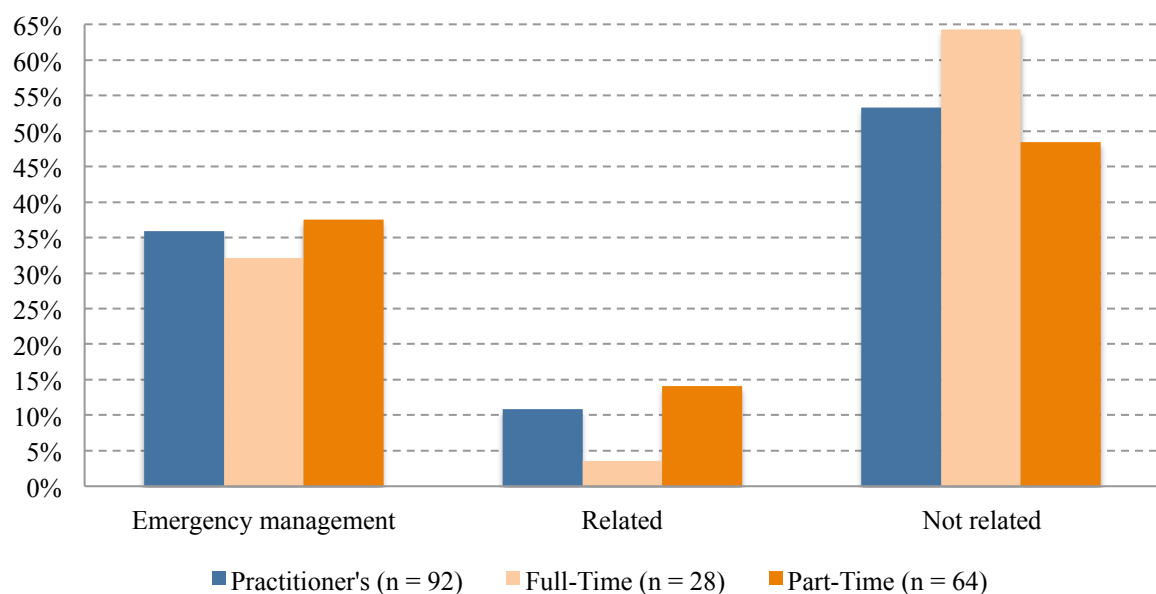
4.9 Industry overview

4.9.1 Industry overview – results

When the 92 practitioners were asked where they believed emergency management should be located, 82 (89.13%) indicated that it should be located within their department. Responses were consistent across the full-time (n = 28; 92.86%) and part-time (n = 64; 87.50%) cohorts.

On examination of practitioner's titles within their primary role (Figure 4.17), the largest group (n = 49; 53.26%) was not related to emergency management and included 'Executive Officer', 'CEO', 'Director Infrastructure Services', 'Parks and Reserves Manager', and 'Incentives Delivery Manager'. The next largest group (n = 33; 35.87%) specifically identified 'emergency management', which was followed by ten (10.87%) practitioners who identified titles that included fire, response, resilience and emergency services.

Figure 4.17 – An examination of related and non-related titles for the practitioner's primary role

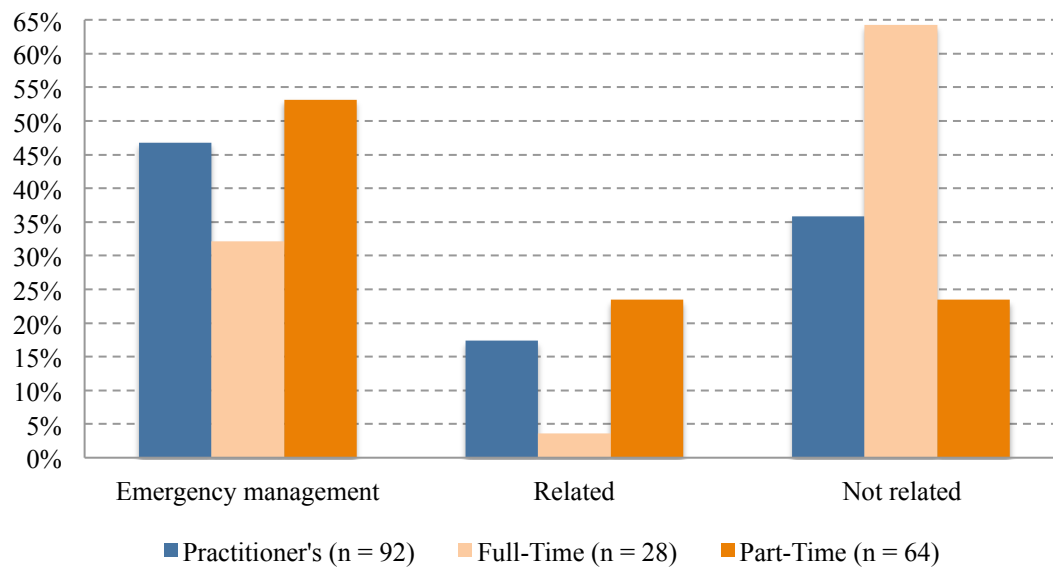


Full-time (n = 28) and part-time (n = 64) practitioners were examined as independent cohorts, the majority of full-time (64.29%) and the largest group of part-time (48.44%) practitioners indicated non-related titles within their primary role⁴³.

⁴³ While determining the appropriateness of some titles to emergency management was readily apparent, some required the specific knowledge of the researchers background, extensive education in emergency management and familiarity with the industry and industry-based terms.

Examining the title of practitioner's in their secondary role, emergency management (Figure 4.18) revealed that 47 (46.74%) respondents had titles that included emergency management and disaster. Nineteen practitioners (17.39%) utilised response related terms that included, emergency resources, incident and emergency response, emergency services, fire, and controller. Twenty-five (35.87%) practitioners listed unrelated or unknown titles that included "Financial Analyst", "Network Operations Standards and Planning Manager", and "Senior Project Coordinator".

Figure 4.18 – An examination of related titles for the practitioner's emergency management role



4.9.1.1 Emergency management as a profession

Of the 92 practitioners, 78 (84.78%) indicated that they considered emergency management a profession; nine (9.78%) asserted that it was not, and five (5.43%) stated that it was in progress. When conducting an analysis of the full-time (n = 28) and part-time (n = 64) cohorts as a percentage, the responses were consistent at 24 (85.71%) and 54 (84.38%), respectively. When examining the belief that emergency management was not a profession, three (10.71%) full-time and six (9.38%) part-time practitioners indicated that it was not. The remaining (n = 1; 3.57%) full-time and (n = 4; 6.25%) part-time practitioners thought it was in progress.

Of the 92 practitioners, 64 (69.57%) indicated that they believed themselves to be emergency management professionals compared to 28 (30.43%) who stated that

they were not. When conducting an analysis of the full-time (n = 28) and part-time (n = 64) cohorts, those who had emergency management as the most substantial component of their job were more likely (n = 27; 96.43%) to identify as an emergency management professional compared to their part-time counterparts (n = 37; 57.81%).

Of the 92 practitioners, 66 (71.74%) did not believe that the services offered by emergency management were being used to their full potential. When examining the full-time (n = 28) and part-time (n = 64) cohorts, the majority of full-time (n = 19; 67.86%) and part-time (n = 47; 73.44%) practitioners indicated that emergency management was not being used to its full potential.

When practitioners were asked if they thought the position of emergency manager was being utilised to its full potential, of the 92 practitioners, 64 (69.57%) did not believe that it was, while 25 (7.61%) said that it was, and three (3.26%) indicated 'Other'. Under 'Other', comments included "councils have a problem in this area with 4 yearly election of Mayor & Councillors who do not understand their role under the Local Government Act & DM Act" [sic] (practitioner, #12), "where funding permits" (practitioner, #14), and "in my circumstances, yes" (practitioner, #41). When analysing the full-time (n = 28), and part-time (n = 64) cohorts, responses were similar with the majority of part-time (44; 71.43%) and full-time (20; 68.75%) practitioners indicating that the position was not utilised to its full potential.

When questioned whether the role of the emergency manager should be a dedicated, stand-alone position within their organisation, of the 92 practitioners, the majority (n = 70; 76.09%) indicated that it should be. When full-time (n = 28) and part-time (n = 64) practitioners were compared, a greater number of full-time (n = 27; 96.43%) than part-time practitioners (n = 43; 67.19%) supported the stand-alone concept for emergency managers.

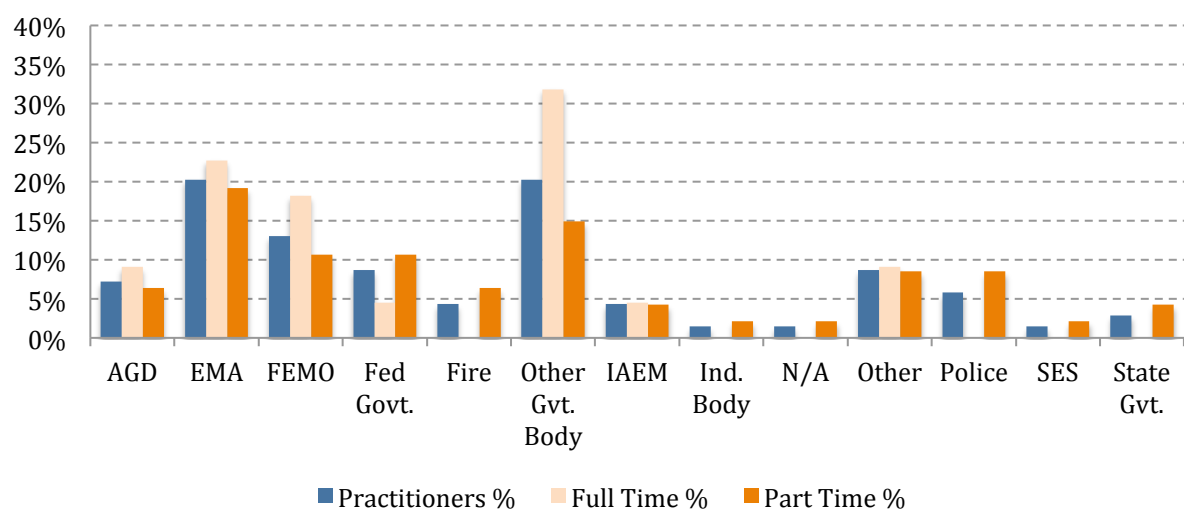
4.9.1.2 Industry regulation

Practitioners were asked two questions relating to the regulation of the industry. These questions included whether they believed the industry should be regulated, and if so, who should be responsible for this regulation. Of the 92 practitioners, 69 (75.00%) indicated that it should be regulated with similar results across full-time (n = 22; 78.53%) and part-time (n = 47; 73.44%) cohorts.

Practitioners were asked a follow-up question of who should be responsible for regulating the emergency management industry. Practitioners had 11 options that included government and non-government, along with nine other organisations.

There was a diversity of responses across the 69 practitioners who indicated that the emergency management industry should be regulated. Of these 69 practitioners, 14 (20.29%) reported that industry regulation should be the responsibility of Emergency Management Australia (EMA), whereas, another 14 (20.29%) indicated ‘other government body’ (Figure 4.19). While these were the two most common responses, there was an inconsistent view across practitioners as to which body should be responsible for managing industry regulation.

Figure 4.19 – Who should be responsible for regulating the emergency management industry?



Note: The names of organisations have been abbreviated as follows; AGD = Attorney General’s Department; EMA = Emergency Management Australia; FEMO = federal emergency management organisation; Fed Govt. = Federal Government; Govt. Body = Other Government Body; Ind. Body = independent body, IAEM = International Association of Emergency Managers, N/A = not applicable, SES = State Emergency Service, State Gvt. = state government.

4.9.1.3 The sharing of personnel

When the 92 practitioners were asked if they saw a benefit in sharing personnel with other organisations to gather practical experience, 89 (96.74%) stated that they did with similar results across the full-time (n = 28; 100%) and part-time (n = 61; 95.31%) cohorts.

Although the majority of practitioners indicated that there were benefits to sharing personnel, 50 (54.35%) practitioners indicated that there were also barriers with similar results across full-time (n = 14; 50.00%) and part-time (n = 36; 56.25%) cohorts. Practitioners identified barriers that included the “part-time role of emergency managers” (practitioner, #1), “politics and personalities and egos get in the way” (practitioner, #3), “funding” (practitioner, #7), “personnel mindset [sic]”

(practitioner, #12), “drain on human and financial resources” (practitioner, #15), “fire and rescue tend to hog the show” (practitioner, #43), “different opinions on policies procedures between organisations” (practitioner, #53), and “competing organisational priorities” (practitioner, #59). Others practitioners stated that they “have already tried with neighbouring councils. Some are not interested” (practitioner, #88).

4.9.1.4 The value of mentoring programs

Practitioners were asked three questions about mentoring. The first was whether a mentor program existed and if it was available to them, with the majority (n = 75; 81.52%) of practitioners indicating that they did not have access to a mentor. The results were similar across the full-time (n = 22; 78.57%) and part-time (n = 53; 82.81%) cohorts. Comments from practitioners included...

Age of emergency management practitioners of concern

(practitioner, #1)

No program required due to the support available from all local, state and non Govt organisations [sic]

(practitioner, #2)

It happens in our workplace through supervisory roles

(practitioner, #6)

If more [sic] time can be found to do it properly

(practitioner, #8)

Would be good to have

(practitioner, #11)

Depends on how the program is structured according to workload

(practitioner, #12)

For the others in my department

(practitioner, #50)

We have a lot of networking meetings, training, information gathering sessions, information [sic] forwarded from other councils, SES, local government Victoria, MAV⁴⁴

(practitioner, #54)

Not sure it would be workable. Need time to consider

(practitioner, #58)

Depends on the workload. One cannot do what one has to do and guide others effectively at the same time

(practitioner, #63)

Dependent upon the type of mentoring (i.e. specific to Emergency Management – not warranted) [sic]

(practitioner, #65)

Enterprise-specific training is provided. Networking with and support from others on the Event Mgr [sic] roster is readily available

(practitioner, #83)

The second question asked the 75 (81.52%) practitioners who indicated that a program did not exist if they were interested in a mentor program. The majority of these practitioners (n = 52; 69.33%) expressed an interest in having such a program in place. When analysing the full-time (n = 28) and part-time (n = 64) cohorts, a greater number of full-time (n = 18; 81.82%) than part-time (n = 34; 64.15%) practitioners indicated an interest in having a mentoring program.

The third question was similar to the second but was rephrased to ask practitioners if they thought a mentoring program was warranted. Of the 92 practitioners, the vast majority (n = 85; 92.39%) indicated that it was needed with comments from practitioners including...

Not if support is available

(practitioner, #2)

Builds skills and confidence

(practitioner, #11)

⁴⁴ Practitioner #54 did not define this acronym.

Most would be the mentors

(practitioner, #12)

Historically a neglected area in our organisation [sic]

(practitioner, #50)

Could be worthwhile

(practitioner, #51)

Experience of others should be valued

(practitioner, #53)

To provide guidance and to learn about best practice in the profession

(practitioner, #54)

Possibly but would need to discuss further with others

(practitioner, #57)

Particularly for people inexperienced in the role

(practitioner, #70)

For those involved in Emergency Management under Govt jurisdiction [sic]

(practitioner, #83)

When analysing the full-time (n = 28) and part-time (n = 64) cohorts, 100% of full-time practitioners, indicated that a mentoring program was warranted when compared 89.06% of part-time practitioners.

4.9.1.5 National register of emergency managers

Practitioners were asked if they thought there was a need for a national register of emergency management practitioners. Of the 92 practitioners, 58 (63.04%) indicated that there was a need for a register. When an analysis was conducted examining the full-time (n = 28) and part-time (n = 64) cohorts, a greater number of full-time (n = 21; 75.00%) than part-time (n = 37; 57.81%) practitioners indicated that there was a need for a national register of emergency managers.

A second question was used to determine whether practitioners would be interested in sharing their professional information on a register, should it exist. Of

the 92 practitioners, 73 (79.35%) indicated that they would. When the full-time (n = 28) and part-time (n = 64) cohorts were analysed, 24 (85.71%) full-time, and 49 (76.56%) part-time practitioners indicated a willingness to share their information. However, some practitioners noted concern over a register.

If it is a register for a professional body to link like-minded people, I am all for it. If it is just a register for regulation's sake, to keep track of people, I'm not sure.

(practitioner, #3)

This [register] is just adding more bureaucracy and training requirements for staff that are already stretched. If such a system was to be implemented, it could only work if dedicated emergency managers were required within an organisation, not the current situation where these responsibilities are added on to people's "normal" jobs.

(practitioner, #88)

4.9.2 Industry overview – discussion

There was a minimal difference (5.94%) between the full-time (92.86%) and part-time (87.50%) cohorts who believed that the emergency management function should be attached to their department. It is plausible that the multidisciplinary nature of emergency management could effectively see the role readily assimilated into any number of predetermined roles, but this may undermine the importance of training, education and experience specific to emergency management. Furthermore, when absorbed into another role or organisation, where emergency management is not the key business function, it is plausible that the role will take on the agenda of the primary function of the host organisation at the expense of effective emergency management (Labadie, 1984) and that this will only exacerbate existing issues associated with a lack of required knowledge.

Another potential issue is demonstrated in the titles of practitioners that included CEO, where they also purported that they were also the emergency manager. This raises a substantial question as to whether this individual would also consider themselves to be the organisation's lawyer, accountant or procurement officer simply by virtue of their role as head of the organisation. Furthermore, is the head of the organisation legitimately qualified and competent to call themselves an emergency manager? It is likely that this occurs during an emergency and supports the theory that the emergency management position within a part-time role is a supportive role and

that the majority of work is carried out during this time (Blanchard, 2001, p. 7). Although speculative, it is also highly unlikely that this individual is formally qualified or experienced in emergency management. These findings are consistent with the stereotypical emergency manager, who is disaster response planning oriented and works primarily with emergency services (Blanchard, 2001, p. 7), or that emergency management is not recognised as a credible and discreet role.

The role of the emergency manager functions more effectively the closer to the head of the organisation (Drabek, 1987, p. 50) but this does not mean the head of the organisation is or should be the subject matter expert. It is possible that due to competing demands of their primary role, the head of the organisation may have a limited understanding or training in the role (Henstra, 2010, p. 237; Grist, 2007, p. 102), may be apathetic (Grist, 2007, p. 102; Labadie, 1984, p. 491), may be absent, not knowledgeable, or unwilling to address the problem (Labadie, 1984, p. 489) and may prioritise other services, such as response, at the expense of emergency planning (Henstra, 2010, p. 237).

When examining the titles of practitioners, these often had little to no bearing on the role, and where the primary and secondary roles were not similar and were comparable to findings identified by McArdle (2017, p. 66–67). It is plausible that this is due to individuals identifying themselves as an emergency manager simply due to their proximity (firefighters) and location to emergency management, or the lack of definitions plaguing the industry. It is also possible that the authors are confusing or combining emergency services and emergency management, and it likely that this will continue to exacerbate issues with forming an industry identity.

The findings in this section are consistent with a report conducted into the consolidation of various police and fire departments in the United States (IAFF & IAFC, 2009). In their report, the IAFF and IAFC (2009, p. 9) found that when roles were combined, those trained in law enforcement, even firefighters, “spend a majority of their time in law enforcement activities” and that they are not as open to teamwork (IAFF & IAFC, 2009, p. 10). It is conceivable that this may be due to the emergency manager taking on the “style, perceptions, and limitations of the line agency” (Labadie, 1984). In this case, that agency would be a system lacking in transparency more akin to secrecy (Canberra Times, 2014, May 21; Walters, 2014, November 13; Morri & Jones, 2010, July 5; Sexton, 2010, December 21) and security that may be deemed essential for police operations. Such a closed system, however, is not

consistent with the tenets and principles of emergency management that espouses community engagement, collaboration and consultation.

The role of police and paramedics has been considered significant enough to standardise training and education of the role, and to regulate their title (Paramedicine Board of Australia, 2019), as is the title of Police Officer. In this context, the justification for regulation appears to be an industry that requires a specific set of skills and knowledge, the need for minimum standards, compliance and public protection, all of which are pertinent to emergency management. It is highly likely that a register will need to be developed to track compliance of personnel in accordance with the standards.

Recommendation # 4.4: Regulate the role and title

It important that the role and title is reserved for those who are appropriately trained and educated in emergency management similar to Police and Paramedics and that the industry is well regulated and where the emergency managers role is seen as separate and distinct from emergency services. Where proximity to emergency management is not considered synonymous with the role of the emergency manager.

4.9.2.1 Emergency management as a profession

Chapter two previously discussed the value and importance of a profession and its role as one of the eight principles of emergency management. The debate over emergency management as a profession is significant and ongoing (Choi, 2008, p. 15; Wilson & Oyola–Yemaiel, 2001, p. 124) and according to the Concise Oxford English Dictionary (Oxford University Press, 2003c) ...

*a profession is a paid occupation, one **involving training and a formal qualification**⁴⁵; a body of people engaged in a profession.*

This is a simplistic and broad definition but when used in conjunction with the literature previously discussed, including Beaton (2010), it highlights several gaps in the existing role of the emergency manager and its journey to becoming a unique recognised professional.

When examining emergency management as a profession, several questions were utilised to ascertain what practitioners thought of the industry, if it was a

⁴⁵ Emphasis added

profession and how it was being utilised. It was noteworthy that just over 30% of practitioners believed that they were not professional emergency managers but still believed that emergency management was a profession. One could assume that the individuals who make up an industry are a required component of defining it as a profession. Although practitioners and academics indicate that emergency management is progressing towards a profession, or is a profession (Haddow, Bullock & Coppola, 2011 p. 97; Cwiak, 2009, p. 1; Grist, 2007, p. 11), there is a lack of consistency in the application of the definition and the required criteria to be formally viewed as such (Beaton, 2010, p. 4; Cwiak, 2009, p. iii).

Despite practitioners indicating that emergency management was a profession, the majority stated that the position and the emergency management industry was not being used to their full potential. Practitioner #61, a full-time member of a fire brigade with a Postgraduate Certificate in Social Science (Emergency Services) indicated that “in my circumstance yes”, it was being utilised to its full potential. This statement implies that this might not be true with other identified emergency managers and supports the existence of the Ikea Effect identified by Norton, Mochon, and Ariely (2011, p. 454). Despite significant differences between emergency management and emergency services (Corriveau, 2009, p. 2; Chen, 2009, p. 82; Crews, 2001, p. 1) the belief that members of an emergency service who have limited education and experience specific to emergency management indicate that positive bias (Nirupama & Etkins, 2009, p. 14) may exist within the industry. It is plausible that regulating the industry may resolve these issues.

4.9.2.2 Industry regulation

Despite significant difference between emergency services and emergency management (Corriveau, 2009, p. 2; Chen, 2009, p. 82; Crews, 2001, p. 1) there are still stakeholders who believe that emergency management supports emergency services. As such, it was unsurprising that the majority of practitioners (75%) indicated that the industry should be regulated. However, it is highly doubtful that this is the reason they believe it should be regulated and more research would be required to understand their reasons with any depth. Some practitioners indicated a belief that a government body or EMA should be responsible for managing this process but there was no clear consensus among the profession of who should be ultimately responsible but as we have seen with recent disasters in Australia such as the bushfires and global

pandemic, political boundaries do not hold much weight and can serve as an impediment to effective planning and operations.

Without legislative oversight, authority, or support, and at the whim of the government of the day, it is highly unlikely that a government organisation will be interested in taking on this role. Particularly in light of the federal government divestment of what few emergency management activities it was overseeing, an example of which is the Emergency Management Australia Institute at Mt. Macedon in Victoria. It is also possible to argue that EMA was not as effective as it should have been with the closure of its Mt Macedon campus and the outsourcing of training services to a service provider with a focus on fire (Kennedy, 2015, April 16; Jay, 2015, March 25), as opposed to emergency management.

This development was likely due to the origin and proximity of emergency management to emergency services (Conway, 2012, p. 53; Crews, 2001, p. 1), and where the majority of work conducted by these organisations is reactive, and as such, is not emergency management in and of itself (Australian Emergency Management Volunteer Forum, 2011, para. 4; Waugh & Tierney, 2007, p. 14; Harper, 2006, p. 10; Arbon & Smith, 2000, p. 8; Britton, 1999, p. 3). Furthermore, emergency management is focused on the all-hazards approach (EMA, 1998a, p. 5), not just fires or individual hazards, and therefore it is plausible to argue that industry regulation requires an organisation with a broader understanding to be effective.

It is likely that continued reliance on organisations with a historical background predominantly in response to a single hazard, as opposed to the tenets of contemporary emergency management (EMA, 1998a, p. 5) will hamper the ability of emergency management and practitioners' to develop their own identity as a professional, stand-alone industry and role (Wilson, 2001, p. 237). It is possible that allocating emergency management in this manner will further allow resources to be directed towards an organisation's primary area of operation or core business, and that they will lack the required understanding that necessitates the active development of emergency management (Waugh & Tierney, 2007, p. 13; Harper, 2006, p. 10; Arbon & Smith, 2000, p. 8; Britton, 1999, p. 3; Labadie, 1984, p. 490).

The ad-hoc nature of current emergency management industry practices indicates a need to examine regulation in greater detail. Currently, industries that utilise regulation do so for several reasons that include community interest, protecting the public, ensuring a standard level of education, protection against professional misconduct and accreditation standards for practitioners (Paramedics Australasia, 2014). Industries that carry a high degree of risk and where protection of the public is

required are more likely to be subject to registration (Productivity Commission, 2005, p. 358). Most recently, paramedics across Australia revealed the critical role regulation played in increasing consistency across state and territory services and the benefits to the community (Paramedics Australasia, 2014). Benefits of a formal regulatory process include stopping individuals without the appropriate training and education from taking on the title of 'Paramedic' (Paramedics Australasia, 2014; Health Workforce Principal Committee, 2012). However, it is also important that regulation is not used to create a monopoly by a government agency or private organisation.

Despite the recognition that emergency management is critical in protecting the public and the increasing costs of disasters, there are currently no requirements for the registration and regulation of individuals employed as emergency managers. The increase in disasters and a lack of regulation raises the question about who should be responsible for losses incurred from disasters? This quandary may be exacerbated by the utilisation of unqualified and inexperienced individuals holding the position of an emergency manager, especially at senior levels across government.

Emergency managers are vital in helping to build disaster resilient communities and in improving public safety. Despite the existence of emergency services, in the last decade, Australia has seen numerous disaster events that have claimed the lives of hundreds if not thousands of individuals, the destruction of homes and the complete eradication of suburbs (Holmes, 2012, p. 413; Keelty, 2011, pp. 28, 96, 167; Teague, 2010, p. 8). This would suggest that current practices that rely on emergency service with a predominant focus on response is not working and that a new strategy is required. As such, it is clear that like other public safety organisations such as police, fire, and ambulance, emergency management requires a change to existing governance that includes the regulation of the industry, and that a stand-alone position is not only necessary but vital to effective DRR.

Recommendation # 4.5: Regulation of the industry

It is plausible that the current belief that emergency services and response are synonymous with emergency management contributes to a gross misunderstanding in which the community suffers as a result and inhibits effective DRR. By embracing industry regulation, similar to that of medicine, it is likely that the damage caused by this belief can drive contemporary emergency management practice in which emergency management is a separate and distinct profession (from emergency services).

4.9.2.3 The sharing of personnel

The method of sharing personnel can be directly affected by the organisations involved, with municipalities more likely to develop relationships with other municipalities compared to a business or emergency services (Elsworth & Anthony–Harvey–Beavis, 2007a, p. 32). Despite the potential for leveraging existing resources and gaining practical experience across all phases of emergency management and the comprehensive approach to emergency management, several practitioners were cynical in sharing personnel (practitioner, #47, #57, #65).

At least one practitioner stating that sharing personnel was a drain on resources (practitioner, #15) and more than 10% of practitioners identified additional barriers that included the tendency of emergency services to “hog the show” (practitioner, #43), apathy (practitioner, #88), different processes (practitioner, #53), politics and egos (practitioner, #), funding (practitioner, #7), the mindset of personnel (practitioner, #3) and competing priorities (practitioner, #) supporting a view of a short sighted, fragmented industry lacking a unified identity (Cwiak, 2009, p. 7).

Recommendation # 4.6: Develop a national sharing program

One of the key tenets of contemporary emergency management is collaboration. It is plausible that by developing a national program where communities and organisations can share personnel to learn from and assist each other during **all**⁴⁶ phases of emergency management will significantly enhance DRR.

4.9.2.4 The value of mentoring programs

Developing interpersonal relationships as well as increasing skills and knowledge about a company has the benefits of higher salaries and more significant organisational influence (De Cieri & Kramar, 2008, pp. 444–445). In an industry that has no standards, does not require any formal education, and has few personnel formally qualified in emergency management, it is noteworthy that 92.39% of practitioners believe a mentoring program was warranted, and that the lack of such a program is a factor that may contribute to impeding the growth and development of the emergency management industry. Mentoring programs have the potential to “maximize the breadth and value of experience” (Lauder, 2008, p. 6). However, a role that is divided or integrates non-related emergency management responsibilities

⁴⁶ Emphasis added

could create barriers to practitioners being able to mentor new or potential emergency managers (Sutkus, Cauley & Ugarte, 2011, para. 9).

Recommendation # 4.7: Develop a national mentoring program

Developing a national mentoring program as part of a holistic approach to industry development, where educated and experienced emergency managers can share their insight and enhance DRR. This should be managed by an emergency management body similar to that of the AMC in medicine.

4.9.2.5 National register of emergency managers

The results of this study indicate the increasing importance of professional registration that is gaining traction across various public safety professions, including the recent national conversation on paramedics. Despite only 58 (63.04%) practitioners indicating the necessity of a national register, 73 (79.35%) stated they would share their information should one exist. Not all practitioners embraced the idea of national registration with several practitioners indicating that it was not needed, would create more work, and would not assist the community in becoming self-sufficient.

There should be a move towards creating self-sufficiency of em [emergency management] where possible. Having a 'pool' of national practitioners will not make them available to help smaller communities. Organisations need to help themselves and giving them a huge list of external practitioners endorses the idea that it is ok to be dependent on external aid.

(practitioner, #15)

Practitioner #3 indicated that a national register would be useful if its purpose were to “link like-minded people” and not for “regulations sake”. However, this may present an issue if the ‘like-minded’ people are not educated or experienced in emergency management, support out-dated concepts or are resistant to change. Regulation can improve industry standing and increase community confidence by ensuring that only individuals who have to meet a set of prescribed standard and maintain a level of competence are allowed to practice.

Opportunities were provided to allow practitioners to comment but some of these responses either did not directly answer the question (practitioner, #6), conflicted with their previous answers (practitioner, #63), or the practitioner did not

elaborate on their brief remarks (practitioner, #57). Of those respondents who provided comments, those attached to the police services were more likely to express a lack of interest in sharing personnel compared to other respondents.

Practitioner #88, a part-time emergency manager who dedicates less than ten hours per week to emergency management, only thought a national register would be suitable if emergency managers were full-time, as it would increase their workload. It is not clear why or how this would be the case, but it highlights the problem with appointing a part-time person to the role and the need for a federal program that can maintain and support practitioners. Someone who may be struggling to meet the current demands and may not be able to adapt to the increased complexity and time required for the position or the need for greater knowledge. Although a professional register is not necessarily about providing a list for the general community, it can increase transparency and confidence in the role and the organisation by stakeholders and improve research into the industry by centralising information.

The role of a national register has numerous benefits to both the emergency management industry and the community. The creation of register can enable the industry to increase communication and networking and can be utilised to identify practitioners' level of education, experience and area/s of speciality. A register enables stakeholders to engage better with each other in alignment with the Principles of Emergency Management (FEMA, 2007, p. 4) and allows for the prepared community (EMA, 1998b, pp. 88–89) by increasing transparency and access to the appropriate skill sets. Like other industries, emergency managers may also specialise in other areas, such as government, humanitarian aid, utilities, transport, or business continuity, amongst others, or they may specialise in one specific area of the comprehensive approach such as prevention, mitigation, response or recovery. Although, to be considered as emergency manager, they must first have the requisite qualifications and experience in emergency management and basic understanding of all principals and tenets.

Recommendation # 4.8: Develop a register of emergency managers

Through developing a register of practitioners, the industry can increase transparency and allows researchers to better targets those holding the role of the emergency manager, as opposed to those who have broad relationship to the industry. For example emergency services personnel.

An overview of the industry revealed that several barriers were present and affected the ability of emergency management to be utilised effectively and efficiently. Barriers identified included politicians, egos, funding, emergency service agencies, apathy, and competing priorities, while several practitioners did not see themselves as professional emergency managers. This reinforces the findings from the literature identified in Chapter Two and raises the concern that the majority of practitioners within this study believed that emergency management was a profession.

4.10 A tale of two industries: An ongoing debate between emergency service and emergency management

The interview questionnaire highlighted the ongoing belief by several practitioners that emergency services and emergency were either synonymous, or where emergency management existed to serve emergency services and the response to emergencies. As such, the telephone interview with practitioners incorporated a question to specifically address and discuss with practitioners if they believed that there was a difference between emergency services and emergency management. In addition to providing insight into the knowledge and understanding of the industry to partially address research questions one and two, this section also identified several factors that might impede the productivity of Australian emergency manager and thus also addressed research question three.

4.10.1 A tale of two industries: An ongoing debate between emergency service and emergency management – results

Of the 32 interviewees that participated in the telephone interview, the vast majority of interviewees (92.86%) indicated that there was a difference in meaning between emergency management and emergency services. Interviewees were sparse with comments when it came to defining what an emergency manager was, but they found it easy to describe the role and identity of emergency service practitioners.

In these interviews, practitioners predominantly recognised emergency services as an organisation that has historically worn a uniform (interviewee, #2), is made up of practitioners who are trained to respond to emergencies (interviewee, #25), are response focussed (interviewees, #5, #7, #8–10, #27), and utilises the command and control system to manage operations (interviewee, #18). Emergency services include the police (interviewees, #1, #12, #14, #16, #24, #28), ambulance (interviewees, #1, #12, #14, #16, #24, #28), fire (interviewees, #1, #3, #12, #14, #16), SES (interviewees, #1, #3, #12, #16), and military (interviewee, #28).

Emergency services were organisations that respond to an emergency event (interviewees, #4, #12, #22, #24) as “the largest part of their duties... on a daily or a, as need basis” (interviewee, #11). Emergency services are “those people or organisations that provide the initial or frontline response” (interviewee, #20) and are the “people that provide... primarily the response or the recovery, so these are the key combat or recovery organisations” (interviewee, #23). However, few respondents recognised that “emergency services generally are responders and form one part of the emergency management portfolio... are one part of a much larger equation” (interviewee, #19).

Several interviewees highlighted the misconception that emergency services were emergency management. For example, interviewee #26 indicated that emergency services were “perhaps the core discipline to emergency management”. Interviewee #27 felt that emergency management was, “a mix of emergency services personnel and... people coming together to manage an emergency”. Interviewees that favoured response indicated that its role included the development of frameworks and policies regarding how to respond to an emergency (interviewees, #8, #12), and preparing emergency services to respond to an emergency (interviewee, #4). Interviewee #14, a 25 to 34-year-old Caucasian male who held an MBA⁴⁷ and was primarily employed as a ‘Corporate Risk and Compliance Officer’ by a local government in NSW commented.

[Emergency management] comes down to the incident as it happens, the management of people in an area of a building, ensuring their safety until [emergency services] arrive to take over the situation and apply their... skills to bring the emergency situation under control.

Interviewee #5, a 35 to 44-year-old Caucasian female who held a Bachelor of Science and was employed by a local government primarily in NSW as a ‘Manager, Open Space Operations’, and as a ‘Local Emergency Management Officer’ in her emergency management role asserted that...

emergency management is about having plans in place to ensure that when there is an emergency, we know what to do and we know who’s responsible and how do we make those plans. Emergency management is also about managing a particular emergency or event that might happen, and that would involve allocating tasks to an emergency services agency.

⁴⁷ Master of Business Administration

According to interview participant #10, “depending on the emergency, generally the SES [State Emergency Service] ... may become the leaders, and you can see the council actually has a very small role in that stuff” (interviewee, #11). Interviewees also revealed conflicting views on the role of the emergency manager, particularly within the police. Interviewee #3 was a 55 to 64-year-old Caucasian male who held an Advanced Diploma in Emergency Management and was primarily employed as an ‘Emergency Management Planning Officer’ by the SA Police who indicated.

I do see emergency management as a different way to... shall we say the traditional emergency services... coming from the policing world where I am professional involved in and engaged across the whole of the state arrangements... so that's all of the PPRR spectra [sic]

Interviewee #17, a 55 to 64-year-old Caucasian male who was primarily employed by the NSW Police as a ‘Regional Emergency Management Officer’ spoke about individuals who are in a legislated emergency management position but who feel restrained by being part of an emergency service organisation (police) that doesn’t understand emergency management.

In my organisation, I’m employed by the... cops, and as far as they’re concerned, I’m an administrative officer, not an emergency manager.

Emergency services are predominantly tactical in nature, but there is an inherent belief by personnel within these organisations that because they are located within the emergency management framework, they are emergency managers (interviewee, #13). Interviewee #28 felt that emergency services were seen as the experts in emergency management by the community despite a lack of knowledge in emergency management and the disconnect between uniformed emergency services personnel and non-uniformed emergency management personnel. In reality, “they look at the response function of what they do as compared to the holistic needs of the community before, during and after” (interviewee, #2).

Interviewee #15 reported that although emergency services were a part of the emergency management process, they are not the entire process, as emergency services are providers within emergency management and not emergency management by itself. This comment was further supported by interviewee #16 who stated that emergency services are “more of [an] agency that supports emergency management practitioners in the field”. Interviewee #13, a 45 to 54-year-old

Caucasian male who held a Bachelor of Emergency Management and was employed by the utility sector in NSW as a ‘Manager, Emergency Management’ stated that...

[Emergency services] undertakes a tactical activity within a somewhat of a silo [separate from other organisations]... For example, if I was a fireman, I would point a hose at a fire – I manage a fire. But that’s not the societal impact of a fire... emergency services carries out an activity within the wider context of a society, and they’re not emergency managers.

Interviewee #18, a 25 to 34-year-old Caucasian male who held a diploma and was employed by a local government in QLD as a ‘Disaster Management Coordinator’ asserted.

People in emergency services think they know... emergency management and how to do things ‘cos they know how to be in charge of a fire truck or something like that, but it’s not necessarily the case – it’s very different.

Interviewee #17, a 55 to 64-year-old Caucasian male who was primarily employed by NSW Police as a ‘Regional Emergency Management Officer’ stated.

To me, the emergency services person or, organisations go out and do the response phase, end of story. They go out there, they clean up, they put the fire out, they do whatever needs to be done... although a lot of the emergency services say, they do the... PPRR, prevent, prepare, respond, recover, they’re not there. They look at, or go out, do this, pack up and go home and leave the rest of it as it is. It crops up a lot with counter-terrorism that all they’re interested in is what’s happened, it’s our crime scene, it’s our scene, and we don’t care what the big picture is or what the consequence are, what’s going on around... the scene.

Of the 28 interviewees, only five (#1, #3, #7, #10, #22) specifically cited the comprehensive approach or the four phases of prevention/mitigation, preparation, response, and recovery (PPRR) as an essential factor in delineating the differences between emergency services and emergency management.

Twenty-five percent of interviewees recognised the broader role of emergency management as being “across a whole range of agencies and organisations” (interviewee, #21), “around the community resilience process” (interviewee, #1), that it is broader than emergency services “and will include other functional areas like health, utilities that provide support to emergency services [sic]” (interviewee, #24). Several interviewees recognised that emergency management was responsible for

conducting risk assessments (interviewees, #19, #20), having proper plans in place (interviewee, #16), and coordinating agencies and services (interviewees, #18, #19), and that it is an ongoing process that operates in the background (interviewee, #7).

Further comments by interviewees revealed a belief that emergency management is a holistic process that involved more agencies than emergency services. Comments included that emergency management was “done by a wide variety of people, sometimes by legislation and standards and other activities that aren’t directly related to the responders who go out in the uniform and fight the actual incident” (interviewee, #3). Interviewee #23 stated that emergency management “puts the [emergency services] together and provides the coordination, the liaison, all those other sorts of things”. Interviewee #3, reported that there were “far... more agencies involved... than the obvious ones that have got lights and sirens on their roof”, and that it “requires... before during and after set of skills and the activities to be undertaken” (interviewee, #2) and “looking at the big picture” (interviewee, #6). Interviewee #28 asserted that “emergency management being primarily tertiary qualified, bring a wide array of views and a better ability to plan and implement than the emergency services”.

Several interviewees stated that emergency management was an activity or responsibility extends beyond the response phase, involves multiple agencies (interviewees, #11, #15, 26), and works to restore a community after a large-scale event (interviewee, #26). Interviewee #10, a 45 to 54-year-old Caucasian male who held a bachelor degree and was employed by local government in QLD as a ‘Resilience and Emergency Management Coordinator’ believed that emergency management takes a “broader span”.

It looks at a whole, a whole gamut of things and this covers preparedness through to the response, the relief and the recovery; and I think, here the capacity to perhaps much better-prepared emergency managers and much better-resourced emergency managers is where the greatest benefit to the community will come, this ability to be able to look outside a narrow operational scope [sic].

Interviewee #13, a 45 to 54-year-old Caucasian male who held a Bachelor of Emergency Management and was employed by the Utility sector in NSW as a ‘Manager, Emergency Management’ specified.

[The] emergency manager is a person who understands the complexity of society and works across silos of organisations to achieve actual objectives ...

the emergency manager is looking at the fire, the traffic disruption, the homelessness created by the fire, the economic disruptions, they're looking at holistically, about the consequences of that event across a societal system, and so to me, emergency managers are holistic whole of society, systems thinkers.

Interviewee #21, a 45 to 54-year-old Caucasian male who held an advanced diploma and was employed by a local government in NSW as an 'Emergency Management Coordinator' falsely believed that emergency management was a new product that arose out of recent legislation.

Perhaps I would suggest the question is, is incomplete. I think there is the emergency services, but I think the evolving sector is... [becoming] more commonly known [as emergency management], and that assertion is supported by the Emergency Management Act of Victoria, 2013, and the language coming out of Emergency Management Victoria, and that is emergency management sector. Where, in the past, it was certainly seen as the emergency services only, but now in today's environment, there is a new term that is called the emergency management sector, that's the way forward.

Interviewees further recognised that emergency management was about "the next level of difficulty and complexity" (interviewee, #11), and when you "expand emergency management away from first responders and you think... very large scale [you see] other [organisations] coming into play [sic]" (interviewee, #26). Interviewees further commented that "if we [emergency management] can somehow just distance ourselves from the reliance on emergency response [it] would be a great thing [sic]" (interviewee, #10), to emergency services being corrupted by their experience as responders in their primary organisation and unable to effectively subscribe to emergency management (interviewee, #28).

4.10.2 A tale of two industries: An ongoing debate between emergency service and emergency management – discussion

Question eight asked interviewees if they believed there was a difference between emergency services and emergency management. The vast majority of interviewees indicated that there was a difference between the two terms but this understanding varied across interviewees.

A number of interviewees had a clear understanding of emergency services and its role within emergency management but a greater number still held the misconception that emergency services and that responding to an emergency was core to emergency management. This may lend credence to the argument that emergency managers should come from an emergency service or response background, however,

recent government reports on disaster events across Australia reveal otherwise (see Chapter 7) (Keelty, 2013, p. 26; Holmes, 2012, p. 413; Keelty, 2011, p. 28, 96, 167; Teague, 2010, p. 8). Recent disasters in Australia, including the 2019/2020 bushfires also revealed the weakness inherent with focussing on response as bushfire brigades struggled to supply and maintain personnel during the length of the event. While there may be calls for more personnel it is highly unlikely that this is the best use of limited resources but that the focus should be on prevention and mitigation. Even should additional personnel be approved, putting out the extensive fires is only one issue, it does not account for the loss of wildlife, or the damage to water systems caused by ash, or the social or economic impact of this event.

These government reports have revealed significant issues with the current practice of housing emergency management within an emergency service organisation that is inconsistent with the emergency management literature (FEMA, 2007, p. 5; EMA 1998a; Labadie, 1984, p. 491). The response phase is a small part of emergency management and yet it is overly emphasised, as such, it is arguable that better standards and minimum education for prevention, mitigation, preparation and recovery for those holding the role of emergency manager would be a superior option that would improve productivity and efficiency within the role (AWPA, 2013, p. 4).

Before 1998 emergency management across Australia was also commonly referred to as disaster management (EMA, 1998a, p. x⁴⁸). However, the date when emergency management was formally established within Australia can be debated. Despite this record, one practitioner asserted that emergency management was a recent term that stemmed from the 2013 Victorian legislation (interviewee, #21). Interviewee comments were a cause of great concern and highlighted the need for practitioners and emergency service personnel to understand the differences between the two terms and the formal role they both play within the emergency management framework.

Many interviewees recognised that emergency services played a role within the emergency management framework but it appears that there is still a number of interviewees that believe emergency services support the activities of emergency managers. Many interviewees do not understand that emergency services and therefore, response, is only one component of the comprehensive approach to emergency management. This finding has the potential to influence future

⁴⁸ Roman Numeral

development and may hinder the ability of the industry to present a professional image or provide a higher level of service. These potential benefits are likely to increase in the presence of greater formal education and relevant experience outside of emergency services. Furthermore, it is plausible to suggest that there is an over reliance on response, and that the deployment of emergency service to disaster constitutes a failure in emergency management.

These findings are even more pertinent if the emergency services personnel are responsible for the hiring or for the provision of advice to senior leadership on such a broad knowledge area that is emergency management. Inconsistencies across the role support the need for a standardised approach to emergency management and a mandatory education level of all practitioners. It is likely that without addressing these deficiencies, emergency management will continue to make the same mistakes of the past, as the industry argues over questions that should have been, or were, resolved decades ago. In an industry that emphasises lessons learned, there is a certain sense of irony.

4.11 Chapter summary

The results of this chapter has revealed that emergency management is a complex industry with specific responsibilities, and that the time required for emergency managers to dedicate to emergency management is essential in allowing practitioners to utilise the various tools, frameworks and processes effectively. A lack of time allocated and understanding of the theory underpinning emergency management and disaster behaviour has a negative impact on the effectiveness of disaster risk reduction efforts.

When examining whether emergency managers were effectively and efficiently being utilised, respondents agreed that more could be done in these areas. It is likely that a lack of qualifications and experience in emergency management has an impact on an employer's ability to value emergency management as a profession. These findings indicate that emergency management does not receive the same recognition as other professions, and has the potential to limit opportunities for updating skills and knowledge for career development. The lack of relevant knowledge is even more evident when there are inconsistencies amongst practitioners with regards to the difference between emergency services and emergency management. Inconsistencies that further expose gaps in the knowledge of practitioners and the ability to provide appropriate services to their community.

This chapter presented the results of the practitioner survey, findings from interviews with practitioners and an analysis and discussion of the data. The literature reveals the complexities required of an emergency manager and the need for a knowledge base requiring a broad array of skills, along with experience and education to effectively and efficiently perform the functions of an emergency manager is not currently present with most practitioners. The benefits of combining education and experience into the role have been identified as important in several studies. In these studies, tertiary-educated practitioners with ten years of experience rated higher on critical thinking than those practitioners without a degree, while those without a specific emergency management degree were more likely to support historically disproven myths and false beliefs.

The findings from the practitioner surveys reveal that while many practitioners within Australia may have a degree or other tertiary award, these are not specific to emergency management. Furthermore, there is a view by several interviewees that practitioners do not require a qualification, let alone one specific to emergency management. The majority of practitioners generally do not subscribe to professional emergency management journals, do not have a membership in an emergency management professional body and reveal a sporadic and inconsistent understanding of contemporary emergency management.

These findings suggest that the standardisation of the industry is not only necessary but also vital in ensuring that practitioners were utilising the same terminology, processes and frameworks. Interviewees indicated that there was a difference between emergency services and emergency management (interviewees, #9, #22, #23, #24) but other interviewees noted that the two terms are often misused (interviewee, #25) and were being used interchangeably. One interviewee believed that this lack of understanding was the result of a lower level of emergency management education by practitioners (interviewee, #2), and other interviewees indicated that the two terms had a symbiotic relationship where you “can’t have one without the other” (interviewee, #8) and “unless you’re actually in the disaster management field you probably don’t have a good understanding” (interviewee, #18). Although experiential knowledge is deemed necessary, it was not clear how a lack of industry experience excluded a person from understanding an industry definition.

Despite a reticence to admit otherwise, for all intents and purposes practitioners in this study did not appear to be fully engaged in attaining the extensive information and knowledge necessary to increase their human capital pertinent to emergency

management, indicating a belief that experience would provide them with all the knowledge they required. This lack of knowledge specific to emergency management has the potential to leave their communities in a perpetual state of unpreparedness and further supports the need for greater regulation regarding the education and experience of practitioners within the industry. This is further supported by government reviews into recent disasters that have highlighted significant issues regarding the poor application, or complete lack of emergency management, the limited capabilities of emergency services to meet the latent demands of the role and a failure of existing organisations to meet their emergency management responsibilities (Holmes, 2012, pp. 102, 413; Keelty, 2011, pp. 9, 28, 96, 167; Teague, 2010, pp. 4, 8), despite the ongoing belief that emergency services is emergency management.

Emergency management is continuously competing for scarce resources, while organisations are always looking for ways to improve the productivity and effectiveness of the various departments and the personnel it employs. Human capital theory (ABS, 2010) has been identified as an essential driver of productivity and meeting the needs of both the emergency manager and the organisations that employ them. According to HCT, critical areas for improving productivity include education, skills, and experience of the personnel and based on the findings from this chapter, the human capital of the emergency management industry could be construed as low and severely hampers the industry from providing effective DRR services.

Arguably, the mostly part-time nature of the role coupled with a lack of education and standards governing the role of the emergency manager and an ad hoc approach significantly contribute to an environment where emergency management is reactive to the needs of the community during an emergency and, as such, is inconsistent with contemporary emergency management. This reactive approach to emergency management has the potential to create a culture that is not interested in education or professional development, that is neither as cohesive nor as robust as it could be, and lacks a national identity that will continue to support sub-standard performance and limit human capital. Chapter five will now provide information on the various job advertisement related to the emergency manager and the expectations of organisations seeking someone for the role.

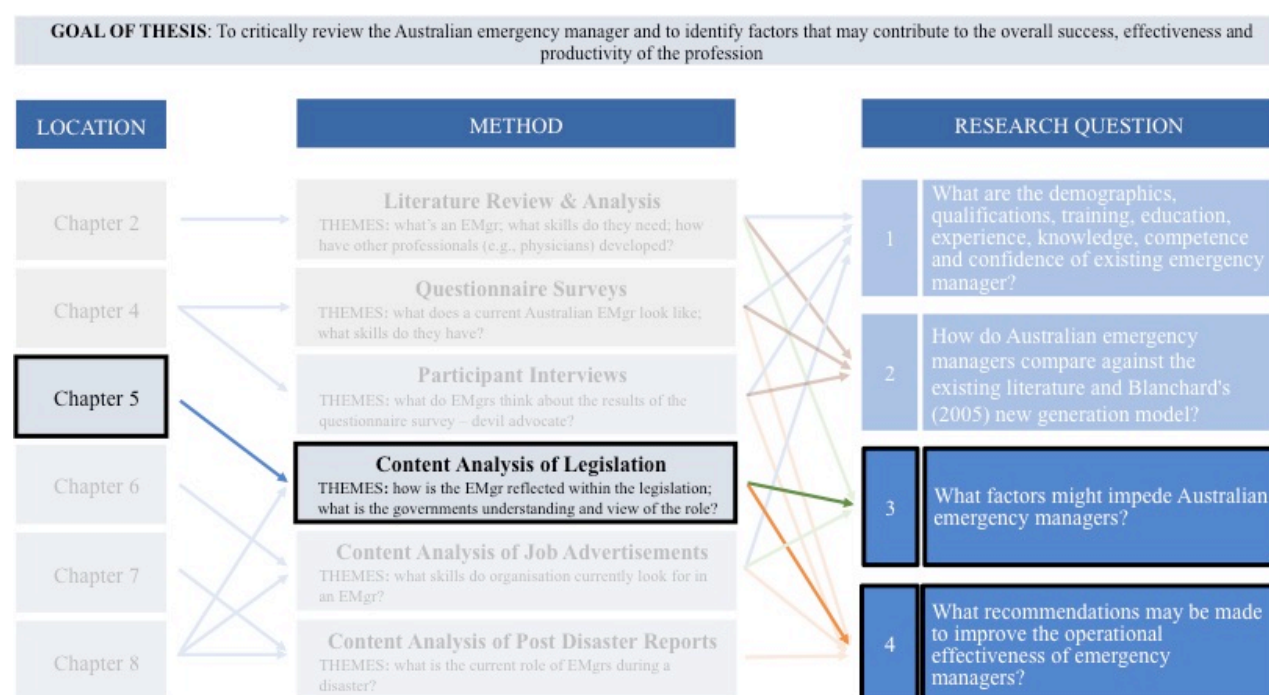
CHAPTER 5: JOB ADVERTISEMENT DISCOURSE – RESULTS, ANALYSIS AND DISCUSSION

*People are not your most important asset.
The right people are*
(Collins, 2001. p. 51)

5.0 Chapter introduction

To further explore the qualifications, training, education, and knowledge of Australian emergency managers, Chapter Five presents and discusses the results of an analysis into job advertisements for ‘emergency managers’ that were posted between January 2012 and December 2018. This chapter will provide a deeper understanding of the current expectations of emergency managers by examining advertisements pertinent to the role, and by default, provide a better understanding of emergency management by organisations recruiting emergency managers (WA Department of Training and Workforce Development, 2016). This chapter will enrich the data presented in Chapter Four and to partially address research questions three and four (Figure 5.1).

Figure 5.1 – Road map of thesis for Chapter Five partially addressing research questions three and four.

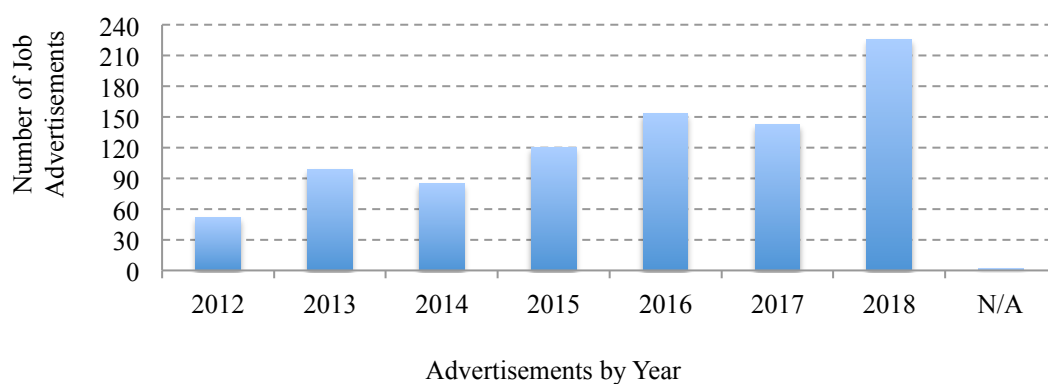


5.1 Context

5.1.1 Context – results

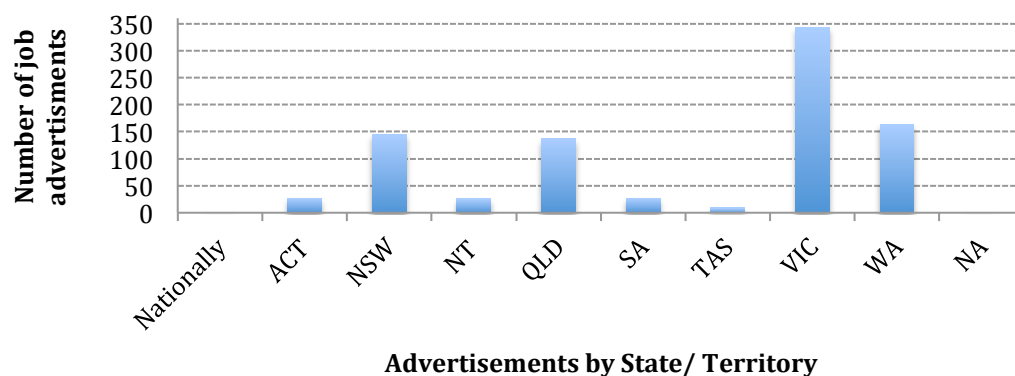
Between January 2012 and December 2018, 880 job advertisements were collected using broad terms related to emergency management and refined (see further details in section 3.2.1). In these six years, there was a steady increase in the number of advertisements, with 2018 seeing the largest number of roles in any given year ($n = 226$) (Figure 5.2). Two advertisements were allocated as N/A as they did not list a closing date.

Figure 5.2 – Number of advertisements by year – between 2011 and 2018



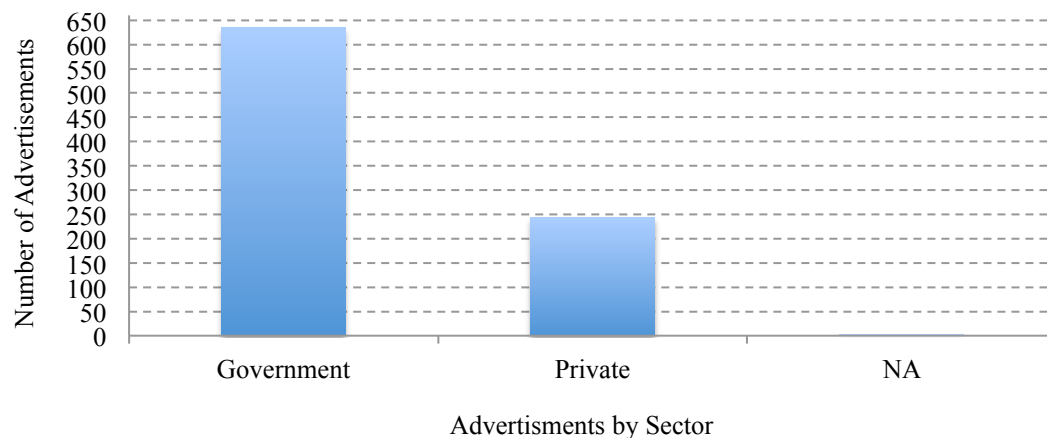
When examining the location of advertisements ($n = 880$), the largest group of practitioners were located within VIC ($n = 343$; 38.98%) followed by WA ($n = 164$; 18.63%), NSW ($n = 145$; 16.48%), and QLD ($n = 137$; 15.57%) (Figure 5.3). Each of the remaining states and territories (ACT, NT, SA, WA, and Nationally) had less than 50 job advertisements. One position was listed as N/A because it did not provide a location.

Figure 5.3 – Job advertisements according to their geographic location within Australia



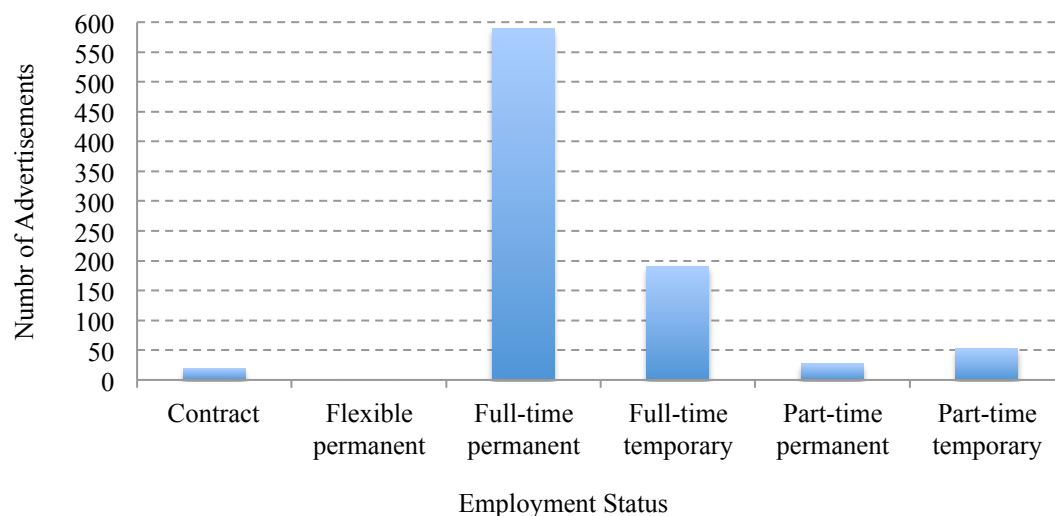
When classifying the employment sector for the advertisement, two advertisements managed by private recruiters did not provide these details and was excluded and listed as N/A. Of the 878 advertisements, the majority (n = 635; 72.32%) indicated that the government was the primary employer of emergency management practitioners (Figure 5.4) followed by private organisations (n = 243; 27.68%).

Figure 5.4 – Job advertisements by sector



When examining the status of emergency managers, the majority were employed in a full-time capacity (n = 590; 67.05%), followed by full-time temporary (n = 190; 21.59%). The remaining advertisements included a part-time temporary (n = 52; 5.91%), part-time permanent (n = 27; 3.07%), contract capacity (n = 20; 2.27%), and flexible permanent roles (n = 1; 0.11%) (Figure 5.5).

Figure 5.5 – Job advertisements by employment status



5.1.2 Context – discussion

Over the six years between 2012 and 2018, there was a significant increase in the number of emergency management roles advertised across Australia. Due to NSW and VIC having the largest populations in comparison to other states and territories, it is likely that this should be reflected in the number of emergency managers. What was surprising is that VIC, followed by WA advertised the highest number of emergency management roles and supported the findings from both McArdle's (2017, p. 97) thesis and the responses from the emergency manager's survey in Chapter Four. While it is not possible to discern with any real accuracy as to why the number of advertisements in Victoria was as high as they were. These findings could be due to several reasons including the restructuring of emergency management within the state post the 2009 bushfires, or it could be that the roles were re-advertised, as they were not attracting the right people. However, the exact reasons were beyond the scope of this research.

It is also plausible that WA posted the second largest number of advertisements due to the size of the mining industry, where the remote and dangerous nature of the work, mine companies often employ on-site emergency service/management personnel. These findings suggest that further research is required to better understand the role and supports previous research that indicates its location within emergency services may be counterproductive to effective DRR.

Human capital theory, identified previously in section 2.5.1 recognises that real efficiency increases productivity gains. A Queensland report (Keelty, 2013, p. 22) conducted into public safety found that there were “ongoing inefficiencies and a failure to adopt contemporary work practices” with a lack of clarity of roles and responsibility with regards to emergency management (p. 26). This report also found that Emergency Management Queensland was a “non-combat agency attempting to do combat work” (p. 27).

The Keelty report (2013, p. 28) also found that the QLD police service as the lead agency for disaster operations, was an “operational agency with little latent capacity to focus on a state disaster” until it was on them, they were limited to making any changes due to legislation. These comments support Banks (2010, p. 14) who commented that HCT is more than just an increase in the number of staff, it requires

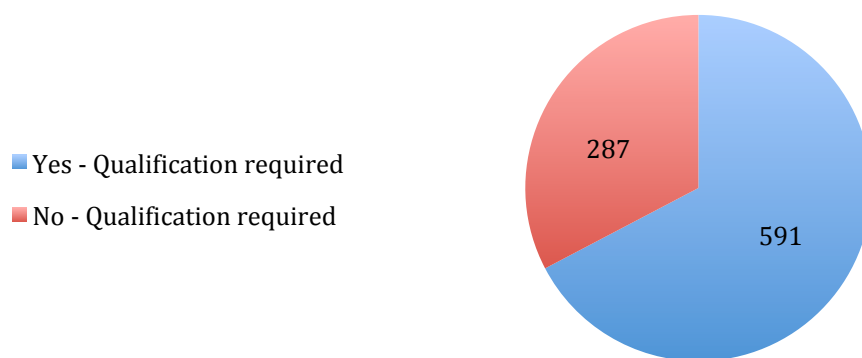
staff to be appropriately employed and educated. This would suggest that the numbers of employees are only part of the role in increasing productivity and that the appropriate support and allocation of personnel and legislation (see Chapter Six for more on this) was also vital.

5.2 Qualifications

5.2.1 Qualifications – results

Of the 880 job advertisements, the vast majority ($n = 591$; 67.16%) indicated that a qualification was a requirement of the role, and 287 (32.61%) did not specify the need for a qualification (Figure 5.6). Two (0.23%) advertisements were allocated as N/A as they provided limited information and were excluded.

Figure 5.6 – Job advertisements requiring qualification

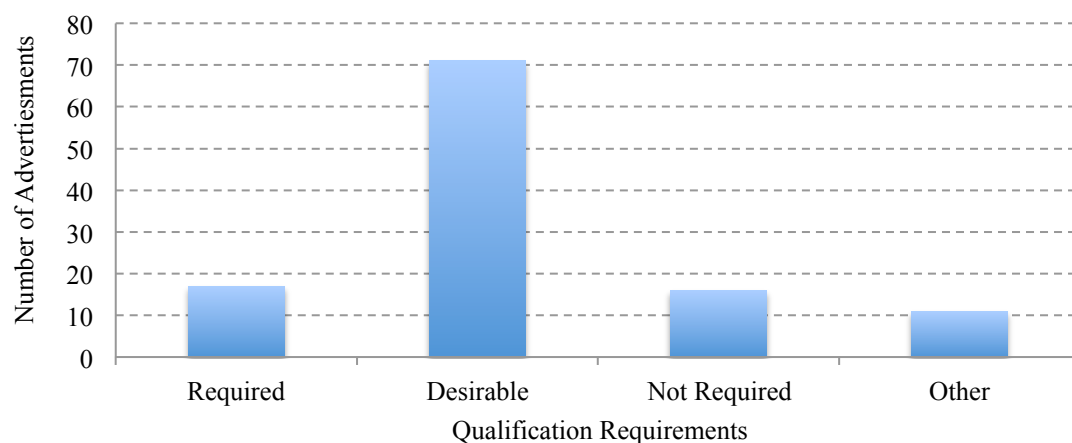


Of the 591 advertisements that indicated a qualification was a requirement of the role, 115 ($n = 19.46\%$) advertisements listed the value of a qualification. Of these 115 values, desirable was the largest group with 71 (61.74%) job advertisements. These 71 job advertisements stated that qualifications were ‘desirable’, ‘preferred’, ‘viewed highly’, ‘well regarded’, or would be ‘advantageous’. The required group was the second largest area with 17 (14.78%) job advertisements stating that qualifications were ‘required’, ‘essential’, ‘highly desirable’, or ‘highly regarded’.

The ‘Desirable’ group was followed by the ‘not required’ group with 16 (13.91%) job advertisements stating that qualifications were ‘not required’, or ‘non-mandatory’. Other was the smallest group with 11 (9.57%) job advertisements that stated applicants should be “working towards”, ‘relevant’, ‘plus’, ‘and/or’, ‘or’ to denote that the qualifications were exchangeable, often for experience.

Of the 11 job advertisements within ‘other’, four listed ‘and/or’, and ‘or’, enabling job applicants to have one or more of the listed qualifications. For example; one advertisement stated that it required a “relevant qualification in emergency or disaster management or related discipline” and another advertisements required a qualification in “management or emergency services related field, Australasian Inter-service Incident Management System (AIIMS) or equivalent” (Figure 5.7).

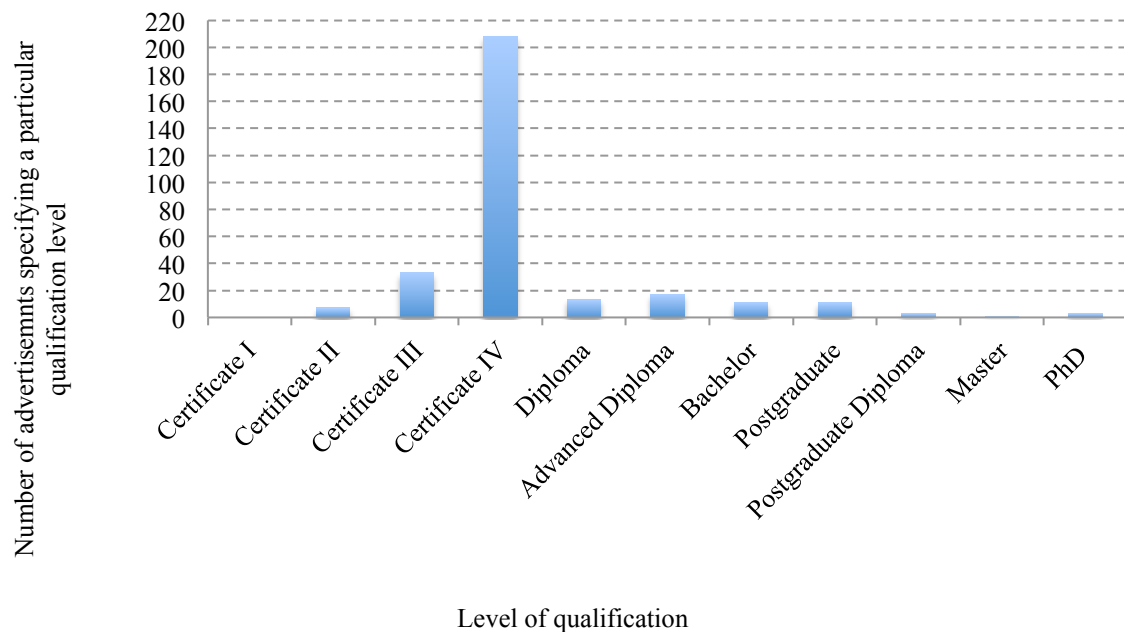
Figure 5.7 – The priority of qualification



Some advertisements provided confusing statements ranging from “emergency management in the areas of prevention and preparedness for response and recovery”, “industry accepted qualifications in any emergency management discipline”, “qualifications of key personnel to the requirement of the position and “sound emergency management qualifications”.

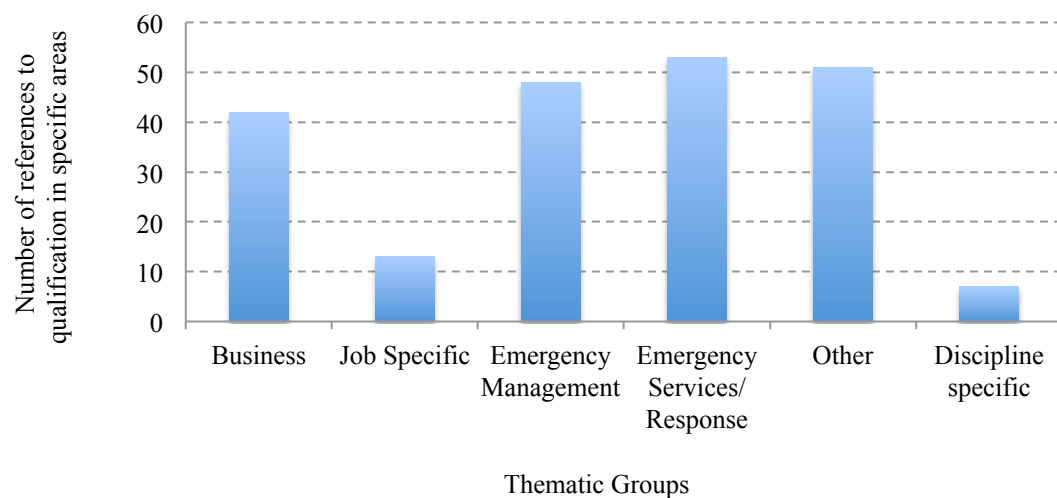
When examining the 591 job advertisements that indicated a qualification was a requirement for the role, only 307 (51.95%) identified a particular level of qualification. All levels within the Australian Qualifications Training Framework were identified, except for a Certificate 1 (Figure 5.8). Of these 307, the largest group was a Certificate IV (n= 208; 67.75%), followed by Certificate III (n = 33; 10.75%), the remaining eight qualifications listed less than 20 qualifications (21.50%) for a total of 66 job advertisements.

Figure 5.8 – Level of qualification



Of the 591 job advertisements that specifically identified qualification as part of the role, only 214 (36.21%) provided an example of what that entailed. When analysing these 214 references to qualification, these were classified into six thematic groups. These groups included business (n = 42; 17.43%), job-specific (n = 13; 5.39%), emergency management (n = 48; 19.92%), emergency services/response (n = 53; 21.99%), other (n = 51; 21.16%), and discipline-specific (n = 7; 2.91%) (Figure 5.9).

Figure 5.9 – Qualification by thematic groups



Emergency Services/Response was the largest thematic group that required qualification, with 53 (21.99%) references across sixteen subjects (Table 5.1).

Table 5.1 – Emergency services/response thematic group

Subject	#
Ambulance (Industrial Emergency Responder)	1
Australasian Inter-service Incident Management System (AIIMS)	10
Training (Community Emergency Services Manager Pathway – IDOPCDSOCE) Trainer and Assessor; Hospital and/or Major Incident Medical Management Support (H-MIMMS/MIMMS) – Instructor)	2
Emergency (response; emergency response and rescue; urban search and rescue; aviation response)	8
Emergency services discipline at the level of Senior Fire Fighter	11
Emergency/critical incident management	3
EMERGOTrain – Instructor	1
E.M.T.	1
E.R.T.	1
Fire (fire safety; public safety – fire)	4
First Aid (Senior First Aid ⁴⁹)	2
Front line leadership	1
Incident Controller – Level 3	3
Leadership/front line management	1
Mine (rescue; emergency response)	3
Paramedic	1
Total	53

⁴⁹ Senior First Aid is the name of qualification

Other was the second-largest thematic group that required qualification with 51 (21.16%) references across eleven subjects (Table 5.2).

Table 5.2 – Other thematic groups

Subject	#
Alcohol and drug	1
Training (industry training; training and assessment; training delivery; design, delivery and assessment of education and training programs based on adult learning principles; developing and delivering education/training programs)	16
Land use planning	1
Leadership	1
Management	19
Pesticide application	1
P.W.A. or P.M.A.⁵⁰ (quality and/or professional registration; relevant qualification under the Australian Quality Training Framework – AQTF)	1
Qualification and registration with AHPRA	1
Relevant	8
Traffic management	1
Chemical, biological and radiation	1
Total	51

Emergency Management was the second-largest thematic group that required qualification with 48 (19.92%) references across five subjects (Table 5.3).

Table 5.3 – Emergency management thematic group

Subject	#
Community Engagement	1
Disaster & Emergency Management	2
Disaster Management	2
Emergency Management (public safety – emergency management; emergency risk management)	42
Emergency/Disaster Management	1
Total	48

⁵⁰ The job advertisement did not disclose what these abbreviations were.

Business was the third-largest thematic group that required qualification with 42 (17.43%) references across twelve subjects (Table 5.4).

Table 5.4 – Business thematic group

Subject	#
Administration	1
Business Administration	2
Business Continuity	7
Business Management	3
Business/Marketing & Communications	1
General Management	1
Health & Safety	4
Planning	4
Project Management	4
Public Administration	1
Risk Management	12
Security	2
Total	42

Job-specific was the second smallest thematic group that required qualification with 13 (7.39%) references across four individual roles (Table 5.5).

Table 5.5 – Job-specific thematic group

Subject	#
Chief Bush Fire Control Officer	1
Nurse	7
QMS 123 qualification (site supervisor)	2
Victorian Prison Officer Pre Service Training	3
Total	13

Discipline was the smallest thematic group identified in education with seven (2.91%) references across four subjects (Table 5.6).

Table 5.6 – Discipline thematic group

Subject	#
Engineering	1
Environment	1
Health (community services; health care)	4
Science	1
Total	7

5.2.2 Qualifications – discussion

The majority (591; 67.16%) of the 880 job advertisements identified the need for a qualification as an important component of the role. A more in-depth review revealed that only 317 identified the level of qualification required, with the vast majority (n = 248) requiring a Certificate IV or lower qualification. Of these 248, the most considerable number listed an education in training (For example, a Certificate IV in Training). It was important to note that the exact title of this qualification varied dramatically, and included “training”, “trainer and assessor”, “assessment and training”, and “T.A.E”.

The results of this study are inconsistent with the findings from McArdle (2017, p. 64), where he found that 48% of participants had attained a bachelor or postgraduate degree. It is, however, unclear why 45% of job advertisements did not think qualification was essential to be a requirement of the role. Although it is possible that organisations assume applicants would have a degree, it is more likely that they did not know a degree specific to emergency management existed, or were apathetic and did not see it as a priority (Cwiak, 2011, p. 8).

It remains unclear how, if qualifications were considered a priority, an individual with a Certificate IV in training could reasonably be expected to conduct the level of training required to increase competence in an area for which they do not possess a formal qualification and would be better as a supplement to a degree in the area it is expected to train. This finding would suggest that the role still does not have a status in society (Beaton, 2010, p. 4) and falls within Blanchard’s (2001) stereotypical emergency manager classification.

The literature identified in Chapter Two recognised the need for emergency managers to have the ability to integrate emergency management into various aspects of an organisation but it is unclear why a qualification in emergency services would be a higher priority than emergency management? If the number of qualification requirements is an indicator of priority, emergency management barely rated mentioning at 1.76% and suggests that it is still not a career of first choice as identified by Blanchard's (2001).

The majority of job advertisements (n = 591; 67.16%) listed a requirement for a qualification and while this finding was consistent with McArdle's findings (2017, p. 6), very few job advertisements provided an example of this qualification. Furthermore, 97 job advertisements expressly indicated that obtaining a qualification was optional, and experience was an acceptable substitute. The inclusion of 'and/or' and poor syntax made it difficult to understand or quantify the qualification requirements with any precision, for example, a qualification in "management or emergency services or related field, Australasian Inter-service Incident Management System (AIIMS) or equivalent ". These topics may be important components of emergency management but having a qualification in one area does not necessarily make you competent in all areas. Furthermore, it is a lot easier for an organisation to provide training on AIIMS than it is to provide a university degree.

In addition to poor syntax, the job advertisements use of set abbreviations such as E.M.T., QMS 123, and E.R.T. created additional issues and suggests a level of insider knowledge specific to the organisation and confusion surrounding terminology and roles. For example, in the United States, E.M.T. stands for Emergency Medical Technician and is the national grading system for those involved in emergency medicine and pre-hospital care that includes paramedic qualifications. This qualification does not exist in Australia, and no other qualification or qualification utilising this abbreviation fit the context of the job advertisement. Even if this qualification was related to pre-hospital emergency care existed within Australia, it is not a component of contemporary emergency management. This example is indicative of the other job advertisements mentioned where there appears to be confusion between the role of the contemporary emergency manager and the emergency services and response practitioner.

These findings raise the questions to whether the qualification listed is fit for purpose or whether unqualified people are developing roles based on a lack of

information or poor understanding of contemporary emergency management. These findings have significant implications for the development of a professional role, especially if the hiring process is being driven by unqualified personnel who do not fully understand the industry and the requirements for those in the role (Bryson, James & Keep, 2013, p. 127). It is plausible that these findings have contributed to comments by Keelty (2011, p. 167) and Teague (2010, p. 8) who previously identified in government reviews into disasters, that government organisations have little understanding of emergency management.

When further examining the various topics of qualification, only 214 (24.32%) advertisements clarified what these were. The highest numbers of subjects in qualifications were located in training and assessment, reinforcing the likelihood that training is the primary focus and priority of the role. This finding raises the question as to what the successful applicants would be teaching when only ten advertisements required the candidate to have an education in emergency management. The remaining thematic groups were not unexpected due to the origin of emergency management in emergency services. Qualifications in management and the job-specific functions would also be expected in a role where emergency management is one component and this finding further support Blanchard's (2001), stereotypical emergency manager.

5.3 Training

5.3.1 Training – results

Of the 880 job advertisements, the vast majority at 847 (96.25%) did not list any type of training, with only 33 (3.75%) identifying training as a requirement for the role (Figure 5.10).

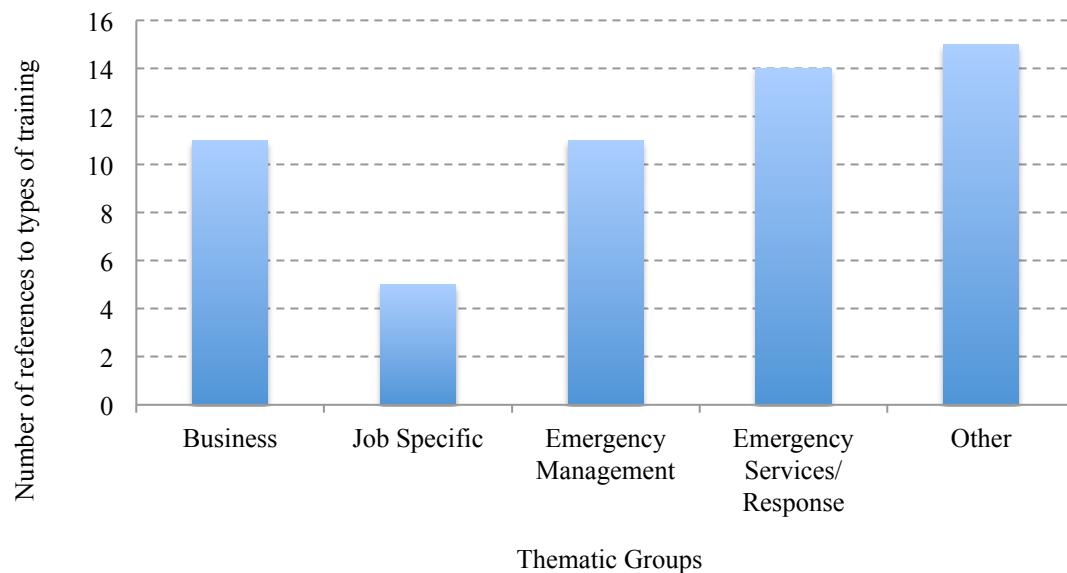
Figure 5.10 – Job advertisements with training requirements



Of these 33 job advertisements that indicated training was necessary, six stated that training was ‘advantageous’, ‘desirable’, ‘highly desirable’, or ‘highly regarded’. Three job advertisements stated that training “would be an advantage, but not essential”, “desirable, but not necessary” and that it “may be required”.

The 33 job advertisements identified training for a total of 56 occurrences and when analysed, these were classified into five thematic groups. These groups included business (n = 11; 19.64%), job-specific (n = 5; 8.93%), emergency management (n = 11; 19.64%), emergency services/response (n = 14; 25.00%), and other (n = 15; 26.79%) (Figure 5.11).

Figure 5.11 – Training by thematic groups



Of these 56 job advertisements, the 15 (26.79%) listed in ‘Other’ indicated one or more options through the use of ‘and/or’, and included “risk management and/or emergency management”, two advertisements stated that the position required the applicant to have “fire and emergency management related courses, including Introduction to emergency management, Introduction to AIIMS”, and “fundamental elements of HSEQ (eg, Emergency Management, supervision/leadership, competency assessment, incident investigation, safety improvement initiatives etc.)”{sic}.

Of the 56 references to training, *Other* was the largest thematic group that required training with 15 (26.79%) references across 13 subjects (Table 5.7).

Table 5.7 – Other thematic groups

Subject	#
Child Abuse and Neglect	1
Clinical Transfusion	1
Speed Camera Operations	2
Patient Handling Techniques	1
Cytotoxic Safety	1
Infection Control Bloodsafe	1
Alcohol And Drug	2
Taproot Incident Investigation Process	1
Competency Assessment	1
Capability Self-Assessment Tool	1
Incident Investigation and Analysis	1
Incident Investigation	1
Safety Improvement Initiatives	1
Total	15

Emergency Services/Response was the second-largest thematic group that required training with 14 (25.00%) references across 11 subjects (Table 5.8).

Table 5.8 – Emergency service/response thematic group

Subject	#
B.L.S.	1
Confined Space Rescue	1
Conducting Briefings and Debriefings	2
Fire	1
Fire Fighting and Response Strategies	1
Fire Safety	1
Introduction to AIIMS	1
First Response Evacuation	1
Mines Emergency Response	2
Supervise Response	2
General Evacuation Instructions	1
Total	14

Business was the third-largest thematic group that required training with 11 (19.64%) references across nine subjects (Table 5.9).

Table 5.9 – Business thematic group

Subject	#
Business	1
Business Continuity	1
Crisis Management	1
Security Operations	2
Risk	1
Health	1
Supervision/Leadership	2
International Development	1
Management	1
Total	11

Emergency management was the fourth largest thematic group that required training with 11 (19.64%) subjects across six areas (Table 5.10).

Table 5.10 – Emergency management thematic group

Subject	#
Queensland Disaster Management Arrangement Framework	2
Emergency Management	4
Disaster Management	1
Emergency Management (Introduction To...)	1
Management (coordination of emergency management or relevant functions or services and its application to community safety)	1
Local Disaster Coordination	2
Total	11

Job-specific was the smallest thematic group that required training with five (8.93%) references across three subjects (Table 5.11).

Table 5.11 – Job-specific thematic group

Subject	#
Authorised Officer (appointed under Section 55 of the E.P.A Act)	1
Victorian Prison Officer Pre Service Training	2
Municipal Fire Prevention Officer	2
Total	5

5.3.2 Training – discussion

Of the seven key areas identified in research question one, training was the second smallest with only 3.75% of the total 880 roles listing it as a requirement. Despite the literature identified in Chapter Two including Blanchard (2001) and Beaton (2010) identifying the importance of training as part of the continued education of practitioners, it was of great concern that the vast majority (n = 847; 96.25%) did not list any type of training as a requirement for role. The lack of training required of those filling the role raises the question as to how they can stay abreast of ongoing changes to the industry, technology, and hazards, and does not support a role that is suited to complex changes in the environment.

The lack of training required is further compounded when examining the roles and where 27 job advertisements utilised ‘and/or’, to indicate that training was optional and suggests a lack of priority, understanding, or indecision in the role by organisations and further supports Blanchard’s (2001) stereotypical emergency manager.

When examining the five thematic groups, emergency management was the second-lowest group with only 11 (19.64%) of the 46 areas of training. Of these 11, two areas applied to contemporary emergency/disaster management, eight centred on local arrangements, and one lacked any clarification of the area, stating that training was in the “management and coordination of emergency management or relevant functions or services and its application to community safety”. It is plausible that the organisations believed the applicant would possess some other form of emergency management knowledge or education, however, the need for training in business, emergency services/response and other was considered more valuable. It is also unclear what the training was related to, and who makes the decision over what training is deemed appropriate.

The ‘Other’ category, revealed 15 (26.79%) areas of training that corresponded to job functions with many having no relation to emergency management. It is plausible that the business category with 30 areas of training could have a direct correlation to emergency management with administration, business continuity, planning, and project management. This finding supports McArdle’s (2017) findings of a lack of structured training programs and Blanchard’s (2001) stereotypical emergency manager while Elsworth and Anthony–Harvey–Beavis’ (2007a, pp. 22, 29) findings revealed that inappropriate training can act as barriers to effective emergency management.

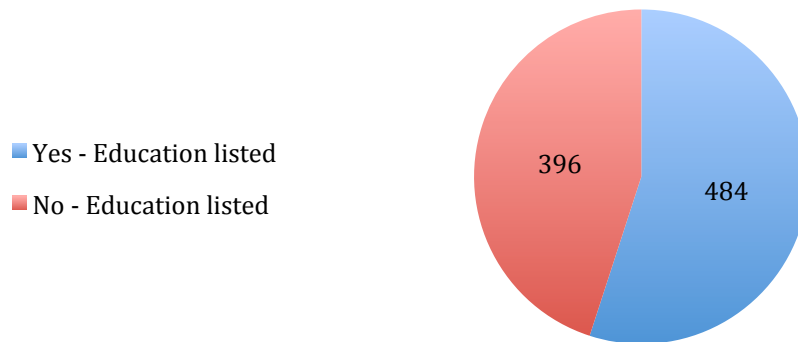
5.4 Education

5.4.1 Education – results

Of the 880 job advertisements, 484 (55.00%) identified the requirement for education as opposed to 396 (45.00%) that either did not require or did not specify a requirement for education (Figure 5.6). Of the 484 job advertisements specifying

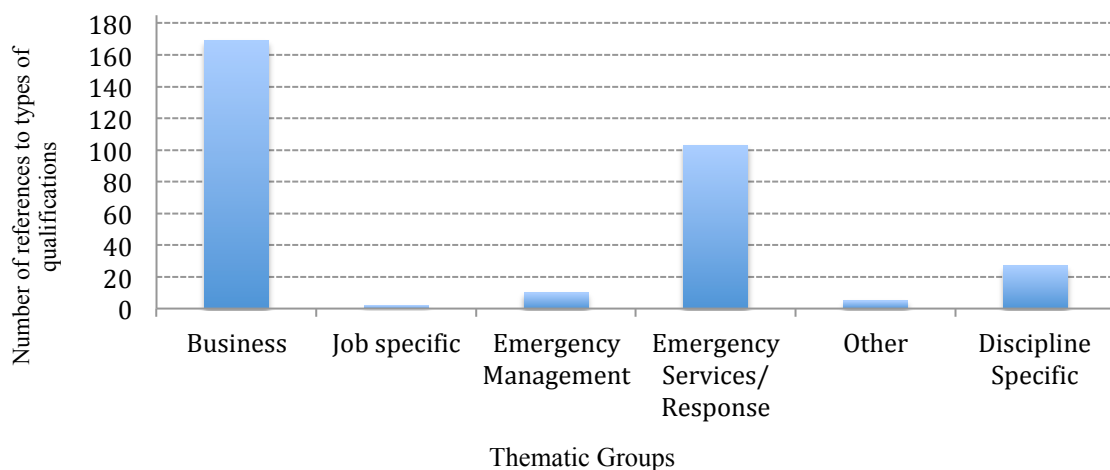
education, only 316 (65.29%) identified specific areas or 35.91% of the 880 job advertisements (Figure 5.12).

Figure 5.12 – Education specified by job advertisements



When analysing the 316 references to education, these were classified into six thematic groups. These groups included business (n = 169; 53.48%), Job-specific (n = 2; 0.63%), emergency management (n = 10; 3.17%), emergency services/response (n = 103; 32.60%), other (n = 5; 1.58%), and discipline specific (n = 27; 8.54%) (Figure 5.13).

Figure 5.13 – Education by thematic groups



Business was the largest thematic group that required education with 169 (53.48%) references across thirteen subjects (Table 5.12).

Table 5.12 – Business thematic group

Subject	#
Business Continuity	4
Business Management	1
Compliance	2
Crisis Management	2
Government Investigations	1
Health and Safety	1
Information Security	1
Law and Compliance	1
Occupational Health and Safety	9
Project Management	2
Risk	2
Security ⁵¹ (security and risk management; security operations)	7
Training (training and assessment; workplace training and assessment)	136
Total	169

Emergency Services/Response was the second–largest group that required education with 103 (32.60%) references across five subjects (Table 5.13).

Table 5.13 – Emergency services/response thematic group

Subject	#
Ambulance (ambulance communications; applied science – ambulance); E.M.T.; health care – ambulance); Paramedical science; pre–hospital care; pre–hospital care – ambulance)	59
Emergency Response	3
Fire (fire fighting; fire technology; Public Safety – Fire; Public Safety – Fire Fighting and Emergency Operations)	11
Mine Emergency (emergency; response; rescue; underground bg4; response and rescue)	27
Public Safety	3
Total	103

⁵¹ **Bold** indicates main area within the theme with sub–topics

Discipline-specific was the second-largest thematic group, (equal with Emergency Services/Response) which required a qualification, with 27 (8.54%) references across four subjects (Table 5.14).

Table 5.14 – Discipline thematic group

Subject	#
Health	18
Science	7
Mining general	1
Veterinary Science	1
Total	27

Emergency management was the fourth largest thematic group that required education with ten (3.16%) references across three subjects (Table 5.15).

Table 5.15 – Emergency management thematic group

Subject	#
Emergency Management	7
Public Safety – Emergency Management	1
Resilience	2
Total	10

Other was the fifth–largest thematic group that required education with five (1.58%) references across one subject area (Table 5.16).

Table 5.16 – Other thematic group

Subject	#
Leadership and Management (front line leadership; front line management; leadership and management)	5
Total	5

Job-specific was the smallest thematic group that required education with two (0.63%) references across one subject (Table 5.17).

Table 5.17 – Job-specific thematic group

Subject	#
Nurse	2
Total	2

5.5.2 Education – discussion

Of the 880 job advertisements, the majority indicated the requirement for education. Despite the expression of interest in education, only 35.91% identified what this included. Business was the largest group and while Blanchard (2005) identified the importance of the emergency manager “to integrate emergency management into all aspects of business” the largest area within business was training (80.47%).

Training has been identified as an important component for an emergency manager but it is not the only key activity of the role. Similar to the qualifications section, it is difficult to understand how an individual can teach an area without an underlying base knowledge or education in the areas being taught. However, it is likely that by examining the next largest education group that insight may be gained. The next largest group specified emergency services/ response and suggests that there is a continued priority on these areas rather than emergency management and is inconsistent with Blanchard’s (2001) new generation emergency manager.

As these roles are for emergency management, one would expect that having an education in emergency management would rate equally as high, if not higher. With only ten references to emergency management, this does not appear to be the case. Despite being the third-largest group, business had 169 references, and Emergency services/ response 103 when compared to the ten references for an education in emergency management.

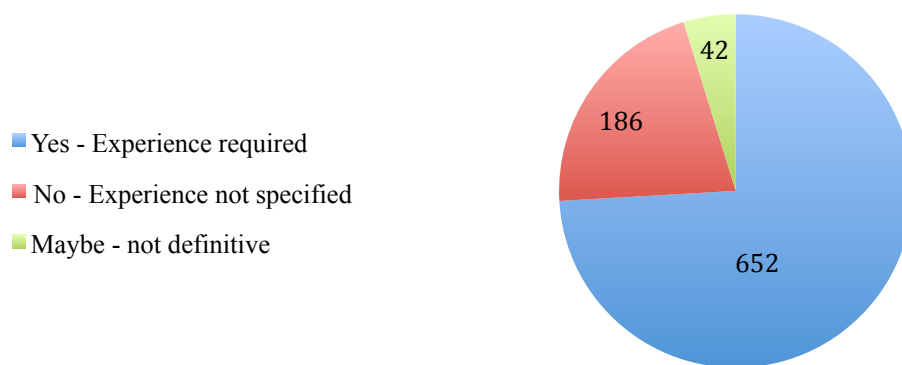
Of the remaining two groups, ‘other’ was predominantly about leadership and management at different levels of an organisation and had five references, and the second group were job-specific and included two references to ‘Nurse’. As nursing requires a degree in Australia, it is plausible to suggest that this is the main priority of the role. Based on the ten references to emergency management it is logical to assume that having an education in this area is not a priority and is a missed opportunity for organisations to capitalise on the benefits of someone specifically educated in knowledge previously identified in Chapter Two by FEMA (2007), Blanchard (2001, pp. 7-8), and EMA (1998).

5.5 Experience

5.5.1 Experience – results

Of the 880 job advertisements, 652 (74.09%) identified the requirement for experience, as opposed to 42 (4.77%) that thought experience was desirable but not mandatory, and 186 (21.14%) that did not specify experience as part of the role (Figure 5.14).

Figure 5.14 – Experience specified by job advertisements



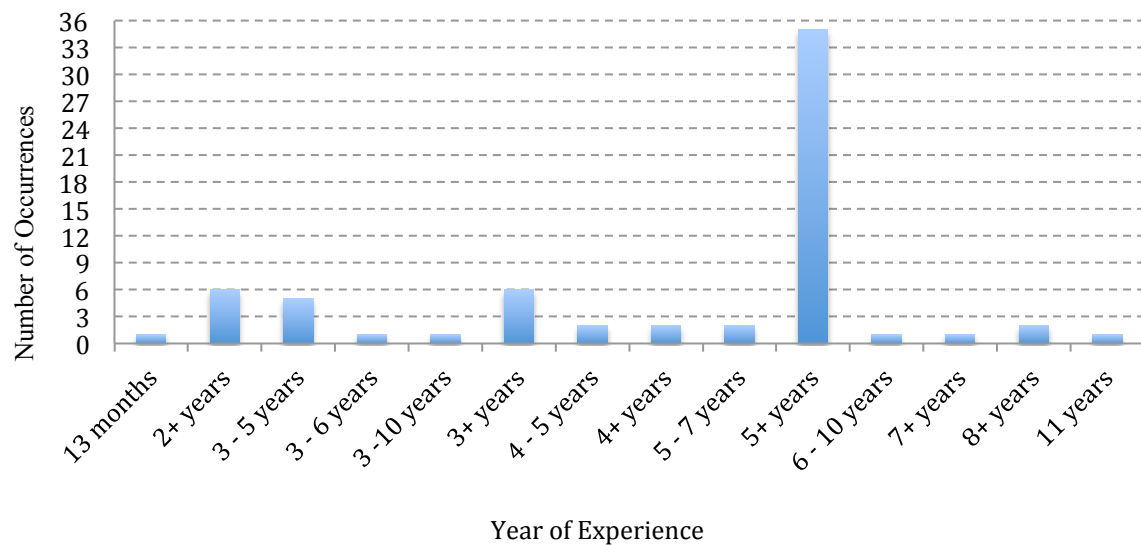
Of the 652 job advertisements, responses could be divided into three groups, these groups included experience by years within the role ($n = 66$; 10.12%), adjectives ($n = 80$; 12.27%), and roles that clarified the specify details of experience required by theme ($n = 506$; 77.61%) across seven areas (Figure 5.15).

Figure 5.15 – Job advertisements that required experience



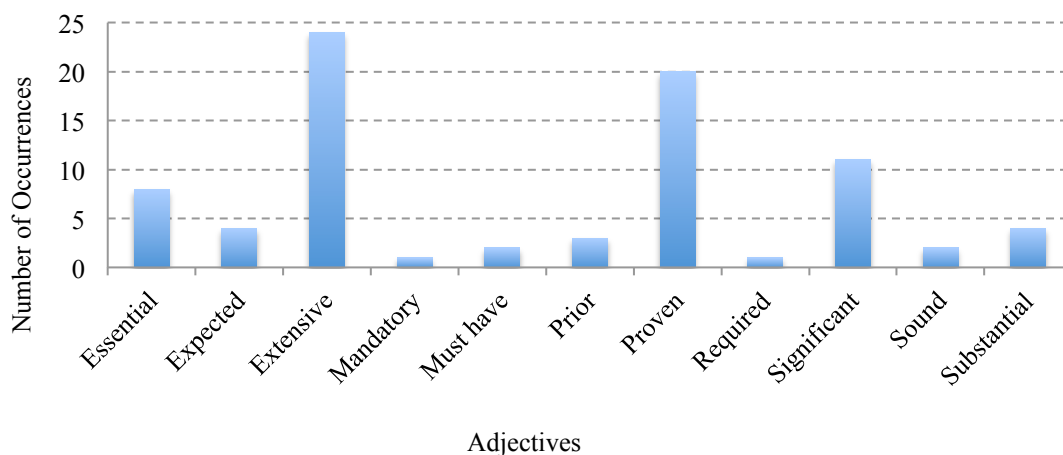
When analysing the 66 job advertisements identifying *experience* by years within the role, these ranged from 13 months to 11 years. The largest group of experience was 5+ years ($n = 35$), followed by 2+ years and 3+ years, equally ($n = 6$), and 3-5 years ($n = 5$) (Figure 5.16). The remaining 14 job advertisements identified ten groups of experience with less than three occurrences each.

Figure 5.16 – Experience listed by years



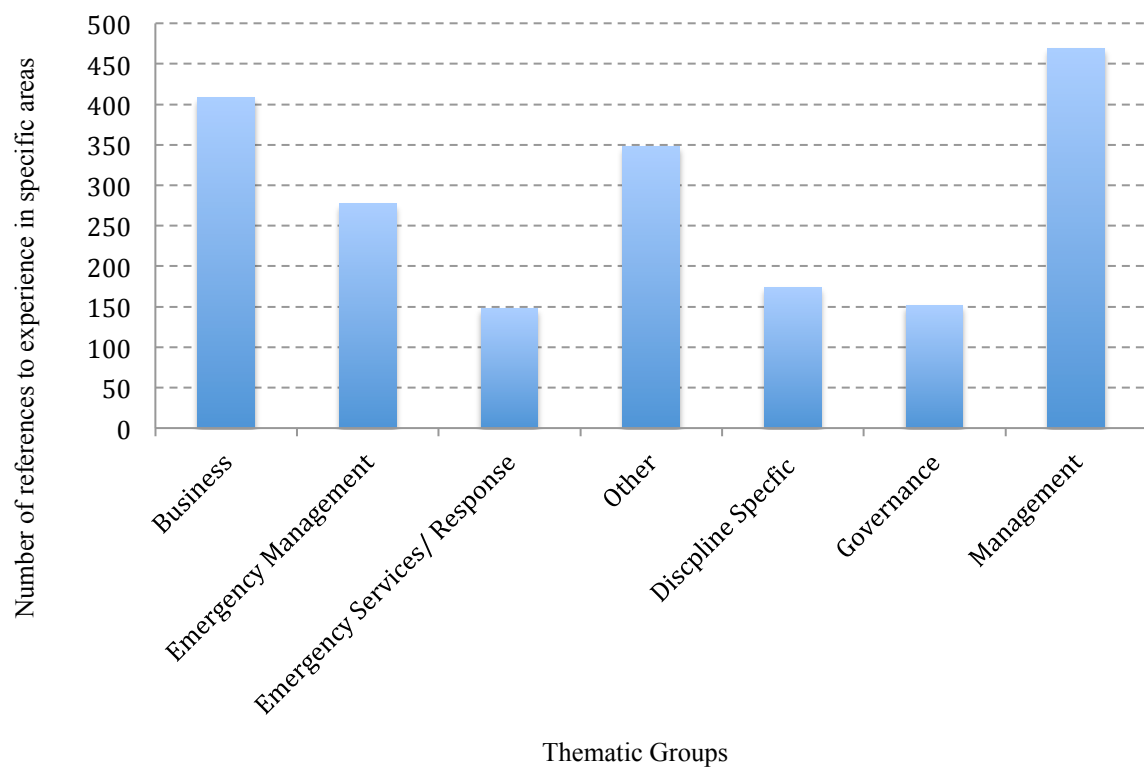
Of the 80 (12.27%) advertisements that listed experience by adjectives, these ranged from mandatory ($n = 1$), and sound experience ($n = 2$), to prior experience ($n = 3$). The largest group indicated that they required extensive experience ($n = 24$) followed by proven ($n = 20$) and significant ($n = 11$) (Figure 5.17).

Figure 5.17 – Experience listed by an adjective



When analysing the 652 job advertisements, there were 1975 occurrences of experience that were classified into seven thematic groups. These groups included business (n = 408; 20.65%), emergency management (n = 277; 14.03%), emergency services/response (n = 148; 7.49%), other (n = 348; 17.62%), discipline-specific (n = 174; 8.81%), governance (n = 151; 7.65%) and management (n = 469; 23.75%) (Figure 5.18).

Figure 5.18 – Job advertisements requiring experience by a thematic group



Management was the largest thematic group identified within experience with 469 (23.75%) references across five subjects (Table 5.18).

Table 5.18 – Management thematic group

Subject	#
Crisis Management (planning, implementation, advice, strategies, frameworks, assessment, planning)	9
People Management (management of people and teams; coordinating people and resources; frontline supervisory leading a team; volunteer coordination; staff development, training and continuing training; leading and managing; leading and managing a geographically dispersed team; contemporary practices to develop, support and motivate teams to achieve positive outcomes; advice and coaching to senior line managers; empowering others to deliver against goals, by providing effective feedback, facilitating employee development and building team commitment through demonstrating personal conviction; workforce management)	62
Project Management (managing the planning, development, implementation and evaluation of complex multi-stakeholder project; development, negotiation and delivery of programs and projects; assessing the risk of physical disasters and leading projects to mitigate threats; monitoring and reaching predicted outcomes using project plans; coordinating and driving a number of projects to completion; leading or participating in complex projects to meet client expectations within deadlines and budget constraints; development, negotiation and delivery of programs and projects)	94
General Management (administration support; quality management; business resilience strategy; contract management; human resources; financial management; customer service; safety; work, health and safety; purchasing; change management; business planning; operations)	219
Leadership and Management (senior management; translating strategic direction; community based leadership; management and coordination; middle management; leading and supervising; leading across emergency management cycle of prevention, preparedness, response and recovery; leading in an operational environment; incident commander)	85
Total	469

Business was the second-largest thematic group that required experience with 408 (20.65%) references across seven subjects (Table 5.19).

Table 5.19 – Business thematic group

Subject	#
Business Continuity (planning, strategy, testing, implementation, principles and practices)	39
Training and Education (teacher; delivering presentations and facilitating exercises; facilitation; development, education & training; design and delivery; design and conduct of emergency code related drills and debriefing; delivering training in emergency response or related capacity; trainer in a related field; competency standards and training packages; facilitating workshops; designing, developing and delivering and materials)	125
Communications (reporting; verbal and written; presentation; strategic and practical advice; analytical reports and providing trend analysis; provision of high quality professional, advice, interpretation and information to senior management, within a politically sensitive organisation; policy writing; negotiation; conduct briefings and debriefings; data entry and word processing skills; media and public relations; networking; technical reports; researching and analysing information)	58
Stakeholders (engagement and management; consultation with key emergency management agencies, landowners, health providers, engineering services, welfare services, utilities, and public information service; negotiate, liaise and influence customer groups including volunteers, government and non-government organisations; creating, maintaining and supporting effective partnerships with the community sector; liaising with key state and federal government departments)	70
Information Systems (Microsoft Project online program; Microsoft Word, Excel, Outlook, or any other computer software system; information analysis and conceptual thinking; TRIM ⁵² ; network operations; geospatial information systems; object oriented programming skills, preferably C++)	39
Security (Development and implementation of policy, procedures, plans and protocols; complex scenarios; operations; Identifying, assessing and mitigating risk; control room)	32
Risk (concepts and principles; standards and policies as it applies to community risk; initiative and applying principles; planning and implementation; developing risk assessment, practices and methodologies; organise risk management workshops; identify emerging issues, risks and opportunities and provide timely information; risk assessment – preferably in an emergency management environment; emergency risk assessment evaluation and treatment; risk management in a disaster management and operational planning context; risk and threat assessments)	45
Total	408

⁵² Document management system

Other was the third-largest thematic group that required experience with 348 (17.62%) references across six subjects (Table 5.20).

Table 5.20 – Other thematic group

Subject	#
And/or (advanced diploma in a relevant discipline and/or equivalent experience, business continuity and emergency management or equivalent demonstrated experience supplemented by continuing professional development activities; project management and/or government environments; compliance, regulatory or aviation background; credible emergency management experience in a similar or comparable role; disaster and/or emergency management; disaster management, business continuity management and/or emergency management; emergency management or fire prevention environment, or regulatory environment; emergency or disaster management; experience or strong interest in emergency management; emergency management and/or fire fighting procedures; training or sales; emergency management or first aid; Fire and Emergency Management; Fire and Compliance)	182
Similar/Relevant (similar role involving emergency management and/or fire fighting procedures; similar role – within an airport, airline, or private sector; similar role in professional services particularly in the facility management or property management sector)	37
Multi-agency (inter-agency/multi-agency/volunteer organisation; multi-agency environment; operating in multi-agency situations)	10
Phases (prevention, preparation, response and recovery of disasters; mitigation strategies – providing innovative; managing, planning and delivering emergency recovery and relief plans; recovery operations; disaster recovery planning; emergency preparedness; prevention, preparation, response and recovery from emergency situations; emergency preparedness – initiatives, development and implementation; municipal recovery management; prepare for, and respond to emergencies – including executing preparedness, planning and response activities; response, relief and recovery programs; fire prevention)	30
Miscellaneous (domestic and international; geographically dispersed organisation; remote site management systems; field sampling for environmental incidents and investigations; incident investigation and analysis – Taproot, root cause analysis; international development programs; fire safety; surveillance; pandemic planning; campaign management)	52
Community (community engagement and planning; community service organisations; community development; community education; community recovery/community development; communities based overseas; delivering community programs; aboriginal and Torres Strait Islander and culturally and linguistically diverse people and communities; community resilience; community education; community based emergency management; community partnership)	37
Total	348

Emergency management is the fourth largest group that required experience with 277 (14.03%) references across three subjects (Table 5.21).

Table 5.21 – Emergency management thematic group

Subject	#
Emergency Management (planning arrangements; concepts and practices; development and implementation; within the private sector; community development; education and awareness; development and delivery; coordination; planning processes; strong background; policy development; principles; legislation; related fields; state and national arrangement; doctrine; support; municipal; capability development; analysis; application to community safety; contemporary practices)	231
Disaster Management (proven research; application of effective strategies; overseas communities; development and implementation; design; interpretation; jurisdiction arrangements; strategic; local government)	32
Resilience (developing; strategies, frameworks, and plans; community resilience; business resilience; managing or supporting resilience related activities – security, emergency management and business continuity; concepts and standards such as ISO22301, AS/NZS5050, ISO31000, ISO27001/2)	14
Total	277

Discipline-specific was the fifth largest thematic group that required experience with 174 (8.81%) references across two subjects (Table 5.22).

Table 5.22 – Discipline-specific thematic group

Subject	#
Industry-specific (teacher, energy sector; health; consulting; civil engineering; church/not-for-profit/charity sector; telecommunications networks; mining; road network; heavy industry; land management; environment protection; inter-agency/multi-agency/volunteer organisation; ranger services; onshore LNG facility; registered nurse/midwife; resource environment; jumbo operating or long hole drilling; humanitarian)	152
Emergency/disaster/hazard (emergency planning – applying AS3745 – planning for emergencies in facilities; DEM ⁵³ ; emergency, disaster planning; disaster contingency; emergency/disaster; emergency settings; hazard planning; natural disaster – planning practices and processes; natural hazards and the potential impacts for communities and organisations)	22
Total	174

⁵³ Abbreviation was not defined.

Governance was the smallest thematic group, equal to emergency services/response that required experience, with 151 (7.65%) references across three subjects (Table 5.23).

Table 5.23 – Governance-specific thematic group

Subject	#
Government (government organisations; alignment with government processes; state, regional, local; planning and liaising with; practices and procedures; Local government, CFA or other relevant authority; Public sector including structure of government and its decision-making processes)	65
Regulatory environment (interpreting and implementing Queensland emergency management assurance framework; Queensland disaster management arrangements; strategic policy and legislative development processes; NT Worksafe, or other Australian regulators; state and national arrangements for counter-terrorism; analysing and auditing policies, systems, plans and processes; NSW integrated planning and reporting framework)	59
Policy/procedures (analysis and advice; strategy and development; development, implementation and review of policies and procedures; research, planning, implementation and evaluation of policy and policy initiatives; strategy development)	27
Total	151

Emergency Services/Response was the smallest thematic group that required experience, with 148 (7.49%) references across three subjects (Table 5.24).

Table 5.24 – Emergency services/response-specific thematic group

Subject	#
Emergency Services (organisation; urban fire, hazmat, country fire authority; pre-hospital care trauma; fire and rescue; fire fighting; operational environment; volunteer emergency services group; ambulance; mine rescue coordination)	38
Response (disaster response and coordination; emergency response; crisis and natural disaster; control of emergency response; rescue; responding to emergency events; public emergency responder; Prevention, preparedness and coordination of emergency response situations; large scale; planning for)	81
Incident Management (Australasian Inter-service Incident Management System (AIIMS); command and control; command and control structure; crisis and incident management – application of principles, practices and methods of implementation; emergency operations centre)	29
Total	151

5.5.2 Experience – discussion

Of the 880 job advertisements, the vast majority (74.09%) indicated that experience was a requirement of the role. Unsurprisingly, a greater number of job advertisements required experience (+10.32%) or training (+1875.73%) over education, further supporting Blanchard's (2001) stereotypical emergency manager. It is important to note that these 74.09% account for 1975 references across 29 subjects.

For brevity and to reduce duplication within the tables, not every instance of a keyword was referenced. For example, Table 5.18 identified nine instances of Crisis Management (planning, implementation, advice, strategies, frameworks, assessment, planning). In reality the key term listed in bold indicated that several advertisements may have had very similar, if not identical, phrases. For example, crisis management presented in table 5.18, included sub-topics that ranged from 'crisis management planning' to 'crisis management implementation'.

Of the thematic groups, 'Other' was the most complex, and highlighted the various inconsistencies and misunderstandings across the industry. When examining 'and/or', examples provided by the various job advertisements ranged from experience that was very similar to emergency management, such as experience in 'Fire and Compliance,' and 'emergency management and/or fire fighting procedures' to 'disaster and/or emergency management'.

The existence of 'and' could be used to provide additional emphasis on experience such as, "Fire and Emergency Management", the use of 'or' indicates that one area is not necessary and has the potential to devalue the required experience. For example, "compliance, regulatory or aviation background", suggests that experience in only one area is necessary for the role but not all areas identified were required. It is possible that the role was very specialised, and the writer was not confident in the specific requirements of the role, that they would be unable to get someone with experience across all areas, or they simply listed everything they thought was relevant to the role. However, when it is used to draw a similar comparison against two subjects such as 'emergency management and first aid' (Table 5.20), it reveals a significant lack of understanding about two very different disciplines and industries.

It is possible that the person who wrote the job advertisements did not understand what was required in first aid but it is more likely that they did not

understand emergency management, thinking that they were comparable and required similar experience. What is more concerning is that few job advertisements are completed in isolation. Especially with the majority of practitioners identified in Chapter 2, Figure 4.10 being in local government where the hiring process would typically involve the hiring manager and human resources. Neither of these noted the discrepancy.

This raises the question as to the second subgroup identified within ‘Other’, relevant or similar. In context, this was referenced to as experience in relevant or similar roles. Using the previous example, the hiring manager could have hired someone trained in first aid to take on the role of emergency management, thinking that both roles were similar when in reality they could not be any more different. An individual qualified in first aid is only required to take short course through St. John or the Red Cross (or similar) where they are only expected to deal with minor first aid issues, something that is not and should not be required of an emergency manager or included as part of their role or job description, any more than it would be required of another technical role such as engineer, or lawyer. This finding highlights the continued lack of understanding that currently exists in which the community aligns emergency management with responding to an emergency.

Other issues included ‘credible emergency management experience in a similar or comparable role’ and ‘experience or strong interest in emergency management’. Who defines credibility, the same person who indicated that first aid and emergency management are synonyms, and why is interest considered a substitute for experience or education, when there are appropriately qualified and experienced practitioners available? Would interest be enough to allow someone to be a lawyer or a doctor, or a plumber? Despite the preference for experience, this section highlights that various types of experience required for those expected in the role, where the majority of the experience listed was not specific to emergency management but to various other non-related functions. While some of this experience is transferable, it is difficult to understand the synergies between a first aider with a competent emergency manager.

Recommendation # 5.1: Standardised job requirements

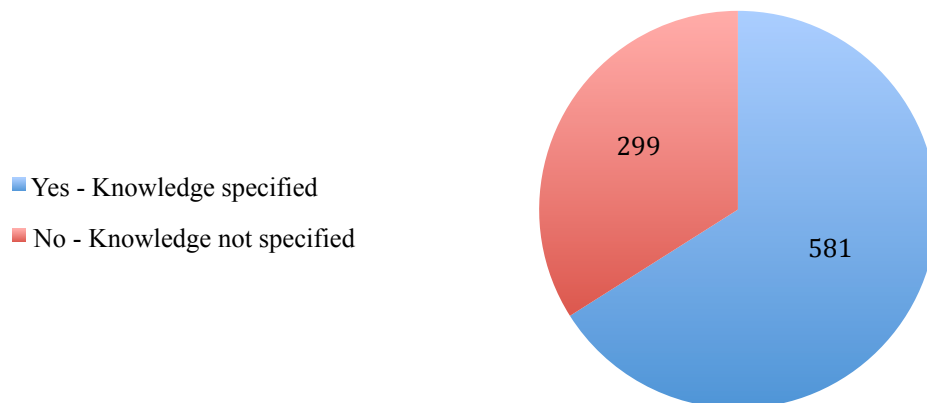
Emergency management needs to be appropriately regulated, as it is a complex industry that has significant public safety outcomes if done incorrectly. Emergency management requires extensive education and experience to become competent and should not be left to a first aider or any individual who happens to be available. Anyone holding the role must have the requisite experience that is determined by an appropriate board of professional practitioners and not left to under-resourced or ill-informed organisations or individuals.

5.6 Knowledge

5.6.1 Knowledge – results

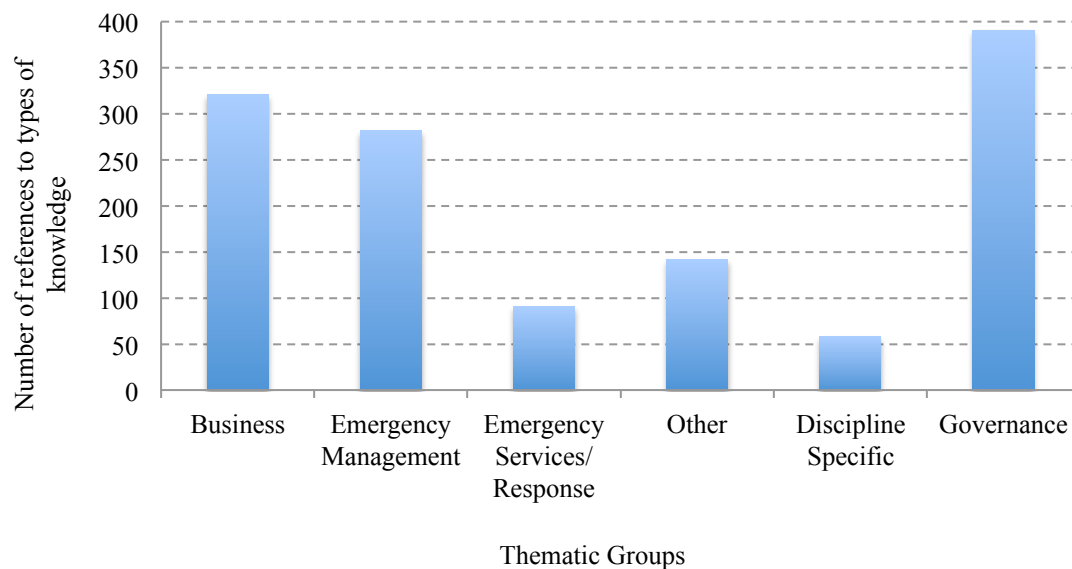
Of the 880 job advertisements, 581 (66.02%) identified the requirement for knowledge (Figure 5.19). As opposed to the 299 (33.98%) that did not indicate the requirement of specific knowledge for the role.

Figure 5.19 – Knowledge specified by job advertisements



The 581 job advertisements identified knowledge for a total of 1285 occurrences, when analysed these were classified into six thematic groups. These 1285 occurrences were further grouped into business (n = 321; 24.98%), emergency management (n = 282; 21.95%), emergency services/response (n = 91; 7.08%), other (n = 142; 11.05%), discipline-specific (n = 58; 4.51%), and governance (n = 391; 30.43%) (Figure 5.20).

Figure 5.20 – Knowledge by thematic groups



Governance was the largest thematic group that required knowledge with 391 (30.43%) references across four subjects (Table 5.25).

Table 5.25 – Governance thematic group

Subject	#
Government	94
Legislation	141
Local and organisational specific standards and processes	111
Policy	45
Total	391

Business was the second-largest thematic group that required knowledge with 321 (24.98%) references across thirteen subjects (Table 5.26).

Table 5.26 – Business thematic group

Subject	#
Business Continuity	30
Business Management	12
Communication	3
Crisis	9
Health and Safety	40
Human Resources	1
Information Communication Technology (I.C.T.)	68
Management	18
Marketing	6
Project Management	17
Risk	58
Training	30
Security	29
Total	321

Emergency management was the third-largest thematic group that required knowledge with 282 (21.95%) references across six subjects (Table 5.27).

Table 5.27 – Emergency management group

Subject	#
Counter Disaster	2
Community Development (capacity building)	12
Disaster Management	29
Emergency Management	210
Hazards	13
Resilience	16
Total	282

Other is the fourth-largest thematic group that required knowledge with 142 (11.05%) references across three subjects (Table 5.28).

Table 5.28 – Other thematic group

Subject	#
Organisational Change	1
Other	126
Stakeholder engagement/management	15
Total	142

Emergency Services/Response was the fifth largest thematic group that required knowledge with 91 (7.08%) references across four subjects (Table 5.29).

Table 5.29 – Emergency services/response thematic group

Subject	#
Command and Control	30
Emergencies	13
Emergency Services	19
Fire	29
Total	91

Discipline-specific was the smallest thematic group that required knowledge with 58 (4.51%) references across six subjects (Table 5.30).

Table 5.30 – Discipline-specific thematic group

Subject	#
Cultural Heritage	1
Environment	10
Geographic Information Systems	3
Health	29
Mining	4
Non-Government Organisation	11
Total	58

5.6.2 Knowledge – discussion

The majority of job advertisements indicated that knowledge was required as part of the role and indicated between one and three areas. These findings support McArdle's research (2017, p. 85) in which the majority of participants (86.14%) indicated that emergency management 'knowledge' was an either 'very important,' or 'essential' attribute to any prospective emergency management profession". However, what this knowledge was did not always reflect contemporary emergency management practice.

When examining the thematic groups, emergency management (21.95%) was third after the governance and business categories. Some job advertisements did not require candidates to have any working or theoretical knowledge of emergency management, only knowledge of local emergency management policy and legislation. It is unclear how practitioners can effectively operate within any field if they have limited knowledge of the subject area for which they are responsible. These findings indicate that emergency management is not the core responsibility of the role, it is also plausible that the position exists to meet legislative obligations, is not fully understood, and will not be as effective in DRR as it could be should the position be required to have emergency management knowledge.

As emergency management is pivotal to effective DRR, it would be expected that knowledge specific to emergency management is a higher priority for organisations looking to employ someone in a specific role. This would suggest that emergency management is an addition to a current role they consider of greater importance and continues to support Blanchard's (2001), stereotypical emergency manager.

It is concerning that several job advertisements included confusing and unrealistic statements in which the applicant was expected to have knowledge that may have been difficult for them to access unless that organisation employed them at the time of applying, such as knowledge of department or organisation policy, or the extent of the organisations' resources. While it is plausible that the organisation has the information available on their website, or that the person lives within the geographic area and is familiar with the particular hazards the organisation faces but based on the geographically dispersed and specialised nature of the roles this would be considered unlikely. Requirements identified included:

understanding of the organisation's long term goals and context of the position's function in the organisational context;

understand and comply with [the organisations] Records management policy and other related policies and procedures;

knowledge of community safety issues, in particular, [local] context,

emergency management procedures [of the organisation];

good working knowledge of council resources and operations and the locality's geography, infrastructure, services and community; and

requires a sound understanding of the identified natural hazards for communities in context with population growth and capability maturity within the broader zone.

Several of these statements would be addressed if they recruited individuals formally trained and educated in contemporary emergency management, but others are vague or require local knowledge. A requirement for local knowledge while important should not override the emergency manager having a comprehensive understanding of global emergency management practices and processes that can be used to strengthen and provide external insight and allow for best practice and innovation.

Recommendation # 5.2: Identify the specific knowledge required of the role

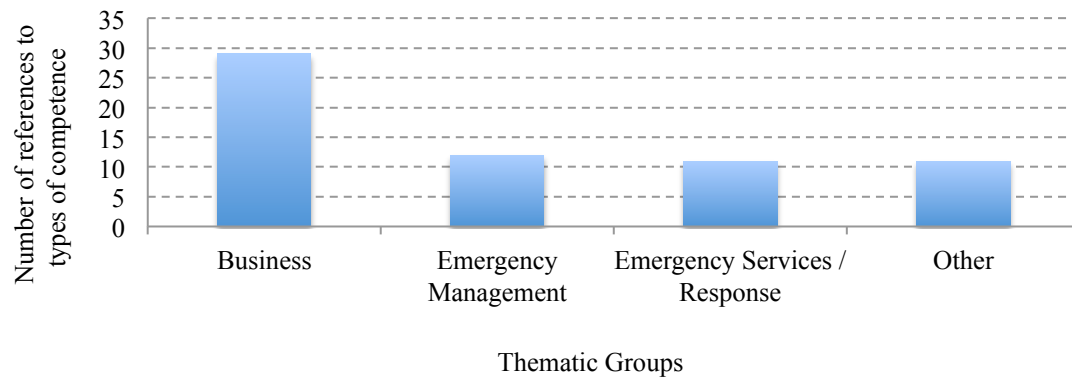
Using evidenced-based practice and emergency management literature to identify and collate information necessary for the role.

5.7 Competence

5.7.1 Competence – results

Of the 880 job advertisements, the vast majority at 840 (95.45%) did not list competence as a requirement for the role. The remaining 40 (4.55%) job advertisements specified competence as part of the role for a total of 63 occurrences. These 63 were classified into four thematic groups that included business (n = 29; 46.03%), emergency management (n = 12; 19.05%), emergency services/response (n = 11; 17.46%), and other (n = 11; 17.46%) (Figure 5.21).

Figure 5.21 – Competence by thematic groups



Business was the largest thematic group that required competence with 29 (46.03%) subjects across eight areas (Table 5.31).

Table 5.31 – Business thematic group

Subject	#
Business Management	1
Financial Management	1
I.C.T. (high–level computer; Microsoft applications; various software packages; contemporary information systems)	17
Management	2
Project Management	4
Resource Management	1
Security procedures	1
Training (competency assessment; competency–based learning and adult learning)	2
Total	29

Emergency management was the second-largest thematic group that required competence with 12 (19.05%) references across five subjects (Table 5.32).

Table 5.32 – Emergency management thematic group

Subject	#
Community Development (capacity building)	1
Emergency Management	1
Natural hazards and consequences	5
Stakeholder engagement	4
Technical competence – Emergency Management	1
Total	12

Emergency Services/Response was the second smallest thematic group (along with ‘Other’) that required competence with 11 (17.46%) references across five subjects that ranged from incident management to emergency services (Table 5.33).

Table 5.33 – Emergency services/response thematic group

Subject	#
Community Development (capacity building)	1
Emergency Management	1
Natural hazards and consequences	4
Stakeholder engagement	4
Technical competence – Emergency Management	1
Total	11

Other was the smallest thematic group that required competence with 11 (17.36%) references across ten subjects (Table 5.34).

Table 5.34 – Other thematic group

Subject	#
Adaptability	1
HSEQ (Fundamental elements of)	1
Incident Investigation	1
Initiating Action	1
Leadership	1
Research and Analytical competencies	2
Safety (improvement initiatives)	1
Supervision/leadership	1
Teamwork	1
Technical competence – Transport Security	1
Total	11

5.7.2 Competence – discussion

Of the seven elements of research question one, 40 (4.55%) of the 880 job advertisements stated that competence was necessary as part of the role. It is plausible to expect candidates to have competence in any role that they are applying for (Corriveau, 2009, p. 3; Blanchard, 2005, p. 1). However, it remains unclear how this can occur when there is a lack of requirements for the practitioner to have qualifications, training, education, and knowledge specific to role and support Broadwell's (1969) unconscious incompetent in which organisations neglect to compare beliefs to reality.

The thematic groups included business, emergency services/response, job, discipline-specific, and governance. However, the limited emergency management requirements identified within these job advertisements suggest that the lack of cultural identity within the emergency management industry is creating inconsistency across the role. Chapter Two previously identified the importance that greater diversity could lead to better outcomes (McArdle, 2017, p. 97) and suggests emergency management continues to be seen as a career of second choice. Without an understanding of the foundations of emergency management, it is unclear how practitioners can understand the basic principles, practices, differentiate myth from

reality, and can apply lessons learned from previous events. Furthermore, participants who...

have no emergency management qualification other than an in-house, non-award qualification speaks poorly of a system which does not cater in any structured way for a universal, recognised, authorised, industry-sponsored program of education and training for its workers

(McArdle, 2017, p. 97)

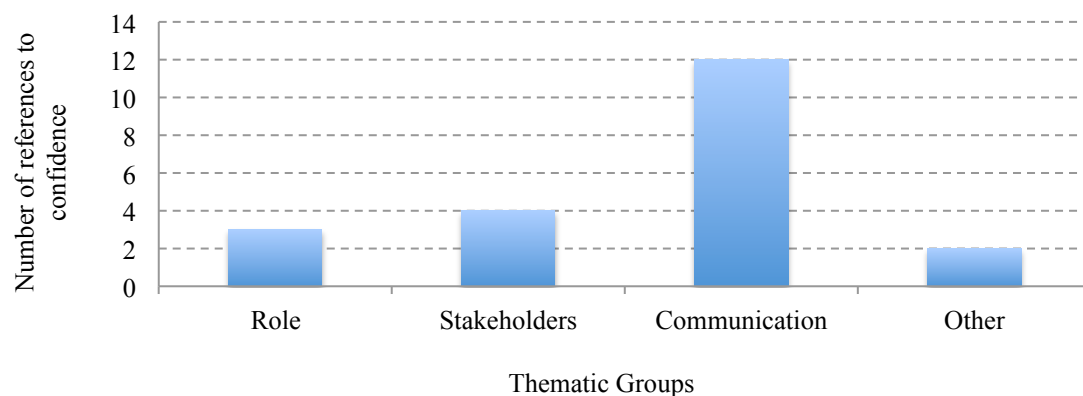
An example would be hiring a person as a medical doctor who is not required to have medical knowledge or degree, but a variety of other administrative, business and governance topics and expecting them to solve technical, medical issues. The possession of a variety of topics by practitioners is essential in the overall development of a role, its failure to include and prioritise emergency management as key component further supports Blanchard's (2001) stereotypical emergency manager. It is likely that a deficiency of industry-specific knowledge will likely exacerbate an industry already lacking in social cohesion, identity and effective DRR.

5.8 Confidence

5.8.1 Confidence – results

Of the 880 job advertisements, the vast majority at 864 (98.18%) did not list confidence as a requirement for the role. Of the remaining 16 (1.82%) job advertisements confidence was listed for a total of 21 references (Figure 5.27). When analysing these 21 references to confidence, these were classified into four thematic groups that included roles ($n = 3$; 14.29%), stakeholders ($n = 4$; 19.05%), communication ($n = 12$; 57.14%), and other ($n = 2$; 9.52%) (Figure 5.22).

Figure 5.22 – Confidence thematic groups



Communication was the largest thematic group that required confidence with 12 (57.14%) references. These findings stated that the successful candidate must have “confidence in verbal communication in a variety of environments and with diverse audiences and can deliver “clear and confident directives when appropriate”.

Stakeholder was the second-largest thematic group that required confidence with four (19.05%) references. These findings required someone with the “ability to work in a partnership approach with internal and external stakeholders in a way that builds confidence, cohesion and shared purpose”. Someone with “confidence in gaining cooperation, engagement and collaboration with stakeholders including community groups and services and other council officers as appropriate”, and inspires “a sense of purpose and direction and builds commitment and confidence in others to engage with change”.

Role was the third-largest thematic group that required confidence with three (14.29%) references. These findings stated that the candidate must have the “ability to work confidently, collaboratively and to analyse, interpret and understand a wide range of legislative requirements”. They must also have the “confidence to coordinate, facilitate and manage internal and external meetings and exercises”, and the “confidence and skills to manage, supervise and support the Municipal Fire Prevention Officer”.

Other was the smallest thematic group identified in qualification with two (9.52%) references and required someone who had a “high level of self-confidence” and would “maintain and enhance confidence in the public service”.

5.8.2 Confidence – discussion

Confidence appeared in only 16 job advertisements and predominantly involved the confidence of practitioner in the role, stakeholders, and communications. It will be a concern, however, if any practitioner has confidence in an area in which they have no qualifications, training, or education and if they did, should that be of concern? It is also plausible to suggest that if the candidate has previous qualifications, training, education and experience in emergency management, then they are more likely to be ‘confident’ than someone without those features.

What was interesting to note was that confidence in emergency management was not listed but the confidence to “manage, supervise and support the Municipal Fire Prevention Officer” was. These findings suggest the presence of Moore and Schatz’s

(2017, p. 1) overconfidence heuristic in which these organisations continue to believe that existing measure and methods are adequate for effective DRR and those specific requirements in emergency management are unnecessary for the job-specific role.

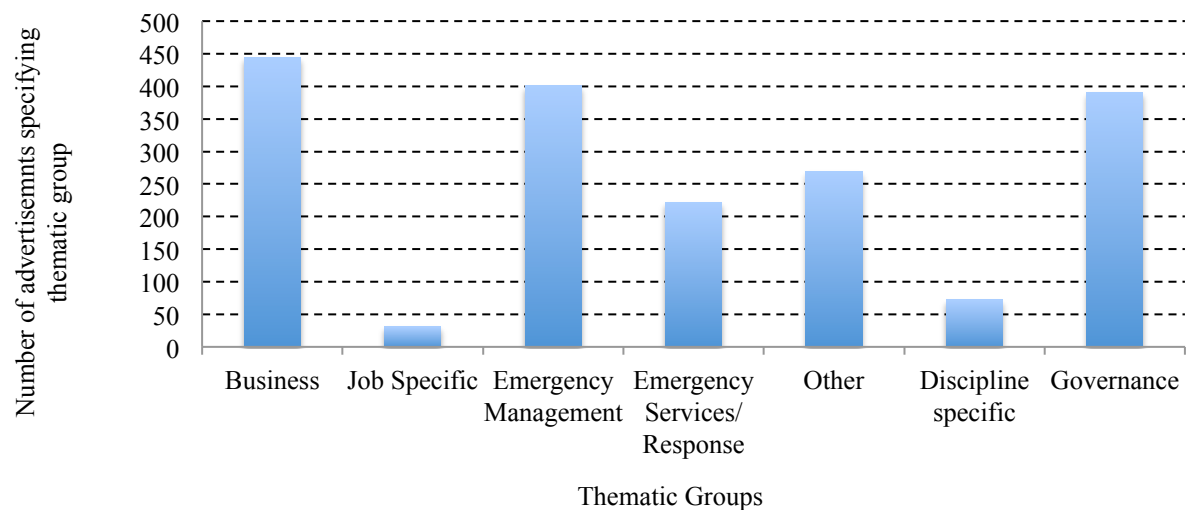
5.9 Chapter summary

Between 2012 and 2018, there was an increase in the number of emergency management jobs advertised. When examining the qualifications of job advertisements, 45% of job advertisements did not include the requirement for qualifications. Furthermore, only 1.7% of the 880 job advertisements listed an emergency management specific qualification. Training, as the smallest of research question one with 56 references, listed emergency management training only 11 (1.25%) times and several of the references identified were focused on local arrangements as opposed to contemporary theory and practice.

Despite the limited number of qualifications and training subjects listed, education was identified as necessary by 591 job advertisements. Of these 591, only 214 provided any detail, and only 48 (8.12%) identified the requirements of education specific to emergency management. Knowledge was the largest of the seven thematic groups in research question one with 86.14% of job advertisements identifying knowledge and 32.05% indicating knowledge in emergency management. Of the 880 job advertisements, 4.55% indicated that competence was a requirement of the role and 1.82% — listed confidence.

When examining the demographics, qualifications, training, education, knowledge, competence and confidence of emergency managers, several recurring themes emerged. These themes ranged from a diversity of knowledge across business, emergency management, emergency services/response, governance, and several job and industry-specific areas of knowledge (Figure 5.23). On review of the thematic groups, business provided the highest number of topics, followed by emergency management and governance. This review identified several areas of conflict that made clarifying the different areas difficult if not impossible, and this syntax included the use of ‘and/or’, and ‘related’.

Figure 5.23 – Total thematic groups



The findings from this chapter suggest that there is a lack of understanding by organisations surrounding the role and that this translates into job advertisements that do not set-up the community or emergency management for success in DRR. As a role attempting to move towards becoming a profession, it should embrace the lessons learned from recognised and experienced professionals such as medicine and physicians (see section 2.6) to advance the role and industry. Overall, findings in this chapter support Blanchard's (2001), stereotypical emergency manager and it is highly likely that this has reduced the ability of the role to be utilised to its full potential and support the findings of the emergency manager survey in Chapter Four (pp. 178–179). Chapter Six will now examine the role of the emergency manager concerning the various Australian state and territory legislation.

CHAPTER 6:

GOVERNMENT LEGISLATION DISCOURSE – RESULTS, ANALYSIS AND DISCUSSION

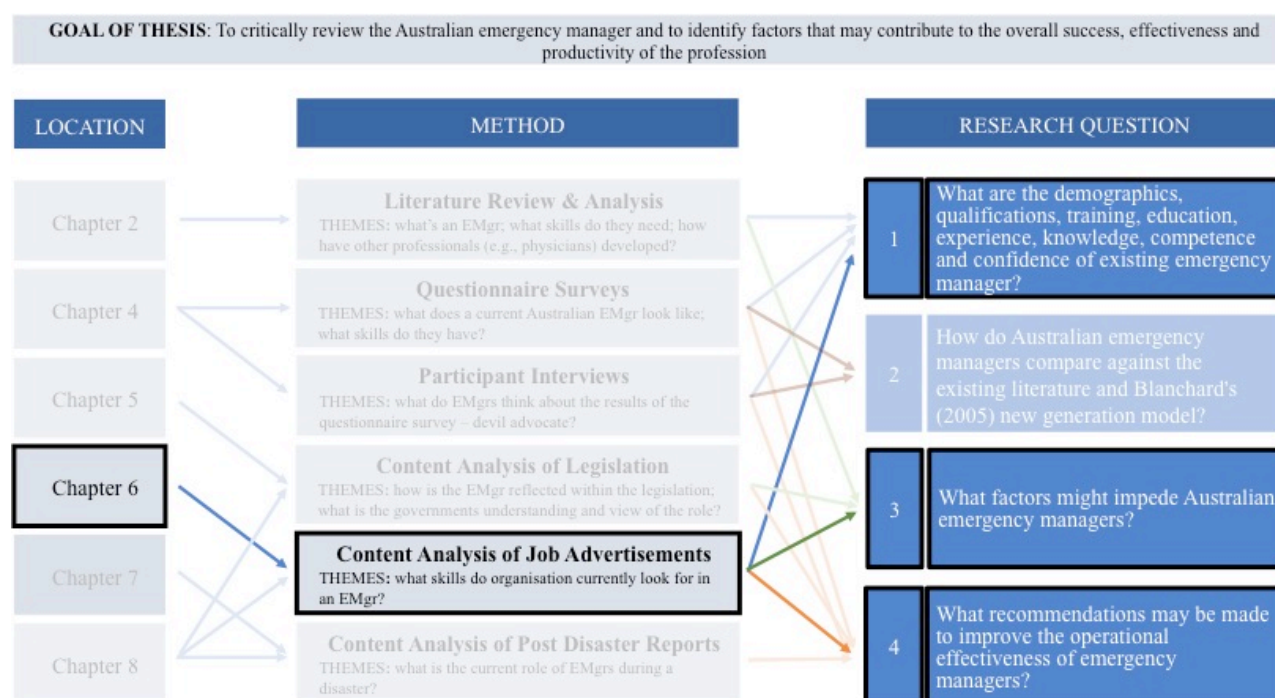
*The fundamental purpose of government
is to protect its citizens.*

(Arlen Specter, 2005, p. 1)

6.0 Chapter introduction

Governance is a crucial component of the emergency management and has been highlighted several times throughout this thesis including the literature review where it recognised the requirement of emergency managers to work “among all levels of government and all elements of a community” (FEMA, 2007, p. 4). Chapter Six will examine the emergency management legislation for each Australian state and territory through the lens of qualification, training, education, experience, knowledge, competence and confidence to partially address research questions one, two and four (Figure 6.1).

Figure 6.1 – Road map of thesis for Chapter Six partially addressing research questions one, three and four.



6.2 Australian emergency management legislation

Of the eight Australian states and territories, all had legislation that appeared to address emergency management (Table 6.1). Of this legislation, the majority (n = 5; were titled emergency management, the remaining three utilised disaster management (n = 1), emergencies (n = 1) and state emergency management and rescue management (n = 1). To ensure the most current version of the Acts were utilised, these were accessed within a few days of each other from their respective state and territory legislative pages, with the exception of the NT, that was retrieved from AustLII (see section 3.2.1 for more details).

Table 6.1 – Australian emergency management legislation by state and territory

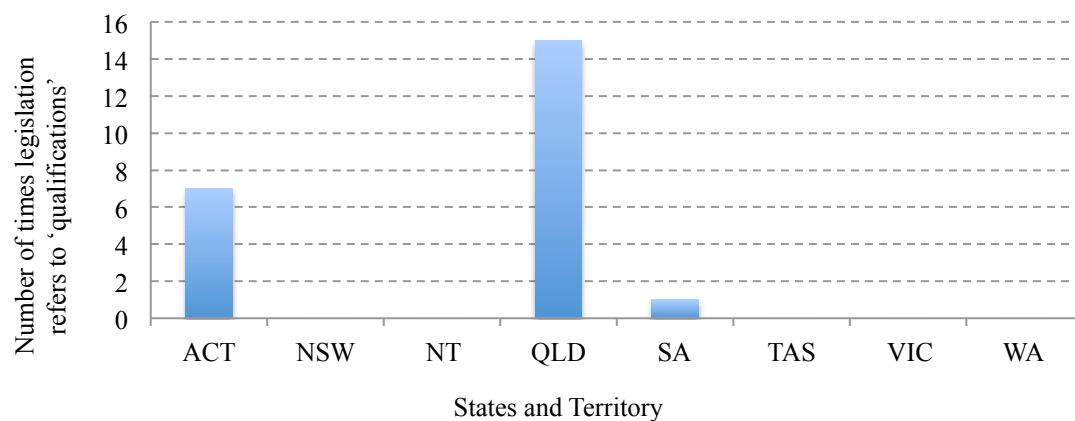
State/ Territory	Legislation	Source/Link	Date Accessed	Notes
ACT	Emergencies Act 2004–28	http://www.legislation.act.gov.au/	16/04/2019	Republication date: 7 December 2018
NSW	State Emergency and Rescue Management Act 1989 No 165	https://www.legislation.nsw.gov.au	16/04/2019	Current version for 7 December 2018
NT	Emergency Management Act 2013	http://www5.austlii.edu.au	16/04/2019	As in force 1 November 2016
QLD	Disaster Management Act 2003	https://www.legislation.qld.gov.au	16/04/2019	Current as of 1 December 2018
SA	Emergency Management Act 2004	https://www.legislation.sa.gov.au	16/04/2019	Version: 26.4.2017
TAS	Emergency Management Act 2018	https://www.legislation.tas.gov.au	13/06/2019	Royal Assent 20 September 2006
VIC	Emergency Management Act 2018	http://www.legislation.vic.gov.au	16/04/2019	Version: 17 October 2018
WA	Emergency Management Act 2005	www.legislation.wa.gov.au	16/04/2019	As at 14 Jul 2017

6.3 Qualifications

6.3.1 Qualifications – results

Of the eight states and territories, three referenced qualifications within their emergency management legislation (Figure 6.2) for a total of 23 occurrences. Of these 23 occurrences, the state with the highest number of references to qualifications at 15 (65.22%) was QLD, followed by the ACT with seven (30.44%), and SA with one (4.34%). NSW, TAS, VIC and WA did not list or refer to qualification within their legislation.

Figure 6.2 – Qualifications



QLD identified qualifications as part of their disaster management legislation. The Disaster Management Act 2003 (QLD) states that it was the responsibility of the “Governor in Council on the recommendation of the Minister” (s 16E(2)) to appoint the Inspector-General Emergency Management (IGEM). The appointment of the IGEM is reliant on the Minister⁵⁴ being “satisfied the person is appropriately qualified... to exercise the... functions and powers effectively and efficiently” (Disaster Management Act 2003 (QLD), s 16E(2)).

The ACT had the second largest number of references to qualifications, with specific references to the “recognition of interstate qualifications” (*Emergencies Act 2004–28 (ACT)*, s 180). This section within the legislation explicitly identifies the requirement for qualifications of specialists from another, state, territory, or foreign country that is undertaking work within the ACT (*Emergencies Act 2004–28 (ACT)*, s

⁵⁴ The legislation does not define who the Minister is, but this is likely to be the Minister responsible for this portfolio

64). The Emergencies Act 2004–28 (ACT) asserts that activities must be “undertaken by a person who holds a qualification (the required qualification)” (s 180 (1)(b), or a person who “holds a qualification recognised by the law of that state, territory, or foreign country” (s 180 (1)(c)). Furthermore, the *Emergencies Act 2004–28 (ACT)* defines a qualification to include, “a degree, diploma, certificate or other award” (s 180 (3)(a) and “registrations with or membership of an entity” (s 180 (3)(b).

The Emergency Management Act 2004 (SA)(s 6) was the third and final state with legislation that made reference to qualifications under the establishment of a State Emergency Management Committee. The legislation states, “the Minister must prepare guidelines... setting out” (s 6(2)) the “qualifications and expertise of those members” (Emergency Management Act 2004 (SA), (s 6(2)(i)).

6.3.2 Qualifications – discussion

Reference to qualifications was limited to just three states and territories, with the majority located within QLD. The majority of these references were in relation to a specific role but this was often a government role that controlled the selection of who would be in charge of the emergency management function. The QLD Disaster Management Committee required no qualifications for inclusion and stated that members were appointed for a limited period based purely on “the conditions decided by the chairperson” (Disaster Management Act 2003 (QLD), s 19(2)). Although the Act did not specifically require qualifications for membership, the District Disaster Management Group (s 25(3)), Temporary district groups (s 28c(3)(b)), and the local government groups (s 33(2)) **may**⁵⁵ provide for qualifications.

The Disaster Management Act 2003 (QLD) introduces a running theme across the legislation that included high–level officials with no qualifications in emergency management but who were responsible for determining the qualification of state representatives. This finding could suggest that the role is a political appointee, there is a lack of understanding of what an appropriately qualified practitioner entails, or the minister relies on the Governor in Council. The Governor in Council means “the Governor acting with the advice of the Executive Council.” This group does not deliberate over policy, but it is responsible for providing “formal, legal effect to the

⁵⁵ Emphasis added

decisions of Cabinet or individual Ministers”, such as appointments (QLD Parliament, 2011, para. 5). However, the Governor in Council “requires a quorum of only the Governor and two Ministers for a meeting” (QLD Parliament, 2011, para. 7) and none is required to have experience or qualifications in the subject matter being reviewed. As political appointees, it is vital that these groups have access to appropriately educated and experienced emergency management practitioners to assist in providing advice, otherwise the community is likely to be provided with documents that are not fit for purpose.

Other issues identified within the legislation include a lack of emergency management specific qualifications required to be a member of the QLD state group, the lack of clarity surrounding the selection of the chairperson, what the role entails, nor any prescription about how the senior leadership should arrive at their decision on any qualifications necessary for the function. The use of ‘**may**’⁵⁶ within the Act is problematic since it provides the groups with an option to exclude or overlook likely relevant qualifications from the position as ‘may’ is not a definitive requirement.

It is plausible that those holding a role in emergency management possess a general qualification (McArdle, 2017, p. 64), but when examining the findings of Chapters Four and Five, it is unlikely that this will, or is, occurring. This lack of mandatory emergency management qualifications will likely harm the productivity and efficiency of the role (Australian Workforce and Productivity Agency, 2013, p. 23). It is further unclear why the QLD Commissioner of Police is responsible for selecting and providing an Executive Officer to support the state groups when the Keelty (2013, p. 27) report found that the QLD Police had little latent capacity to provide support outside of policing that supports the emergency service-centric history of the industry. It is highly likely that the Keelty report reflects the role and attitude of police across Australia. As emergency management is not their core responsibility, it is likely any activities outside of an emergency will be put aside for more ‘urgent’ policing matters (IAFF & IAFC, 2009, pp. 9–10).

The *Emergencies Act 2004–28 (ACT)* is the only legislation to define a qualification, however, this legislation only indicated that it was important for

⁵⁶ Emphasis added

interstate specialists to have qualifications, and it did not specify the “activities” or “required qualifications” (*Emergencies Act 2004–28 (ACT)*, s 180). Furthermore, the legislation did not clarify why those from interstate required qualifications, but those located within the ACT did not and suggests the presence of the overconfidence heuristic (Moore & Schatz, 2017).

Similar to the Disaster Management Act 2003 (QLD), the *Emergency Management Act 2004 (SA)* (p. 6) outlines the requirements of the Minister to prepare guidelines and the qualifications and expertise of the *State Emergency Management Committee*. Similar to the Disaster Management Act 2003 (QLD), it is unclear what qualifications the senior leadership has that make them suitable to understand the requirements of a document that underpins emergency management. It is highly unlikely that the minister will personally write or develop guidelines but will largely rely on the advice of previous, or existing members of the *State Emergency Management Committee (SEMC)* or the *State Co-ordinator*, who is the *Commissioner of Police* (p. 10). It does raise the question as to the level of understanding of emergency management by everyone involved, and leaves the qualifications required for role open to individual interpretation.

As there are still people and organisations who confuse managing an emergency with emergency management (TAS SES, 2016; Britton, 1999, p. 5), it is highly likely that unless these individuals are appropriately qualified, the Minister may end up perpetuating the errors of the past. Errors that include emergency services personnel being considered the appropriate authority on emergency management and contributing to less than optimal outcomes within emergency management (Holmes, 2012, pp. 102, 413; Keelty, 2011, pp. 9, 28, 96, 167; Teague, 2010, pp. 4, 8).

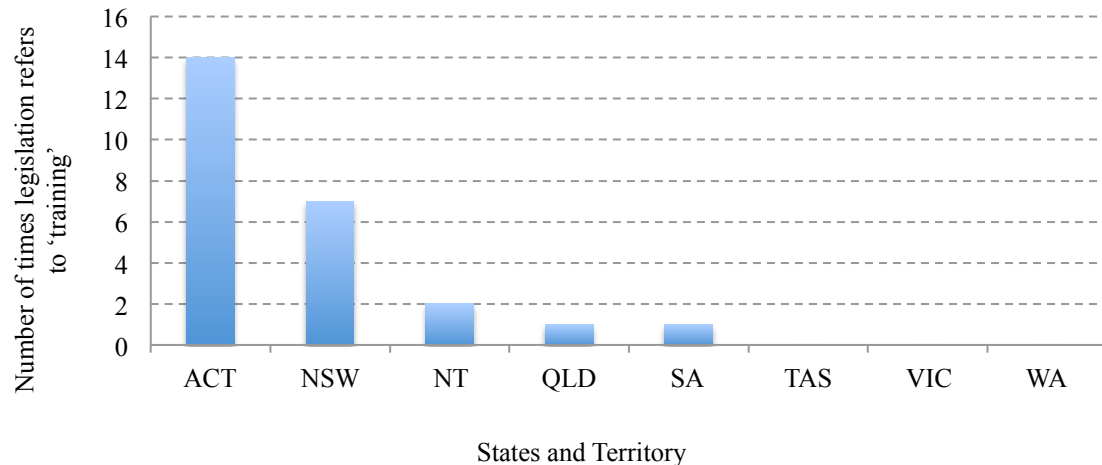
6.4 Training

6.4.1 Training – results

Of the eight states and territories, five referred to training within their emergency management legislation (Figure 6.3) for 25 occurrences. Of these 25 occurrences, the highest number at 14 (56.00%) was the ACT, followed by NSW with seven (28.00%), the NT with two (8.00%) and QLD and SA, equally, with one (4.00%). TAS, VIC and

WA did not list the requirement of training within their emergency management legislation.

Figure 6.3 – Training



The Emergencies Act 2004-28 (ACT) made reference to training on 14 occasions, in several cases it identified training as the responsibility of a Chief Officer for an emergency services agency (s 29(3)(b); s 30(3)(b); s 31(3)(b)). Two references were related to functions of the Emergency Services Commissioner and included “operational and administrative support to the services” with training as a component (*Emergencies Act 2004–28 (ACT)*, s 8(1)(b)), and for ensuring the training of members of emergency services (s 8(4)(i)). The remaining six references listed training for fire units (s 50), the media (s 149 (2)(ii)), gifts and donation by way of training for an emergency service (s 184=2 (1)(b)(ii)), and training as a function of the Security and Emergency Management Senior Officials Group (s 143(2)(c)).

In NSW, four out of the seven references to training specified emergency management as functions of the Regional Emergency Management Committees and Local Emergency Management Committees. The remaining three references identified training specific to “exercises in rescue operations” (State Emergency and Rescue Management Act 1989 No 165 (NSW), s 48(1)(j)), “training standards of... rescue” (s 48(1)(l)), and to “report to the Minister on... the standard of... training... of accreditation of the [fire] unit” (s 54(3)).

The NT had the third most common reference to training, with an emphasis on training in an operational perspective where “emergency operation means an activity (including training) to prevent, minimise, prepare for and respond to an event”

(*Emergency Management Act 2013 (NT)*, s 8). According to this legislation, “the NTES⁵⁷ has the following functions: “to advise, assist, educate and train members of the public and organisations, including Agencies and volunteer organisations, in emergency planning and operations” (s 46(b)).

The remaining two states to reference training included QLD and SA. QLD identified one of the functions of the chief executive “to ensure that persons performing functions under this Act in relation to disaster operations are appropriately trained” (*Disaster Management Act 2003 (QLD)*, s 16(c)). The *Emergency Management Act 2004 (SA)* (5A(23)) introduced training as a component within the *State Emergency Management Plan*, where the plan “may⁵⁸ make provision for the “establishment of a committee to provide a forum to plan for and address emergency management (PPRR⁵⁹) training and other requirements for organisations” (s 5A(30(a))).

6.4.2 Training – discussion

Of the 25 references to training, only five specifically addressed emergency management. The remaining 20 references focused on the training of emergency services personnel, rescue, and operations further supporting the continued priority of emergency services and response over contemporary emergency management. The training of emergency services personnel might be a positive outcome but the legislation does not provide any indication of what this training is, leaving it to the *Chief Officer* of the respective emergency service to define.

It is appropriate that the role of the Chief Officer, determine the qualifications for their respective agency but it is important to note that these are emergency service agencies with a predominant focus on response, as opposed to emergency management and PPRR. As such, it is highly likely that training will be specific to their core business, responding to a specific event, for example, emergency medicine in the ambulance service, fire fighting in fire service and floods and storms for State Emergency Services. Furthermore, there was no mention of training specific to emergency management as a unique industry within the legislation.

⁵⁷ Northern Territory Emergency Service (NTES)

⁵⁸ Emphasis added

⁵⁹ Prevent/ Mitigate, Prepare, Respond, Recover as part of all-hazards, prepared community, all-agencies, comprehensive approach to emergency management

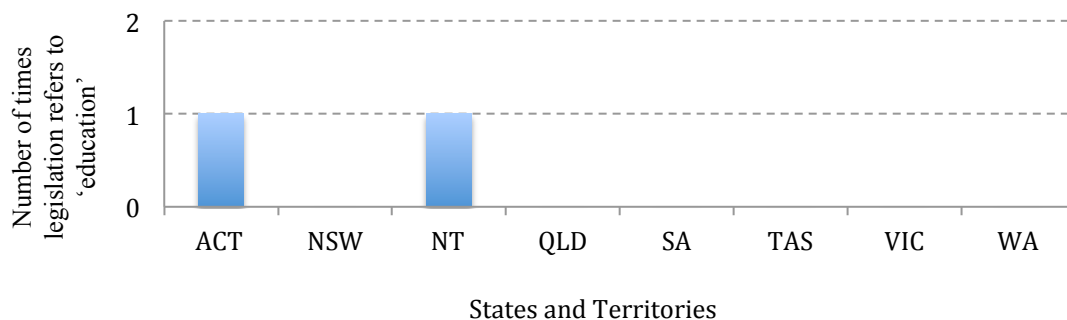
These findings further support the continued emphasis of emergency services within emergency management training that is inconsistent with the eight principles of emergency management (FEMA, 2007, p. 4) and Beaton’s (2010) *Criteria for Becoming a Profession*. This finding would suggest that without the appropriate training in emergency management, it is unlikely that the role will achieve professionalisation or adequately meet the growing demand or requirements for effective emergency management.

6.5 Education

6.5.1 Education – result

Of the eight states and territories, only the ACT and the NT referred to education within their emergency management legislation (Figure 6.4) on two occasions.

Figure 6.4 – Education



In this legislation, the ACT *Emergencies Act 2004–28* (s 8(4)(g)) emphasised “community education and preparedness for emergencies while the NT *Emergency Management Act 2013* (s 46(b)) stated that one of the NTES functions was “to advise, assist, educate and train members of the public and organisations... in emergency planning and operations”.

6.5.2 Education – discussion

The low number of references to education within the legislation of most states and territories coincided with the low number (6.67%) of participants in the practitioner survey that had an education specific to emergency management and suggests that education is not a high priority. It is plausible that this is due to the emergency services centric history of the industry where emergency services personnel have not

been required to obtain formal tertiary education (with the exception of paramedics) and are provided with the training required for their given role.

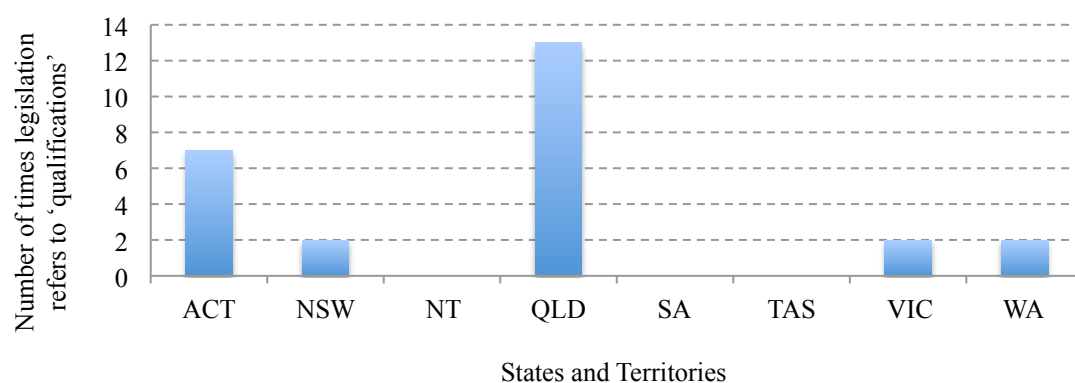
With only two territories referring to education, it is important to note that neither of these were related to emergency management practitioners, but the community, and various (unnamed) organisations. The education of the community and various stakeholders is an essential component of emergency management, the emergency manager and the prepared community approach (FEMA, 2007, p. 4; Blanchard, 2001, p. 7). However, it is concerning that those tasked with providing emergency management education are not required to have an education in this area despite “prolonged and specialised... education” necessary to achieve professionalisation (Beaton, 2010, p. 4).

6.6 Experience

6.6.1 Experience – results

Of the eight states and territories, five referred to experience within their emergency management legislation (Figure 6.5) on 26 different occasions. Of these 26, the highest number at 13 (50.00%) was QLD, followed by the ACT with seven (26.93%), and NSW, VIC, and WA, equal, with two (7.69%). SA and TAS did not list the requirement for experience within their emergency management legislation.

Figure 6.5 – Experience



The 13 references to experience by the Disaster Management Act 2003 (QLD) (s 17) specifically related to the roles and membership of the QLD Disaster Management Committee, herein referred to as the *State group*, district disaster

management groups (s 22), temporary district groups (s 28), and local government disaster management groups (s 29). Each of these groups contained a chairperson, deputy chairperson (s 20; s 25; s 28C; s 34), and membership (s 19⁶⁰; s 24; s 28B; s 22). The *State Group* and *District Group* included an Executive Officer (s 21A; s 27), the *State Group* also included a *State Disaster Coordinator* (s 21B) and a *State Recovery Coordinator* (s 21D), and the *District group* had a *District Disaster Coordinator* (s 25A).

The Emergencies Act 2004–28 (*ACT*) (s 129(2)(b) referred to experience as part of membership in the *Bushfire Council*. According to this legislation (s 129(3)), the Minister “must try to ensure that the following are among the other members appointed” to the Bushfire Council. The positions identified for the Bushfire council (s 129(3)) include individuals with experience in fire science (s 129(3)(a)), indigenous land management (s 129(3)(b)), or fighting fires(s 129(3)(c)).

The remaining six references were within NSW, VIC and WA. The State Emergency and Rescue Management Act 1989 No 165 (NSW), stated that a Commissioner of Police is responsible for appointing a Regional Emergency Operations Controller for each district (s 24(1) who may appoint a deputy (s 24(2)) and “a Local Emergency Operations Controller for each local government area” (s 30(1)). In selecting these roles, there are two requirements, that these individuals must be a police officer (s 24(a)), which, “in the opinion of the Regional Emergency Operations Controller” has experience in emergency management (s 24(2)(b); s 30(2)(a)).

The Emergency Management Act 2018 (VIC) utilises experience to delegate the authority of the *Emergency Management Commissioner* – EMC (s 31) and the *Inspector-General for Emergency Management* – IGEM), “to any person who in the opinion of the... [EMC or IGEM⁶¹] has relevant emergency management experience” (s 30; s 63). The Emergency Management Act 2005 (WA) (p. 10) states that the Minister is to ensure the establishment of a *State Emergency Management Committee* and that the chairperson and its membership “has expertise or experience that, in the

⁶⁰ The person’s membership is subject to the conditions decided by the chairperson (p. 24).

⁶¹ This statement is mentioned twice, where the only change is the title (EMC or IGEM) for each respective reference.

minister's opinion, is relevant to the functions of the SEMC and the State Emergency Coordination Group" (s 13(3)(a)).

6.6.2 Experience – discussion

A number of roles within the Disaster Management Act 2003 (QLD) identified experience including district (s 28B(2)(b)) and local groups (s 33(2)(b)). However, it unclear why senior leadership including the chief executive (s 16A), *Inspector-General of Emergency Management* – IGEM (s 16E) and the *Office of the IGEM* (s 16M), are not referenced. The lack of reference to experience is concerning as these roles are responsible for developing the strategic policy framework, the state disaster management plan, and disaster management guidelines (s 4A(b)) and should also be developing prevention/mitigation and recovery plans for a whole of government approach to disaster management and working with the community to ensure the prepared community approach is undertaken.

Queensland is not the only state that relies on senior leadership in emergency management that are not required to have experience by the legislation. The State Emergency and Rescue Management Act 1989 No 165 (NSW) and the Emergency Management Act 2018 (VIC), the opinion of the Commissioner of Police, and the Minister⁶², is the deciding factor on the level and type of experience of senior emergency management practitioners. The Emergencies Act 2004–28 (ACT) identifies the need for experience in positions that contribute to the industry, but not the emergency management industry or emergency managers. The only state that specified the requirement of all its senior leadership in emergency management to have experience was WA, but even this was reliant on the opinion of a minister who is unlikely to have an in-depth understanding of contemporary emergency management or the experience necessary for the role. This is further supported by a review into the Perth Hills Bushfire where Keelty (2011, p. 167) found a range a criticism of FESA and their understanding of emergency management. Yet, this is a key agency the minister would likely rely on for advice.

It is possible to argue that a minister would not make such an appointment alone and without an appointment advisory committee, and that this committee would likely specify that a Commissioner (or such appointment) would have to have extensive

⁶² The Act does not specify specific which Minister, but it is logical to assume that it is the Minister responsible for the portfolio.

experience. The lack of details in the legislation means that the level and type of experience of Commissioners is also open to interpretation. For example, the NT Commissioner of Police and Chief Executive Officer Fire and Emergency Services position advertised in 2015 required the incumbent to have “proven strategic leadership, command and management capability in a policing/emergency management organization”, not that they had direct experience, education or knowledge in emergency management. This highlights the use and definition of emergency management, and raises the question as to whether the police service is an emergency management organization. In that it is part of emergency management industry, yes, it likely to support this argument in much the same way that stating that police manage emergencies but that does not make them emergency managers in the context of this argument. It also does not mean that the police service is an emergency management organization in the definition of and context of the contemporary literature provided in earlier chapters. Meanwhile, the WA Police Deputy Commissioner role advertised in December 2018 does not mention emergency management as a requirement for the role in the position description.

It is plausible to argue that senior leadership roles are more about strategy and that specifying the requirement of experience in emergency management in the legislation is unnecessary. However, it remains unclear how an individual can anticipate issues, provide effective oversight, recognise myths, or offer appropriate opinions for an area in which they may have limited or no experience or education? It is plausible to suggest that this then becomes more likely about their personal opinion rather than based on evidence, science or merit. It is further unclear why the NT, SA and TAS did not include experience as part of their legislation, let alone as a requirement of an emergency management role.

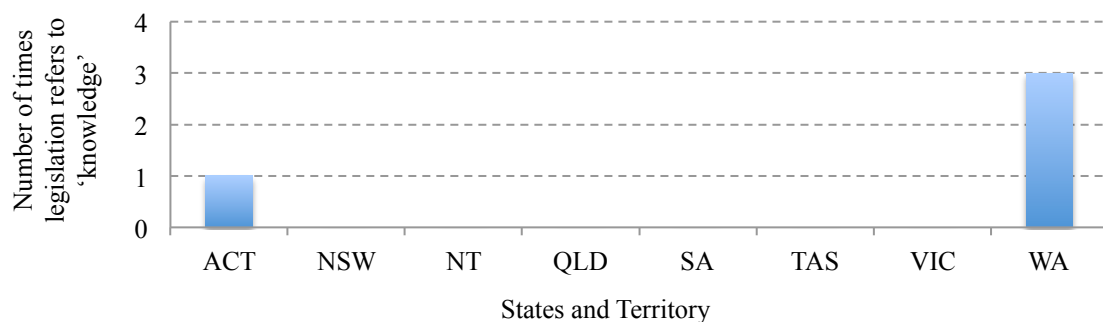
The various interpretations of emergency management previously identified and levels of understanding amongst police services across Australia suggests the need to address the lack of consistency across the legislation through mandating a set level of experience across the various roles. Furthermore, there is a need to remove the importance of the opinion of any single individual, especially one with little to no experience in emergency management, regardless of their status within the government.

6.7 Knowledge

6.7.1 Knowledge – results

Of the eight states and territories, two (20.00%) refer to knowledge within their emergency management legislation (Figure 6.6) on four occasions. Of these four, WA had three (75.00%), and the ACT had one (25.00%). NSW, NT, QLD, SA, TAS and VIC did not refer to knowledge within their emergency management legislation.

Figure 6.6 – Knowledge



The majority of references to knowledge within the legislation are in relation to a disclosure of interest (Emergencies Act 2004–28 (ACT), s 132©(iii)), obstructing officers (Emergency Management Act 2005 (WA), s 89; s 97(1)(a)), and the “disclosure of interests by bushfire council members” (Emergencies Act 2004–28 (ACT), s 139(1); 1A.4(1)). The Emergencies Act 2004–28 (ACT) (s 74) referenced the requirement of a “strategic bushfire management plan” that must include knowledge of “bushfire causes” (s 74(2)(c)). The remaining three references to knowledge were located within Emergency Management Act 2005 (WA) and were related to a hazard management agency (s 4(2); s 74(4)), and combat agencies and support organisations (s 6(2)). Furthermore, the Emergency Management Act 2005 (WA) describes a hazard management agency as a person or agency, that based on its functions, by “law or specialised knowledge, expertise and resources, is responsible for emergency management” (s 4(3)).

6.7.2 Knowledge – discussion

This lack of priority on emergency management as its own area requiring specialised knowledge further supports Blanchard’s (2001) stereotypical emergency manager identified in Chapter 2. Furthermore, the lack of reference to precise knowledge raises the question as to how emergency management can address the failure to apply existing knowledge (Glassey, 2008, p. 14), when there are no requirements within the

legislation for anyone, especially practitioners, to have specific knowledge of emergency management? Despite the recognition of a need for improved knowledge within emergency management (Eburn & Jackman, 2011, p. 1; Glassey, 2008, p. 26), the limited number of references within the legislation does not support this, certainly not as a priority.

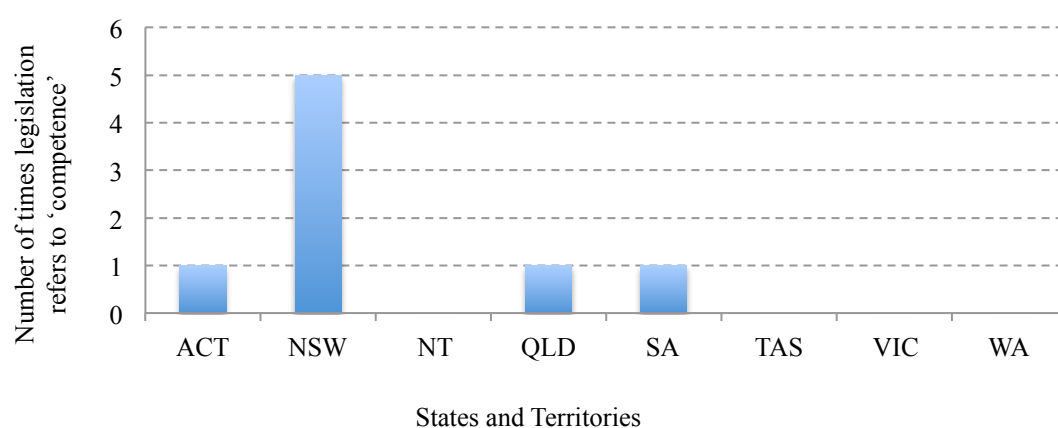
The majority of references to knowledge across the states and territories focussed on offences against the legislation rather than the knowledge of emergency management practitioners. The Emergency Management Act 2005 (WA) identified one area linking knowledge to emergency management, however, this reference did not specify knowledge of emergency management. This reference only specified that the person or agency had specialised knowledge and was also responsible for emergency management, not the contents of that knowledge or that there needed to be clear and defined knowledge as part of this knowledge.

6.8 Competence

6.8.1 Competence – results

Of the eight states and territories, four (50.00%) referred to competence on eight occasions within their emergency management legislation (Figure 6.7). Of these eight, NSW had five (62.50%), followed by the ACT, QLD and SA with one each (12.50%). The NT, SA, VIC and WA legislation did not list competent or competence.

Figure 6.7 – Competence



No references to competence were pertinent to the role of the emergency manager. The five references to competence within the State Emergency and Rescue Management Act 1989 No 165 (NSW) related to the recovery of operational costs from undertaking safety measures through a “competent jurisdiction” (s 37A(2); s

60F(4); s 61(2)) and the use of competent persons to undertake specific tasks during an emergency (response). The remaining three references listed a “court of competent jurisdiction” (Emergencies Act 2004–28 (ACT), s 172), the removal of the inspector–general, if the Minister believed that the duties of the role were performed “incompetently” (Disaster Management Act 2003 (QLD), s 16J(3)(b)), and that “a competent person to connect, reconnect, disconnect or shut off the supply” (Emergency Management Act 2004 (SA), s 26).

6.8.2 Competence – discussion

Despite the importance of competence in improving productivity (AWPA, 2013, p. 23; Putnam, 2000, p. 4), the majority of references were specific to a “court of competent jurisdictions” concerning debt recovery. Two references to competence discussed the requirement of having a competent person managing specific tasks, both of which were related to external roles during an emergency, specifically the shutting off of services to an area or building. Although emergency management legislation did not refer to the competence of the emergency manager, there was a single mention of incompetence that related to the dismissal of the role by the Minister. However, similar to previous sections, it is unclear how a Minister would determine someone is incompetent when they are unlikely to have any qualifications or experience in emergency management, and there are no formal requirements for the role or outcomes.

The community has the right to expect emergency managers to have emergency management competencies (Blanchard, 2005, p. 1; Corriveau, 2009, p. 3) and that the competency of personnel correlates to a particular job (ABS, 2010, p. 6). Failure to require competence in the critical components of contemporary emergency management and aligning with the role may negatively impede on the human capital of emergency management practitioners and their ability to provide holistic disaster risk reduction measures. However, it is essential not to confuse the identification and inclusion of emergency management roles within the legislation as equivalent to competent practitioners. A lack of definitive or standardised definitions of a competent emergency manager further suggests that the appointment or release of personnel from a position may be more purely political than based on any true measure of performance.

6.9 Confidence

6.9.1 Confidence – results

Of the eight states and territories, only the Emergencies Act 2004–28 (ACT) (s 1A.6(3)(a)(i)) identified confidence within their emergency management legislation. The remaining seven states and territories did not list the requirement for confidence. Despite the Emergencies Act 2004–28 (ACT) referencing confidence, it was not pertinent to emergency management but focused on the Ambulance Service Quality Assurance Committee (ASQAC) obtaining information (s 1A.6(3)(a)(i)). Specifically, that as long as someone provides information “honestly and without recklessness” they are not “in breach of confidence... professional etiquette or ethics... or... rule of professional conduct”. However, the application of an organisation similar to ASQAC has merit within emergency managers.

6.9.2 Confidence – discussion

This section identified confidence within the emergency management legislation, however, it was interesting that this occurrence was more concerned with emergency services and the provision of information and professional conduct. This finding continues to support the priority of emergency services and a lack of understanding of contemporary emergency management in which response is one of several components.

Recommendation # 6.1: Establish legislation at a national level

Establish legislation at a federal level similar to medicines Health Practitioner Regulation National Law (ACT) that regulates the industry. This should be developed by tertiary qualified emergency managers with extensive experience and minimum of a bachelor degree in emergency management.

6.10 Chapter summary

When examining the various key words, Chapter Six has revealed a lack of consistency across the various states and territories. These findings suggest that human capital in emergency management and the role of the emergency manager is not a priority within the legislation and that the legislation is emergency in name only, not in practice. The emphasis on experience, qualification and training over education and knowledge is not only detrimental to the industry (Salisbury, 2014; Graves, 2015; Wilson, 2014; Remus, 2014) but it also supports Blanchard’s (2001, pp. 7–10)

stereotypical emergency manager and Moore and Schatz's (2017, p. 1) *overconfidence heuristic*.

It is highly likely that this lack of priority will not only decrease the productivity of the role (Australian Workforce and Productivity Agency, 2013, p. 23; Putnam, 2000, p. 4) but it will affect the ability of the states and territories to have competent practitioners and effective emergency management legislation. These findings support a lack social cohesion that will hinder the ability for the emergency manager to grow and develop as a unique and dedicated professional responsible for effective DRR. Chapter seven will examine a number the emergency management reports and their role in recent Australian disasters and the role of the emergency manager.

CHAPTER 7: DISASTER REPORT DISCOURSE – RESULTS, ANALYSIS AND DISCUSSION

History is only the register of crimes and misfortunes.

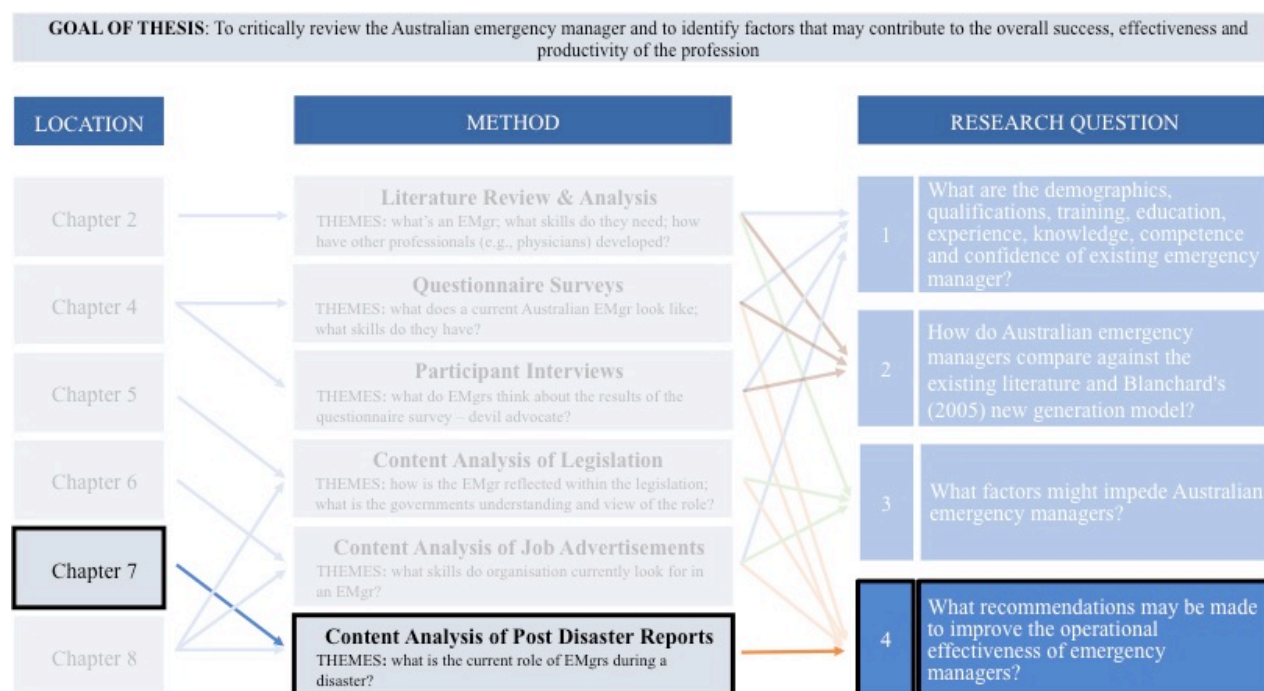
(Attributed to Voltaire, 1694 – 1778)

7.0 Chapter introduction

Previous reports identified in section 2.4.2 identified significant deficiencies in the ability of emergency services to understand and implement effective emergency management processes. Section 3.2.1 recognised the benefits of undertaking reports to improve our understanding of existing emergency management processes.

Furthermore, it is not unreasonable to suggest that these reports enable a post-incident analysis of events leading up to and including the disaster and improving the emergency manager's ability to effect better DRR. Chapter seven (Figure 7.1) examines recent disasters across Australia that were considered significant enough to justify publishing formal reviews.

Figure 7.1 – Road map of thesis for Chapter Seven partially addressing research question four



7.1 Disaster reports

Despite the number of reviews into disasters across Australia over the past several decades (see section 3.2.1 - Table 3.10), only six reports were selected for review and include:

- **Cyclone Debbie** (MacKenzie, 2017): A severe tropical cyclone that crossed the northeast coast of Queensland between, March 28–30, 2017. This event resulted in significant flooding and cost the Queensland community in excess of AU\$2.5 billion in damage and exports (MacKenzie, 2017, p. 9). This “review” by MacKenzie (2017, p. 17) was conducted to “provide assurance that there is a robust approach to continuous improvement” and to review and assess the effectiveness of disaster management.
- **Hazelwood Mine Fire** (Teague, 2014): In mid-January 2014, Melbourne experienced one of its most prolonged heatwaves since 1908, with four days over 40°C (Teague, 2014, p. 12). On February 9, 2014, a series of fires started (Teague, 2014, p. 13) that would burn for 45 days. This fire would cost the “Victorian Government, the local community and the operator of the Hazelwood mine, GDF Suez” above AU\$100 million (Teague, 2014, p. 12). Under the “Terms of Reference” for this event, the “Board” was “to inquire into, and report on” (Teague, 2014, p. 43) any matter that was considered appropriate or “reasonable” concerning the fire (Teague, 2014, p. 44).
- **Lindt Café Siege** (State Coroner of NSW, 2017): Between December 15–16, 2015, Man Monis took hostages at the Lindt Café in Martin Place, Sydney that resulted in the deaths of two of the hostages and Man Monis (State Coroner of NSW, 2017, p. 3). This “inquest” was conducted into the events to determine “how such incidents might most effectively be responded to in the future” (State Coroner of NSW, 2017, p. 4).
- **SA Blackout** (Australian Energy Market Operator - AEMO, 2016): On the afternoon of September 28, 2016, a weather front that included high winds, lightning, hail and heavy rain moved through SA, resulting in “multiple transmission faults” and the loss of three “major... transmission lines north of Adelaide” and an “interconnector overload” resulting in a Blackout (AEMO, 2016, p. 2). This “report” was to provide the AEMO with “a preliminary

overview of the sequence of events that resulted in the SA region Black System and the steps taken to restore power to the power system” (AEMO, 2016, p. 6).

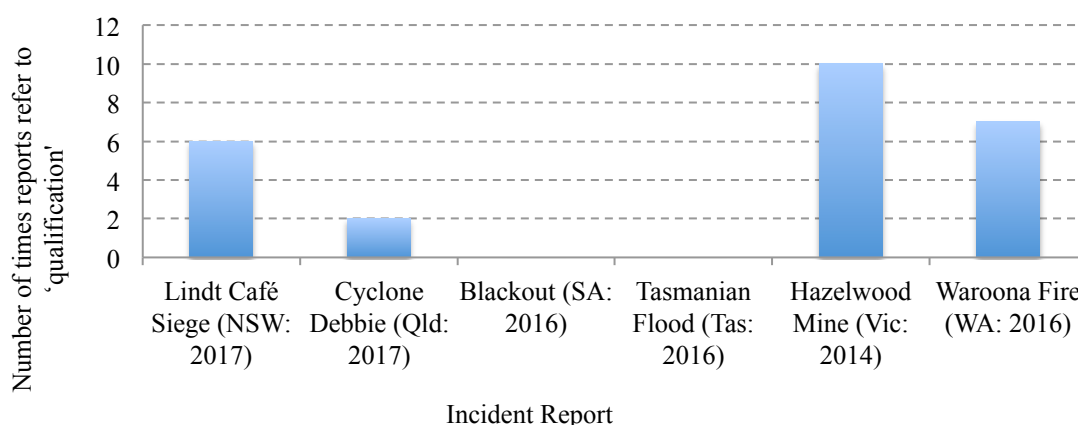
- **Tasmanian Floods** (Blake, 2017): Leading up to June and July 2016, many communities in Tasmania had experienced extensive rainfall. With many catchments already close to saturation, the heavy rain during these months caused widespread flooding (Blake, 2017, p. 49). This “review” was undertaken to “consider all aspects of the flood” and was expected to inform and guide policy reform, and legislative change (Blake, 2017, p. 12).
- **Waroona Fire** (Ferguson, 2016): On the evening of January 5, 2016 (Ferguson, 2016, pp. 16–17) a major bushfire progressed to the town of Waroona (WA) causing the death of two people, and the destruction of 181 properties. The estimated cost of the fire was AU\$155 million and “included suppression, losses, damage and recovery” (Ferguson, 2016, p. 18). This “report” was to be a “catalyst for change. Should there be no change, then this Special Inquiry will have failed” (Ferguson, 2016, p. 13).

7.2 Qualification

7.2.1 Qualification – results

Of the six post-incident reports, four referred to qualifications for a total of 25 references (Figure 7.2). Of these four reports, the Hazelwood Mine had the greatest number of references to qualifications ($n = 10$), followed by the Waroona Fire ($n = 7$), the Lindt Café Siege ($n = 6$), and Cyclone Debbie ($n = 2$). The SA Blackout and the Tasmanian Floods made no references to qualifications.

Figure 7.2 – Qualification



There were numerous references across these four reports identifying the importance of qualifications. These ranged from the importance of qualifications by those managing the event such as members of the incident management team (State Coroner of NSW, 2017, p. 301; Ferguson, 2016, pp. 130, 132; Teague, 2014, pp. 43, 305), to the value of having qualified individuals available at the right time (State Coroner of NSW, 2017, p. 87; Ferguson, 2016, p. 132; Teague, 2014, pp. 305, 401), and the problems caused by a lack of appropriately qualified personnel available during an event (State Coroner of NSW, 2017, p. 87, 311).

Teague (2014, p. 401) identified criticisms by stakeholders that there was a lack of information sharing with the community and that by sharing information reinforced that the “opinions of eminently qualified experts were being sought”. MacKenzie (2017, pp. 11, 70) recognised that “most local district groups had only, most likely, and worst-case scenarios, with no qualifying information about the probability of either”. Despite the references to qualification, the Waroona Fire (Ferguson, 2016, p. 132) was the only report that referenced qualifications, specifically, with regards to emergency management. In this report, Ferguson identified deficiencies in succession planning that could...

*be addressed by building a broader set of skills and experience into the selection criteria for key rural and general fire management positions. Examples might be to recognise volunteer service, local government fire experience, actual rural firefighting experience and seeking out applicants with a broader range of qualifications, including tertiary qualifications in land, agricultural, forestry and **emergency management***⁶³

(Ferguson, 2016, p. 238)

7.2.2 Qualification – discussion

Of the 25 occurrences that identified qualifications, the majority of these were specific to response roles, and only one report mentioned qualifications specific to emergency management. This finding reveals a missed opportunity to better understand the other components that comprise emergency management. Not only do these findings emphasise the need for a dedicated and unique position in regards to emergency management (amongst other activities) but it also raises the question as to

⁶³ Emphasis added.

whether these inquiries are asking the right questions and examining the right areas? It also raises the relevance of these incident based on potentially limited terms of reference or scope or whether the reviews actually met the full scope listed.

The one exception was a reference to a qualification in emergency management as part of the Waroona Fire (Ferguson, 2016, p. 238) that recognised a need for a “broader set of skills” that could address the deficiency in succession planning. However, this statement was not designed to addresses the overall need for greater knowledge of emergency management or how having people with this qualification could improve the whole process. In this statement, Ferguson (2016) emergency management was identified with a myriad of other qualifications in an attempt to encapsulate any that were remotely similar. Ferguson’s (2016, p. 238) statement may support previous findings identified in Chapters Two and Four where individuals believed that managing an emergency (incident controllers and incident management teams) were considered synonymous with emergency management.

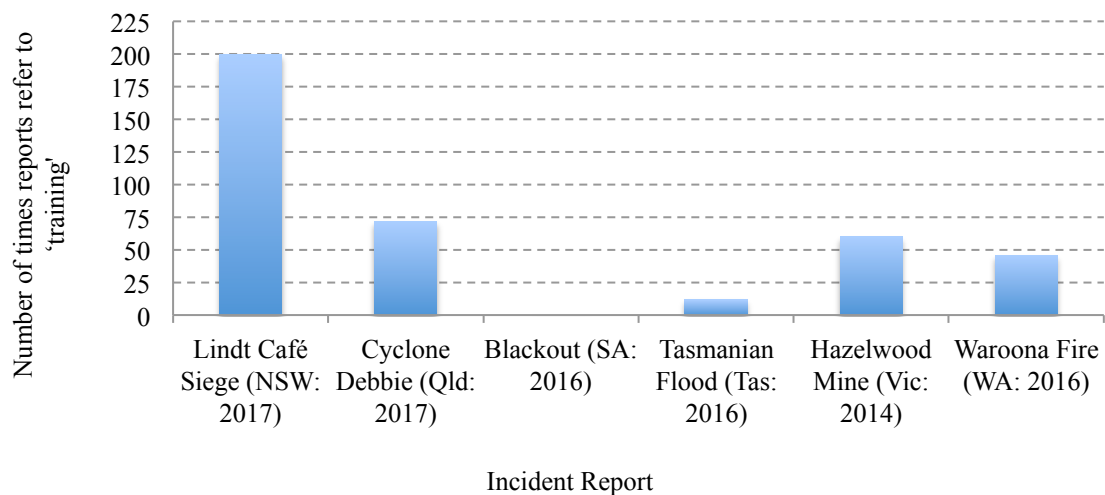
It was interesting to note that SA and TAS did not find it essential to examine the qualifications of any of the personnel as part of the review. As people are the key to prevention, mitigation, preparedness, response and recovery systems and processes, their qualification for being in a relevant role would appear to be pertinent to their success or failure. Furthermore, the specific qualifications of practitioners have become increasingly important within the emergency management industry (IAEM, 2019a; Waugh & Tierney, 2007, p. 21; Parker & Handmer, 1992, p. 52).

7.3 Training

7.3.1 Training – results

Of the six reports, the majority (n = 5) referred to training on 390 occasions (Figure 7.3). Of these five reports, the Lindt Café Siege had the highest number of references to training (n = 200), followed by Cyclone Debbie (n = 72), and the Hazelwood Mine (n = 60). The remaining two, the Waroona Fire and the Tasmanian Flood had less than 50 references to training (n = 46) and (n = 12), respectively. The SA Blackout made no references to training throughout the report.

Figure 7.3 – Training



All reports except for the SA Blackout found that training had an important role in the management of disasters. The Lindt Café Siege (State Coroner of NSW, 2017) had the most significant number of occurrences of training with the majority of references predominantly revolving around the Office of the Director of Public Prosecutions (ODPP) lawyer (State Coroner of NSW, 2017, pp. 12-13, 87), negotiators (State Coroner of NSW, 2017, pp. 24-25, 27), and members of the Tactical Operations Unit (State Coroner of NSW, 2017, pp. 19, 115, 117). Despite the Lindt Café Siege inquiry identifying extensive training of various police teams, the report found that the “Negotiation Training Program” (State Coroner of NSW, 2017, p. 115), specialised in “dealing with domestic high-risk situations... [and that this] does not adequately equip them to engage effectively with terrorist/s in a siege” (State Coroner of NSW, 2017, p. 27).

The Cyclone Debbie (MacKenzie, 2017) report identified the value and importance (MacKenzie, 2017, p. 119) of training in preparing for disasters and recognised areas for further improvement. This report identified that the Queensland Disaster Management Training Framework “outlines courses needed by disaster management stakeholders to enable effective performance in their roles”. This training was available to be “delivered online or by QFES⁶⁴ and that most [stakeholders] had completed the appropriated training to manage the event” (MacKenzie, 2017, p. 119). The inquiry also found that of the of...

⁶⁴ Queensland Fire & Emergency Services

training and exercising that does occur, Debbie highlighted that misunderstood terminology is a barrier to effective disaster management. It is essential that critical terms are defined and that definition has a shared meaning across the sector

(MacKenzie, 2017, p. 15)

The Hazelwood Mine (Teague, 2014, pp. 127-128) identified the importance of the Australasian Inter-service Incident Management System (AIIMS) training as an important component of the emergency command structure (Teague, 2014, p. 128) and committed to providing “enhanced training to CFA personnel and other relevant emergency services agencies” (Teague, 2014, p. 127). The Waroona Fire (Ferguson, 2016, pp. 50, 146, 249, 240) inquiry also supported the importance of training, but recognised significant issues in the management and implementation of existing programs.

Issues identified within the Waroona Fire review included agencies not providing “adequate training to their staff in bushfire management, [that] emphasises theory rather than practical experience” (Ferguson, 2016, p. 238) and a lack of management and quality control systems (Ferguson, 2016, p. 150). Although the inquiry recognised numerous deficiencies with internal training, it also provided several recommendations. Recommendations that included the need to provide enhanced training in “natural hazard incident management; hazard reduction burning; and rural and forest fire behaviour” as well as “research, planned burning, [and] lessons learned” (Ferguson, 2016, p. 24).

7.3.2 Training – discussion

Five reports identified training for a total of 390 occurrences. The majority of these were specific to response, and none were related to the role of the emergency manager. These reports identified the need for greater training and provided for recommendations to address weaknesses within existing training. However, the value of training and the specific deficiencies identified in training aligns with existing contemporary emergency management practices identified in Blanchard’s (2001) new generation emergency manager and FEMA’s (2007, p. 4) Principles of emergency management, if it were specifically aligned to emergency management. Blanchard (2001) characterises the new generation emergency manager as someone who is a life long learner and is knowledgeable (in the context of emergency management), while

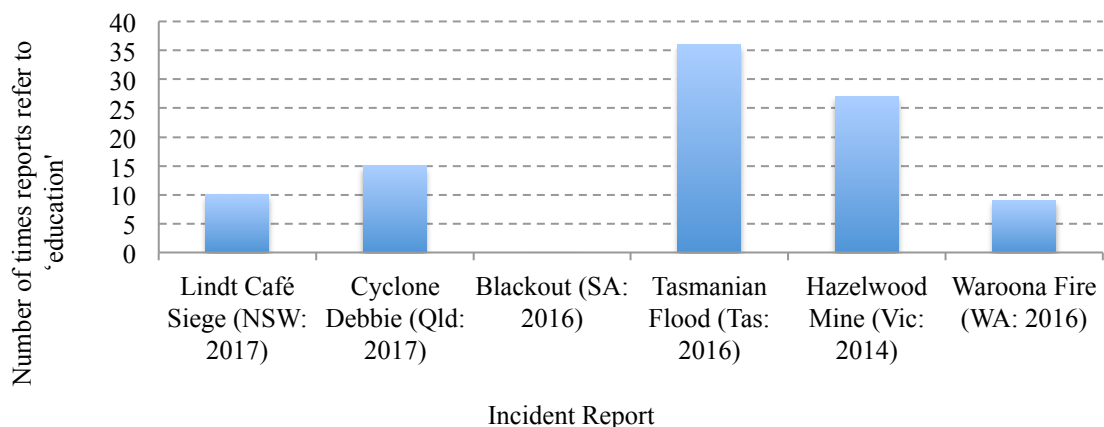
FEMA (2007) identifies emergency managers as professionals that value knowledge. The reports referencing training focused on response miss a vital opportunity to provide their respective communities with a more comprehensive review of contemporary emergency management practices. A review that could be better addressed by employing a dedicated position trained explicitly in contemporary emergency management practices that include all phases of the integrated approach and PPRR.

7.4 Education

7.4.1 Education – results

Of the six post-incident reports, the majority (n = 5) referred to education for a total of 97 occurrences (Figure 7.4). Of these five reports, the Tasmanian Flood had the highest number of references to training (n = 36), followed by the Hazelwood Mine (n = 27), and Cyclone Debbie (n = 15). The remaining two reports, the Lindt Café Siege and the Waroona Fire, had ten or fewer references to education (n = 10; n = 9) while the SA Blackout provided no references.

Figure 7.4 – Education



The Tasmanian Floods (Blake, 2016) had the highest number of references to education. In this report, the focus was on ‘community education’ with the inquiry highlighting the existence of a single “Senior Planning and Education Officer” within the SES (Blake, 2016, p. 39). The inquiry also noted that although a lack of resources was a “barrier to better community outcomes” the reviewers made “no conclusions about... whether or not [the] SES is or was appropriately resourced” (Blake, 2017, p. 39).

Hazelwood Mine (Teague, 2014), Cyclone Debbie (MacKenzie, 2017), and the Lindt Café Seige (State Coroner of NSW, 2017) referred to community education. In these three reports, the Hazelwood Mine (Teague, 2014, p. 34) report identified the need “to improve community awareness and education”. Cyclone Debbie (MacKenzie, 2017) recognised the importance of education in community engagement programs and that “communities [were] empowered through timely public information and through education initiatives to prepare for, respond to, and recover from disasters” (MacKenzie, 2017, p. 84). Finally, the Lindt Café Seige’s (State Coroner of NSW, 2017, p. 114) reference to education centred around the roles and responsibility of the police operations group to conduct “research, education and community engagement in respect of terrorism and counterterrorism”.

The Waroona Fire (Ferguson, 2016) was the only inquiry to identify the role of education as a core objective across all phases of emergency management (Ferguson, 2016, p. 13). However, the role of education in this inquiry revolved around “warning and alert meanings and limitations” (Ferguson, 2016, p. 184). Where education should be part “of local government’s emergency management planning and preparedness process” (Ferguson, 2016, p. 185). The Cyclone Debbie (MacKenzie, 2017, p. 120) inquiry found that “broader education in relation to terminology” was important, as it was the responsibility of everyone involved in ensuring consistency.

7.4.2 Education – discussion

Five reports identified education for a total of 97 occurrences. However, the majority of these were specific to response or ‘community education’. Only one report referenced education specific to emergency management and none was related to the role of the emergency manager.

Waroona (Ferguson, 2016) was the only inquiry to report the importance of education across emergency management. However, concern remains about the emphasis on local government to undertake this process. A ‘shared responsibility’ (Keelty, 2011, p. 159) and the prepared community are essential components of contemporary emergency management but it has been identified that local government may struggle to justify the cost of hiring individuals with a formal education in emergency management (see section 4.3.1). However, the focus in the Ferguson (2016) report revolved around the education of others, using it as a synonym for in-house training, as opposed to the formal education of individuals. There are several concerns over in-house ‘education’. These concerns predominantly revolve

around the quality and quantity of training, the instructors, and the level of consistency (Smith, 2008, p. 63; Stehr, 2007, p. 38).

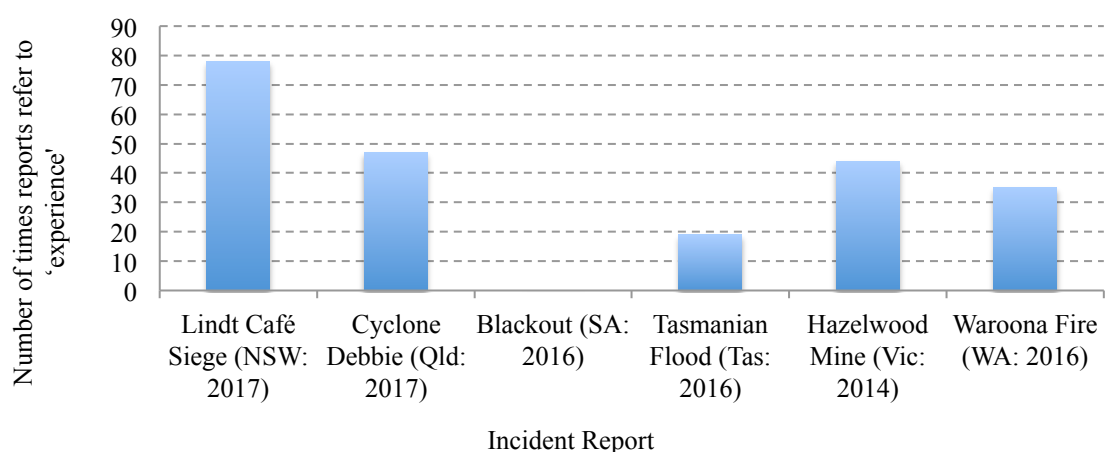
In light of previous comments about the importance of consistency in terminology and a lack of minimum standards governing the role, it would be plausible that employing someone with an education in emergency management would go a long way in addressing these issues (McArdle, 2017, p. 5, 36; Choi, 2008, p. 15). While it is highly unlikely that anyone who is not interested in becoming an emergency manager will obtain an education specific to emergency management,. Chapter Two recognised the role of human capital and the value that education contributes to increased productivity. This finding would indicate a missed opportunity to examine and better understand the education of those employed in emergency management, specifically the emergency manager, and in determining the effectiveness of personnel with regards to the prevention, mitigation of, preparedness for, and recovery from these events.

7.5 Experience

7.5.1 Experience – results

Five reports referred to experience on 223 occasions (Figure 7.5). Of these, the Lindt Café Siege had the greatest number of references to experience (n = 78), followed by Cyclone Debbie (n = 47), the Hazelwood Mine (n = 44), the Waroona Fire (n = 35), and the Tasmanian Flood (n = 19). The SA Blackout did not refer to experience.

Figure 7.5 – Experience



Despite the number of references to experience, none were specific to the role of the emergency manager. The Lindt Café Siege (State Coroner of NSW, 2017) had the greatest number of references to experience that ranged from the police

commanders (State Coroner of NSW, 2017, p. 4), negotiators and psychiatrists, to the ODPP Lawyer (State Coroner of NSW, 2017, p. 87). The State Coroner (2017, pp. 283, 290) also identified issues with regards to the lack of experience of the negotiators with regards to terrorism, and the consultant psychiatrist whose knowledge in terrorism was considered by the inquiry to be too generalist and not specific to the Islamic State (p. 302).

MacKenzie (2017) recognised that the disaster management sector was experienced in reviewing events, but this was predominantly in identifying lessons at the local level with limitations on the “broader systems” (MacKenzie, 2017, p. 9). The inquiry further recognised that planning was a “fundamental part of disaster management” (MacKenzie, 2017, p. 12), and that while there were some well-resourced councils with good plans, there were “others with lower capacity or less experience” (p. 12). The inquiry also found that the experience gained by groups in event planning and who “understood risks, planned, engaged the public, and developed their capability” were better prepared for events than those who did not (MacKenzie, 2017, p. 12). MacKenzie (2017, p. 119) further recognized that

the use of experienced staff as team leaders guided the flow of information, tempo and priority of actions. Those with previous experience gave timely and sound advice to those seeking to understand how the procedures worked.

Experience was often referred to in two ways, through personal experience in which a person or community was exposed to a situation, or the practical experience of individuals where they have gained mastery of an area. An example of the former includes the Hazelwood Mine fire (Teague, 2014, p. 123) that identified “the vast majority of fires experienced at the Hazelwood mine are minor” (Teague, 2014, p. 213), and the “extreme bushfire conditions like those experienced in the summer of 2014” (Teague, 2014, p. 13). Other examples include “the all too recent experience of Black Saturday” (Teague, 2014, p. 123), and the FES Commissioner advising the inquiry of the frustrations he experienced in the process (Teague, 2014, p. 134), both of which reveal broad experience more specific to a place or, to a general feeling.

The latter area of experience was about gaining mastery of an area like those identified in the Tasmanian Floods such as “career fire experience” (Ferguson, 2016, p. 238), or an “employee with GIS experience who had transferred” (Ferguson, 2016,

p. 132), to “an atmospheric scientist with extensive experience in applied research relevant to cloud seeding” (Ferguson, 2016, p. 53).

These reports highlighted the importance of experience gained by mastering an area was necessary for being able to contribute to a scenario effectively. Experience was often used to evoke confidence in a situation through adverbs such as “highly”, “extremely”, “significant”, or “extensive”. On a rare occasion, years were utilised as a metric by emergency services to provide greater credibility and further support the claim. Examples from The Tasmanian Floods (Ferguson, 2016) and the Hazelwood Mine (Teague, 2014) include...

*Deputy Operations Officer – a DFES firefighter with over **25 years**⁶⁵ of experience*

(Ferguson, 2016, p. 85).

*Mr Jeremiah is an **extremely experienced** Incident Controller, having been operating at the highest level of accreditation (Level 3) for approximately **25 years***

(Teague, 2014, p. 95).

*The role of the Incident Controller during this period was shared between Mr Robert Barry and Mr John Haynes. Mr Barry has been with the CFA for **38 years**, has **extensive experience** as a Regional Controller and Regional Agency Commander*

(Teague, 2014, p. 120).

7.5.2 Experience – discussion

Five reports identified experience for a total of 223 occurrences, although the majority of these were specific to response. Many of these reports revealed contradictory comments between personnel and agencies and none referred to the experience of an emergency manager as highlighted in the context of contemporary emergency management practice. Furthermore, despite the alleged experience of personnel, reports showed that there were significant issues in which this was not transferable to the event, even when that event was similar to the core role.

Despite the number of references to experience throughout this inquiry, there were no discussions regarding the role of an emergency management practitioner.

⁶⁵ Emphasis, added on all three quotes

Rather, the Hazelwood Fire (Teague, 2014) inquiry examined the role of experience through the history of the site, the lens of the community, the emergency responders, and the response to the event. Unfortunately, the common practice of trying to learn from previous experience previously identified in section 3.2.1 does not seem to apply, as the report mentions multiple times that there are historical records to show that these events were neither unforeseen nor unpredictable.

More importantly, despite the recognition that the Hazelwood site employed several extensively experienced Incident Controllers and Emergency Commanders who were also supported by “experienced” staff in the Incident Control Centre, this was not enough to prevent the incident from occurring. Based on the literature that espouses the importance and return on investment in prevention over response (MMC, 2018, p. i). It is plausible to suggest that had GDF Suez chosen to hire an emergency manager with an education across prevention, the AU\$100 million loss may have been greatly reduced. Furthermore, MacKenzie identified the importance of planning but found an inconsistency in the quality of plans which further supports the need for a dedicated standardised role across local government, and that would align with the contemporary emergency manager identified by Blanchard (2001) that “plans with jurisdiction stakeholders”.

Based on the need for these reports, it is possible to argue that emergency management was not working as designed and reveals systemic issues with current practices that include an emphasis on response at the expense of prevention and mitigation. The selective practicing of one component, such as response, is not equivalent to the holistic practice of emergency management. It is unrealistic to expect the same or similar results of an incident when the element selected (response), does not provide the same return or benefits as prevention or mitigation (MMC, 2018, p. i; MMC, 2005, p. iii).

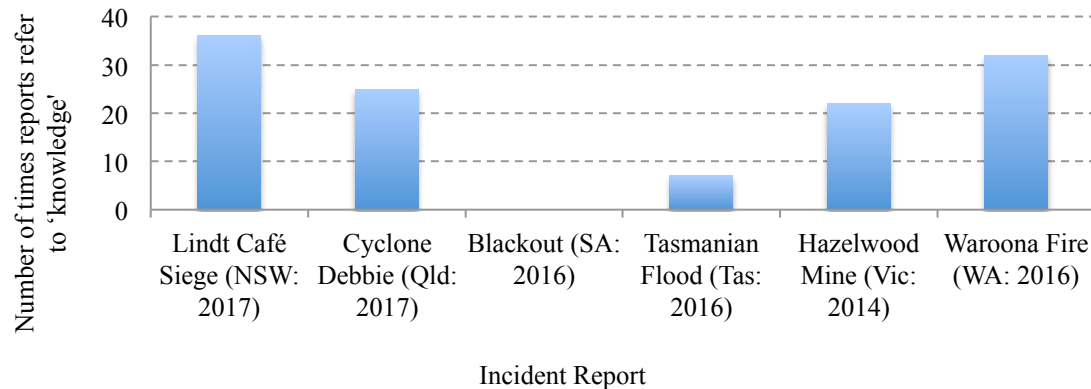
7.6 Knowledge

7.6.1 Knowledge – results

Of the six post-incident reports, the majority (n = 5) referred to knowledge on 122 occasions (Figure 7.6). Of these five reports, the Lindt Café Siege had the greatest number of references to knowledge (n = 36), followed by the Waroona Fire (n = 32),

Cyclone Debbie (n = 25), Hazelwood Mine (n = 22) and the Tasmanian Floods (n = 7). There was no mention to knowledge in the South Australian Blackout.

Figure 7.6 – Knowledge



Several key themes emerged from the five reports that ranged from identifying a lack of knowledge, to the role of local knowledge in better managing incidents. The Lindt Café Siege (State Coroner of NSW, 2017) recognised the benefit of knowledge, particularly in hindsight (p. 5) and expressed an interest in understanding how to “best use the information holdings and knowledge of the agencies concerned” (p. 431).

The Lindt Café Siege (State Coroner of NSW, 2017) identified the importance of knowledge by examining the roles of those involved across the incident. As part of this inquiry the coroner identified a lack of knowledge across many of the positions, including the:

- ODPP’s (State Coroner of NSW, p.83) who lacked knowledge of Monis’ file
- Liaison officers (State Coroner of NSW, p. 376) and officers conducting debriefs (State Coroner of NSW, p. 269) who lacked operational information,
- Tactical Operation Unit’ who did not have an understanding of the café floor layout (State Coroner of NSW, p. 369),
- Snipers who lacked knowledge on the Café’s window thickness (State Coroner of NSW, p. 327),
- Negotiators lacking specialist knowledge in terrorism (State Coroner of NSW, p. 289), and the
- Consultant psychiatrist that lacked access to all the intelligence available to make an informed decision (State Coroner of NSW, p. 304).

The knowledge of key personnel was also called to attention by Ferguson (2016) in the Waroona Fire, who found a conflict between the paid DFES staff and the bushfire volunteers. Although the DFES was recognized as the Hazard Management Agency for fire “because of their specialised knowledge” (Ferguson, 2016, p. 159), a “range of stakeholders have expressed concern that DFES staff do not have sufficient expertise in rural fire management” for the role (Ferguson, 2016, p. 237). Stakeholders also raised concerns that DFES had a preference for promoting staff from a “metropolitan background” where, “unless you’ve [rural firefighters have] gone through their school of knowledge, you can’t get above a D/O level” (Ferguson, 2016, p. 240).

The Ferguson (2016, p. 243) inquiry indicated that DFES has similar concerns for the volunteer brigades and suggested, “improving the knowledge and understanding of AIIMS and the bushfire command structure may be beneficial to improving [the integration of brigades into the fire structure]”. Unfortunately, volunteers highlighted issues with this training as “modules required to be undertaken are lengthy and delivered during business hours... and... fail to recognise pre-existing knowledge and training” (Ferguson, 2016, p. 240).

Ferguson (2016) also heard of a heavy-handed approach by the DFES to property access by residents created problems “regardless of the competency and local knowledge of the person trying to get in, can only lead to frustration, anger and maybe unnecessary losses for the property owner” (Ferguson, 2016, p. 231). The report acknowledged the value of having local knowledge in enhancing undocumented area history (Ferguson, 2016, p. 81), understanding the landscape (Ferguson, 2016, p. 150), locating water resources (Ferguson, 2016, p. 210), improving processes (Ferguson, 2016, p. 221), and in using local firefighters to better inform the Incident Management Team (Ferguson, 2016, p. 245).

Cyclone Debbie (MacKenzie, 2017, pp. 12, 80) and the Hazelwood Mine (Teague, 2014, p. 44) supported the need for local knowledge. MacKenzie (2017) recognised that this “may be more highly regarded and trusted by the community due to their existing relationships and knowledge of the local people, than officials [located in] Melbourne” (Teague, 2014, p. 353). The Cyclone Debbie report noted that a...

clearer understanding of everyone’s roles and responsibilities in managing disasters. Such knowledge builds trust and confidence among decision-makers at all levels

The Tasmania Floods (Blake, 2016, pp. 9, 110) did not discuss the importance of local knowledge, it did raise a concern that the “government may be exposed to key-person dependency risk in its emergency management arrangements”. Blake (2016) also recognised that many people in this role were highly committed, operating in the best interest of the public, undertaking multiple tasks, “operating in ‘acting’ capacities”, often being re-tasked to other work before completion, and were under-resourced (Blake, 2016, p. 11). This review noted that...

existing management systems... compensate for this... in an environment where responding to natural disasters is not a day-to-day activity, there is a risk that practical application of these knowledge-based systems may wane

(Blake, 2016, p. 110).

7.6.2 Knowledge – discussion

Although there were 122 references across five reports that identified knowledge, similar to the previous key words, the majority of these were specific to response. These reports revealed the importance of emergency management knowledge and the often contradictory comments between personnel and agencies. None of these reports referred explicitly to the experience of the emergency manager, although they did identify the correlation between knowledge and the roles and responsibility of personnel. The Lindt Café Siege had the greatest number of references to knowledge that presented a very ominous image of police activities. It is understandable that some events are difficult to predict, it is of greater concern when there are areas in the direct control of a department or individual but were neglected or overlooked especially in the area they purport to be the subject matter experts.

This availability of information is crucial when personnel need information to fulfill a role, examples include providing officers with the knowledge required to act as family liaisons officers, consultant psychiatrists that were not provided with complete access to the available intelligence, and snipers not being able to determine the type of glass that directly affects the accuracy of their rounds, or being provided with inappropriate ammunition. It is plausible to argue that these areas of knowledge were key to the specific role and should have been resolved prior to the event, or at the latest, on the day. Especially as the advent of terrorism was not new to the NSW Police, as Australia had been on increased security standing for over a decade since

the September 11, 2001, terrorist attack in the United States. In response, Sydney has undergone significant terrorism training for numerous events, including the Asia-Pacific Economic Cooperation (APEC) leadership forum and World Youth Day in 2009 and the country being on an elevated terrorism standing.

As such, it is of great concern that NSW Police did not have the required knowledge and were unable to plan for a single ‘terrorist’ effectively. A ‘terrorist’ that had been under scrutiny by the criminal justice system for some time and had a history of violence and instability, and was currently on bail. Some of the actions identified, such as the inability of the ODPP to locate Monis’s file may have been outside the capacity of police to manage, this event suggests that the standards for people in complex positions must be much higher. These findings reveal a lack of transparency which is vital to effective emergency management and also raises a pertinent question, if police are unable to manage what is essentially a core function of their role, how can they reasonably be expected to plan and manage areas outside of this? Especially as the only legislated emergency officers in NSW are under the auspices of the NSW Police Force.

The importance of knowledge is further demonstrated in the Waroona Fire that found similar issues to those identified by the Lindt Café Siege inquest that revolved around the details and subtleties of a role. However, these subtleties were enough to cause friction between a metropolitan fire service that predominantly focused on structural fire fighting and the rural fire service with a focus on bushfires. It could be forgiven if the general public did not understand the differences between the two areas. Still, the differences in techniques and methods are a literal matter of life and death for these two disciplines.

In the case of urban firefighting, the metropolitan fire service has the option of surrounding a single building with multiple engines and personnel to suppress a fire. The rural fire service has to contend with fire fronts that may be kilometres in width, one that can abruptly change direction and speed depending on the weather. Despite similarities that end with the fire and water elements, the difference in both knowledge and application in what are two distinct disciplines introduces the issue of transferable skill and knowledge. Where similarities in disciplines do not always translate across each, let alone where there are significant differences that exist between very different areas such as the fires service and emergency management.

Cyclone Debbie presented a well-balanced argument on the value of knowledge, ranging from the strengths and weaknesses of local community knowledge to the

reliance and lack of succession planning for the council's disaster management⁶⁶ officers. While the inquiry found that there are individuals in council that possess "disaster management expertise and local knowledge" (MacKenzie, 2017, p. 117), the review did not provide any detail on what this knowledge was or how it applied to emergency management. It is also possible that this lack of defined knowledge may contribute to the misunderstanding and increase confusion regarding the various emergency management concepts, principles and terminology (Cwiak, 2011, p. 8; Choi, 2008, p. 1; Waugh, 2007a, p. 15; Stehr, 2007, p. 37; Harper, 2006, p. 3).

The legislation that drives this position does not explicitly mention the need for succession planning, thereby making effective leadership difficult and contributes to the fatigue of the position during a response (MacKenzie, 2017, p. 117). However, the availability of a deputy also reveals a lack foresight by organisations that extends beyond the response phase and needs to be considered in the delivery of services that could readily be extended to the prevention, mitigation and preparedness phases of contemporary emergency management.

Knowledge was mentioned several times by the Hazelwood Mine inquiry, and ranged from the transfer of knowledge between organisations. to the dissemination of accurate and relevant knowledge between the government and the community. The remaining references were assumptive, as the reported identified that there were a "number of CFA volunteers are employed at the mine and therefore have operational knowledge of firefighting at the mine" (Teague, 2014, pp. 90-91). It was unclear whether these members were actually employed in an emergency response capacity and if so, what qualifies them to be knowledgeable about mine fires. The operational requirements of mine fires and bush fires have two very different operating environments that require different knowledge and skills sets, yet, according to this statement there is a belief that firefighting skills are the same across areas.

The only remaining reference to knowledge was in regards to the "Emergency Commander" who had "good knowledge of the mine" (Teague, 2014, p. 111). It is highly likely that beliefs by individuals in which emergency services personnel are, all-knowing in terms of emergencies, and the similar title of "Emergency Commander" when compared to emergency managers contribute to the ongoing mythos that emergency services are synonymous with emergency managers.

⁶⁶ Qld utilises disaster management instead of emergency management reinforcing the issues of terminology

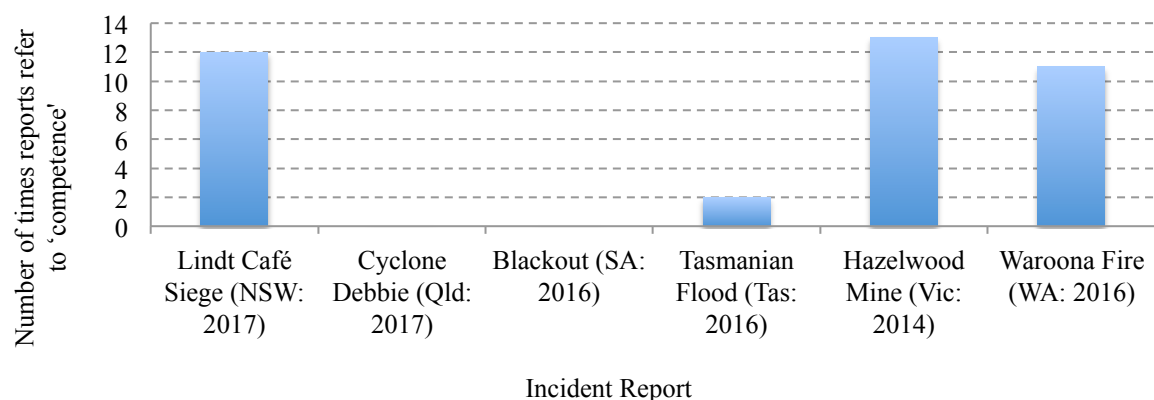
The Tasmanian Floods (Blake, 2016) was the second inquiry to mention the knowledge of specialised persons in emergency management. While it was not about the knowledge of those in the role, it was the only report to go into any detail and essentially mimic Blanchard's (2001), stereotypical emergency manager. What is more concerning is that Blanchard's typology is nearly 20 years old, and these reports reveal that we have not progressed beyond what is well known information across the echelons of the emergency management industry. This inquiry did not feel that investigating the people responsible for planning and the prevention and mitigation of hazards was important. This finding is another opportunity lost for investigating the knowledge of role responsible for the prevention/ mitigation, preparation, and recovery of disasters identified throughout Chapter Two. This literature included FEMAs (2007) Principles of emergency management, Blanchard's (2001, pp. 7–8) new generation emergency manager and Spiewak's (2005) Top ten core competencies. Although knowledge was a common theme throughout these reports, there was a lack of details on the understanding of personnel and no mention of an emergency management practitioner.

7.7 Competence

7.7.1 Competence – results

Of the six reports, four referred to competence on 38 occasions (Figure 7.7). Of these, Hazelwood Mine had the greatest number of references to competence ($n = 13$), followed by the Lindt Café Siege ($n = 12$), the Waroona Fire ($n = 11$), and the Tasmanian Floods ($n = 2$) reports.

Figure 7.7 – Competence



When discussing the role of competence, the Hazelwood Fire (Teague, 2014) inquiry acknowledged the competence of the Environmental Protection Agency

(EPA) and the CFA. Teague (2014) recognised the EPA in “its commitment to scientific rigour and scientific competence in analysing a large amount of complex air quality data sets in a short period of time” (Teague, 2014, p. 23) and CFA crews in their firefighting (Teague, 2014, p. 214). Despite these acknowledgements, the inquiry also recognised that that support came either too late (Teague, 2014, p. 23) or was inappropriate for the type of hazard being faced (Teague, 2014, p. 209).

In light of the various findings identified within the report, the inquiry made several recommendations regarding the key competencies of people within the organisation, specifically, the Department of Health. This inquiry recommended key competency requirements for the Health Advocate (Teague, 2014, p. 361), and that the “expert panel” increase its membership to include “senior experts with competencies” where the expert panel includes subject areas outside of health such as hazardous materials, infectious disease, and air and water pollution, and from a broad range of locations (Teague, 2014, p. 362).

The Lindt Café Siege (State Coroner of NSW, 2017) identified several areas included an interview report by Monis’ migration agent that revealed a lack of coherent responses by Monis to “competent and searching questions” (State Coroner of NSW, 2017, p. 60). Competence was also used in this inquiry as part of the qualifying statement with regards to various themes that ranged from the allocation of the Monis “matter to a competent lawyer because of its... complexity” (State Coroner of NSW, 2017, p. 82). Other areas of competence included the necessary completion of the negotiators’ course for the police (State Coroner of NSW, 2017, p. 115) and the “wide range of skills” necessary for Tactical Operations Unit officers to be competent in their role (State Coroner of NSW, 2017, p. 117).

According to the Waroona Fire (Ferguson, 2016) inquiry, the Department of Fire and Emergency Services “is seen as professional, and highly competent” (Ferguson, 2016, p. 12) where “career staff attain rank based on formal competency assessments and experience in urban fire” (Ferguson, 2016, p. 253). Ferguson (2016, p. 15) further recognised that “there are no systems in place to guarantee quality control, the registration of competencies held, [and that] there are no checklists for the currency of alleged competencies held” for private firefighting units. This inquiry found that it was “imperative that bushfire skillsets are incorporated into succession planning” and according to one submission, the urban fire training the DFES undertakes is not appropriate for rural fighting practice (Ferguson, 2016, p. 238).

The Tasmania Floods (Blake, 2016) referenced competence on only two occasions. These two references included the need for a financially competent approach for which they define as “the best **response and recovery process**⁶⁷; the cost of those processes; and how those costs will be paid for” provided by a “rehearsed immediate response plan based on scenario planning and previous experience” (Blake, 2017, p. 109).

7.7.2 Competence – discussion

Although there were 38 references of competence across four reports, none of these focused on the role of the emergency manager or emergency management. These reports did, however, acknowledge the need for a broad knowledge base and competent personnel (Teague, 2014, p. 209). The Hazelwood Fire (Teague, 2014) inquiry specified several different people with specific skill sets but it is possible to argue that a competent emergency manager trained and educated in contemporary emergency management practices could improve efficiencies (Banks, 2010, p. 14).

The Lindt Café Siege (2007) inquiry was very comprehensive in its review of personnel involved in the lead up to and in response to the siege. As such, the exclusion of the emergency management officers in this report likely means that they had little to no input into the process. Despite the missed opportunities of this inquiry to investigate the use of such a key resource, there were several references to competence as a critical component for other roles including lawyer, negotiator and TOU officers and supports the need and desire to align competent people to key positions. It is possible to argue that based on lack of information regarding the role of the emergency manager within this inquiry that it is either not well known or understood. However, as the NSW Police employ the only legislated emergency management role within NSW, the District Emergency Management Officer, this would suggest otherwise.

Two possibilities could be argued and include the lack of understanding of emergency management by the inquiry, or emergency management as a priority for NSW Police is in name only, not in practice. It is likely the combination of the two is present based on previous comments by District Emergency Management Officers

⁶⁷ Emphasis added

within Chapter Four. In this response, interviewee #17 stated that the police saw his role more like an “administrative officer” rather than as an emergency manager and raises the question as to whether it should be under the auspices of the police who have a very different skillset and culture to that of emergency management (Waugh, 2019, p. 6; Topp, 2019, pp. 45, 46).

Although there were no mentions of the emergency manager or the competence of those fulfilling the role in the Waroona Fire (Ferguson, 2016), the ongoing conflict between the urban firefighters under DFES and the rural firefighters revolves around the competency of their various members. This finding would suggest that not only is competency important but vital, and the degrees to what this entails depends on the area and level of knowledge. It is therefore unsurprising that firefighters specialised in rural practice deemed those with skills based on the urban environment lacked competence in an area of firefighting in which they may have had no training, and vice-versa. Which is why it was interesting to note that some stakeholders thought a CFA volunteer would understand the Hazelwood Mine emergency procedures and have the knowledge of responding to a mine fire (Teague, 2014, p. 91).

While not specific to emergency management, this finding does suggest that if two very similar fields reveal conflict in what skills are deemed transferable, it is easy to understand why some believe that these skills are readily transferable to emergency management. This finding supports the need for a competent emergency manager who has a broad understanding of all-hazards and all the phases (PPRR) of emergency management and that these individual are better placed to oversee emergency management than individual services with a very focused remit and a limited understanding.

Although the Tasmania Floods (Blake, 2016) did not discuss the role of the emergency managers or the competence of those filling the position, the inquiry did raise competence twice. These references not only revealed a lot about the understanding of the inquiry concerning emergency management but the current mindset of communities. The existing literature continues to identify that the best return on investment in emergency management is through investing in prevention and mitigation, as opposed to response and recovery. This finding revealed a

significant contrast between current practice and contemporary emergency management and the best value for money for the community.

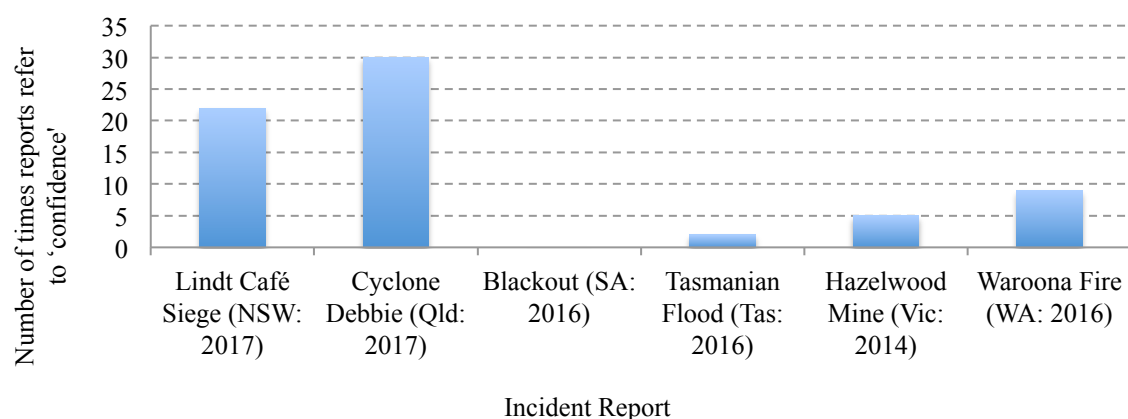
The findings further revealed a continued preference towards response and recovery activities. It is plausible that these findings could be addressed by ensuring that emergency management activities are conducted by someone with a contemporary understanding of emergency management, rather than the dated emergency management stereotype identified by Blanchard (2001, pp. 7–8). It is plausible that a competent emergency manager trained and appropriately educated in contemporary emergency management could reduce the number of personnel required and increase the productivity of the role (AWPA, 2013, p. 23; Ernst & Young, 2013, p. 2; ABS, 2010) while providing greater insight into activities undertaken by these reviews.

7.8 Confidence

7.8.1 Confidence – results

Of the six post-incident reports, five referred to confidence on 68 occasions (Figure 7.8). Of these, Cyclone Debbie had the greatest number of references to confidence ($n = 30$), followed by the Lindt Café Siege ($n = 22$), the Waroona Fire ($n = 9$), the Hazelwood Mine fire ($n = 5$) and the Tasmanian Flood ($n = 2$).

Figure 7.8 – Confidence



Cyclone Debbie (Blake, 2016) predominantly referenced confidence around building community confidence, but also commercial confidentiality (Blake, 2016, p. 80), and the confidence of the regional council to stand down after an event (Blake, 2016, p. 81). In this inquiry, the focus was on “delivering value and confidence

through trust and empowerment” (Blake, 2016, pp. 1, 121). The level of community confidence was highlighted as essential, to gain a better understanding a community survey was undertaken to find out if the respondents “were ready and able to deal with the impacts of the event” (Blake, 2016, p. 89). The majority of responses were positive but the survey revealed that there “may be pockets of the community that do not fully understand the risk posed in events” (Blake, 2016, p. 89). The inquiry did note that gaps, inconsistencies and misunderstandings in information “creates confusion, [and] can erode confidence in the authorities” (Blake, 2016, p. 90).

The Lindt Café Siege (2007) references to confidence included comments from the consultant psychiatrist who believed basic guidelines accurately described his role and “was confident the negotiators and the police commanders also understood his role” (State Coroner of NSW, 2017, p. 300). These comments also included one from Assistant Commissioner Murdoch (NSW Police) who “was confident that we would negotiate an outcome” (State Coroner of NSW, 2017, p. 343) and “that [the TOU] would successfully assault the stronghold and release the hostages” (State Coroner of NSW, 2017, p. 348).

The Waroona Fire (Ferguson, 2016) highlighted the conflicting ideation of what confidence means through several submission. Submissions ranged from “witnesses attest[ing] to the high degree of confidence held in DFES’ urban fire capability” (State Coroner of NSW, 2017, p. 12). This comment was further supported by a member of the community who had been assisted during the fire (State Coroner of NSW, 2017, p. 143), and the Director-General of Parks and Wildlife stating that the process [fire] had been “positive” and gave him confidence (State Coroner of NSW, 2017, p. 57). Despite these findings, other stakeholders expressed concerns where “confidence in incident reviews undertaken by the SEMC Secretariat is... varied” (State Coroner of NSW, 2017, p. 60), and that volunteers “do not have any confidence in DFES⁶⁸ administratively or operationally” (State Coroner of NSW, 2017, p. 250).

Unlike the Waroona Fire (2016), the Hazelwood Fire (Teague, 2014) predominately revolved around a lack of confidence. This lack of confidence was specific to advice provided by an earlier (1988) report about the risk of fire caused by nearby plantations (Teague, 2014, p. 141), sharing governance of the mine with the mining regulator and their statutory authority (Teague, 2014, p.170), and community confidence in authorities (Teague, 2014, p. 393). The community’s lack of confidence

⁶⁸ Department of Fire and Emergency Services,

centred around the Chief Health Officer's assessment that there would be "no long-term health effects from the fire" (Teague, 2014, p. 394), despite a lack of rationale behind this statement (Teague, 2014, p. 401). Finally, the Tasmania Floods (Blake, 2017, p. 97) recognised that the confidence of Flood Recovery Assessments "as being authoritative".

7.8.2 Confidence – discussion

Although there were 68 references to confidence, none of these was in regards to a specific role or function, let alone the emergency manager. Confidence was identified as an important factor in the "disaster management sector" (Blake, 2017, p. 121) but this may not always be a reliable indicator of the quality of service and should not be taken as synonymous with capable personnel. As the findings from the Lindt café review identified where numerous assumptions and beliefs by various individuals were not accurate, and their confidence was significantly misplaced.

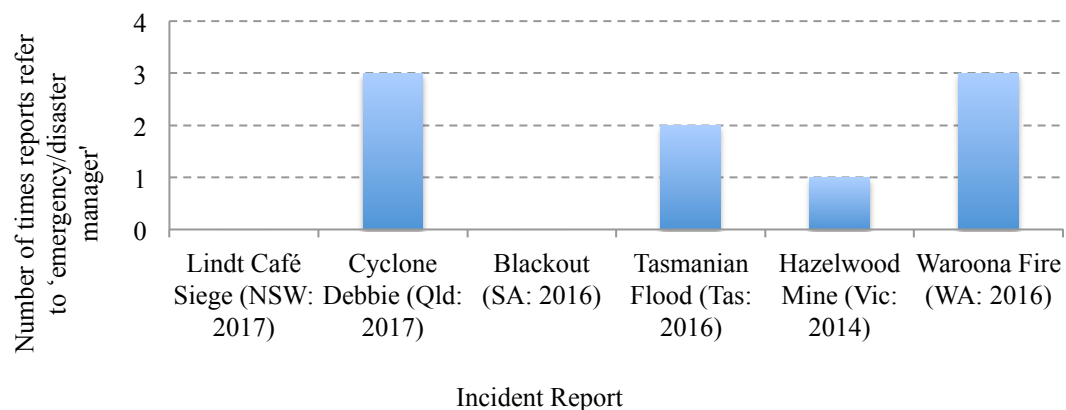
It is possible that any action undertaken by emergency service personnel, which is much beloved by the community and strongly associated with volunteers (Calcutt, 2019, p. 2) and which is held in high esteem, may introduce a sense of false confidence or "false bravado" due to the "lack of maturity of the national consciousness" (Catsaras, 2014). Furthermore, it is plausible that individuals may indirectly draw parallels between intent, well-meaning and pride, with competence. It is likely that hiring a dedicated qualified, trained, educated, experienced, and knowledgeable practitioner in emergency management is a better indicator to a practitioners level of competence than one without, or of a senior member of an emergency services agencies purely by time in service.

7.9 Emergency Managers

7.9.1 Emergency Managers – results

Of the six post-incident reports, the majority (n = 4) referred to one of emergency manager, or disaster manager, on a total of nine occasions (Figure 7.9). Of these nine references, the Waroona Fire and Cyclone Debbie report had the majority of references to emergency managers and disaster managers (n = 3), respectively. The remaining three references occurred in the Tasmania Flood (n = 2), and the Hazelwood Mine (n = 1) reports.

Figure 7.9 – Emergency Managers



Cyclone Debbie (MacKenzie, 2017) specifically referenced the challenges of the emergency managers position and included sustainability issues due to multiple events (MacKenzie, 2017, p. 15), “previous knowledge of cyclone behaviour” (MacKenzie, 2017, p. 116), and inconsistent terminology used by emergency management practitioners (MacKenzie, 2017, p. 120). The Cyclone Debbie report also acknowledged that the Inspector-General Emergency Management was attempting to resolve the terminology issue through the National Disaster Resilience Glossary Project (MacKenzie, 2017, p. 120).

The Waroona Fire (Ferguson, 2016, p. 13) referenced the role of the emergency manager three times and that...

*acting on these recommendations sets the stage for a landscape that is resilient to fire, a community that is informed and adapted to their bushfire risk and **emergency managers**⁶⁹ who are skilled and ready to serve*

The second occurrence referenced by Ferguson (2016) was on the evacuation of people as a strategy “employed by emergency managers to mitigate the potential of loss” (Ferguson, 2016, p. 135). Finally, the report asserted that it is “not part of the role of fire and emergency managers to anticipate, plan and be ready for extreme and ‘out of scale’ events?” (Ferguson, 2016, p. 263).

The Tasmanian Flood (Blake, 2016) referenced the role of the emergency manager concerning NGOs⁷⁰, the lack of collaboration and consultation in coordinating financial relief and assistance payments, and

⁶⁹ Emphasis added

⁷⁰ Non-Government Organisations

*that **emergency managers** should have a good appreciation for planning purposes both of what NGOs can offer and what the associated costs are. We suggest greater awareness by response management authorities of the roles and functions NGOs can perform would benefit early engagement and more effective service delivery during emergency events.*

(Blake, 2016, 88)

The Hazelwood Mine (Teague, 2017) report had one reference to “Environmental Emergency Manager” as part of “Figure 2.21 Emergency organisation structure under the GDF Suez Emergency Response Plan” (Teague, 2017, p. 93). In this figure, the role of the Environmental Emergency Manager was listed under the Operations Coordinator (Teague, 2017, p. 93). There were no other references or description of the role to provide further detail.

7.9.2 Emergency Manager – discussion

There were nine references across four reports that identified the role of the emergency manager. However, few of these references coincided with the keywords of this thesis that included qualification, training, education, experience, knowledge, confidence and competence of the role.

The Cyclone Debbie (MacKenzie, 2017) report revealed significant issues with the emergency management industry. Despite recognition that terminology was an issue, QLD is the only Australian state that uses disaster management as opposed to emergency management. Disaster management addresses the concern raised by Drabek & Hoetmer (1991, p. 121), in that emergency management is a misnomer, and better reflects the industry. However, it is difficult to see how QLD can raise concerns over terminology when it declines to use existing industry terminology but does raise the need to review and define the role of the emergency/ disaster manager. Furthermore, this suggests the need for federal interference to ensure consistency across states and territories and is something that could be addressed by having federal legislation providing some form of governance.

What is more surprising is that despite these issues, Cyclone Debbie (MacKenzie, 2017) referenced emergency management practitioners, specifically in the title of the QLD Inspector-General – Emergency Management (MacKenzie, 2017, p. 120). This finding continues to support the argument of an industry lacking professional identity (Creuss & Creuss, 2018, p. 239). It is unclear how the Cyclone Debbie report and QLD differentiate this discrepancy. It is likely that by adopting a

formal structure with proper resourcing, governance, authority, and recognition of the emergency manager as a unique role, similar to that of the physician (Gelfand, 1993, p. 1121) that these issues can be readily resolved.

The Waroona Fire (Ferguson, 2016) report recognised the need for emergency managers to be skilled and ready to serve, it does not define what these skills are, whom they are expected to serve, or in what capacity. As such, the details of these skills will be influenced by who defines the role, for example, emergency services see emergency management as being synonymous with incident commanders or managing an emergency, but it does not correspond with contemporary emergency management practices. Furthermore, these skills must be industry-specific (Waugh & Streib, 2006, p. 131; EMA, 1998a) and must be recognised as not readily transferable (Sgobbi & Suleman, 2015, p. 379) across other industries. What is concerning is Ferguson's (2016) comment that it was not the role of an emergency manager to anticipate, plan and be ready for extreme and 'out of scale' events, when that is the definition of the contemporary emergency manager.

The literature supporting the role of the emergency manager does not support this statement (Tarrant, 2006, p. 9; Drabek & Hoetmer 1991, p. 121) and it is likely that this belief is contributing to confusion surrounding the role (Cwiak, 2011, p. 8; Choi, 2008, p. 1; Waugh, 2007a, p. 15; Stehr, 2007, p. 37; Harper, 2006, p. 3) and impedes its ability to reach its potential. Ferguson's (2016) statement would suggest that there is either a significant lack of understanding over what emergency management is or that the inquiry believed emergency management and emergency services are synonymous. This statement further supports the need to define the role better and separate it from emergency services and response. One example of this is the current bushfires in NSW and VIC that have highlighted the myriad of actions that need to be addressed as part of holistic approach to emergency management (Hutchison, 2020, January 9; Dominey-Howes, 2020, January 7; Alexandra & Bowman, 2020, January 7; Keenan, 2020, January 6; Nicholls, 2020 January 5; Smee, 2019, December 30; Gordon, 2019 December 26).

Despite recommendation 20 of the Tasmanian Floods (Blake, 2016) suggesting that the "Government engages" with NGOs to provided support, principle five of the Principles of emergency management (FEMA, 2017), the *new generation* emergency manager (Blanchard, 2001, pp. 7–8) and the *Top ten competencies* for professional emergency managers (Blanchard, 2005) specifically reference collaboration and consultation as core competencies of the emergency managers role. More importantly,

the age of this literature and lack of awareness by emergency services, including senior leadership, supports the need for significant change and recognition that even these individuals are not ‘Emergency Managers’. Similar to the Waroona Fire (Ferguson, 2017), the Blake (2016) report continues to raise issues that have previously been addressed within the literature and reveals the lack of understanding of the emergency managers role by stakeholders.

The one reference to an emergency manager within the Hazelwood Mine (Teague, 2014) report was prefaced by ‘environment’, as an “Environment Emergency Manager”. This role was listed under an organisation structure where there were six general roles located under ‘Operations Coordinator’. Of these six roles, three had their roles and responsibilities listed (p. 94), and it is possible to argue that two of the remaining three, (Front Line Personnel and Security Officers) were self-explanatory. Unfortunately, there was no other reference to the Environmental Emergency Manager or clarification on its roles or responsibilities, leaving the role open to interpretation.

The review of these reports revealed nine references to the role of the emergency manager and disaster manager. However, they also revealed significant discrepancies around the roles and responsibilities that are inconsistent with the literature and the contemporary emergency manager. This finding reveals a lack of understanding by organisations with responsibility for emergency management and the role of the emergency manager.

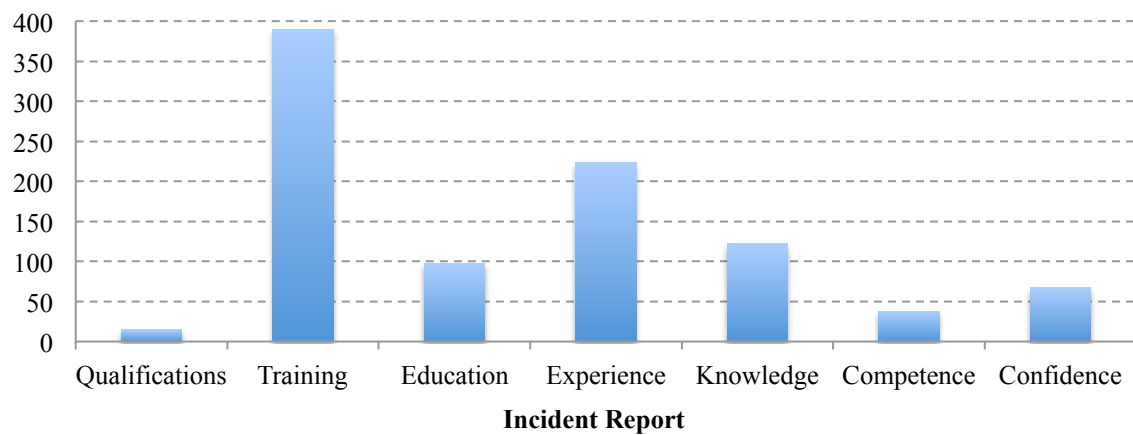
Recommendation # 7.1: Establish a specialist review team and accompanying guidelines

Establish disaster review team comprised of emergency management specialists with associated guidelines to ensure that the scope of disaster reviews are reflective of contemporary emergency management standards. External to government interference and standards that provide for a holistic review covering all phases and personnel with mandatory compliance for recommendations.

7.10 Chapter summary

The majority of reports (n = 5) referenced one of the six keywords listed in research question one, for a total of 953 occurrences (Figure 7.10). Training had the greatest number of references (n = 390), followed by experience (n = 223), knowledge (n = 122), education (n = 97), confidence (n = 68), competence (n = 38) and qualification (n = 15).

Figure 7.10 – Keyword comparison



In an industry that favours training over other forms of education and knowledge, it is unsurprising that this area rates the highest across the various reports and inquiries. Training is a crucial component of being a professional (Beaton, 2010; Oxford University Press, 2003c) but the gap between training, education, experience and qualifications is inconsistent with the principles of emergency management (FEMA, 2007) and the new generation emergency manager (Blanchard, 2001, pp. 7–8). However, it is important that any training provided is conducted in contemporary emergency management principles and tenets by someone formally educated and experienced, based on the job advertisements reviewed earlier this does not appear to be occurring but more research is needed to validate this assertion.

The focus of the various reports and inquiries largely focused on the response phase of the disaster cycle, and the limited references to emergency managers suggest a lack of understanding of the benefits of the emergency manager and support the fragmented industry (Cwiak, 2009, p. 7). This finding is further supported by the SA Blackout (Australian Energy Market Operator, 2016) report that did not include any of the keywords or references to emergency management or emergency managers. The limited scope of these reports and inquiries reveals lost opportunities to fully understand the complexity of the emergency manager and its place within the emergency management industry. Chapter Eight will now draw on the previous chapters to provide the thesis conclusion.

CHAPTER 8: THESIS CONCLUSIONS

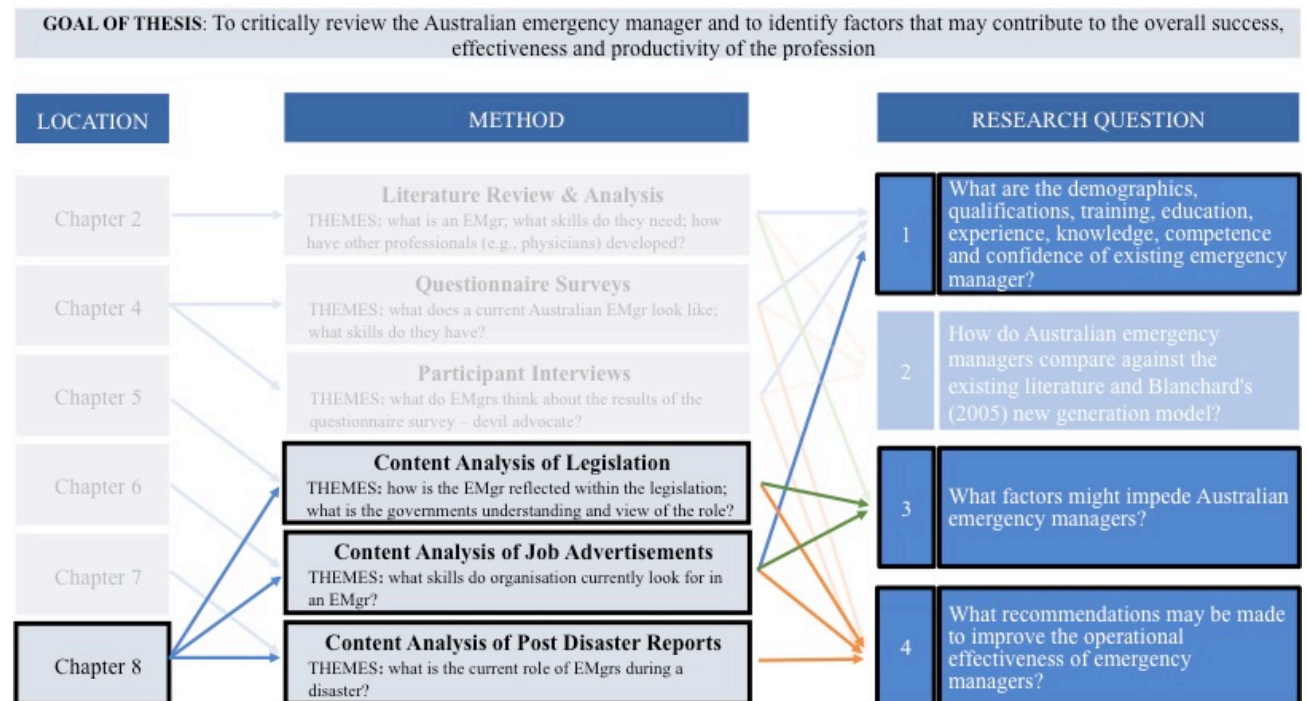
*The only true wisdom is in
knowing that you know nothing.*

(Attributed to Socrates, c. 470 – 399 BC)

8.0 Chapter introduction

In Chapter Eight, I will present an evaluation of the results, discussions and conclusion from Chapters Two, and Four through Seven (Figure 8.1). This section will examine the implications of this thesis and what this research means in terms of practice for the emergency manager. I then present key findings and evaluate these against the aims and research questions identified in section 1.8. This section will then be followed by a review of the limitations of the thesis and areas that could benefit from future research.

Figure 8.1 – Road map of thesis for Chapter Eight partially addressing research questions one, three and four



8.1 Implications

In Chapter Two, human capital theory identified the importance of increasing the productivity of a role through the improvement of education, training, experience and general knowledge of practitioners. Chapter Two revealed a growing body of knowledge relevant to emergency management (broadly) and the emergency manager (specifically) that was pertinent to the effective development of the role. These initial findings supported the need to investigate the Australian emergency manager and compare it against the literature. Specifically, Blanchard's (2001) stereotypical and new generation emergency managers and Beaton's (2010) criteria for becoming a profession.

Examining the practitioner against the literature enables the Australian community to understand local practitioners. Furthermore, by researching the position, the industry can improve transparency and raise awareness of the role and emergency management within Australia. Previously, the emergency manager role has been considered synonymous with emergency services and response with little research being undertaken to challenge this perception. It is plausible to argue that it is this misconception that has impeded the growth of the role and effective DRR. A unique role, one that is separate from and distinct from emergency services and underpinned by a vast body of knowledge, supported by all levels of government could undertake real change.

The adoption of the emergency manager as a unique dedicated role has significant implications for the Australian community and government. Implications that will have an impact on various stakeholders including the emergency management practitioner (being more skilled and educated), the emergency management industry (higher standards including evaluation, greater control, and improved leadership and governance), the Australian community (more prepared, better return on investments), and the role of government (better accountability, funding and support). Currently, the government relies heavily on response and recovery programs and where it spends the majority of its disaster budget. An example of which is the recently announced AUD\$2 Billion for the reactive establishment of a National Bushfire Recovery Agency (Office of the Prime Minister, 06 Jan 2020). This would require a significant change in emergency management understanding and practice across Australia.

Major natural catastrophes are a burden even to successful national economies like Australia's. Data from 2017 indicates that 97% of disaster funding was spent on post-disaster relief and recovery, with only 3% on mitigating a disaster before it happens.

(Munich RE, 2019)

8.2 Evaluating against aims and research questions

In section 1.8, I discussed the main key research questions that guided this thesis with an...

aim to critically review the Australian emergency manager and to identify factors that may contribute to the overall success, effectiveness and productivity of the role.

The main research question sought to establish a baseline of the emergency manager and their human capital and the second question utilised existing literature to compare the Australian emergency manager objectively. Finally, the third and fourth questions sought to determine what factors may impact the role before providing recommendations on how to improve the operational effectiveness of the position. A summary of conclusions against each of the research questions is now provided.

8.2.1 Key research question one - what are the demographics, qualifications, training, education, experience, knowledge, competence and confidence of existing emergency managers?

In Chapters Two, Four, and Six, I addressed research question one which sought to examine the human capital of the emergency manager. As part of this review, my research supported McArdle's (2017) findings that identified a role lacking in diversity and education specific to emergency management. The current role of the emergency manager within Australia is inconsistent with the tenets and principles of contemporary emergency management. Furthermore, the position is not supported by job advertisements requiring specific knowledge or education, or state legislation utilising contemporary emergency management as its basis.

8.2.2 Key research question two - how do Australian emergency managers compare against the existing literature and Blanchard's new generation model?

In Chapters Two and Four, I addressed research question two. This question sought to examine and compare the emergency manager against Blanchard's (2001) stereotypical and new generation emergency manager model. The results of this thesis

suggest that while emergency managers within Australia are progressing towards the new generation emergency manager, the lack of diversity, and willingness to obtain an education specific to emergency management still locate it within the stereotypical emergency manager. Furthermore, the lack of emergency management legislation with particular references to the role and the job advertisements with few requirements related to emergency management further support this finding.

8.2.3 Key research question three - what factors might impede Australian emergency managers?

In Chapters Two, Five and Six, I addressed research question three and identified several factors that have the potential to impede the role. These factors include a lack of minimal standards governing the role, lack of awareness, understanding and misperceptions of emergency management and the emergency manager by stakeholders, and a lack of diversity, education, professional body, and legislation, as well as leadership, governance and evaluation, to support practitioners. This finding is further hampered by vague job advertisements with a greater focus on random skill requirements not necessarily related to emergency management and poorly designed legislation developed primarily for response and emergency services.

8.2.4 Key research question four - what recommendations may be made to improve the operational effectiveness of emergency managers?

Throughout this thesis, I have made a series of recommendations to address the issues identified. However, while I will not list all the recommendations here, I will highlight several key foundation issues. For a comprehensive list of the recommendations, please see each chapter. Key recommendations include:

- Developing a professional body managed by practitioners with experience and education specific to emergency management. Responsible for governing all aspects of emergency management and the emergency manager, including type and level of education, continuing education, minimum standards and requirements, and the complaints of practitioners. See medicine in Chapter Two (medicine) as a model.
- Review, define and regulate the practitioner to address any professional identity problems associated with incident management, emergency services and response as being synonymous with emergency management and the emergency management practitioner, to be regulated independent of the government but with government support.

- Develop a national register of practitioners under the management of the professional body to assist in the management and governance of practitioners, including level and type of experience and education pertinent to emergency management.
- Develop legislation at the federal level using the Health Practitioner Regulation National Law as a model (<https://www.ahpra.gov.au/About-AHPRA/What-We-Do/Legislation.aspx>). Where the emergency management legislation better reflects contemporary emergency management, balancing the emphasis on response with prevention and mitigation. To be developed under the guidance of the professional body in consultation with the industry.
- Review and adapt funding models at all levels of government, where prevention and mitigation receive the bulk in alignment with evidence-based research and ensuring a higher financial return than a focus on response.
- Identify and improve leadership at all levels of government, and ensure personnel are appropriately experienced and tertiary qualified Emergency Management Practitioners.
- Develop appropriate emergency management governance structure at all levels of government by improving agency authority, autonomy, accountability, ethics, compliance and budgets.
- Mandate regular evidence-based evaluations of programs, people and processes to improve accountability and ensure the best return on investment.

8.2.5 Key recommendations

In totality there were 12 recommendations throughout this thesis from Chapter 4 and including chapters five, six and seven. These recommendations have been included in this chapter in table format to provide the reader with ease of reference and communicating the weight of findings.

Table 8.1 – Entire list of thesis recommendations

#	Recommendation
4.1	<p>Establish minimum standards for entry to the role</p> <p>By establishing minimum standards to those who can hold the position of the emergency manager, it is likely that this will decrease the number of individuals holding the role in a part time capacity. Especially, those who hold the role in addition to a primary non-related role.</p>

4.2	<p>Employ a more diverse and representative workforce</p> <p>Employing a more representative and diverse workforce across demographics (age, gender, ethnicity, religion and sexuality).</p>
4.3	<p>Mandatory defined educational pathway</p> <p>Utilise existing professional bodies such as medicine and the AMC as a model, to develop an independent (of government) body supported by legislation and managed by practitioners to develop a minimum level of mandatory educational pathway in emergency management (not a peripheral degree in response or emergency services) with a respective pathways/specialisation and level of practitioner.</p> <p>Emergency management practitioners (not to be confused with emergency services) need to work with universities to identify core requirements of the role and develop educational standards and experience for each level of education. For example</p> <ul style="list-style-type: none"> • A manager and above must hold a masters, and bachelor degree in emergency management. • A deputy manager must hold a bachelors degree in emergency management • A specialist must hold a bachelors degree in emergency management plus a recognised qualification (minimum diploma) in their area of specialisation, for example, prevention, media • Other emergency management industry personnel must hold at least an advanced diploma • A researcher must hold a research masters and bachelor degree in emergency management <p>Non-emergency management qualified personnel (specialists) may be called to provide advice (police, firefighters, meteorologists, geologists, engineers) but are not a member of the committee or group and are not categorised as emergency managers</p>
4.4	<p>Regulate the role and title</p> <p>It important that the role and title is reserved for those who are appropriately trained and educated in emergency management similar to Police and Paramedics and that the industry is well regulated and where the emergency managers role is seen as separate and distinct from emergency services. Where proximity to emergency management is not considered synonymous with the role of the emergency manager.</p>

4.5	<p>Regulation of the industry</p> <p>It is plausible that the current belief that emergency services and response are synonymous with emergency management contributes to a gross misunderstanding in which the community suffers as a result and inhibits effective DRR. By embracing industry regulation, similar to that of medicine, it is likely that the damage caused by this belief can drive contemporary emergency management practice in which emergency management is a separate and distinct profession (from emergency services).</p>
4.6	<p>Develop a national sharing program</p> <p>One of the key tenets of contemporary emergency management is collaboration. It is plausible that by developing a national program where communities and organisations can share personnel to learn from and assist each other during all phases of emergency management will significantly enhance DRR.</p>
4.7	<p>Develop a national mentoring program</p> <p>Developing a national mentoring program as part of a holistic approach to industry development, where educated and experienced emergency managers can share their insight and enhance DRR. This should be managed by an emergency management body similar to that of the AMC in medicine.</p>
4.8	<p>Develop a register of emergency managers</p> <p>Through developing a register of practitioners, the industry can increase transparency and allows researchers to better targets those holding the role of the emergency manager, as opposed to those who have broad relationship to the industry. For example emergency services personnel.</p>
5.1	<p>Standardised job requirements</p> <p>Emergency management needs to be appropriately regulated, as it is a complex industry that has significant public safety outcomes if done incorrectly. Emergency management requires extensive education and experience to become competent and should not be left to a first aider or any individual who happens to be available. Anyone holding the role must have the requisite experience that is determined by an appropriate board of professional practitioners and not left to under-resourced or ill-informed organisations or individuals.</p>

5.2	Identify the specific knowledge required of the role Using evidenced-based practice and emergency management literature to identify and collate information necessary for the role.
6.1	Establish legislation at a national level Establish legislation at a federal level similar to medicine's, Health Practitioner Regulation National Law (ACT), which regulates the industry. This should be developed in concert with tertiary qualified emergency managers with extensive experience and minimum of a bachelor degree in emergency management.
7.1	Establish a specialist review team and accompanying guidelines Establish disaster review team comprised of emergency management specialists with associated guidelines to ensure that the scope of disaster reviews are reflective of contemporary emergency management standards. External to government interference and standards that provide for a holistic review covering all phases and personnel with mandatory compliance for recommendations.

8.3 Limitations of the thesis

Several limitations were apparent in the design, implementation and analysis of this thesis, specifically with the practitioners' survey in Chapter Four. These issues ranged from the sample size of the practitioner survey, and the return rate, to the lack of a practitioner register.

8.3.1 Sample size

The sample size of this study was based on preliminary research into various emergency management plans at different levels of government. This search identified approximately 900 organisations, ranging from local to state and federal government, utilities and mining companies. However the role of government varies across states/territories, and even when legislation exists it is usually vague and either offers a very broad interpretation of the position (see for example, the NSW SERM ACT 1989) and its application, or is very narrow in scope. This makes it difficult to determine who should or should not be included in any research into the role of the emergency management practitioner. The small numbers of responses also made it difficult to obtain any useful statistical data, such as p-value, t-tests, or chi². Future

research will need to address these limitations in order to generate more statistical data.

The sample of the questionnaire was small at 92 participants. However, it was not entirely inconsistent with previous research identified in Chapter Two. Chapter 2 revealed a number of studies examining the emergency manager with sample sizes that ranged from 24 to 859. Of the seven studies previously identified, including Cwiak (2007, 2009), Elsworth & Anthony-Harvey-Beavies (2007a), Nirupama and Etkin (2009, 2012), Bird (2013) and McArdle (2017), the majority (57.14%) had sample sizes of less than 43 participants. The remaining three, Elsworth & Anthony-Harvey-Beavies (2007a), Bird (2013) and McArdle (2017) were 354, 415 and 859, respectively.

A larger sample size would serve to address the question of validity, and an industry body could accomplish this but there are inherent issues. While AFAC is a potential candidate as an industry body with a large membership, it is a body that is first and foremost dedicated to fire, and not emergency management. Previous research has shown that many emergency services personnel believe that they are emergency managers, and this suggests that the majority of their membership would not be emergency managers but emergency service personnel. It is also likely that due to the focus on emergency services and fire, the service will represent the major body and any research undertaken will include this bias and not serve to advance the unique role of the emergency manager.

The largest global body for emergency management is IAEM, but their membership numbers in Australia are low and they do not have the mass or following to drive such a program seeking to be accomplished. These findings would suggest that a neutral third party, such as a university, undertakes this research. However, it is plausible that a university will have issues where the academics do not fully understand emergency management either and as such, it would be important that this university utilises someone with extensive experience and education in emergency management (not emergency services). The second issue that arises is the criteria most appropriate for identifying emergency managers. My belief is that Blanchard's' (2001) new generation emergency manager model would provide a solid baseline as his model continues to be relevant. Furthermore, it offers the opportunity to allocate emergency managers into two categories, allowing more flexibility in the process.

8.3.2 Rate of return

The return rate of the practitioners' survey was approximately 10% of the estimated sample size. Although small sample sizes are not a significant problem in qualitative research, it does present an issue with quantitative data analysis. When compared against previous research, the most three recent studies declined to hypothesis the exact figures of the industry, due to the lack of registers and information about the practitioners who made up the industry. While several reports have identified personnel numbers for emergency services (AFAC, 2018, p. 6; Lawrence et al., 2018, p. 1) these figures vary and are specific to emergency services and response as opposed to emergency managers. It is also likely that exact numbers would be problematic due to the common belief that emergency services personnel are often seen as synonymous with the emergency manager and may complicate data.

8.3.3 Practitioner Database

As there is no central database of emergency managers, appropriate personnel were not easy to locate and were sourced by contacting individual organisations that filtered the availability of practitioners. Several organisations were unable to identify appropriate personnel to the researcher, citing restrictions of the "Privacy Act"⁷¹, which meant that the researcher was unable to identify the exact number of personnel for whom the study was made available and form a conclusive response rate. It was also noted, that several respondents were from emergency services and felt that their role in this function automatically qualified them as an 'emergency manager', supporting previous findings by McArdle (2017). The definition and then identification of practitioners is most likely the first logical step in any future research.

8.3.4 Lack of details in job advertisements

There were limited details within the job advertisements that made it challenging to address research questions two. These issues ranged from inconsistent disclosure of salaries to the level and type of qualifications, training, education, and experience of practitioners, and it was unclear whether these issues were intentional. Despite the

⁷¹ A phone conversation with the Federal Privacy Ombudsman early in the contact phase revealed that because only 'public' details were being requested this was not in fact covered by the 'privacy' legislation and the details should be made available. The researcher did not push the matter realising that the organisations would be set in its mindset and the issue would more than likely need to go through a Freedom of Information application, which would take time and could potentially cost money for each request.

intent, this lack of information makes it difficult to understand the role and the industry with any depth.

8.3.5 Limited and inconsistent scope of disaster reports

The different reports identified in this thesis had very different scopes that ranged from covering everything deemed related to the disaster, to only including activities specific to the response. This finding made it very difficult to compare reports and allowed for various interpretations. Despite the different scopes across the reports, the predominant focus was on the response phase of the disaster management cycle. As such, it was not unexpected that the focus was on emergency services, or that there were limited mentions of emergency managers. However, to fully capture the data, it is important that such reviews provide more depth and that the investigators extend their reviews beyond this limited scope to include the personnel who should be present and the actions leading up to the event, including any prevention/mitigation, preparation measures undertaken.

8.3.6 A brief reflection on human capital theory

Human capital theory was determined to be the most suitable theory to examine the key attributes of emergency management practitioners, specifically, their demographics, qualifications, training, education, experience, knowledge, competence and confidence. During this research, I realised some inherent issues, specifically, the use of these five terms. While demographics and experience are relatively straightforward to define, the problems arise when determining qualifications, training, educations and knowledge. Quite often, I found that these terms were being used synonymously across the various documents required, making it difficult to separate. I also found that knowledge would have been better placed to encompass both experience and education, rather than as a separate and distinct area. In totality, I think HCT works in this context. Still, a more clear structure and better clarity around terminology would reduce some the potential issues identified and make for a better outcome.

8.4 Further research

The work undertaken as part of this thesis was kept broad in nature and encapsulated anyone who was remotely involved in emergency management. Based on the results, analysis and discussions within this thesis, this section will suggest various ways of

extending the scope of the research by more selectively targeting emergency management practitioners.

Findings from this thesis corroborate previous literature identified in Chapter Two in which emergency management is a misnomer. It is plausible that the terminology is too similar to emergency response and incident management, creating confusion both within the industry and with laypersons. Future work should be undertaken with consideration of laying a proper foundation to clarify the role of the emergency management practitioner better and includes:

- **Examining the title:** The aim in this would be to understand better whether ‘emergency manager’, or ‘disaster manager’ is a more accurate representation of the role. This finding would better delineate those classed as an emergency responder with ‘managing an emergency’ as a core responsibility and those tasked with ‘emergency management’ using both the practitioners and the public understanding and perception of the role to drive change and whether Disaster Manager is a more suitable term that accurately portray the role;
- **Defining the role:** As previously identified in Chapter Two, emergency management comprises various actors across organisations and as such, it is plausible that this contributes to a lack of identity and that this may pose a problem. Clarification of the role would enable more refined research process with more accurate outcomes;
- **Developing a register:** The aim of this action is to develop a more accurate representation of the ‘emergency manager’. It is plausible that a pre-existing database provides the researcher with a direct access tool to practitioners. The development of a register/database specific to the emergency manager would enable greater transparency, accuracy, consistency, and rigour across the industry while providing a better research baseline for the role;
- **Conducting case studies:** Conduct research into senior ‘emergency managers’ across the various states and territories. The aim of this is to understand their background better and how this relates to the development of the emergency management industry (broadly) and emergency manager (specifically);
- **Revisiting human capital of practitioners:** Conduct a more extensive longitudinal study with a greater number of emergency managers (not emergency services or peripheral personnel) utilising statistical data into their demographics, qualifications, training, education, experience, knowledge, competence and

confidence. This research would enable a better understanding of practitioners against key literature and more importantly, providing greater transparency;

- **Examining the knowledge required of practitioners:** Conduct research into the knowledge required of a contemporary emergency manager. The aim of this is to have a greater understanding of the knowledge required of the role and to enable objective comparisons to be made against existing practitioners and improvements for education programs;
- **Review senior leadership:** Conduct a review of the qualifications of emergency management agencies to better understand how these individuals align with Blanchard's (2001) new generation emergency manager model identified previously and the literature surrounding the knowledge required of an emergency manager;
- **Revisiting job Advertisements:** Conduct more in-depth research into job advertisements and the selection criteria. This research would enable a better understanding of the criteria within advertisements, including wages, and the percentage of split roles dedicated to emergency management and the nature of the position. For example, is it a new role or is it a re-advertisement and if so, why? Why was the role considered necessary by the organisation? and how did the organisation arrive at the specific criteria? This research would enable the industry to better determine growth and insight into the job by communities and organisations;
- **Conducting a review of post-incident reports:** Conduct a more in-depth analysis of post-incident reports to understand their structure and encapsulate contemporary emergency management and the emergency manager better. This research would include the all-phases (PPRR), the role of the emergency manager and how it can be better used to better progress the industry and promote meaningful DRR. A task that is more easily done with the establishment of a public database managed by the BNHRC (Cole, Dovers, Gough, & Eburn, 2018, p. 38).
- **Review community relationships with practitioners:** Engage with communities and their citizens to better understand the relationship between emergency management practitioners, community beliefs and perceptions, if there are tensions that arise between practitioners and communities that want to

pursue emergent responses to problems they face, and what emergency managers can do, and what communities need.

8.5 Chapter summary

On a superficial level, the research presented in this thesis is significant due to the limited information available examining emergency manager practitioners across Australia. This research further supports and expands on the previous literature, specifically McArdle's (2017), and Elsworth & Anthony-Harvey-Beavis (2007a). The research developed in thesis utilised triangulation of various data sources, including legislation, job advertisements and reports into recent disasters to validate the initial findings in a manner and has not been used before. Furthermore, this thesis supports the findings from others (critically McArdle) but uniquely, finds the following:

- Research is industry wide and more often than not utilises emergency services and response personnel and is not specific to the role of the emergency manager;
- Job advertisements do not specify much detail of what is required in the appointment of a suitable emergency manager;
- The legislation is vague and could be strengthened and harmonised for consistency; and
- Disaster reports are inconsistent with conducting a holistic review of emergency management practices across all-phases (PPRR) of a disaster.

CHAPTER 9: APPENDICES:

Appendix A: Participant contact details by state and organisation

New South Wales State Government Organisations		
Organisation	Email	Website
Agriculture Functional Area	nsw.agriculture@dpi.nsw.gov.au	http://www.dpi.nsw.gov.au/agriculture
Ambulance Service of NSW	generalenquiry@ambulance.nsw.gov.au	http://www.ambulance.nsw.gov.au
Attorney General and Justice, Department of	communications@agd.nsw.gov.au	http://www.lawlink.nsw.gov.au/Lawlink/Corporate/ll_corporate.nsf/pages/attorney_generals_department_index
Bush Fire Coordinating Committee		http://www.rfs.nsw.gov.au/dsp_content.cfm?cat_id=1197
Community Relations Commission	crc.mail@crc.nsw.gov.au	http://www.crc.nsw.gov.au
Department of Education and Communities		http://www.educationandcommunities.nsw.gov.au/
Department of Family and Community Services		http://www.community.nsw.gov.au
Department of Finance and Services	Enquiry@services.nsw.gov.au	http://www.services.nsw.gov.au
Department of Planning and Infrastructure	information@planning.nsw.gov.au	http://www.planning.nsw.gov.au
Department of Premier & Cabinet	contact_us@dpc.nsw.gov.au	http://www.dpc.nsw.gov.au
Department of Primary Industry		http://www.dpi.nsw.gov.au
Department of Transport	mail@transport.nsw.gov.au	http://www.transport.nsw.gov.au
Division of Local Government, Department of Premier & Cabinet	dlg@dlg.nsw.gov.au	http://www.dlg.nsw.gov.au

Fire and Rescue NSW	info@fire.nsw.gov.au	http://www.fire.nsw.gov.au
Fire Protection Association Australia		http://www.fpaa.com.au/
Marine Rescue NSW	contact@marinerescuensw.com.au	http://www.marinerescuensw.com.au
Mines Rescue Service	info@rescue.coalservices.com.au	http://www.minesrescueservices.com
Minister for Police and Emergency Services		http://www.directory.nsw.gov.au/ministers.asp
Local Government of NSW		http://www.lgnsw.org.au/about-us/council-links
Ministry for Police and Emergency Services	MinistryEnquiry@mpes.nsw.gov.au	http://www.mpes.nsw.gov.au
NSW Government Telecommunications Authority		http://www.telco.nsw.gov.au/
NSW Ministry of Health	feedback@doh.health.nsw.gov.au	http://www.health.nsw.gov.au
NSW National Parks & Wildlife Service (Dept. of Environment and Conservation)	info@environment.nsw.gov.au	http://www.npws.nsw.gov.au
NSW Office of Water	information@water.nsw.gov.au	http://www.water.nsw.gov.au
NSW Police Force		http://www.police.nsw.gov.au
NSW Public Works		http://www.publicworks.nsw.gov.au/
NSW Rural Fire Service		http://www.rfs.nsw.gov.au
NSW Service	info@service.nsw.gov.au	http://www.service.nsw.gov.au/about-us
NSW State Emergency Service		http://www.ses.nsw.gov.au
NSW State Forests	info@fcns.com.au	http://www.forest.nsw.gov.au
NSW Volunteer Rescue Association	vrarsq@rescue.org.au	http://www.rescue.org.au
Office of Environment and Heritage	info@environment.nsw.gov.au	http://www.environment.nsw.gov.au
Roads and Maritime	contactus@rms.nsw.gov.au	http://www.rms.nsw.gov.au

Services		
State Emergency Management Committee (SEMC)		http://www.emergency.nsw.gov.au/semc
Sydney Ports Corporation	enquiries@sydneyports.com.au	http://www.sydneyports.com.au
The Treasury	contact@treasury.nsw.gov.au	http://www.treasury.nsw.gov.au
Wireless Institute Civil Emergency Network (WICEN)	committee@nsw.wicen.org.au	http://www.nsw.wicen.org.au

Local Government

Albury City Council	info@alburycity.nsw.gov.au	http://www.alburycity.nsw.gov.au
Armidale Dumaresq Council	council@armidale.nsw.gov.au	http://www.armidale.nsw.gov.au
Ashfield Council	info@ashfield.nsw.gov.au	http://www.ashfield.nsw.gov.au
Auburn City Council	AuburnCouncil@auburn.nsw.gov.au	http://www.auburn.nsw.gov.au/
Ballina Shire Council	council@ballina.nsw.gov.au	http://www.ballina.nsw.gov.au
Balranald Shire Council	council@balranald.nsw.gov.au	http://www.balranald.nsw.gov.au/
Bankstown City Council	council@bankstown.nsw.gov.au	http://www.bankstown.nsw.gov.au
Bathurst Regional Council	council@bathurst.nsw.gov.au	http://www.bathurst.nsw.gov.au
The Hills Shire Council	council@thehills.nsw.gov.au	http://www.thehills.nsw.gov.au
Bega Valley Shire Council	council@begavalley.nsw.gov.au	http://www.begavalley.nsw.gov.au
Bellingen Shire Council	council@bellingen.nsw.gov.au	http://www.bellingen.nsw.gov.au
Berrigan Shire Council	mail@berriganshire.nsw.gov.au	http://www.berriganshire.nsw.gov.au
Blacktown City Council	council@blacktown.nsw.gov.au	http://www.blacktown.nsw.gov.au
Bland Shire Council	council@blandshire.nsw.gov.au	http://www.blandshire.nsw.gov.au

	v.au	au
Blayney Shire Council	council@blayney.nsw.gov.au	http://www.blayney.local-e.nsw.gov.au
Blue Mountains City Council	council@bmcc.nsw.gov.au	http://www.bmcc.nsw.gov.au/
Bogan Shire Council	admin@bogan.nsw.gov.au	http://www.bogan.nsw.gov.au/
Bombala Council	council@bombala.nsw.gov.au	http://www.bombala.nsw.gov.au
Boorowa Council	council@boorowa.nsw.gov.au	http://www.boorowa.nsw.gov.au
The Council of the City of Botany Bay	council@botanybay.nsw.gov.au	http://www.botanybay.nsw.gov.au
Bourke Shire Council	bourkeshire@bourke.nsw.gov.au	http://www.bourke.nsw.gov.au
Brewarrina Shire Council	breshire@brewarrina.nsw.gov.au	http://www.breshire.com
Broken Hill City Council	council@brokenhill.nsw.gov.au	http://www.brokenhill.nsw.gov.au
Burwood Council	council@burwood.nsw.gov.au	http://www.burwood.nsw.gov.au
Byron Shire Council	council@byron.nsw.gov.au	http://www.byron.nsw.gov.au
Cabonne Council	council@cabonne.nsw.gov.au	http://www.cabonne.nsw.gov.au
Camden Council	mail@camden.nsw.gov.au	http://www.camden.nsw.gov.au
Campbelltown City Council	council@campbelltown.nsw.gov.au	http://www.campbelltown.nsw.gov.au
City of Canada Bay Council	council@canadabay.nsw.gov.au	http://www.canadabay.nsw.gov.au
Canterbury City Council	council@canterbury.nsw.gov.au	http://www.canterbury.nsw.gov.au
Carrathool Shire Council	council@carrathool.nsw.gov.au	http://www.carrathool.nsw.gov.au
Central Darling Shire Council	council@centraldarling.nsw.gov.au	http://www.centraldarling.nsw.gov.au
Cessnock City Council	council@cessnock.nsw.gov.au	http://www.cessnock.nsw.gov.au
Clarence Valley Council	council@clarence.nsw.gov.au	http://www.clarence.nsw.gov.au

Cobar Shire Council	mail@cobar.nsw.gov.au	http://www.cobar.nsw.gov.au
Coffs Harbour City Council	coffs.council@chcc.nsw.gov.au	http://www.coffsharbour.nsw.gov.au
Conargo Shire Council	info@conargo.nsw.gov.au	http://www.conargo.nsw.gov.au
Coolamon Shire Council	council@coolamon.nsw.gov.au	http://www.coolamon.nsw.gov.au
Cooma–Monaro Shire Council	council@cooma.nsw.gov.au	http://www.cooma.nsw.gov.au
Coonamble Shire Council	council@coonambleshire.nsw.gov.au	http://www.coonambleshire.nsw.gov.au
Cootamundra Shire Council	mail@cootamundra.nsw.gov.au	http://www.cootamundra.nsw.gov.au
Corowa Shire Council	council@corowa.nsw.gov.au	http://www.corowa.nsw.gov.au
Cowra Shire Council	council@cowra.nsw.gov.au	http://www.cowraregion.com.au
Deniliquin Council	council@deniliquin.nsw.gov.au	http://www.deniliquin.nsw.gov.au
Dubbo City Council	dcc@dubbo.nsw.gov.au	http://www.dubbo.nsw.gov.au
Dungog Shire Council	shirecouncil@dungog.nsw.gov.au	http://www.dungog.nsw.gov.au
Eurobodalla Shire Council	council@eurocoast.nsw.gov.au	http://www.esc.nsw.gov.au
Fairfield City Council	mail@fairfieldcity.nsw.gov.au	http://www.fairfieldcity.nsw.gov.au
Forbes Shire Council	forbes@forbes.nsw.gov.au	http://www.forbes.nsw.gov.au
Gilgandra Shire Council	council@gilgandra.nsw.gov.au	http://www.gilgandra.nsw.gov.au
Glen Innes Severn Council	council@gisc.nsw.gov.au	http://www.gisc.nsw.gov.au
Gloucester Shire Council	council@gloucester.nsw.gov.au	http://www.gloucester.nsw.gov.au
Gosford City Council	goscity@gosford.nsw.gov.au	http://www.gosford.nsw.gov.au
Goulburn Mulwaree Council	council@goulburn.nsw.gov.au	http://www.goulburn.nsw.gov.au/
Greater Taree City Council	gtaree@gtcc.nsw.gov.au	http://www.gtcc.nsw.gov.au
Greater Hume Shire	mail@greaterhume.nsw.gov.au	http://www.greaterhume.nsw.gov.au

Council	v.au	ov.au
Great Lakes Council	council@greatlakes.nsw.gov.au	http://www.greatlakes.nsw.gov.au
Griffith City Council	admin@griffith.nsw.gov.au	http://www.griffith.nsw.gov.au
Gundagai Shire Council	mail@gundagai.nsw.gov.au	http://gundagai.local-e.nsw.gov.au/
Gunnedah Shire Council	council@infogunnedah.com.au	http://www.infogunnedah.com.au
Guyra Shire Council	council@guyra.nsw.gov.au	http://www.guyra.nsw.gov.au
Gwydir Shire Council	mail@gwydir.nsw.gov.au	http://www.gwydirshire.com/
Harden Shire Council	council@harden.nsw.gov.au	http://www.harden.nsw.gov.au
Port Macquarie–Hastings Council	council@pmhc.nsw.gov.au	http://www.pmhc.nsw.gov.au
Hawkesbury City Council	council@hawkesbury.nsw.gov.au	http://www.hawkesbury.nsw.gov.au
Hay Shire Council	mail@hay.nsw.gov.au	http://www.hay.nsw.gov.au
Holroyd City Council	hcc@holroyd.nsw.gov.au	http://www.holroyd.nsw.gov.au
The Council of the Shire of Hornsby	hsc@hornsby.nsw.gov.au	http://www.hornsby.nsw.gov.au
The Council of the Municipality of Hunters Hill	council@huntershill.nsw.gov.au	http://www.huntershill.nsw.gov.au
Hurstville City Council	hccmail@hurstville.nsw.gov.au	http://www.hurstville.nsw.gov.au
Inverell Shire Council	council@inverell.nsw.gov.au	www.inverell.nsw.gov.au
Jerilderie Shire Council	mail@jerilderie.nsw.gov.au	http://www.jerilderie.nsw.gov.au
Junee Shire Council	jsc@junee.nsw.gov.au	http://www.junee.nsw.gov.au
Kempsey Shire Council	ksc@kempsey.nsw.gov.au	http://www.kempsey.nsw.gov.au
The Council of the Municipality of Kiama	council@kiama.nsw.gov.au	http://www.kiama.nsw.gov.au
Kogarah City Council	mail@kogarah.nsw.gov.au	http://www.kogarah.nsw.gov.au
Ku-ring-gai Council	kmc@kmc.nsw.gov.au	http://www.kmc.nsw.gov.au
Kyogle Council	council@kyogle.nsw.gov.au	http://www.kyogle.nsw.gov.au

	u	
Lachlan Shire Council	council@lachlan.nsw.gov.au	http://www.lachlan.nsw.gov.au
Lake Macquarie City Council	council@lakemac.nsw.gov.au	http://www.lakemac.com.au
Lane Cove Municipal Council	lccouncil@lanecove.nsw.gov.au	http://www.lanecove.nsw.gov.au
Leeton Shire Council	council@leeton.nsw.gov.au	http://www.leeton.nsw.gov.au
Leichhardt Municipal Council	leichhardt@lmc.nsw.gov.au	http://www.leichhardt.nsw.gov.au
Lismore City Council	council@lismore.nsw.gov.au	http://www.lismore.nsw.gov.au
City of Lithgow Council	council@lithgow.nsw.gov.au	http://www.council.lithgow.com/
Liverpool City Council	lcc@liverpool.nsw.gov.au	http://www.liverpool.nsw.gov.au
Liverpool Plains Shire Council	lpssc@lpssc.nsw.gov.au	http://www.lpssc.nsw.gov.au/
Lockhart Shire Council	mail@lockhart.nsw.gov.au	http://www.lockhart.nsw.gov.au
Maitland City Council	mcc@maitland.nsw.gov.au	http://www.maitland.nsw.gov.au
Manly Council	records@manly.nsw.gov.au	http://www.manly.nsw.gov.au
Marrickville Council	council@marrickville.nsw.gov.au	http://www.marrickville.nsw.gov.au
Mid–Western Regional Council	council@midwestern.nsw.gov.au	http://www.midwestern.nsw.gov.au/
Moree Plains Shire Council	council@mpsc.nsw.gov.au	http://www.mpsc.nsw.gov.au
Mosman Municipal Council	council@mosman.nsw.gov.au	http://www.mosman.nsw.gov.au
Murray Shire Council	admin@murray.nsw.gov.au	http://www.murray.nsw.gov.au
Murrumbidgee Shire Council	mail@murrumbidgeeshire.com.au	http://www.murrumbidgee.local-e.nsw.gov.au
Muswellbrook Shire Council	council@muswellbrook.nsw.gov.au	http://www.muswellbrook.nsw.gov.au
Nambucca Shire Council	council@nambucca.nsw.gov.au	http://www.nambucca.nsw.gov.au
Narrabri Shire Council	council@narrabri.nsw.gov.au	http://www.narrabri.nsw.gov.au

	au	
Narrandera Shire Council	council@narrandera.nsw.gov.au	http://www.narrandera.nsw.gov.au
Narromine Shire Council	mail@narromine.nsw.gov.au	http://www.narromine.nsw.gov.au
Newcastle City Council	mail@ncc.nsw.gov.au	http://www.newcastle.nsw.gov.au
North Sydney Council	council@northsydney.nsw.gov.au	http://www.northsydney.nsw.gov.au
Oberon Council	council@oberon.nsw.gov.au	http://www.oberon.nsw.gov.au/
Orange City Council	council@orange.nsw.gov.au	http://www.orange.nsw.gov.au
Palerang Council	records@palerang.nsw.gov.au	http://www.palerang.nsw.gov.au
Parkes Shire Council	council@parkes.nsw.gov.au	http://www.parkes.nsw.gov.au
Parramatta City Council	council@parracity.nsw.gov.au	http://www.parracity.nsw.gov.au
Penrith City Council	pencit@penrithcity.nsw.gov.au	http://www.penrithcity.nsw.gov.au
Pittwater Council	pittwater_council@pittwater.nsw.gov.au	http://www.pittwater.nsw.gov.au
Port Stephens Council	council@portstephens.nsw.gov.au	http://www.portstephens.nsw.gov.au
Queanbeyan City Council	council@qcc.nsw.gov.au	http://www.qcc.nsw.gov.au
Randwick City Council	general.manager@randwick.nsw.gov.au	http://www.randwick.nsw.gov.au
Richmond Valley Council	council@richmondvalley.nsw.gov.au	http://www.richmondvalley.nsw.gov.au
Rockdale City Council	rcc@rockdale.nsw.gov.au	http://www.rockdale.nsw.gov.au/
Ryde City Council	cityofryde@ryde.nsw.gov.au	http://www.ryde.nsw.gov.au
Shellharbour City Council	records@shellharbour.nsw.gov.au	http://www.shellharbour.nsw.gov.au
Shoalhaven City Council	council@shoalhaven.nsw.gov.au	http://www.shoalhaven.nsw.gov.au

Singleton Council	ssc@singleton.nsw.gov.au	http://www.singleton.nsw.gov.au
Snowy River Shire Council	records@snowyriver.nsw.gov.au	http://www.snowyriver.nsw.gov.au
Strathfield Municipal Council	council@strathfield.nsw.gov.au	http://www.strathfield.nsw.gov.au
Sutherland Shire Council	ssc@ssc.nsw.gov.au	http://www.sutherland.nsw.gov.au
Council of the City of Sydney	council@cityofsydney.nsw.gov.au	http://www.cityofsydney.nsw.gov.au
Tamworth Regional Council	trc@tamworth.nsw.gov.au	http://www.tamworth.nsw.gov.au
Temora Shire Council	temshire@temora.nsw.gov.au	http://www.temora.nsw.gov.au
Tenterfield Shire Council	council@tenterfield.nsw.gov.au	http://www.tenterfield.nsw.gov.au
Tumbarumba Shire Council	mail@tumbashire.nsw.gov.au	http://www.tumbashire.nsw.gov.au
Tumut Shire Council	admin@tumut.nsw.gov.au	http://www.tumut.nsw.gov.au/
Tweed Shire Council	tsc@tweed.nsw.gov.au	http://www.tweed.nsw.gov.au
Upper Hunter Shire Council	council@upperhunter.nsw.gov.au	http://upperhunter.local-e.nsw.gov.au/
Upper Lachlan Shire Council	council@upperlachlan.nsw.gov.au	http://upperlachlan.local-e.nsw.gov.au/
Uralla Shire Council	council@uralla.nsw.gov.au	http://www.uralla.nsw.gov.au
Urana Shire Council	mail@urana.nsw.gov.au	http://www.urana.nsw.gov.au
Wagga Wagga City Council	Council@wagga.nsw.gov.au	http://www.wagga.nsw.gov.au
The Council of the Shire of Wakool	mail@wakool.nsw.gov.au	http://www.wakool.nsw.gov.au
Walcha Council	council@walcha.nsw.gov.au	http://www.walcha.nsw.gov.au/
Walgett Shire Council	admin@walgett.nsw.gov.au	http://www.walgett.nsw.gov.au
Warren Shire Council	Council@warren.nsw.gov.au	http://www.warren.nsw.gov.au
Warringah Council	council@warringah.nsw.gov.au	http://www.warringah.nsw.gov.au
Warrumbungle Shire	info@warrumbungle.nsw.gov.au	http://www.warrumbungle.nsw.gov.au

Council	ov.au	gov.au
Waverley Council	waver@waverley.nsw.gov.au	http://www.waverley.nsw.gov.au
Weddin Shire Council	mail@weddin.nsw.gov.au	http://weddin.local-e.nsw.gov.au
Wellington Council	mail@wellington.nsw.gov.au	http://www.wellington.nsw.gov.au
Wentworth Shire Council	council@wentworth.nsw.gov.au	http://www.wentworth.nsw.gov.au
Willoughby City Council	email@willoughby.nsw.gov.au	http://www.willoughby.nsw.gov.au
Wingecarribee Shire Council	wscmail@wsc.nsw.gov.au	http://www.wsc.nsw.gov.au/
Wollondilly Shire Council	council@wollondilly.nsw.gov.au	http://www.wollondilly.nsw.gov.au/
Wollongong City Council	council@wollongong.nsw.gov.au	http://www.wollongong.nsw.gov.au
Woollahra Municipal Council	records@woollahra.nsw.gov.au	http://www.woollahra.nsw.gov.au/
Wyong Shire Council	wsc@wyong.nsw.gov.au	http://www.wyong.nsw.gov.au
Yass Valley Council	council@yass.nsw.gov.au	http://www.yass.nsw.gov.au/
Young Shire Council	mail@young.nsw.gov.au	http://www.young.nsw.gov.au

Queensland State Government Organisations

Organisation	Email	Website
Agriculture, Fisheries and Forestry, Department of	callweb@daff.qld.gov.au	http://www.daff.qld.gov.au
Australian Red Cross – Queensland	qldredcross@redcross.org.au	http://www.redcross.org.au/contact-qld.aspx
Communities, Child Safety and Disability Services, Department	enquiries@communities.qld.gov.au	http://www.communities.qld.gov.au/gateway/
Community Safety – Emergency Management Queensland, Department of		http://www.emergency.qld.gov.au/emq/info/contact.asp
Community Safety, Department of		http://www.communitysafety.qld.gov.au

Education and Training, Department of	corporatecorrespondence@ deta.qld.gov.au	http://deta.qld.gov.au
Energex	custserve@ energex.com.au	http://www.energex.com.au
Energy and Water Supply, Department of	Contact_us@dews.qld.gov. au	http://www.dews.qld.gov.au
Environment and Heritage Protection, Department of	info@ehp.qld.gov.au	www.ehp.qld.gov.au
Ergon Energy	customerservice@ergon.co m.au	www.ergon.com.au/
Housing and Public Works, Department of	eedback@hpw.qld.gov.au	http://www.hpw.qld.gov.au
Justice and Attorney– General, Department of	mailbox@justice.qld.gov.a u	http://www.justice.qld.gov.au
Local Government Association of Queensland	ask@lgaq.asn.au	http://www.lgaq.asn.au
Local Government, Community Recovery and Resilience, Department of	info@dlg.qld.gov.au	http://www.dlg.qld.gov.au
Minister for Police, Corrective Services and Emergency Services	communitysafety@minister ial.qld.gov.au	http://www.qgd.qld.gov.au/pol–minister
National Parks, Recreation, Sport and Racing, Department of	info@nprsr.qld.gov.au	http://www.nprsr.qld.gov.au
Natural Resources and Mines, Department of	communications@nrw.qld. gov.au	http://www.dnrm.qld.gov.au
Powerlink Queensland	website.enquiries@powerli nk.com.au	http://www.powerlink.com.au
Premier	premiers.master@premiers. qld.gov.au	http://www.thepremier.qld.gov.au
Premier and Cabinet, Department of	premiers.master@premiers. qld.gov.au	http://www.premiers.qld.gov.au
Queensland Ambulance Service		https://ambulance.qld.gov.au
Queensland Fire and Rescue Service		https://www.fire.qld.gov.au
Queensland Health	info@health.qld.gov.au	http://www.health.qld.gov.au
Queensland Police	policelink@police.qld.gov. au	http://www.police.qld.gov.au

Queensland Reconstruction Authority	info@qldra.org.au	http://qldreconstruction.org.au
Queensland SES	SES.Support@dcs.qld.gov.au	http://www.emergency.qld.gov.au/ses/
Queensland Treasury and Trade	info@treasury.qld.gov.au	http://www.treasury.qld.gov.au
Royal Flying Doctor Service	enquiries@flyingdoctor.net	http://www.flyingdoctor.net
Royal Life Saving Society of Queensland	reception@rlssq.com.au	http://www.rlssq.com.au
RSPCA Queensland	admin@rspcaqld.org.au	http://www.rspcaqld.org.au
State Development, Infrastructure and Planning, Department of	info@dsdip.qld.gov.au	http://www.dsdip.qld.gov.au
Surf Life Saving Queensland	stomson@lifesaving.com.au	http://www.lifesaving.com.au
Transport and Main Roads, Department of	director-general@tmr.qld.gov.au	http://www.tmr.qld.gov.au
Volunteer Marine Rescue Association QLD	president@vmraq.org.au	http://marinerescueqld.org.au
Wireless Institute Civil Emergency Network (WICEN)	wicenqld@wia.org.au	http://vk4radio.info/indexwcn.html

Local Government

Aurukun Shire Council	council@aurukun.qld.gov.au	www.aurukun.qld.gov.au
Balonne Shire Council	council@balonne.qld.gov.au	www.balonne.qld.gov.au
Banana Shire Council	enquiries@banana.qld.gov.au	www.banana.qld.gov.au
Barcaldine Regional Council	admin_office@barcaldinerc.qld.gov.au	www.barcaldinerc.qld.gov.au
Barcoo Shire Council	shire@barcoo.qld.gov.au	www.barcoo.qld.gov.au
Blackall–Tambo Regional Council	admin@btrc.qld.gov.au	www.btrc.qld.gov.au
Boulia Shire Council	admin@boulia.qld.gov.au	www.boulia.qld.gov.au
Brisbane City Council	Brisbane City Council	www.brisbane.qld.gov.au
Bulloo Shire Council	Council@bulloo.qld.gov.au	www.bulloo.qld.gov.au

Bundaberg Regional Council	ceo@bundaberg.qld.gov.au	www.bundaberg.qld.gov.au
Burdekin Shire Council	burdekin@burdekin.qld.gov.au	www.burdekin.qld.gov.au
Burke Shire Council	Office@Burke.qld.gov.au	www.burkeshirecouncil.com
Cairns Regional Council	council@cairns.qld.gov.au	www.cairns.qld.gov.au
Carpentaria Shire Council	council@carpentaria.qld.gov.au	www.carpentaria.qld.gov.au
Cassowary Coast Regional Council	enquiries@cassowarycoast.qld.gov.au	www.cassowarycoast.qld.gov.au
Central Highlands Regional Council	enquiries@chrc.qld.gov.au	www.chrc.qld.gov.au
Charters Towers Regional Council	mail@charterstowers.qld.gov.au	www.charterstowers.qld.gov.au
Cherbourg Aboriginal Shire Council	ceo@cherbourg.qld.gov.au	www.cherbourg.qld.gov.au
Cloncurry Shire Council	council@cloncurry.qld.gov.au	www.cloncurry.qld.gov.au
Cook Shire Council	mail@cook.qld.gov.au	www.cook.qld.gov.au
Croydon Shire Council	admin@croydon.qld.gov.au	www.croydon.qld.gov.au
Diamantina Shire Council	admin@diamantina.qld.gov.au	www.diamantina.qld.gov.au
Doomadgee Aboriginal Shire Council	ceo@doomadgee.qld.gov.au	
Etheridge Shire Council	info@etheridge.qld.gov.au	www.etheridge.qld.gov.au
Flinders Shire Council	flinders@flinders.qld.gov.au	www.flinders.qld.gov.au
Fraser Coast Regional Council	enquiry@frasercoast.qld.gov.au	www.frasercoast.qld.gov.au
Gladstone Regional Council	info@gladstonerc.qld.gov.au	www.gladstonerc.qld.gov.au
Gold Coast City Council	gccemail@goldcoast.qld.gov.au	www.goldcoast.qld.gov.au
Goondiwindi Regional Council	mail@grc.qld.gov.au	www.goondiwindirc.qld.gov.au
Gympie Regional Council	council@gympie.qld.gov.au	www.gympie.qld.gov.au

Hinchinbrook Shire Council	ceo@hinchinbrook.qld.gov.au	www.hinchinbrook.qld.gov.au
Hope Vale Aboriginal Shire Council	hopevalecouncil@hopevale.qld.gov.au	www.hopevale.qld.gov.au
Ipswich City Council	council@ipswich.qld.gov.au	www.ipswich.qld.gov.au
Isaac Regional Council	records@isaac.qld.gov.au	www.isaac.qld.gov.au
Kowanyama Aboriginal Shire Council	admin@kowanyama.qld.gov.au	www.kowanyama.qld.gov.au
Lockhart River Aboriginal Shire Council	Reception@lockhart.qld.gov.au	www.lockhart.qld.gov.au
Lockyer Valley Regional Council	mailbox@lvrc.qld.gov.au	www.lockyervalley.qld.gov.au
Logan City Council	council@logan.qld.gov.au	www.logan.qld.gov.au
Longreach Regional Council	assist@longreach.qld.gov.au	www.longreach.qld.gov.au
Mackay Regional Council	council@mackay.qld.gov.au	www.mackay.qld.gov.au
Mapoon Aboriginal Shire Council	mapoon.admin@mapoon.qld.gov.au	www.mapoon.com
Maranoa Regional Council	council@maranoa.qld.gov.au	www.maranoa.qld.gov.au
McKinlay Shire Council	reception@mckinlay.qld.gov.au	www.mckinlay.qld.gov.au
Moreton Bay Regional Council	mbrc@moretonbay.qld.gov.au	www.moretonbay.qld.gov.au
Mornington Shire Council	mail@mornington.qld.gov.au	www.mornington.qld.gov.au
Mount Isa City Council	city@mountisa.qld.gov.au	www.mountisa.qld.gov.au
Murweh Shire Council	ceo@murweh.qld.gov.au	www.murweh.qld.gov.au
Napranum Aboriginal Shire Council	reception@napranum.qld.gov.au	www.napranum.qld.gov.au
North Burnett Regional Council	admin@northburnett.qld.gov.au	www.northburnett.qld.gov.au
Northern Peninsula Area Regional Council	info@nparc.qld.gov.au	www.nparc.qld.gov.au
Palm Island Aboriginal Shire Council	reception@palmcouncil.qld.gov.au	www.piac.com.au

Paroo Shire Council	council@paroo.qld.gov.au	www.paroo.qld.gov.au
Pormpuraaw Aboriginal Shire Council	ceo@pormpuraaw.qld.gov.au	www.pormpuraaw.qld.gov.au
Quilpie Shire Council	admin@quilpie.qld.gov.au	www.quilpie.qld.gov.au
Redland City Council	rcc@redland.qld.gov.au	http://www.redland.qld.gov.au
Richmond Shire Council	enquiries@richmond.qld.gov.au	www.richmond.qld.gov.au
Rockhampton Regional Council	enquiries@rrc.qld.gov.au	www.rockhamptonregion.qld.gov.au
Scenic Rim Regional Council	mail@scenicrim.qld.gov.au	www.scenicrim.qld.gov.au
Somerset Regional Council	mail@somerset.qld.gov.au	www.somerset.qld.gov.au
South Burnett Regional Council	info@southburnett.qld.gov.au	www.southburnett.qld.gov.au
Southern Downs Regional Council	mail@southerndowns.qld.gov.au	www.southerndowns.qld.gov.au
Sunshine Coast Regional Council	mail@sunshinecoast.qld.gov.au	www.sunshinecoast.qld.gov.au
Tablelands Regional Council	info@trc.qld.gov.au	www.trc.qld.gov.au
Toowoomba Regional Council	info@toowoombarc.qld.gov.au	www.toowoombarc.qld.gov.au
Torres Shire Council	admin@torres.qld.gov.au	www.torres.qld.gov.au
Torres Strait Island Regional Council	info@tsirc.qld.gov.au	www.tsirc.qld.gov.au
Townsville City Council	enquiries@townsville.qld.gov.au	www.townsville.qld.gov.au
Western Downs Regional Council	info@wdrc.qld.gov.au	www.wdrc.qld.gov.au
Whitsunday Regional Council	info@whitsundayrc.qld.gov.au	www.whitsundayrc.qld.gov.au
Winton Shire Council	info@winton.qld.gov.au	www.winton.qld.gov.au
Woorabinda Aboriginal Shire Council	ceo@woorabinda.qld.gov.au	www.woorabinda.qld.gov.au
Wujal Wujal Aboriginal Shire Council	chambers@wujalwujalcouncil.qld.gov.au	www.wujalwujalcouncil.qld.gov.au
Yarrabah Aboriginal Shire Council	secretary@yarrabah.qld.gov.au	www.yarrabah.qld.gov.au

State Disaster Management Group	SDCC@ds.qld.gov.au	
--	--------------------	--

Victoria State Government Organisations

Organisation	Email	Website
Ambulance Victoria	@ambulance.vic.gov.au	http://www.ambulance.vic.gov.au
Attorney-General's Department		www.parliament.vic.gov.au...
Building Commission		http://www.buildingcommission.com.au
Catchment Management Authorities		http://www.dse.vic.gov.au/land-management/catchments/catchment-management-authorities
Coroners Court of Victoria	mediaenquiries@coronerscourt.vic.gov.au	www.coronerscourt.vic.gov.au/
Country Fire Authority		http://www.cfa.vic.gov.au
Department of Education and Early Childhood Development	edline@edumail.vic.gov.au	http://www.education.vic.gov.au
Department of Environment and Primary Industries	paul.sellars@depi.vic.gov.au	http://www.depi.vic.gov.au
Department of Health	enquiries@health.vic.gov.au	www.health.vic.gov.au
Department of Human Services (Public Health)	callcentre@dhs.vic.gov.au	www.dhs.vic.gov.au
Department of Justice		www.justice.vic.gov.au
Department of Planning and Community Development		http://www.dpcd.vic.gov.au
Department of Premier and Cabinet	dp&c@dpc.vic.gov.au	www.dpc.vic.gov.au
Department of State Development, Business and Innovation		www.dsdbi.vic.gov.au
Department of Transport, Planning and Local Infrastructure		www.dtpli.vic.gov.au
Department of Treasury and Finance	information@dtf.vic.gov.au	www.dtf.vic.gov.au

Emergency Services Telecommunications Authority	corporate.affairs@esta.vic.gov.au	http://www.esta.vic.gov.au/#sthash.FnZZDmwX.dpuf
Energy Safe Victoria	info@esv.vic.gov.au	http://www.esv.vic.gov.au
Environmental Protection Authority	contact@epa.vic.gov.au	http://www.epa.vic.gov.au
Fire Services Commissioner	admin@firecommissioner.vic.gov.au	http://www.firecommissioner.vic.gov.au/#sthash.FnZZDmwX.dpuf
Foodbank Victoria	info@foodbankvictoria.org.au	www.foodbankvictoria.org.au
Life Saving Victoria	mail@lifesavingvictoria.com.au	http://www.lifesavingvictoria.com.au
Melbourne Water Corporation	peter.scott@melbournewater.com.au	http://www.melbournewater.com.au
Metropolitan Fire Brigade (Community resilience email)	commres@mfb.vic.gov.au	http://www.mfb.vic.gov.au
Minister for Bushfire Response		http://www.parliament.vic.gov.au/members/id/171
Minister for Police and Emergency Services		http://www.parliament.vic.gov.au/members/id/171
National Offshore Petroleum Safety and Environmental Management Authority	information@nopsema.gov.au	http://www.nopsema.gov.au
Office of the Emergency Services Commissioner	oesc@justice.vic.gov.au	http://www.oesc.vic.gov.au/#sthash.FnZZDmwX.dpuf
Parks Victoria	info@parks.vic.gov.au	http://parkweb.vic.gov.au
Port of Melbourne Corporation	information@portofmelbourne.com	http://www.portofmelbourne.com
Public Transport Victoria	DOI-ODCS-PA-Internet_Mail_Database-Public_Affairs@transport.vic.gov.au	http://www.transport.vic.gov.au
Rural Finance Corporation of Victoria	admin@ruralfinance.com.au	www.ruralfinance.com.au
Transport Safety Victoria	information@transportsafety.vic.gov.au	http://www.transportsafety.vic.gov.au
VicRoads		http://www.vicroads.vic.gov.au

Victoria Police	policemedia@police.vic.gov.au	http://www.police.vic.gov.au/
Victoria State Emergency Service	vices@ses.vic.gov.au	http://www.ses.vic.gov.au/
Victorian Council of Churches	vcc@vcc.org.au	http://www.vcc.org.au
Victorian Managed Insurance Authority	risk.info@vmia.vic.gov.au	http://www.vmia.vic.gov.au
Victorian Regional Channels Authority	admin@regionalchannels.vic.gov.au	http://www.regionalchannels.vic.gov.au
VicTrack Access	services@victrack.com.au	https://www.victrack.com.au
Wireless Institute Civil Emergency Network (WICEN)	secretary@vic.wicen.org.au	http://www.vic.wicen.org.au
WorkSafe Victoria (Victorian WorkCover Authority)	info@worksafe.vic.gov.au	http://www.worksafe.vic.gov.au

Local Government

Alpine Shire Council	info@alpineshire.vic.gov.au	www.alpineshire.vic.gov.au
Ararat Rural City Council	council@ararat.vic.gov.au	www.ararat.vic.gov.au
Ballarat City Council	ballcity@ballarat.vic.gov.au	www.ballarat.vic.gov.au
Banyule City Council	enquiries@banyule.vic.gov.au	www.banyule.vic.gov.au
Bass Coast Shire Council	basscoast@basscoast.vic.gov.au	www.basscoast.vic.gov.au
Baw Baw Shire Council	bawbaw@bawbawshire.vic.gov.au	www.bawbawshire.vic.gov.au
Bayside City Council	enquiries@bayside.vic.gov.au	www.bayside.vic.gov.au
Benalla Rural City Council	council@benalla.vic.gov.au	www.benalla.vic.gov.au
Boroondara City Council	boroondara@boroondara.vic.gov.au	www.boroondara.vic.gov.au
Brimbank City Council	info@brimbank.vic.gov.au	www.brimbank.vic.gov.au
Buloke Shire Council	buloke@buloke.vic.gov.au	www.buloke.vic.gov.au

Campaspe Shire Council	shire@campaspe.vic.gov.au	www.campaspe.vic.gov.au
Cardinia Shire Council	mail@cardinia.vic.gov.au	www.cardinia.vic.gov.au
Casey City Council	caseycc@casey.vic.gov.au	www.casey.vic.gov.au
Central Goldfields Shire Council	mail@cgoldshire.vic.gov.au	www.centralgoldfields.com.au
Colac Otway Shire Council	inq@colacotway.vic.gov.au	www.colacotway.vic.gov.au
Corangamite Shire Council	shire@corangamite.vic.gov.au	www.corangamite.vic.gov.au
Darebin City Council	mailbox@darebin.vic.gov.au	www.darebin.vic.gov.au
East Gippsland Shire Council	feedback@egipps.vic.gov.au	www.egipps.vic.gov.au
Frankston City Council	correspondence@frankston.vic.gov.au	www.frankston.vic.gov.au
Gannawarra Shire Council	council@gannawarra.vic.gov.au	www.gannawarra.vic.gov.au
Glen Eira City Council	mail@gleneira.vic.gov.au	www.gleneira.vic.gov.au
Glenelg Shire Council	enquiry@glenelg.vic.gov.au	www.glenelg.vic.gov.au
Golden Plains Shire Council	enquiries@gplains.vic.gov.au	www.goldenplains.vic.gov.au
Greater Bendigo City Council	info@bendigo.vic.gov.au	www.bendigo.vic.gov.au
Greater Dandenong City Council	council@cgd.vic.gov.au	www.greaterdandenong.com
Greater Geelong City Council	contactus@geelongcity.vic.gov.au	www.geelongaustralia.com.au
Greater Shepparton City Council	council@shepparton.vic.gov.au	www.shepparton.vic.gov.au, www.greatershepparton.com.au
Hepburn Shire Council	shire@hepburn.vic.gov.au	www.hepburn.vic.gov.au
Hindmarsh Shire Council	info@hindmarsh.vic.gov.au	www.hindmarsh.vic.gov.au
Hobsons Bay City Council	customerservice@hobsonsbay.vic.gov.au	www.hobsonsbay.vic.gov.au
Horsham Rural City Council	council@hrcc.vic.gov.au	www.hrcc.vic.gov.au

Hume City Council	email@hume.vic.gov.au	www.hume.vic.gov.au
Indigo Shire Council	indigoshire@indigoshire.vic.gov.au	www.indigoshire.vic.gov.au
Kingston City Council	info@kingston.vic.gov.au	www.kingston.vic.gov.au
Knox City Council	knoxcc@knox.vic.gov.au	www.knox.vic.gov.au
Latrobe City Council	latrobe@latrobe.vic.gov.au	www.latrobe.vic.gov.au
Loddon Shire Council	loddon@loddon.vic.gov.au	www.loddon.vic.gov.au
Macedon Ranges Shire Council	mrsc@mrsc.vic.gov.au	www.mrsc.vic.gov.au
Manningham City Council	manningham@manningham.vic.gov.au	www.manningham.vic.gov.au
Mansfield Shire Council	council@mansfield.vic.gov.au	www.mansfield.vic.gov.au
Maribyrnong City Council	email@maribyrnong.vic.gov.au	www.maribyrnong.vic.gov.au
Maroondah City Council	maroondah@maroondah.vic.gov.au	www.maroondah.vic.gov.au
Melbourne City Council	enquiries@melbourne.vic.gov.au	www.melbourne.vic.gov.au
Melton City Council	csu@melton.vic.gov.au	www.melton.vic.gov.au
Mildura Rural City Council	mrcc@mildura.vic.gov.au	www.mildura.vic.gov.au
Mitchell Shire Council	mitchell@mitchellshire.vic.gov.au	www.mitchellshire.vic.gov.au
Moira Shire Council	webmaster@moira.vic.gov.au	www.moira.vic.gov.au
Monash City Council	mail@monash.vic.gov.au	www.monash.vic.gov.au
Moonee Valley City Council	council@mvcc.vic.gov.au	www.mvcc.vic.gov.au
Moorabool Shire Council	info@moorabool.vic.gov.au	www.moorabool.vic.gov.au
Moreland City Council	info@moreland.vic.gov.au	www.moreland.vic.gov.au
Mornington Peninsula Shire Council	custserv@mornpen.vic.gov.au	www.mornpen.vic.gov.au
Mount Alexander Shire Council	info@mountalexander.vic.gov.au	www.mountalexander.vic.gov.au

Moyne Shire Council	moyne@moyne.vic.gov.au	www.moyne.vic.gov.au
Murrindindi Shire Council	msc@murrindindi.vic.gov.au	www.murrindindi.vic.gov.au
Nillumbik Shire Council	nillumbik@nillumbik.vic.gov.au	www.nillumbik.vic.gov.au
Northern Grampians Shire Council	ngshire@ngshire.vic.gov.au	www.ngshire.vic.gov.au
Port Phillip City Council	assist@portphillip.vic.gov.au	www.portphillip.vic.gov.au
Pyrenees Shire Council	pyrenees@pyrenees.vic.gov.au	www.pyrenees.vic.gov.au
Borough of Queenscliffe	info@queenscliffe.vic.gov.au	www.queenscliffe.vic.gov.au
South Gippsland Shire Council	council@southgippsland.vic.gov.au	www.southgippsland.vic.gov.au
Southern Grampians Shire Council	council@sthgrampians.vic.gov.au	www.sthgrampians.vic.gov.au
Stonnington City Council	council@stonnington.vic.gov.au	www.stonnington.vic.gov.au
Strathbogie Shire Council	info@strathbogie.vic.gov.au	www.strathbogie.vic.gov.au
Surf Coast Shire Council	info@surfcoast.vic.gov.au	www.surfcoast.vic.gov.au
Swan Hill Rural City Council	council@swanhill.vic.gov.au	www.swanhill.vic.gov.au
Towong Shire Council	info@towong.vic.gov.au	www.towong.vic.gov.au
Wangaratta Rural City Council	council@wangaratta.vic.gov.au	www.wangaratta.vic.gov.au
Warrnambool City Council	wbool_city@warrnambool.vic.gov.au	www.warrnambool.vic.gov.au
Wellington Shire Council	enquiries@wellington.vic.gov.au	www.wellington.vic.gov.au
West Wimmera Shire Council	council@westwimmera.vic.gov.au	www.westwimmera.vic.gov.au
Whitehorse City Council	customer.service@whitehorse.vic.gov.au	www.whitehorse.vic.gov.au
Whittlesea City Council	info@whittlesea.vic.gov.au	www.whittlesea.vic.gov.au

Wodonga City Council	info@wodonga.vic.gov.au	www.wodonga.vic.gov.au
Wyndham City Council	mail@wyndham.vic.gov.au	www.wyndham.vic.gov.au
Yarra City Council	info@yarracity.vic.gov.au	www.yarracity.vic.gov.au
Yarra Ranges Shire Council	mail@yarraranges.vic.gov.au	www.yarraranges.vic.gov.au
Yarriambiack Shire Council	info@yarriambiack.vic.gov.au	www.yarriambiack.vic.gov.au

South Australia Government Organisations

Organisation	Email	Website
Attorney-General's Department	agd@agd.sa.gov.au	http://www.agd.sa.gov.au
Department for Communities and Social Inclusion (DCSI)	DCSIenquiries@dcsi.sa.gov.au	http://www.dcsi.sa.gov.au
Department for Education and Child Development	DECSCustomers@sa.gov.au	http://www.decd.sa.gov.au
Department for Health and Ageing	dhce@health.sa.gov.au	http://www.sahealth.sa.gov.au
Department for Manufacturing, Innovation, Trade, Resources and Energy	dmitre@sa.gov.au	http://www.dmitre.sa.gov.au
Department of Environment, Water and Natural Resources		http://www.environment.sa.gov.au
Department of Planning, Transport and Infrastructure	DPTI.EnquiriesAdministrator@sa.gov.au	http://www.dpti.sa.gov.au
Department of Primary Industries and Regions		http://www.pir.sa.gov.au
Department of the Premier and Cabinet	dpcwebmaster@sa.gov.au	http://www.dpc.sa.gov.au
Department of Treasury and Finance	commservices@sa.gov.au	http://www.treasury.sa.gov.au
Environment Protection Authority	epainfo@epa.sa.gov.au	http://www.epa.sa.gov.au

Housing SA	DCSIhousing@dcsi.sa.gov.au	http://sa.gov.au/subject/Housing,+property+and+land/Customer+entry+points+and+contacts/Contacts/Housing+SA+contacts
Local Government Association of South Australia	lgasa@lga.sa.gov.au	www.lga.sa.gov.au/
Minister for Agriculture, Food and Fisheries and Regional Development	minister.gago@sa.gov.au	
Minister for Communities and Social Inclusion	DCSI.MinisterPiccolo@dcsi.sa.gov.au	
Minister for Emergency Services	minister.obrien@sa.gov.au	
Minister for Health and Ageing	Minister.Health@health.sa.gov.au	
Minister for Mineral Resources and Energy	minister.koutsantonis@sa.gov.au	
Minister for Police	minister.obrien@sa.gov.au	
Minister for State/Local Government Relations	minister.gago@sa.gov.au	
Minister for Sustainability, Environment and Conservation,	ministerhunter@sa.gov.au	
Minister for Transport	ministerfox@sa.gov.au	
Office of the Chief Information Officer (OCIO)	DTEI.CIOAdministrator@sa.gov.au	
Royal Adelaide Hospital		www.rah.sa.gov.au/
SA Health	dhce@health.sa.gov.au	http://www.sahealth.sa.gov.au
Safe Work SA	help@safework.sa.gov.au	http://www.safework.sa.gov.au
South Australia Ambulance Service	saenquiries@health.sa.gov.au	http://www.saambulance.com.au
South Australia Country Fire Service	cfshq@cfs.sa.gov.au	www.cfs.sa.gov.au/

South Australia Fire and Emergency Services Commission (SAFECOM)	SAFECOM.enquiries@safecom.sa.gov.au	http://www.safecom.sa.gov.au
South Australia Metropolitan Fire Service	enquiry@samfs.sa.gov.au	http://www.mfs.sa.gov.au
South Australia Police (SAPOL)	sapol.enquiries@police.sa.gov.au	http://www.police.sa.gov.au
South Australia State Emergency Service	shq@ses.sa.gov.au	http://www.ses.sa.gov.au
South Australia Water Corporation	customerservice@sawater.com.au	www.sawater.com.au
Wireless Institute Civil Emergency Network (WICEN)		http://www.sa.wicen.org.au

Local Government

Adelaide City Council	city@adelaidecitycouncil.com	www.adelaidecitycouncil.com
Adelaide Hills Council	mail@ahc.sa.gov.au	www.ahc.sa.gov.au
Alexandrina Council	alex@alexandrina.sa.gov.au	www.alexandrina.sa.gov.au
Anangu Pitjantjatjara Yankunytjatjara	gmapy@anangu.com.au	www.waru.org/ap/index.html
Barossa Council	barossa@barossa.sa.gov.au	www.barossa.sa.gov.au
District Council of Barunga West	barunga@barungawest.sa.gov.au	www.barungawest.sa.gov.au
Berri Barmera Council	records@berribarmera.sa.gov.au	www.berribarmera.sa.gov.au
City of Burnside	burnside@burnside.sa.gov.au	www.burnside.sa.gov.au
Campbelltown City Council	cityof@campbelltown.sa.gov.au	www.campbelltown.sa.gov.au
District Council of Ceduna	council@ceduna.sa.gov.au	www.ceduna.net
City of Charles Sturt	council@charlessturt.sa.gov.au	www.charlessturt.sa.gov.au
Clare and Gilbert Valleys Council	admin@cgvc.sa.gov.au	www.claregilbertvalleys.sa.gov.au
District Council of Cleve	council@cleve.sa.gov.au	www.cleve.sa.gov.au
District Council of Coober Pedy	dccp@cpccouncil.sa.gov.au	www.cooberpedy.sa.gov.au

Coorong District Council	council@coorong.sa.gov.au	www.coorong.sa.gov.au
District Council of Copper Coast	info@coppercoast.sa.gov.au	www.coppercoast.sa.gov.au
District Council of Elliston	dce@elliston.sa.gov.au	www.elliston.sa.gov.au
The Flinders Ranges Council	council@flindersrangelscouncil.sa.gov.au	www.flindersrangelscouncil.sa.gov.au
District Council of Franklin Harbour	council@franklinharbour.sa.gov.au	www.franklinharbour.sa.gov.au
Town of Gawler	council@gawler.sa.gov.au	www.gawler.sa.gov.au
Regional Council of Goyder	council@goyder.sa.gov.au	www.goyder.sa.gov.au
District Council of Grant	info@dcgrant.sa.gov.au	www.dcgrant.sa.gov.au
City of Holdfast Bay	mail@holdfast.sa.gov.au	www.holdfast.sa.gov.au
Kangaroo Island Council	kicouncil@kicouncil.sa.gov.au	www.kangarooisland.sa.gov.au
District Council of Karoonda East Murray	council@dckem.sa.gov.au	www.dckem.sa.gov.au
District Council of Kimba	council@kimba.sa.gov.au	www.kimba.sa.gov.au
Kingston District Council	info@kingstondc.sa.gov.au	www.kingstondc.sa.gov.au
Light Regional Council	light@light.sa.gov.au	www.light.sa.gov.au
District Council of Lower Eyre Peninsula	mail@dclep.sa.gov.au	www.lowereyrepeninsula.sa.gov.au
District Council of Loxton Waikerie	council@loxtonwaikerie.sa.gov.au	www.loxtonwaikerie.sa.gov.au
District Council of Mallala	info@mallala.sa.gov.au	www.mallala.sa.gov.au
City of Marion	council@marion.sa.gov.au	www.marion.sa.gov.au
Mid Murray Council	postbox@mid-murray.sa.gov.au	www.mid-murray.sa.gov.au
City of Mitcham	mitcham@mitchamcouncil.sa.gov.au	www.mitchamcouncil.sa.gov.au
District Council of Mount Barker	council@dcmtbarker.sa.gov.au	www.dcmtbarker.sa.gov.au
City of Mount Gambier	city@mountgambier.sa.gov.au	www.mountgambier.sa.gov.au
District Council of Mount Remarkable	postmaster@mtr.sa.gov.au	www.mtr.sa.gov.au

Rural City of Murray Bridge	j.daniels@rcmb.sa.gov.au	www.murraybridge.sa.gov.au
Naracoorte Lucindale Council	council@nlc.sa.gov.au	www.naracoortelucindale.sa.gov.au
Northern Areas Council	ceo@nacouncil.sa.gov.au	www.nacouncil.sa.gov.au
City of Norwood, Payneham & St Peters	townhall@npsp.sa.gov.au	www.npsp.sa.gov.au
City of Onkaparinga	mail@onkaparinga.sa.gov.au	www.onkaparingacity.com
District Council of Orroroo Carrieton	council@orraroo.sa.gov.au	www.orraroo.sa.gov.au
District Council of Peterborough	council@peterborough.sa.gov.au	www.peterborough.sa.gov.au
City of Playford	playford@playford.sa.gov.au	www.playford.sa.gov.au
City of Port Adelaide Enfield	custserv@portenf.sa.gov.au	www.portenf.sa.gov.au
Port Augusta City Council	admin@portaugusta.sa.gov.au	www.portaugusta.sa.gov.au
City of Port Lincoln	plcc@plcc.sa.gov.au	www.portlincoln.sa.gov.au
Port Pirie Regional Council	council@pirie.sa.gov.au	www.pirie.sa.gov.au
City of Prospect	admin@prospect.sa.gov.au	www.prospect.sa.gov.au
Renmark Paringa Council	council@renmarkparinga.sa.gov.au	www.renmarkparinga.sa.gov.au
District Council of Robe	council@robe.sa.gov.au	www.council.robe.sa.gov.au
Municipal Council of Roxby Downs	roxby@roxbycouncil.com.au	www.roxbydowns.com
City of Salisbury	city@salisbury.sa.gov.au	www.salisbury.sa.gov.au
Southern Mallee District Council	council@southernmallee.sa.gov.au	www.southernmallee.sa.gov.au
District Council of Streaky Bay	dcstreaky@streakybay.sa.gov.au	www.streakybay.sa.gov.au
Tatiara District Council	office@tatiara.sa.gov.au	www.tatiara.sa.gov.au
City of Tea Tree Gully	cttg@cttg.sa.gov.au	www.teatreegully.sa.gov.au
District Council of Tumby Bay	dctumby@tumbybay.sa.gov.au	www.tumbybay.sa.gov.au
City of Unley	pobox1@unley.sa.gov.au	www.unley.sa.gov.au

City of Victor Harbor	localgov@victor.sa.gov.au	www.victor.sa.gov.au
Wakefield Regional Council	admin@wakefieldrc.sa.gov.au	www.wakefieldrc.sa.gov.au
Corporation of the Town of Walkerville	walkervl@walkerville.sa.gov.au	www.walkerville.sa.gov.au
Wattle Range Council	council@wattlerange.sa.gov.au	www.wattlerange.sa.gov.au
City of West Torrens	csu@wtcc.sa.gov.au	www.wtcc.sa.gov.au
Corporation of the City of Whyalla	council@whyalla.sa.gov.au	www.whyalla.sa.gov.au
Wudinna District Council	admin@wudinna.sa.gov.au	www.wudinna.sa.gov.au
District Council of Yankalilla	council@yankalilla.sa.gov.au	www.yankalilla.sa.gov.au
District Council of Yorke Peninsula	admin@yorke.sa.gov.au	www.yorke.sa.gov.au
State Emergency Management Planning Officer Disaster Management Services	stevenson.robert@ses.sa.gov.au	

Australian Capital Territory

Organisation	Email	Website
No local Government		

Western Australia Government Organisations

Organisation	Email	Website
Brookfield Rail	corporate.relations@brookfieldrail.com	http://www.brookfieldrail.com
Department Agriculture	enquiries@agric.wa.gov.au	http://www.agric.wa.gov.au
Department for Child Protection and Family Support		http://www.dcp.wa.gov.au
Department for Environment Regulation	info@der.wa.gov.au	http://www.der.wa.gov.au
Department for Planning	corporate@planning.wa.gov.au	http://www.planning.wa.gov.au

Department of Environment and Conservation	info@dec.wa.gov.au	http://www.dec.wa.gov.au
Department of Fire and Emergency Services,	media@dfes.wa.gov.au	http://www.dfes.wa.gov.au
Department of Health		http://www.health.wa.gov.au
Department of Local Government and Communities	info@dlgc.wa.gov.au	http://www.dlgc.wa.gov.au
Department of Mineral and Petroleum Resources	webmaster@dmp.wa.gov.au	http://www.dmp.wa.gov.au
Department of the Attorney General		http://www.dotag.wa.gov.au
Department of the Premier and Cabinet	admin@dpc.wa.gov.au	http://www.dpc.wa.gov.au
Department of Transport		http://www.transport.wa.gov.au
Department of Treasury	info@treasury.wa.gov.au	http://www.treasury.wa.gov.au
Department of Water	Atrium.Reception@water.wa.gov.au	http://water.wa.gov.au
Environmental Protection Authority	info@epa.wa.gov.au	http://www.epa.wa.gov.au
Forest Products Commission	info@fpc.wa.gov.au	www.fpc.wa.gov.au/
Minister for Emergency Services		http://www.premier.wa.gov.au/MINISTERS/Pages/Default.aspx
Minister for Police		http://www.premier.wa.gov.au/MINISTERS/Pages/Default.aspx
Office of State Security and Emergency Coordination (OSSEC)	ossec@dpc.wa.gov.au	http://www.ossec.dpc.wa.gov.au
Port Australia	info@portsaustralia.com.au	http://www.portsaustralia.com.au
State Emergency Management Committee (SEMC)	semc.secretariat@semc.wa.gov.au	http://www.semc.wa.gov.au

WA Police Service	police.media@police.wa.gov.au	http://www.police.wa.gov.au
Water Corporation	customer@watercorporation.com.au	http://www.watercorporation.com.au
Western Australian Local Government Association	info@walga.asn.au	www.walga.asn.au/

Local Government

Albany City	staff@albany.wa.gov.au	www.albany.wa.gov.au
Armadale City	info@armadale.wa.gov.au	www.armadale.wa.gov.au
Ashburton Shire	soa@ashburton.wa.gov.au	www.ashburton.wa.gov.au
Augusta–Margaret River Shire	amrsc@amrsc.wa.gov.au	www.amrsc.wa.gov.au
Bassendean Town	mail@bassendean.wa.gov.au	www.bassendean.wa.gov.au
Bayswater City	mail@bayswater.wa.gov.au	www.bayswater.wa.gov.au
Belmont City	belmont@belmont.wa.gov.au	www.belmont.wa.gov.au
Beverley Shire	admin@beverley.wa.gov.au	www.beverley.wa.gov.au
Boddington Shire	shire@boddington.wa.gov.au	www.boddington.wa.gov.au
Boyup Brook Shire	keith@boyupbrook.wa.gov.au	www.boyupbrook.wa.gov.au
Bridgetown–Greenbushes Shire	btnshire@bridgetown.wa.gov.au	www.bridgetown.wa.gov.au
Brookton Shire	mail@brookton.wa.gov.au	www.brookton.wa.gov.au
Broome Shire	shire@broome.wa.gov.au	www.broome.wa.gov.au
Broomehill–Tambellup Shire	mail@shirebt.wa.gov.au	www.shirebt.wa.gov.au
Bruce Rock Shire	admin@brucerock.wa.gov.au	www.brucerock.wa.gov.au
Bunbury City	records@bunbury.wa.gov.au	www.bunbury.wa.gov.au
Busselton City	city@busselton.wa.gov.au	www.busselton.wa.gov.au
Cambridge Town	mail@cambridge.wa.gov.au	www.cambridge.wa.gov.au
Canning City	customer@canning.wa.gov.au	www.canning.wa.gov.au
Capel Shire	Info@capel.wa.gov.au	www.capel.wa.gov.au
Carnamah Shire	shire@carnamah.wa.gov.au	www.carnamah.wa.gov.au
Carnarvon Shire	shire@carnarvon.wa.gov.au	www.carnarvon.wa.gov.au
Chapman Valley Shire	admin@chapmanvalley.wa.gov.au	www.chapmanvalley.wa.gov.au

Chittering Shire	chatter@chittering.wa.gov.au	www.chittering.wa.gov.au
Christmas Island Shire	shikin.mohdhasinudin@shire.gov.cx	www.christmas.shire.gov.cx
Claremont Town	toc@claremont.wa.gov.au	www.claremont.wa.gov.au
Cockburn City	customer@cockburn.wa.gov.au	www.cockburn.wa.gov.au
Cocos (Keeling) Islands Shire	info@cocos.wa.gov.au	www.shire.cc
Collie Shire	colshire@collie.wa.gov.au	www.collie.wa.gov.au
Coolgardie Shire	execsec@coolgardie.wa.gov.au	www.coolgardie.wa.gov.au
Coorow Shire	shire@coorow.wa.gov.au	www.coorow.wa.gov.au
Corrigin Shire	shire@corrigin.wa.gov.au	www.corrigin.wa.gov.au
Cottesloe Town	council@cottesloe.wa.gov.au	www.cottesloe.wa.gov.au
Cranbrook Shire	shire@cranbrook.wa.gov.au	www.cranbrook.wa.gov.au
Cuballing Shire	enquiries@cuballing.wa.gov.au	www.cuballing.wa.gov.au
Cue Shire	shire@cue.wa.gov.au	www.cue.wa.gov.au
Cunderdin Shire	admin@cunderdin.wa.gov.au	www.cunderdin.wa.gov.au
Dalwallinu Shire	shire@dalwallinu.wa.gov.au	www.dalwallinu.wa.gov.au
Dandaragan Shire	council@dandaragan.wa.gov.au	www.dandaragan.wa.gov.au
Dardanup Shire	records@dardanup.wa.gov.au	www.dardanup.wa.gov.au
Denmark Shire	enquiries@denmark.wa.gov.au	www.denmark.wa.gov.au
Derby–West Kimberley Shire	sdwk@sdwk.wa.gov.au	www.sdwk.wa.gov.au
Donnybrook–Balingup Shire	shire@donnybrook.wa.gov.au	www.donnybrook–balingup.wa.gov.au
Dowerin Shire	cso@dowerin.wa.gov.au	www.dowerin.wa.gov.au
Dumbleyung Shire	ceo@dumbleyung.wa.gov.au	www.dumbleyung.wa.gov.au
Dundas Shire	shire@dundas.wa.gov.au	www.dundas.wa.gov.au
East Fremantle Town	admin@eastfremantle.wa.gov.au	www.eastfremantle.wa.gov.au
East Pilbara Shire	ces@eastpilbara.wa.gov.au	www.eastpilbara.wa.gov.au
Esperance Shire	shire@esperance.wa.gov.au	www.esperance.wa.gov.au

Exmouth Shire	records@exmouth.wa.gov.au	www.exmouth.wa.gov.au
Fremantle City	info@fremantle.wa.gov.au	www.fremantle.wa.gov.au
Gingin Shire	mail@gingin.wa.gov.au	www.gingin.wa.gov.au
Gnowangerup Shire	gnpshire@gnowangerup.wa.gov.au	www.gnowangerup.wa.gov.au
Goomalling Shire	goshire@goomalling.wa.gov.au	www.goomalling.wa.gov.au
Gosnells City	council@gosnells.wa.gov.au	www.gosnells.wa.gov.au
Greater Geraldton City	council@cgg.wa.gov.au	www.cgg.wa.gov.au
Halls Creek Shire	hcshire@hcshire.wa.gov.au	www.hallscreek.wa.gov.au
Harvey Shire	shire@harvey.wa.gov.au	www.harvey.wa.gov.au
Irwin Shire	reception@irwin.wa.gov.au	www.irwin.wa.gov.au
Jerramungup Shire	council@jerramungup.wa.gov.au	www.jerramungup.wa.gov.au
Joondalup City	info@joondalup.wa.gov.au	www.joondalup.wa.gov.au
Kalamunda Shire	kala.shire@kalamunda.wa.gov.au	www.kalamunda.wa.gov.au
Kalgoorlie–Boulder City	mailbag@kalbould.wa.gov.au	www.kalbould.wa.gov.au
Katanning Shire	cso@katanning.wa.gov.au	www.katanning.wa.gov.au
Kellerberrin Shire	shire@kellerberrin.wa.gov.au	www.kellerberrin.wa.gov.au
Kent Shire	admin@kent.wa.gov.au	www.kent.wa.gov.au
Kojonup Shire	council@kojonup.wa.gov.au	www.kojonup.wa.gov.au
Kondinin Shire	enquiries@kondinin.wa.gov.au	www.kondinin.wa.gov.au
Koorda Shire	ceo@koorda.wa.gov.au	www.koorda.wa.gov.au
Kulin Shire	enquiries@kulin.wa.gov.au	www.kulin.wa.gov.au
Kwinana City	admin@kwinana.wa.gov.au	www.kwinana.wa.gov.au
Lake Grace Shire	shire@lakegrace.wa.gov.au	www.lakegrace.wa.gov.au
Laverton Shire	reception@laverton.wa.gov.au	www.laverton.wa.gov.au
Leonora Shire	admin@leonora.wa.gov.au	www.leonora.wa.gov.au
Mandurah City	council@mandurah.wa.gov.au	www.mandurah.wa.gov.au
Manjimup Shire	Info@manjimup.wa.gov.au	www.manjimup.wa.gov.au
Meekatharra Shire	ceo@meekashire.wa.gov.au	www.meekashire.wa.gov.au
Melville City	melinfo@melville.wa.gov.au	www.melvillecity.com.au
Menzies Shire	admin@menzies.wa.gov.au	www.menzies.wa.gov.au

Merredin Shire	admin@merredin.wa.gov.au	www.merredin.wa.gov.au
Mingenew Shire	ceo@mingenew.wa.gov.au	www.mingenew.wa.gov.au
Moora Shire	moorashire@wn.com.au	www.moora.wa.gov.au
Morawa Shire	admin@morawa.wa.gov.au	www.morawa.wa.gov.au
Mosman Park Town	admin@mosmanpark.wa.gov.au	www.mosmanpark.wa.gov.au
Mount Magnet Shire	shire@mtmagnet.wa.gov.au	www.mtmagnet.wa.gov.au
Mount Marshall Shire	admin@mtmarshall.wa.gov.au	www.mtmarshall.wa.gov.au
Mukinbudin Shire	admin@mukinbudin.wa.gov.au	www.mukinbudin.wa.gov.au
Mundaring Shire	shire@mundaring.wa.gov.au	www.mundaring.wa.gov.au
Murchison Shire	ceo@murchison.wa.gov.au	www.murchison.wa.gov.au
Murray Shire	mailbag@murray.wa.gov.au	www.murray.wa.gov.au
Nannup Shire	nannup@nannup.wa.gov.au	www.nannup.wa.gov.au
Narembeen Shire	admin@narembeen.wa.gov.au	www.narembeen.wa.gov.au
Narrogin Shire	enquiries@narroginshire.wa.gov.au	www.narroginshire.wa.gov.au
Narrogin Town	enquiries@narrogin.wa.gov.au	www.narrogin.wa.gov.au
Nedlands City	council@nedlands.wa.gov.au	www.nedlands.wa.gov.au
Ngaanyatjarraku Shire	mail@ngaanyatjarraku.wa.gov.au	www.ngaanyatjarraku.wa.gov.au
Northam Shire	records@northam.wa.gov.au	www.northam.wa.gov.au
Northampton Shire	ceo@northampton.wa.gov.au	www.northampton.wa.gov.au
Nungarin Shire	nungshir@wn.com.au	www.nungarin.com
Peppermint Grove Shire	admin@peppermintgrove.wa.gov.au	www.peppermintgrove.wa.gov.au
Perenjori Shire	admin@perenjori.wa.gov.au	www.perenjori.wa.gov.au
Perth City	info.city@cityofperth.wa.gov.au	www.perth.wa.gov.au
Pingelly Shire	admin@pingelly.wa.gov.au	www.pingelly.wa.gov.au
Plantagenet Shire	info@sop.wa.gov.au	www.plantagenet.wa.gov.au
Port Hedland Town	council@porthedland.wa.gov.au	www.porthedland.wa.gov.au
Quairading Shire	shire@quairading.wa.gov.au	www.quairading.wa.gov.au
Ravensthorpe Shire	shire@ravensthorpe.wa.gov.au	www.ravensthorpe.wa.gov.au

Rockingham City	council@rockingham.wa.gov.au	www.rockingham.wa.gov.au
Roebourne Shire	cor@roebourne.wa.gov.au	www.roebourne.wa.gov.au
Sandstone Shire	sandstoneshire@westnet.com.au	www.sandstone.wa.gov.au
Serpentine–Jarrahdale Shire	info@sjshire.wa.gov.au	www.sjshire.wa.gov.au
Shark Bay Shire	admin@sharkbay.wa.gov.au	www.sharkbay.wa.gov.au
South Perth City	enquiries@southperth.wa.gov.au	www.southperth.wa.gov.au
Stirling City	stirling@stirling.wa.gov.au	www.stirling.wa.gov.au
Subiaco City	city@subiaco.wa.gov.au	www.subiaco.wa.gov.au
Swan City	swan@swan.wa.gov.au	www.swan.wa.gov.au
Tammin Shire	shire@tammin.wa.gov.au	www.tammin.wa.gov.au
Three Springs Shire	admin@threesprings.wa.gov.au	www.threesprings.wa.gov.au
Toodyay Shire	records@toodyay.wa.gov.au	www.toodyay.wa.gov.au
Trayning Shire	admin@trayning.wa.gov.au	www.trayning.wa.gov.au
Upper Gascoyne Shire	admin@uppergascoyne.wa.gov.au	www.uppergascoyne.wa.gov.au
Victoria Park Town	admin@vicpark.wa.gov.au	www.victoriapark.wa.gov.au
Victoria Plains Shire	reception@victoriaplains.wa.gov.au	www.victoriaplains.wa.gov.au
Vincent City	mail@vincent.wa.gov.au	www.vincent.wa.gov.au
Wagin Shire	shire@wagin.wa.gov.au	www.wagin.wa.gov.au
Wandering Shire	reception@wandering.wa.gov.au	www.wandering.wa.gov.au
Wanneroo City	enquiries@wanneroo.wa.gov.au	www.wanneroo.wa.gov.au
Waroon Shire	warshire@waroon.wa.gov.au	www.waroon.wa.gov.au
West Arthur Shire	shire@westarthur.wa.gov.au	www.westarthur.wa.gov.au
Westonia Shire	shire@westonia.wa.gov.au	www.westonia.wa.gov.au
Wickepin Shire	admin@wickepin.wa.gov.au	www.wickepin.wa.gov.au
Williams Shire	shire@williams.wa.gov.au	www.williams.wa.gov.au
Wiluna Shire	reception@wiluna.wa.gov.au	www.wiluna.wa.gov.au

Wongan–Ballidu Shire	shire@wongan.wa.gov.au	www.wongan.wa.gov.au
Woodanilling Shire	shire@woodanilling.wa.gov.au	www.woodanilling.wa.gov.au
Wyalkatchem Shire	general@wyalkatchem.wa.gov.au	www.wyalkatchem.wa.gov.au
Wyndham–East Kimberley Shire	mail@swek.wa.gov.au	www.swek.wa.gov.au
Yalgoo Shire	pa@yalgoo.wa.gov.au	www.yalgoo.wa.gov.au
Yilgarn Shire	yilgarn@yilgarn.wa.gov.au	www.yilgarn.wa.gov.au
York Shire	records@york.wa.gov.au	www.york.wa.gov.au
Bunbury–Harvey Regional Council		www.bhrc.wa.gov.au
Eastern Metropolitan Regional Council	mail@emrc.org.au	www.emrc.org.au
Mid West Regional Council	ceo@mwrc.wa.gov.au	www.mwrc.wa.gov.au
Mindarie Regional Council	admin@mrc.wa.gov.au	www.mrc.wa.gov.au
Murchison Regional Vermin Council	ceo@mtmagnet.wa.gov.au	
Pilbara Regional Council	ea@prc.wa.gov.au	www.prc.wa.gov.au
Rivers Regional Council	admin@rrc.wa.gov.au	www.rrc.wa.gov.au
Southern Metropolitan Regional Council	smrc@smrc.com.au	www.smrc.com.au
Tamala Park Regional Council	mail@tamalapark.wa.gov.au	www.tamalapark.wa.gov.au
Western Metropolitan Regional Council	ceo@wmrc.wa.gov.au	www.wmrc.wa.gov.au
State Emergency Management Committee	semc.secretariat@semc.wa.gov.au	

Northern Territory Government Organisations

Organisation	Email	Website
Department of Business	territory.businesscentres@nt.gov.au	http://www.dob.nt.gov.au
Department of Construction & Infrastructure	Media.DOI@nt.gov.au	http://www.nt.gov.au/infrastructure

Department of Education and Children's Services	infocentre.det@nt.gov.au	www.education.nt.gov.au/
Department of Health		www.health.nt.gov.au/
Department of Housing	territoryhousing@nt.gov.au	http://www.housing.nt.gov.au
Department of Housing, Local Government and Regional Services	territoryhousing@nt.gov.au: localgovernment@nt.gov.au:	http://www.dhlgrs.nt.gov.au : http://www.drdia.nt.gov.au/regional_services
Department of Justice	dojwebmanager.doj@nt.gov.au	http://www.nt.gov.au/justice/
Department of Land Resource Management		http://www.lrm.nt.gov.au
Department of Lands and Planning	Communications.DLPE@nt.gov.au; Media.DLPE@nt.gov.au	http://www.dlp.nt.gov.au
Department of Lands, Planning and the Environment		http://www.dlpe.nt.gov.au
Department of Natural Resources, Environment, the Arts and Sport		www.nreta.nt.gov.au/
Department of Primary Industry and Fisheries (DPIF)	info.dpif@nt.gov.au	http://www.nt.gov.au/d/
Department of the Chief Minister	security.dcm@nt.gov.au	http://www.dcm.nt.gov.au
Department of Transport	Feedback.dlp@nt.gov.au	http://www.transport.nt.gov.au
Department of Treasury and Finance	NTTreasury.NTT@nt.gov.au	http://www.treasury.nt.gov.au
Employee Assistance Services Australia (EASA)	easadarwin@easa.org.au	www.easa.org.au/
Environment Protection Authority	ntepa@nt.gov.au	http://www.ntepa.nt.gov.au
Minister for Police, Fire and Emergency Services		http://www.nt.gov.au/ntg/chief_min.shtml
Multicultural Council Northern Territory	info@playfair.com.au	http://www.mcnt.org.au
Northern Territory Police, Fire and Emergency Services	pfes.media@pfes.nt.gov.au	www.pfes.nt.gov.au/

NT Fleet Service	fleetcustomerenquiries.ntg@nt.gov.au	http://www.dob.nt.gov.au/
NT WorkSafe	ntworksafe@nt.gov.au	www.worksafe.nt.gov.au
Office of Children and Families	online form with attachment	http://www.childrenandfamilies.nt.gov.au
Parks and Wildlife		www.parksandwildlife.nt.gov.au
Power and Water Corporation	customerservice@powerwater.com.au	www.powerwater.com.au/
Wireless Institute Civil Emergency Network (WICEN)		http://www.vkham.com/~vk8da/html/11-wicen.html

Local Government

Alice Springs Town Council	astc@astc.nt.gov.au	www.alicesprings.nt.gov.au
Barkly Shire Council	reception@barkly.nt.gov.au	www.barkly.nt.gov.au
Belyuen Community Government Council	info@belyuen.nt.gov.au	www.belyuen.nt.gov.au
Central Desert Shire Council	info@centraldesert.nt.gov.au	www.centraldesert.nt.gov.au
City of Palmerston	palmerston@palmerston.nt.gov.au	www.palmerston.nt.gov.au
Coomalie Community Government Council	reception@coomalie.nt.gov.au	www.coomalie.nt.gov.au
City of Darwin	darwin@darwin.nt.gov.au	www.darwin.nt.gov.au
East Arnhem Shire Council	info@eastarnhem.nt.gov.au	www.eastarnhem.nt.gov.au
Katherine Town Council	records@ktc.nt.gov.au	www.ktc.nt.gov.au
Litchfield Council	council@lsc.nt.gov.au	www.litchfield.nt.gov.au
MacDonnell Shire Council	info@macdonnell.nt.gov.au	www.macdonnell.nt.gov.au
Roper Gulf Shire Council	info@ropergulf.nt.gov.au	www.ropergulf.nt.gov.au
Tiwi Islands Shire Council	contactus@tiwiislands.nt.gov.au	www.tiwiislands.nt.gov.au

Victoria Daly Shire Council	VicDaly.Admin@vicdaly.nt.gov.au	www.victoriadaly.nt.gov.au
Wagait Shire Council	council@wagait.nt.gov.au	www.wagait.nt.gov.au
West Arnhem Shire Council	info@westarnhem.nt.gov.au	www.westarnhem.nt.gov.au

Tasmania Government Organisations

Organisation	Email	Website
Ambulance Tasmania Service	ots.communications@dhhs.tas.gov.au	www.dhhs.tas.gov.au/ambulance
Association of Independent schools	admin@independentschools.tas.edu.au	http://www.independentschools.tas.edu.au
Aurora energy		www.auroraenergy.com.au
Department of Economic Development, Tourism and the Arts	info@development.tas.gov.au	http://www.development.tas.gov.au
Department of Education	ServiceCentre@education.tas.gov.au	http://www.education.tas.gov.au
Department of Health and Human Services:		http://www.dhhs.tas.gov.au
Department of Infrastructure, Energy and Resources	dier@dier.tas.gov.au	http://www.dier.tas.gov.au
Department of Justice	records@justice.tas.gov.au	http://www.justice.tas.gov.au
Department of Police and Emergency Management		http://www.dpem.tas.gov.au
Department of Premier and Cabinet		http://www.dpac.tas.gov.au
Department of Primary Industries, Parks, Water and Environment	Information@dpipwe.tas.gov.au	http://www.dpipwe.tas.gov.au/
Department of Treasury and Finance	secretary@treasury.tas.gov.au	http://www.treasury.tas.gov.au
Forestry Tasmania	forestry.tasmania@forestrytas.com.au	http://www.forestrytas.com.au
Hobart City Mission	info@hobartcitymission.org.au	http://hobartcitymission.org.au

Hydro–Tasmania	contactus@hydro.com.au	http://www.hydro.com.au
Local government Association of Tasmania	admin@lgat.tas.gov.au	www.lgat.tas.gov.au
Maritime and Safety Tasmania (MAST)	admin@mast.tas.gov.au	www.mast.tas.gov.au
Medicare locals	info@tasmedicarelocal.com.au	http://www.tasmedicarelocal.com.au
Migrant Resource Centre	reception@mrchobart.org.au	www.mrchobart.org.au
Minister for Police and Emergency Management		http://www.parliament.tas.gov.au/HA/Cabinet.htm
Parks and Wildlife		http://www.parks.tas.gov.au
Premier	lara.giddings@dpac.tas.gov.au	http://www.premier.tas.gov.au/
TasGas Networks		www.tasgas.com.au
Tasmania Fire Service	fire@fire.tas.gov.au	https://www.fire.tas.gov.au
Tasmania Police	tasmania.police@police.tas.gov.au	www.police.tas.gov.au
Tasmania Ports corporation	secretary@tasports.com.au	www.tasports.com.au
Tasmania State Emergency Service	ses@ses.tas.gov.au	www.ses.tas.gov.au
Tasmanian Council of Churches	geraldine@churcheswa.com.au	www.churcheswa.com.au/
Tourism Tasmania	reception@tourism.tas.gov.au	www.tourismtasmania.com.au
Transend	reception@transend.com.au	www.transend.com.au
Volunteering Tasmania	admin@volunteeringtas.org.au	www.volunteeringtas.org.au
Wireless Institute Civil Emergency Network (WICEN)		http://tas.wicen.org.au

Local Government

Break O’Day Council	admin@bodc.tas.gov.au	www.bodc.tas.gov.au
Brighton Council	admin@brighton.tas.gov.au	www.brighton.tas.gov.au
Burnie City Council	burnie@burnie.net	www.burnie.net

Central Coast Council	admin@centralcoast.tas.gov.au	www.centralcoast.tas.gov.au
Central Highlands Council	leyles@centralhighlands.tas.gov.au	www.centralhighlands.tas.gov.au
Circular Head Council	council@circularhead.tas.gov.au	www.circularhead.tas.gov.au
Clarence City Council	clarence@ccc.tas.gov.au	www.ccc.tas.gov.au
Derwent Valley Council	dvcouncil@dvc.tas.gov.au	www.derwentvalley.tas.gov.au
Devonport City Council	council@devonport.tas.gov.au	www.devonport.tas.gov.au
Dorset Council	dorset@dorset.tas.gov.au	www.dorset.tas.gov.au
Flinders Council	office@flinders.tas.gov.au	www.flinders.tas.gov.au
George Town Council	council@georgetown.tas.gov.au	www.georgetown.tas.gov.au
Glamorgan Spring Bay Council	admin@freycinet.tas.gov.au	www.gsbc.tas.gov.au
Glenorchy City Council	gccmail@gcc.tas.gov.au	www.gcc.tas.gov.au
Hobart City Council	hcc@hobartcity.com.au	www.hobartcity.com.au
Huon Valley Council	hvc@huonvalley.tas.gov.au	www.huonvalley.tas.gov.au
Kentish Council	council@kentish.tas.gov.au	www.kentish.tas.gov.au
Kingborough Council	kc@kingborough.tas.gov.au	www.kingborough.tas.gov.au
King Island Council	kicouncil@kingisland.tas.gov.au	www.kingisland.tas.gov.au
Latrobe Council	council@latrobe.tas.gov.au	www.latrobe.tas.gov.au
Launceston City Council	council@launceston.tas.gov.au	www.launceston.tas.gov.au
Meander Valley Council	mail@mvc.tas.gov.au	www.meander.tas.gov.au
Northern Midlands Council	council@northmidlands.tas.gov.au	www.northernmidlands.tas.gov.au
Sorell Council	sorell.council@sorell.tas.gov.au	www.sorell.tas.gov.au
Southern Midlands Council	mail@southernmidlands.tas.gov.au	www.southernmidlands.tas.gov.au
Tasman Council	tasman@tasman.tas.gov.au	www.tasman.tas.gov.au

Waratah–Wynyard Council	council@warwyn.tas.gov.au	www.warwyn.tas.gov.au
West Coast Council	wcc@westcoast.tas.gov.au	www.westcoast.tas.gov.au
West Tamar Council	wtc@wtc.tas.gov.au	www.wtc.tas.gov.au
Office of Security and Emergency Management	SEM@dpac.tas.gov.au	

Federal Government Organisations

Organisation	Email	Website
Eraring Energy	Eraringinfo@eraring-energy.com.au	http://www.eraring-energy.com.au
ERM Power	sme@ermpower.com.au.	http://www.ermpower.com.au
Green Rock Energy Limited	info@greenrock.com.au	http://www.greenrock.com.au
Horizon Power	enquiries@horizonpower-reply.com.au	http://www.horizonpower.com.au
Integral Energy (Origin energy is parent company)		http://www.integral.com.au
Lumo Energy (Infratil Ltd. Is parent company)	admin@infratil.com	http://www.infratil.com
Macquarie Generation	info@macgen.com.au	http://www.macgen.com.au
Pacific Hydro	http://pacifichydro.com	http://pacifichydro.com
Power and Water Corporation	customerservice@powerwater.com.au	http://www.powerwater.com.au
Raya Group	info@panaxgeothermal.com	http://www.panaxgeothermal.com.au
Red Energy	enquiries@redenergy.com.au	http://www.redenergy.com.au
Roaring 40s (no website)		
Snowy Hydro Limited	enquiry@snowyhydro.com.au	http://www.snowyhydro.com.au
Spark Infrastructure	webqueries@computershare.com.au	http://sparkinfrastructure.com
Stanwell Corporation	company.secretary@stanwell.com.	http://www.stanwell.com
Synergy	info@synergy.net.au	http://www.synergy.net.au

Verve Energy	nquiries@verveenergy.com.au	http://www.verveenergy.com.au
Western Power	enquiry@westernpower.com.au	http://www.westernpower.com.au

Water Companies		
ACTEW Corporation Limited	talktous@actew.com.au	http://www.actew.com.au
Riverina Water County Council	admin@rwcc.com.au	http://www.rwcc.com.au
SA Water	customerservice@sawater.com.au	http://www.sawater.com.au
Sydney Water	name@sydneywater.com.au	ww.sydneywater.com.au

Fixed Line phone operators		
Telstra Corporation Limited	companysecretary@team.telstra.com	http://www.telstra.com.au
TPG Telecom Limited	info@tpg.com	http://www.tpg.com.au
AAPT		https://aapt.com.au
SingTel Optus Pty Limited		https://www.optus.com.au
iPrimus	community@iprimus.com.au	http://www.iprimus.com.au
Vodafone Australia		http://www.vodafone.com.au
Business Continuity Institute Australia	bci@thebci.org	http://thebci.org

Australian Mining Companies		
Organisation	Email	Website
First Quantum Minerals	info@fqml.com	http://www.first-quantum.com
Focus Minerals Ltd	info@focusminerals.com.au	www.focusminerals.com.au
Fortescue Metals Group	fmgf@fmgf.com.au	www.fmgf.com.au
GHD		http://www.ghd.com
Gindalbie Metals Limited	gbg@gindalbie.com.au	http://www.gindalbie.com.au/
Glencore Xstrata	info@glencorexstrata.com	http://www.glencorexstrata.com
Gold Fields		www.goldfields.com.au

Golden West Resources Limited	admin@goldenwestresources.com	http://www.goldenwestresources.com/
GVK		http://www.gvk.com
Hancock Prospecting	mail@hancockprospecting.com.au	www.hancockprospecting.com.au
Heathgate Resources	publicrelation@heathgate.com.au	http://www.heathgate.com.au
Integra Mining Limited		www.integramining.com.au
International Coal		http://www.intercoal.com.au
La Mancha Resources	info@lamancha.ca	http://www.lamancha.ca/en/our-assets/australia
LD Operations (LDO)	oakes@ldo.com.au	http://www.ldo.com.au
Leighton Holdings	leighton@leighton.com.au	http://www.leighton.com.au/our-business/projects/challenger-gold-mine
Merlin Diamonds Limited	info@merlindiamonds.com.au	http://www.merlindiamonds.com.au
Metals X Ltd	reception@metalsx.com.au	http://metalsx.com.au
Minara Resources	info@minara.com.au	http://www.minara.com.au
Minerals and Metals Group		www.mmg.com
Mount Gibson Iron	admin@mtgibsoniron.com.au	http://www.mtgibsoniron.com.au
Navigator Resources Limited	navigator@navigatorresources.com.au	www.navigatorresources.com.au
New Hope Coal	community@newhopegroup.com.au	http://www.newhopegroup.com.au
New Hope Group	community@newhopegroup.com.au	http://www.newhopegroup.com.au
Newcrest Mining Limited	corporateaffairs@newcrest.com.au	www.newcrest.com.au
Newmont		http://www.newmont.com
Norseman Gold Plc		www.norsemangoldplc.com
Northern Star Resources	info@nsrltd.com	http://www.nsrltd.com
Norton Gold Fields Limited	info@nortongoldfields.com.au	www.nortongoldfields.com.au

OZ Minerals	info@ozminerals.com	http://www.ozminerals.com
OZMinerals	info@ozminerals.com	www.ozminerals.com
Padbury Mining Limited	info@padburymining.com.au	http://www.padburymining.com.au/
Ramellus Resources	info@ramellusresources.com.au	www.ramellusresources.com.au
Rio Tinto	CommunicationsExternalRelationsWA@riotinto.com	http://www.riotinto.com.au
Roy Hill	info@royhill.com.au	http://www.royhill.com.au
Saracen Mineral Holdings	CDOadmin@saracen.com.au	http://www.saracen.com.au
Silver Lake Resources		www.silverlakeresources.com.au
Sinosteel Midwest Corporation	info@smcl.com.au	http://www.smcl.com.au/
St Barbara Limited	melbourne@stbarbara.com.au	www.stbarbara.com.au
Straits Resources Limited	info@straits.com.au	http://www.straits.com.au
Tanami Gold NL	tanamigold@tanami.com.au	www.tanami.com.au
The Geraldton Iron Ore Alliance		http://www.gioa.com.au
Top Iron Proprietary Limited	info@topiron.com.au	http://www.topiron.com.au
Troy Resources NL		www.troyres.com.au
Uranium one		http://www.uranium1.com
XSTRATA	info@xstratacoal.com	www.xstratacoal.com
Yancoal		http://www.yancoal.com.au
Yilgarn Iron Producers Association – (Iron)	david.utting@yipa.com.au	http://www.yipa.com.au

Appendix B: Recruitment advertisement

Do you have a role in emergency management in Australia? We are looking for people who have a role in disaster management, crisis management or business continuity in Australia. The primary survey will target six key areas of emergency managers that include, general employment baseline data, emergency management employment baseline data, level of education, experience and knowledge, emergency management, and demographics.

This study will be conducted online by the University of New South Wales, for further information please contact _____, or _____

The practitioner study should take around 30min.

Practitioner survey: <http://www.surveys.unsw.edu.au/survey/157269/3ac5/>

The study closing date is the October 31st 2013.

Appendix C: Ethics approval email

Ethics 2024 31/07/13 11:48 AM

Ethics 2024

Friday, 3 May 2013 11:11

Dear Professor Field The following application has been recommended for approval by the Panel

Application File No. **2024** Title: Emergency Management: A Critical analysis of Emergency Managers across Australia – Investigating obstacles, competence, and opportunities Chief Investigator:

ou will receive another email confirming the Deputy Vice Chancellor's approval, when it arrives. You may only recruit participants for your study after receiving that approval.

Please quote your file number in any future correspondence.

Regards Linda

Personal Assistant to Head of School



https://mail.unsw.edu.au/owa/?ae=Item&a=Open&t=IPM.Note&id=R...9nDPd2%2bJx%2bAAApu14%2fAAAJ&pspid=_1375230491445_271525166 Page 1 of 1

Appendix D: Letter Of Introduction (LOI)

Dear XXXX

RE: Possible assistance in undertaking a research survey on roles, values and challenges of emergency management activities

My name is _____ and I am Co-Director of the Natural Hazards Research Lab at the University of New South Wales.

One of my Ph.D. students – _____ is undertaking a research thesis for his Ph.D. examining the current status of Emergency Managers across Australia, particularly in order to establish a baseline of information for further studies. Specifically, practitioners and their supervisors within Emergency Management, Disaster Management, Crisis Management, Business Continuity or similar areas.

We are interested in your emergency manager participating in this study. It would be appreciated if you could share this information with those whom fit the criteria within your organisation including the various committees and subcommittees with emergency management responsibilities. Should you have any questions about the project, please do not hesitate to contact _____ or Myself.

This would be voluntary and no identities would be revealed in the study or any work arising. The aims of the study are to explore their knowledge, experience, competence and professional training. As a new research field, this study will allow for the generation of data using quantitative and qualitative methodologies.

The anticipated outputs will include a report submitted to the University of New South Wales as part of a PhD Thesis and submission to a peer reviewed journal. We expect the outcomes of the work could include a better understanding of the qualifications, experience and self-assessed competence of current emergency managers across Australia.

In order for us to comply with our University Human Ethics research code, we cannot approach emergency managers directly. As such, I am writing to seek your permission by return of email to approach your emergency managers directly to participate.

If you consent, we will contact your emergency managers and organize to provide a copy of the *Participant Information Statement*, *Participant Consent Form* and electronic link to the survey – “Emergency Management across Australia” online questionnaire.

Should you have any further questions about the project, please do not hesitate to contact _____ or Myself.

In advance, many thanks and warm wishes

Appendix E: Participant Information Statement (PIS)

UNSW



Approval No.: 2024

THE UNIVERSITY OF NEW SOUTH WALES
PARTICIPANT INFORMATION STATEMENT
Emergency Managers across Australia

Participant Selection and Purpose of Study

This project entails a survey and an interview concerning the qualifications, background, experience, and self-assessed competence of emergency managers across Australia. You have been invited to participate, having been identified as an emergency manager.

Description of Study and Risks

Your responses to the survey and interview will be used to understand the general employment baseline data, emergency management employment baseline data, level of education, level of experience in emergency management, level of knowledge in emergency management, and demographics features of emergency managers and in comparison with corresponding community-wide features derived from the Australian Bureau of Statistics and other sources. The findings are aimed at informing the education and development of emergency managers in the future. The findings will also be used to identify specific areas of concerns among emergency managers.

Your responses should help the community of emergency managers. However, we cannot and do not guarantee, or promise that you will receive any benefits from this study. There are no foreseeable risks associated with participating in this study. Your participation is entirely voluntary and unpaid and you are free to withdraw at any time.

Confidentiality and Disclosure of Information

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or except as required by law. If you give us your permission by signing this document, we plan to incorporate the findings in an PhD. thesis that will be available to the participants on request. In the thesis or any subsequent publication, information will be provided in such a way that you cannot be identified.

Your consent

Your decision whether or not to participate will not prejudice your future relations with The University of New South Wales. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without prejudice.

Inquiries

If you have any questions or concerns following your participation, (m)
or Associate Professor
will be happy to address them.

Complaints may be directed to the Ethics Secretariat, The University of New South Wales, SYDNEY 2052 AUSTRALIA: (phone 9385 4234, fax 9385 6648, email ethics.sec@unsw.edu.au).

Please keep this information sheet and one copy of the Participant Consent Form. The investigator will keep the other signed copy. Both copies should be signed by you and the investigator.

Appendix F: Participant Consent Form (PCF)

Approval No (2024)

PARTICIPANT CONSENT FORM

The Contemporary Emergency Manager: An Argument for a Unique Dedicated Position

Examining the demographics, qualifications, training, education, experience, knowledge, competence and confidence of Australian emergency management practitioners

You are making a decision whether or not to participate. Your signature indicates that, having read the information provided on the participant information sheet, you have decided to participate.

.....
Signature of Research Participant

.....
Signature of Parent or Guardian (when relevant)

.....
(Please PRINT name)

.....
(Please PRINT name)

.....
Date

.....
Signature(s) of Investigator(s)

.....
Please PRINT Name

REVOCATION OF CONSENT

The Contemporary Emergency Manager: An Argument for a Unique Dedicated Position

I hereby **WITHDRAW** my consent to participate in the research proposal described above and direct that any data collected from me be destroyed.

I understand that such withdrawal **WILL NOT** jeopardise any treatment or my relationship with The University of New South Wales, *(other participating organisation[s] or other professional[s])*.

.....
Signature

.....
Date

.....
Please PRINT Name

The section for Revocation of Consent should be forwarded to _____, The University of New South Wales, Faculty of Science, School of Biological, Earth & Environmental Sciences, Mathews Building, Level 14, Kensington Campus, NSW 2052

Appendix G: Practitioner's Questionnaire Survey Instrument

This study aims to gather information about emergency managers across Australia. The research intends to establish a baseline of information that may allow for further studies and provide recommendations to be made about the industry.

You have been invited to participate in this study as you currently have emergency management responsibilities within your current role. Please pass this study on to anyone that fulfils an emergency management role within your area, i.e., alternate, substitute, etc.

IMPORTANT: Please note that some questions are similar in nature and caution should be taken when reading. This questionnaire should take about 30 minutes to complete.

Employment capacity of practitioners

1. Is your role as an emergency management performed in addition to your main role?

☐ Yes ☐ No

2. What percentage of your working week is dedicated to emergency management?

☐ Less than 5% ☐ 16 – 25% ☐ 75 – 100%
☐ 6 – 10% ☐ 26 – 50%
☐ 11 – 15% ☐ 51 – 75%

3. How many hours per week do you work in emergency management?

☐ Fewer than 10 hours ☐ 31 – 40 hours
☐ 11 – 20 hours ☐ Greater than 38 hours
☐ 21 – 30 hours

4. How long have you held your primary position?

☐ Fewer than 6 months ☐ 5 to 10 years
☐ 6 to 12 months ☐ 10 to 15 years
☐ 1 to 3 years ☐ 15+ years (please specify):
☐ 3 to 5 years

5. How many hours per week do you work in your main role?

☐ Fewer than 10 hours ☐ 31 – 40 hours
☐ 11 – 20 hours ☐ Greater than 38 hours
☐ 21 – 30 hours

Context and Background

6. Please select your gender

☐ Male ☐ Female

7. Please select your age group from the list below

- | | | |
|---|---|------------------------------------|
| <input type="checkbox"/> Under 18 years | <input type="checkbox"/> 35 to 44 years | <input type="checkbox"/> 65+ years |
| <input type="checkbox"/> 18 to 24 years | <input type="checkbox"/> 45 to 54 years | |
| <input type="checkbox"/> 25 to 34 years | <input type="checkbox"/> 55 to 64 years | |

8. Please specify your ethnic or cultural background:

- | | | |
|-------------------------------------|--|--|
| <input type="checkbox"/> Aboriginal | <input type="checkbox"/> Black | <input type="checkbox"/> European |
| <input type="checkbox"/> Asian | <input type="checkbox"/> Caucasian/White | <input type="checkbox"/> Other (please specify): |

9. Religion

- | | | |
|-----------------------------------|---------------------------------------|--|
| <input type="checkbox"/> Agnostic | <input type="checkbox"/> Christianity | <input type="checkbox"/> Judaism |
| <input type="checkbox"/> Atheist | <input type="checkbox"/> Hinduism | <input type="checkbox"/> Pagan |
| <input type="checkbox"/> Buddhism | <input type="checkbox"/> Islam | <input type="checkbox"/> Other (please specify): |

10. What is your state/territory?

- | | | | |
|------------------------------|------------------------------|------------------------------|------------------------------|
| <input type="checkbox"/> ACT | <input type="checkbox"/> NSW | <input type="checkbox"/> NT | <input type="checkbox"/> QLD |
| <input type="checkbox"/> SA | <input type="checkbox"/> TAS | <input type="checkbox"/> VIC | <input type="checkbox"/> WA |

11. What is your primary industry sector?

- | | |
|--|--|
| <input type="checkbox"/> Consulting | <input type="checkbox"/> Power/Utility Company |
| <input type="checkbox"/> Defence | <input type="checkbox"/> Property management |
| <input type="checkbox"/> Education | <input type="checkbox"/> Security |
| <input type="checkbox"/> Engineering | <input type="checkbox"/> State government |
| <input type="checkbox"/> Entertainment industry | <input type="checkbox"/> Tourism |
| <input type="checkbox"/> Federal government | <input type="checkbox"/> Other government organisation |
| <input type="checkbox"/> Human resources | <input type="checkbox"/> Other private organisation |
| <input type="checkbox"/> Insurance | <input type="checkbox"/> Local government |
| <input type="checkbox"/> Other (please specify): | |

Human capital – qualifications, training, education, experience, Competence and Confidence

Qualifications

12. What is your highest completed qualification in emergency management?

- | | |
|--|--|
| <input type="checkbox"/> Certificate I | <input type="checkbox"/> Post Graduate Certificate |
| <input type="checkbox"/> Certificate II | <input type="checkbox"/> Postgraduate Diploma |
| <input type="checkbox"/> Certificate III | <input type="checkbox"/> Master's Degree |
| <input type="checkbox"/> Certificate IV | <input type="checkbox"/> Professional Doctorate |
| <input type="checkbox"/> Advanced Diploma | <input type="checkbox"/> PhD |
| <input type="checkbox"/> Bachelor's Degree | <input type="checkbox"/> Other (please specify): |

Training

13. Have you received additional training in your role?

☐ Yes ☐ No

14. If yes, please specify what additional training have you received in this role (please insert course code if it is nationally recognised training course)?

15. Has this training met your needs?

☐ Yes ☐ No

16. Do you feel that you need more training in emergency management?

☐ Yes ☐ No

Comments: _____

Education

17. For tertiary education (Bachelors degree or higher) what was your major area of study?

<input type="checkbox"/> Arts	<input type="checkbox"/> Engineering	<input type="checkbox"/> Social Science
<input type="checkbox"/> Business	<input type="checkbox"/> Law	<input type="checkbox"/> Not applicable
<input type="checkbox"/> Education	<input type="checkbox"/> Science	<input type="checkbox"/> Other (please specify):

Experience

18. Before your current role, did you have any previous experience in emergency management?

☐ Yes (see next question) ☐ No

19. If yes, how many years?

<input type="checkbox"/> Fewer than 6 months	<input type="checkbox"/> 3 to 5 years
<input type="checkbox"/> 6 to 12 months	<input type="checkbox"/> 5 to 10 years
<input type="checkbox"/> 1 to 3 years	<input type="checkbox"/> Greater than 10 years (please specify):

20. Do you volunteer for another organisation?

☐ Yes (see next question) ☐ No

21. If yes, what is the name of the organisation/s? (please check all that apply):

<input type="checkbox"/> Ambulance	<input type="checkbox"/> Rural Fire Service
<input type="checkbox"/> Coast Guard	<input type="checkbox"/> St John
<input type="checkbox"/> Fire Brigade	<input type="checkbox"/> State Emergency Service
<input type="checkbox"/> Lifeguard	<input type="checkbox"/> Surf Life Saving Australia
<input type="checkbox"/> Police	<input type="checkbox"/> Volunteer Rescue Association
<input type="checkbox"/> Red Cross	<input type="checkbox"/> Other (please specify):

28. Please rate your level of satisfaction with the following aspects of emergency management:

27. Do you have any interest in further developing your emergency management knowledge?

- 26. If Yes, Please check all that apply**

25. Do you subscribe to any emergency management journal or magazine?

24. Do you have a membership to an emergency management industry body or association?

- 23.** If yes, what do these events include? (please tick all that apply):

22. Do you have any experience with large-scale emergencies as an emergency manager?

Industry overview

29. Do you believe emergency management should be attached to your department?

☐ Yes ☐ No (please specify):

30. What is the job title of your primary position?

31. What is your emergency management title?

Emergency management as a profession

32. Do you consider emergency management a profession?

☐ Yes ☐ No (please specify):

33. Do you consider yourself to be an emergency management professional?

☐ Yes ☐ No (please specify):

34. Do you believe that the services offered by emergency management are being used to their full potential?

☐ Yes ☐ No (please specify):

35. Do you believe that the emergency managers' roles are being utilised to its fullest?

☐ Yes ☐ No (please specify):

36. Do you believe that there should be a dedicated, stand-alone emergency management position within your organisation?

☐ Yes ☐ No

Industry regulation

37. Do you believe that the emergency manager and the emergency management industry should be regulated? If so, how and by who?

☐ Yes (see next question) ☐ No

38. Who do you think should be responsible for regulating the emergency management industry?

- ☐ Ambulance
 - ☐ Attorney Generals Department
 - ☐ Emergency Management Australia (EMA)
 - ☐ Federal emergency management organisation
 - ☐ Federal government
 - ☐ Fire
 - ☐ Government body
 - ☐ Industry Body
 - ☐ International Association of Emergency Managers (IAEM)
 - ☐ Police
 - ☐ Private organisation
 - ☐ Other (please explain):
-

39. Do you see a benefit in sharing personnel with other organisations to gather practical experience?

- ☐ Yes ☐ No (please specify):

40. Do you foresee any barriers to such an agreement where emergency managers are shared with other organisations?

- ☐ Yes ☐ No (please specify):
-

Mentor programs

41. Do you have a mentor program in place in your current role?

- ☐ Yes ☐ No

42. If no, are you interested in having a mentor program?

- ☐ Yes ☐ No (please specify):

43. Do you believe that a mentor program is warranted for Emergency Managers?

- ☐ Yes ☐ No (please specify):
-

National Register

44. Do you think there is a need for a national register of emergency managers?

- ☐ Yes ☐ No

45. Would you be interested in sharing your professional information on a register?

- ☐ Yes ☐ No

CHAPTER 10:REFERENCES

- AAP. (2017, November 30). Bullying claims hit Emergency Victoria. *SBS News*. Retrieved from <https://www.sbs.com.au/news/article/2017/11/30/bullying-claims-hit-emergency-victoria>
- Admin. (2011, January 3). *Primary skills of an Emergency Manager* [Wordpress blog]. Retrieved from <http://www.educacionenemergencias.org>
- Alexander, D. (2000). *Confronting catastrophe: New perspectives on natural disasters*. New York: Oxford University Press.
- Alexander, D. (2002). From civil defence to civil protection—and back again. *Disaster Prevention and Management*, 11(3), 209. Retrieved from <http://search.proquest.com/docview/214379972/>
- Alexander, D. (2003). Towards the development of standards in emergency management training and education. *Disaster Prevention and Management*, 12(2), 113–123. Retrieved from <http://search.proquest.com/docview/214376460/>
- Alexander, D. (2008). *Disaster planning and emergency management: The role of emergency management training in an advanced civil protection degree*. Retrieved from <http://emergency-planning.blogspot.com.au/2008/10/role-of-emergency-management-training.html>
- Alexander, D. (2016). The game changes: “Disaster Prevention and Management” after a quarter of a century. *Disaster Prevention and Management*, 25(1), 2–10. <https://doi.org/10.1108/DPM-11-2015-0262>
- Alexandra, J., and Bowman, D. (2020, January 7). There’s no evidence ‘greenies’ block bushfire hazard reduction but here’s a controlled burn idea worth trying. *The conversation*. Retrieved 7 January 2020 from <https://theconversation.com/theres-no-evidence-greenies-block-bushfire-hazard-reduction-but-heres-a-controlled-burn-idea-worth-trying-129350>
- Amabile, T. & Kramer, S. (2011, October 10). Valuing Your Most Valuable Assets. *Harvard Business Review*. Retrieved from <https://hbr.org/2011/10/valuing-your-most-valuable>
- American Medical Association. (2019). *Why does the medical profession need a code of ethics?* Retrieved from <https://www.ama-assn.org/delivering-care/ethics/why-does-medical-profession-need-code-ethics>

- Anderson, B. & Adey, P. (2012). Governing events and life: 'Emergency' in UK Civil Contingencies. *Political Geography*, 31(1), 24–33.
doi.org/10.1016/j.polgeo.2011.09.002
- Angier, B. D. (2017). Making the Most of Your Post Incident Analysis. *Fire Engineering*, 170, 8, 55–58. Retrieved from
<https://www.fireengineering.com/articles/print/volume-170/issue-8/features/making-the-most-of-your-post-incident-analysis.html>
- AON. (2013). *2013 Global Risk Management Survey*. AON Risk Solutions. Retrieved from aon.com/2013GlobalRisk
- Apan, A., Keogh, D. U., King, D., Thomas, M., Mushtaq, S. & Baddiley, P. (2010). *The 2008 floods in Queensland: A case study of vulnerability, resilience and adaptive capacity*. National Climate Change Adaptation Research Facility Gold Coast
- Arbon, P. & Smith, C. (2000). Research Development in the Field of Emergency Management. *The Australian Journal of Emergency Management*, 15(1), 6–10.
- Armstrong, B., Gillespie, J., Leeder, S., Rubin, G. & Russell, L. (2007). Challenges in health and health care for Australia. *Medical Journal of Australia*, 187(9), 485–489. doi.org/10.5694/j.1326-5377.2007.tb01383.x
- ASIS International. (2008). *Chief Security Officer (CSO) Organisational Standard: ASIS CSO.1-2008*. ASIS International
- Atkinson, S. (2014). Current status of online rating of Australian doctors. *Australian Journal of Primary Health*, 20(3), 222–223. <https://doi.org/10.1071/PY14056>
- AustLii. (2019). Home. *Australasian Legal Information Institute*. Retrieved from <http://www.austlii.edu.au>
- Australasian Fire and Emergency Services Authorities Council (2018). *Male champions of change: Fire and Emergency - Progress Report 2017-18*. Retrieved from <https://malechampionsofchange.com/wp-content/uploads/2018/12/MCC-Fire-and-Emergency-Progress-Report-2018.pdf>
- Australian Bureau of Statistics. (2004). *4102.1 – Australian social trends*. Retrieved from http://www.abs.gov.au/ausstats/abs@.nsf/1020492cfc_d63696ca2568a1002477b5/fa58e975c470b73cca256e9e00296645!OpenDocument
- Australian Bureau of Statistics. (2010). *1370.0 – Measures of Australia's Progress, 2010*. Retrieved from [http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1370.0~2010~Main%20Features~Home%20page%20\(1\)](http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1370.0~2010~Main%20Features~Home%20page%20(1))
- Australian Bureau of Statistics. (2012a). *4102.0 – Australian Social Trends, April 2013*. Retrieved from <http://www.abs.gov.au/ausstats/abs@.nsf/mf/3101.0>

- Australian Bureau of Statistics. (2017a). *3235.0 – Population by Age and Sex, Regions of Australia*, 2016. Retrieved from <http://www.abs.gov.au/ausstats/abs@.nsf/mf/3235.0>
- Australian Bureau of Statistics. (2017b). *3412.0 – Migration, Australia, 2015–16*. Retrieved from <http://www.abs.gov.au/ausstats/abs@.nsf/lookup/3412.0Media%20Release12015–16>
- Australian Bureau of Statistics. (2017c). *2016 Census: Religion* [Media Release]. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/mediareleasesbyReleaseDate/7E65A144540551D7CA258148000E2B85?OpenDocument>
- Australian Capital Territory Fire & Emergency Agency. (2019). *Emergency arrangements*. Retrieved from <https://esa.act.gov.au/cbr-be-emergency-ready/emergency-arrangements>
- Australian Department of Employment. (2015). *Meet the most popular recruitment methods in Australia: how does your strategy compare?* Jobactive. Retrieved from <https://jobsearch.gov.au/most-popular-recruitment-australia/default.aspx>
- Australian Emergency Management Volunteer Forum. (2011). *Emergency management sector*. Retrieved from <http://www.aemvf.org.au/emergency-management-sector>
- Australian Energy Market Operator. (2016). *Preliminary Report – Black System Event In South Australia On 28 September 2016*.
- Australian Government. (n.d.). *Australian Health Practitioner Regulation Agency*. Retrieved from <https://www.australia.gov.au/directories/australia/ahpra>
- Australian Health Practitioner Regulation Agency. (2019a). *The National Registration and Accreditation Scheme*. Retrieved from <https://www.ahpra.gov.au/About-AHPRA/What-We-Do.aspx>
- Australian Health Practitioner Regulation Agency. (2019b). *National Boards*. Retrieved from <https://www.ahpra.gov.au/National-Boards.aspx>.
- Australian Institute for Disaster Resilience. (2015). *National Emergency Risk Assessment Guidelines: Australian Emergency Management Handbook Series: Handbook 10*
- Australian Institute for Disaster Resilience. (2019a). *Australian Emergency Management Arrangements (3rd ed.)*. Australian Emergency Management Arrangements Handbook Collection.
- Australian Institute for Disaster Resilience. (2019b). *The Australian Journal of Emergency management*. Retrieved from

- <https://knowledge.aidr.org.au/collections/australian-journal-of-emergency-management/>
- Australian Institute for Disaster Resilience. (2019c). Home. *Australian Institute for Disaster Resilience*. Retrieved from <https://www.aidr.org.au/about-aidr/>
- Australian Institute of Architects. (2016). How to become an architect. *Australian Institute of Architects*. Retrieved from <http://www.raia.com.au/i-cms?page=773>
- Australian Institute of Family Studies. (2008). Enhancing family and relationship service accessibility and delivery to culturally and linguistically diverse families in Australia. *AFRC Issues No. 3–June*. Retrieved from <https://aifs.gov.au/cfca/publications/enhancing-family-and-relationship-service-accessibility-and/barriers-service>
- Australian Medical Association. (2016). *Professional Development*. Retrieved from <https://ama.com.au/careers/continuing-professional-development>
- Australian Medical Association. (2018). *Doctors' Relationships with Industry 2018*. Retrieved from <https://ama.com.au/position-statement/doctors-relationships-industry-2018>
- Australian Medical Association. (2019a). *Why does the medical profession need a code of ethics?* Retrieved from <https://www.ama-assn.org/delivering-care/ethics/why-does-medical-profession-need-code-ethics>
- Australian Medical Association. (2019b). *Becoming a Doctor – What will I study during my degree?* Retrieved from <https://ama.com.au/careers/becoming-a-doctor>
- Australian Medical Council. (2018). *Accreditation standards for specialist medical education and training* [Electronic Version] from <https://www.amc.org.au/accreditation-and-recognition/accreditation-standards-and-procedures/>
- Australian Public Service Commission. (2011). APS Human Capital Matters: Human Capital. *Vol-1-2011-Human-capital*. Retrieved from www.apsc.gov.au
- Australian Salaried Medical Officers' Federation. (2014). *Home*. from <http://www.asmof.org.au>
- Australian Workforce and Productivity Agency. (2013). *Human capital and productivity*. Literature review. Canberra, ACT: Australian Workforce and Productivity Agency.
- Babbie, E. (2004). *The practice of social research (10th ed.)*. Belmont, CA: - Thomson/Wadsworth.
- Baigent, M. & Baigent, R. (2018). Burnout in the medical profession: not a rite of passage. *The Medical Journal of Australia*, 208(11), 471–472. doi.org/10.5694/mja17.00891
- Banks, G. (2010). Advancing Australia's 'human capital agenda' [Fourth 'Ian Little Lecture', Melbourne, 13 April 2010.] [online]. *Public Administration Today*, No.

- 23, July–Sept 2010: 12–21. Availability: <<https://search-informit-com-au.ezproxy1.library.usyd.edu.au/documentSummary;dn=201012111;res=IELAPA>> ISSN: 1832–0066.
- Barbera, J. A., Macintyre, A. G., Shaw, G., Seefried, V., Westerman, L. & DeCosmos, S. (2005). *VHA–EMA Emergency Response and Recovery Competencies: Competency Survey, Analysis, and Report*. GWU – Institute for Crisis, Disaster and Risk Management. Survey Report v2.
- Barclays. (2014). *Meet our People*. Retrieved from <http://group.barclays.com/mobile/about-barclays/careers/meet-our-people>
- Barnes, P. (2001). Regulating safety in an unsafe world (risk reduction for and with communities). *Journal of Hazardous Materials*, 86(1–3), 25–37.
- Barnes, T. (2009). Structural functional theory. In Gregory, D. (Ed.). *The dictionary of human geography (5th ed)*, 690–91. Chichester, U.K.; Wiley–Blackwell.
- Barzilai, K. (2010). *Organizational theory*. Case Western Reserve University. Retrieved from http://www.cwru.edu/med/epidbio/mphp439/Organizational_Theory.htm.
- Beaton, G. R. (2010). *Why professionalism is still relevant*. Melbourne: University of Melbourne
- Beaulieu, K. (2012). The future of emergency management. In Thompson, K. (Ed.), *IAEM Bulletin* 29(6), 20–21. Retrieved from <https://www.iaem.com/page.cfm?p=resources/newsletter>
- Beck, U. (1997). *Risk Society – Towards a New Modernity*. Sage Publication. London (translated)
- Benayoune, M. (2013, December 20). *Are You Putting People First*. Retrieved from <http://www.tac-focus.com/article/are-you-putting-people-first#.U1Y2p8Zk4pE>
- Bennett, E. (2018). *Climate of the Nation 2018: Tracking Australia’s attitudes towards climate change and energy: Research report*. The Australia Institute. Retrieved from <https://www.tai.org.au/sites/default/files/180911%20-%20Climate%20of%20the%20Nation%202018%20%5BPRINT%5D.pdf>
- Białek, M. & Domurat, A. (2017). Cognitive abilities, analytic cognitive style and overconfidence: A commentary on Dutt (2016): Cognitive Abilities, Analytic Cognitive Style and Overconfidence. *Bulletin of Economic Research*, 70(1), E119–E125. doi.org/10.1111/boer.12117
- Bird, D. & Dominey–Howes, D. (2008). Testing the use of a “questionnaire survey instrument” to investigate public perceptions of tsunami hazard and risk in Sydney, Australia. *Natural Hazards*, 45(1), 99–122. doi.org/10.1007/s11069–007–9172–8
- Bird, J. (2013). *The Face of the Profession: Contributing to a Benchmark Profile of the Emergency Management Profession in Canada*. (Unpublished master’s thesis). Royal Roads University, Victoria: Canada.

- Birkland, T. (2006). *Lessons of disaster: Policy change after catastrophic events*. Georgetown University Press.
- Blake, J. (1999). Overcoming the 'value-action gap' in environmental policy: Tensions between national policy and local experience. *Environment*, 4:3, 257–278, doi:10.1080/13549839908725599
- Blake, M. (2017). Report of the Independent Review into the Tasmanian Floods of June and July 2016. Retrieved from http://www.dpac.tas.gov.au/__data/assets/pdf_file/0015/332610/floodreview.pdf
- Blanchard, B. W. (2001). FEMA higher education project manager discusses the new generation of emergency managers. In Thompson, K. (Ed.), *IAEM Bulletin*, 18(5), 7–8 (May 2001). Retrieved from <http://www.iaem.com/search.cfm>
- Blanchard, B. W. (2005). *Top ten competencies for professional emergency management*. Emmitsburg, Maryland: Emergency Management Institute. Retrieved from https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=2ahUKEwj5-4Spul3iAhVPWX0KHXVaCeIQFjACegQIBRAC&url=https%3A%2F%2Ftraining.fema.gov%2Fhiedu%2Fdocs%2Fblanchard%2520-%2520competencies%2520em%2520hied.doc&usg=AOvVaw2EttyYeq_5Ffto1bxLzO2u
- Blanchard, B. W. (2007). *Guide to emergency management and related terms, definitions, concepts, acronyms, organizations, programs, guidance, executive orders & legislation: A tutorial on emergency management, broadly defined, past and present*. Federal Emergency Management Agency. United States. Federal Emergency Management Agency.
- Blanchard, B. W. Canton, L. G., Cwiak, C. L., Goss, K. C., McEntire, D. A., Newsome, L., . . . Waugh, W. L. (2007). *Principles of emergency management supplement*. Emergency Management Public Safety, Public Trust, 4.
- Boag, H. (1916). Human Capital and the Cost of the War. *Journal of the Royal Statistical Society*, 79, 7–17. Retrieved from <http://search.proquest.com/docview/1307597393/>
- Bolton, R. (2018, December 27). Is James Ruse the best School in Australia. *Australian Financial Review*. Retrieved <https://www.afr.com/policy/health-and-education/is-james-ruse-the-best-school-in-australia-20181217-h197fx>
- Boone, W. G. (2010). *Emergency and Disaster Theory: Achieving Balance in Emergency Management Infrastructure*. Solution Design & Assessment, LLC.
- Boorstein, D. J. (1984, 29 January). The 6 O'Clock Scholar. In Krucoff, C. *The Washington Post*, Retrieved from https://www.washingtonpost.com/archive/lifestyle/1984/01/29/the-6-oclock-scholar/eed58de4-2dcb-47d2-8947-b0817a18d8fe/?utm_term=.3685c830a982

- Bouwer, L., Crompton, R., Faust, E., Hoppe, P. & Pielke Jr., R. (2007). Disaster Management: Confronting Disaster Losses. *Science*, 318(5851), 753–753. doi.org/10.1126/science.1149628
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative research journal*, 9(2), 27–40. doi:10.3316/QRJ0902027
- Bowles, S. & Gintis, H. (1975). The Problem with Human Capital Theory—A Marxian Critique. *The American Economic Review*, 65(2), 74–82. doi.org/10.2307/1818836
- Brien, A. (1998). Professional Ethics and The Culture of Trust. *Journal of Business Ethics*, 17(4), 391–409. https://doi.org/10.1023/A:1005766631092
- Brill, D. (2014). Australian doctors' leader attacks plan to charge to see a GP. *British Medical Journal* (Online), 348 (2014 May 23). https://doi.org/10.1136/bmj.g3495
- Britton, N. (1999). *Whither the Emergency Manager?* Wellington, N.Z: Ministry for Emergency Management & Civil Defense.
- Britton, N. (2001). A New Emergency Management for the New Millennium? *The Australian Journal of Emergency Management*, 16(4), 44–54.
- Britton, N. R. (2004). *Higher Education in Emergency Management: What is Happening Elsewhere?* [Presented at the 7th Annual By-Invitation Emergency Management Higher Education Conference]. National Emergency Management Training Center, Federal Emergency Management Agency. Department of Homeland Security. Emmitsburgh, Maryland. 8–10 June 2004. Retrieved from http://scholar.google.com.au/scholar?start=160&q=who+should+be+the+emergency+manager&hl=en&as_sdt=0,5
- Britton, N. R. & Clark, G. J. (1999). *New Zealand Country Report 1999*. Wellington, New Zealand: NZ Ministry of Emergency Management. Retrieved from <http://www.adrc.asia/countryreport/NZL/NZLeng99/NewZealand99.htm>
- Broadwell, M. M. (1969). Teaching for learning (XVI.). *Gospel Guardian*, 20(41), 1–3a
- Bruce, J., Donovan, K., Hornof, M. and Barthos, S. (2004). *Emergency management education in Canada*. Ontario, CA: Public Safety & Emergency Preparedness Canada. Retrieved from <http://publications.gc.ca/collections/Collection/PS4-15-2005E.pdf>
- Bryman, A. (2012). *Social Research Methods (4th ed.)*. Oxford University Press
- Bryson, J., James, S., and Keep, E. (2013). Chapter Seven - Recruitment and Selection pp. 125-149. In Bach, S., and Edwards, M. R. (Ed). *Managing human resources: human resource management in transition* (5ed.). UK: John Wiley & Sons
- Bumgarner, J. (2008). *Emergency management*. Santa Barbara, Calif.: ABC-CLIO.

- Bureau of Transport Economics (2001). *Economic costs of natural disasters in Australia*. Canberra, ACT: Bureau of Transport Economics.
- Burrell, D. (2007). Nontraditional leadership training for public managers: new educational programs expose working professionals to the critical challenges of our time: emergency preparedness, crisis response, disaster management, and counterterrorism. *The Public Manager*, 36(3), 62–66.
- Bushfire and Natural Hazards Cooperative Research Centre. (2017). National research priorities for natural hazards emergency management: Issues, priorities, directions. Retrieved from www.bnhcrc.com.au/nationalpriorities
- Cabano, S. (2006). *Attracting and Retaining Project Resources*. AACE International Transactions, PM21–PM25. Retrieved from <http://search.proquest.com/docview/208172685/>
- Calcutt, B. (2019). *Valuing volunteers: Better understanding the primary motives for volunteering in Australian emergency services*. (Unpublished master's thesis). University of Wollongong, Australia. Retrieved from <https://ro.uow.edu.au/theses1/558>
- Calman, K. (1994). The profession of medicine. *British Medical Journal*, 309(6962), 1140–1143. <https://doi.org/10.1136/bmj.309.6962.1140>
- Canberra Times, The. (2014, May 21). ACT Policing's failure to communicate. *Canberra Times*. Retrieved from <http://www.canberratimes.com.au/comment/ct-editorial/act-policings-failure-to-communicate-20140520-zrj55.html>
- Carter, W. N. (1999). *Disaster Management – A disaster Manager's Handbook*. Manila, Philippines: Asian Development Bank.
- Catsaras, A. (2014). *Adolescent Australia's road to adulthood*. Lowy Institute. Retrieved from <https://www.lowyinstitute.org/the-interpreter/adolescent-australias-road-adulthood>
- Charles Darwin University. (2019). *Master of Emergency and Disaster Management* [Website]. Retrieved from <https://www.cdu.edu.au/study/master-emergency-and-disaster-management-memdm-2019>
- Charles Sturt University. (2019a). *Bachelor of Emergency Management* [Website]. Retrieved from <https://study.csu.edu.au/courses/police-security-emergency/bachelor-emergency-management>
- Charles Sturt University. (2019b). *Master of Emergency Management* [Website]. Retrieved from <https://study.csu.edu.au/courses/police-security-emergency/master-emergency-management>
- Chen, J. (2009). *Factors affecting city government emergency preparedness* (Unpublished doctoral dissertation). University of Southern California: California.

- Choi, S. (2008). Emergency Management: Implications from a Strategic Management Perspective. *Journal of Homeland Security and Emergency Management*, 5(1), 1372. doi.org/10.2202/1547-7355.1372
- Clarke, T. & Rowlands, D. (2008). *ANAO 2007–08: Performance Audit*. Emergency management Australia. Barton, ACT: Australian National Audit Office. Retrieved from https://www.anao.gov.au/sites/g/files/net616/f/ANAO_Report_2007–2008_27.pdf
- Coates, G., Duffy, A., Hills, W. & Whitfield, R. (2007). A preliminary approach for modelling and planning the composition of engineering project teams [Proceedings of the Institution of Mechanical Engineers], Part B: *Journal of Engineering Manufacture*, 221(7), 1255–1265. doi.org/10.1243/09544054JEM608
- Coffey, A. (2013). Analysing documents. In Flick, U. (Ed.). *The SAGE handbook of qualitative data analysis*, 367–379. London: SAGE Publications. doi.org/10.4135/9781446282243.n25
- Cole, L., Dovers, S., Gough, M., Eburn, M. (2018). Can major post-event inquiries and reviews contribute to lessons management? *Australian Journal of Emergency Management*. 33(2), 34-39.
- Coles, E. (2014). A Real Profession or Simply ‘professional’? Some Thoughts on the Status of Emergency Management in the UK. *Emergency Management Review*, 2(1).
- Coles, E. & Buckle, P. (2004). Developing Community Resilience as a Foundation for Effective Disaster Recovery. *The Australian Journal of Emergency Management*, 19(4), 6–15.
- Collins, J. (2001). *Good to great: why some companies make the leap... and others don't*. London: Random House Business.
- Commonwealth Scientific and Industrial Research Organisation. (2018). *Why should we adapt*. Retrieved from <https://research.csiro.au/climate/introduction/why-should-we-all-adapt/>
- Conway, G. (2012). AIIMS Doctrine: Have we got the fundamentals right? *The Australian Journal of Emergency Management*, 27(2), 54–57.
- Cootes, B. (2018). How low can the AMA Go? Retrieved from <http://medicalrepublic.com.au/low-can-ama-go/14216>
- Coppola, D. P. (2011). *Introduction to international disaster management (2nd ed.)*. MA: Butterworth Heinemann.
- Correia, T. (2013). The interplay between managerialism and medical professionalism in hospital organisations from the doctors’ perspective: A comparison of two distinctive medical units. *Health Sociology Review: The Journal of the Health Section of the Australian Sociological Association*, 22(3), 255–267. <https://doi.org/10.5172/hesr.2013.22.3.255>

- Corriveau, G. (2009). Have You Read Canada's Standing Senate Committee's Report on Emergency Preparedness? *Journal of Homeland Security and Emergency Management*, 6(1), 1617. doi.org/10.2202/1547-7355.1617
- Cox, K. R. (2009). Public Good. In Kitchin, R., and Thrift, N. (Ed.), *The Encyclopaedia of Human Geography*, 599–600. Amsterdam, Netherlands: Elsevier Science Pub.
- Crawley, H. (2016). *The State of Training: one year on* [Australian and New Zealand Disaster and Emergency Management Conference – Proceedings]. Gold Coast: QLD (30–31 May 2016).
- Creuss, S. R. & Cruess, R. L. (2018). *The Development of Professional Identity*. Chapter 17. pp. 239–254. In Swanwick, T., Forrest, K., and O'Brien, B. C. (Ed.). *Understanding Medical Education: Evidence, Theory, and Practice (3ed.)*. The Association for the Study of Medicinal Education. Oxford:UK
- Crews, D. (2001). The case for emergency management as a profession. *The Australian Journal of Emergency Management*, 16(2), 2–3.
- Cwiak, C. L. (2019). Framing higher education and disciplinary efforts through a professionalization lens. In Waugh Jr, W. L. (Ed.). *Journal of Emergency Management*. 17(1), 61-66 Special Issue 1. Weston:MA. ISSN 1543-5865
- Cwiak, C. L. (2007). *Issues, Principles and Attitudes – Oh My!: Examining perceptions from select academics, practitioners and consultants on the subject of emergency management*. North Dakota State University. Retrieved from <http://www.training.fema.gov/EMIWeb/edu/emprinciples.asp>
- Cwiak, C. L. (2009). *Strategies for success: The role of power and dependence in the emergency management professionalization process*. (Unpublished doctoral dissertation). North Dakota State University, USA. Retrieved from <http://ndsu.edu/emgt/graduate/alumni> (10–29–009)
- Cwiak, C. L. (2011). A royal flush: Stacking the deck for success in EM. In Thompson, K. (Ed.), *IAEM Online Bulletin* 28(10) 8, 20–21. Retrieved from <https://www.iaem.com/page.cfm?p=resources/newsletter>
- Cwiak, C., Cline, K. & Karlgaard, T. (2004). *Emergency management demographics: What can we learn from a comparative analysis of IAEM respondents and rural emergency managers?* Retrieved from <http://www.training.fema.gov/emiweb/edu/surveys.asp>.
- Darlington, J. D. (2008). *The profession of emergency management: Educational opportunities and gaps*. Western Illinois University/Federal Emergency Management Agency. Retrieved from https://training.fema.gov/hiedu/downloads/prof_em.pdf
- Davis, S. (2011, May, 26). Dr. B. Wayne Blanchard to receive Honorary Doctorate Degree at Metropolitan College of New York. *In All Hands on Deck*. Retrieved from <http://www.allhandsconsulting.com>

- De Cieri, H. & Kramar, R. (2008). *Human resource management in Australia: Strategy, people, performance (3rd ed.)*. Boston: McGraw–Hill
- Deloitte. (2014). *Deloitte Debates: Cash or People*. Retrieved from http://www.hreonline.com/pdfs/01012009Extra_DeloitteDebate.pdf
- Department of Foreign Affairs and Trade. (2018, April 12). *The Global battle to reduce disaster losses will be won or lost in Asia and the Pacific*. Retrieved from <https://blog.dfat.gov.au/2018/10/12/the-global-battle-to-reduce-disaster-losses-will-be-won-or-lost-in-asia-and-the-pacific/>
- Dilling, J. (2009). *Locus of an emergency field: Framing emergency management knowledge, values, and priorities within current academic curricula*. (doctoral dissertation). Florida State University, Florida.
- Dillon, M. (2009). *Introduction to sociological theory: Theorists, concepts, and their applicability to the twenty-first century*. Chichester, UK: John Wiley & Sons.
- Disaster Management Act 2003 (QLD)*. Retrieved from <https://www.legislation.qld.gov.au>
- Dominey-Howes, D. (2020, January 7). Australia can expect far more fire catastrophes. A proper disaster plan is worth paying for. *The conversation*. Retrieved from <https://theconversation.com/australia-can-expect-far-more-fire-catastrophes-a-proper-disaster-plan-is-worth-paying-for-129326>
- Dominey-Howes, D. (2018). Natural hazards and disasters in the Anthropocene: some critical reflections for the future. *Geoscience Letters*, 5 (7): <https://doi.org/10.1186/s40562-018-0107-x>
- Donovan, A. (2019). Critical volcanology? Thinking holistically about risk and uncertainty. *Bulletin of Volcanology*, 81(4), 20.
- Dow, A. (2018, March 2). Sleeper sell: Anaesthetists want name change so people know how skilled they are. *The Age*. Retrieved from <https://www.theage.com.au/national/sleeper-sell-anaesthetists-wan...-change-so-people-know-how-skilled-they-are-20180301-p4z2c7.html>
- Dowling, R. (2010). Power, Subjectivity and Ethics in Qualitative Research. In Hay, I. M. (Ed.), *Qualitative Research Methods in Human Geography (3rd ed.)*, 22–36. Don Mills, Ont:Canada. Oxford University Press.
- Drabek, T. (1986). *Some emerging issues in emergency management*. Emmitsburg, MD: National Emergency Training Center.
- Drabek, T. (1987). *The professional emergency manager: structures and strategies for success*. Boulder, Colo: Institute of Behavioral Science, University of Colorado.
- Drabek, T. (2004, June). *Theories relevant to emergency management versus a theory of emergency management* [In a paper presented at the annual Emergency

- Management Higher Education Conference]. National Emergency Training Center, Emmitsburg, Maryland. Retrieved from www.training.fema.gov
- Drabek, T. & Hoetmer, G. (1991). *Emergency management: principles and practice for local government*. Washington, D.C: International City Management Association.
- Duckett, S. (2016). Patient advocate or doctors' union? How the AMA flexes its political muscle. *The Conversation*. Retrieved from <https://theconversation.com/patient-advocate-or-doctors-union-how-the-ama-flexes-its-political-muscle-60444>
- Duffield, C., Gardner, G., Chang, A., Fry, M. & Stasa, H. (2011). National regulation in Australia: A time for standardisation in roles and titles. *Collegian*, 18(2), 45–49. <https://doi.org/10.1016/j.colegn.2011.01.002>
- Duncan, R. D. (2013). Nine ways to keep your company's most valuable asset – its employees. *Forbes*, Retrieved from <http://www.forbes.com/sites/forbesleadershipforum/2013/08/20/nine-ways-to-keep-your-companys-most-valuable-asset-its-employees/>
- Dunn, K. (2010). Interviewing. In Hay, I. M. (Ed.), *Qualitative Research Methods in Human Geography (3rd ed.)*, 50–82. Don Mills, Ont:Canada. Oxford University Press.
- Dunning, D., Heath, C. & Suls, J. (2004). Flawed Self-Assessment: Implications for Health, Education, and the Workplace. *Psychological Science in the Public Interest*, 5(3), 69–106. doi.org/10.1111/j.1529-1006.2004.00018.x
- Ebert, L., Hoffman, K., Levett-Jones, T. & Gilligan, C. (2014). “They have no idea of what we do or what we know”: Australian graduates' perceptions of working in a health care team. *Nurse Education in Practice*, 14(5), 544–550. <https://doi.org/10.1016/j.nepr.2014.06.005>
- Eburn, M. & Dovers, S. (2011). The Stakes Are High for Australian Emergency Managers. In Thompson, K. (Ed.), *IAEM Bulletin* 28(10), 31–32. Retrieved from <https://www.iaem.com/page.cfm?p=resources/newsletter>
- Eburn, M. & Jackman, B. (2011). Mainstreaming fire and emergency management into law. *Environmental and Planning Law Journal*, 28(2), 59–76.
- Edith Cowen University. (2019). *Master of Disaster and Emergency Response* [Website]. Retrieved from <https://www.ecu.edu.au/degrees/courses/master-of-disaster-and-emergency-response>.
- Elkin, K., Spittal, M., Elkin, D. & Studdert, D. (2012). Removal of doctors from practice for professional misconduct in Australia and New Zealand. *BMJ Quality & Safety*, 21(12), 1027–1033. <https://doi.org/10.1136/bmjqs-2012-000941>
- Elsworth, G. & Anthony-Harvey-Beavis, K. (2007a). *The National Local Government Emergency Management Survey – Final Report*. RMIT University: Melbourne.

- Elsworth, G. & Anthony–Harvey–Beavis, K. (2007b). *Selected additional results from the National Local Government Emergency Management Survey*. RMIT University: Melbourne.
- Emergencies Act 2004–28 (ACT)*. Retrieved from <http://www.legislation.act.gov.au/>
- Emergency Management Act 2004 (SA)*. Retrieved from <https://www.legislation.sa.gov.au>
- Emergency Management Act 2005 (WA)*. Retrieved from www.legislation.wa.gov.au
- Emergency Management Act 2013 (NT)*. Retrieved from <http://www5.austlii.edu.au>
- Emergency Management Act 2018 (TAS)*. Retrieved from <https://www.legislation.tas.gov.au>
- Emergency Management Act 2018 (VIC)*. Retrieved from <http://www.legislation.vic.gov.au>
- Emergency Management Australia Institute. (2014a). *Complex emergencies – Longford Gas explosion, Victoria 1998*. Retrieved from <https://www.emknowledge.gov.au/resource/?id=383>
- Emergency Management Australia Institute. (2014b). *Hail – Sydney, New South Wales 1999*. Retrieved from <https://www.emknowledge.gov.au/resource/213/1999/hail—sydney-new-south-wales-1999>
- Emergency Management Australia. (1993). *Commonwealth counter disaster concepts and principles: Australian counter disaster handbook - Volume 1 (2nd Ed.)*. Canberra, A.C.T.
- Emergency Management Australia. (1998a). *Australian emergency management terms: Thesaurus*. Tasmania: Australia.
- Emergency Management Australia. (1998b). *Australian Emergency Management Glossary*. Tasmania: Australia.
- Emergency Management Australia (2000). *Australian emergency management arrangements* (6th ed). Emergency Management Australia, Dickson, A.C.T.
- Emergency Management Australia. (2004). *Concepts and principles. Manual number 1. Emergency Management Australia*, Dickson, A.C.T.
- Emergency Management Australia. (2007). *Guidelines for Emergency Management in Culturally and Linguistically Diverse Communities – Manual 44*. Emergency Management Australia, Canberra: ACT
- Emergency Management Australia. (2012a). *Australian Disaster Database*. Retrieved from <http://www.disasters.ema.gov.au>
- Emergency Management Australia. (2012b). *Australian Disaster Database: Reports*. Retrieved from <http://www.ema.gov.au/disasters>

- Engineers Australia. (2019). *For individuals* [Website]. Retrieved from <https://www.engineersaustralia.org.au/For-Individuals>
- Eriksen, C. (2014). Gendered Risk Engagement: Challenging the Embedded Vulnerability, Social Norms and Power Relations in Conventional Australian Bushfire Education. *Geographical Research*, 52(1), 23–33. doi.org/10.1111/1745–5871.12046
- Ernst & Young. (2013). What makes Australians productive? *Productivity Pulse – May 2012*. Ernst & Young. Retrieved from [http://www.ey.com/AU/en/Services/Advisory/Productivity–Pulse_May_2012_What–makes–Australians–productive](http://www.ey.com/AU/en/Services/Advisory/Productivity-Pulse_May_2012_What-makes-Australians-productive)
- Etkin, D. (2006). *Emergency management core competencies*. York University, Toronto. Retrieved from <https://training.fema.gov/hiedu/emcompetencies.aspx>
- Evans, R. (2008). A Quest for Identity, Authority, and Status: The Development of Paediatrics in Australia. *Health and History*, 10(2), 48–72. <https://doi.org/10.2307/40111303>
- Evetts, J. (2003). The Sociological Analysis of Professionalism: Occupational Change in the Modern World. *International Sociology*, 18(2), 395–415. doi.org/10.1177/0268580903018002005
- Fair Work Ombudsman. (2019). Hours of Work [Website]. Retrieved [https://www.fairwork.gov.au/employee–entitlements/hours–of–work–breaks–and–rosters/hours–of–work](https://www.fairwork.gov.au/employee-entitlements/hours-of-work-breaks-and-rosters/hours-of-work)
- Farris, D. & McCreight, R. (2014). The professionalization of emergency management in institutions of higher education. *Journal of Homeland Security and Emergency Management*, 11(1), 73–94. doi.org/10.1515/jhsem–2013–0074
- Fazio, T. (2015). Doctor Life Cycle. In *Becoming a Doctor, Australian Medical Association* [Website]. Retrieved from [https://ama.com.au/careers/becoming–a–doctor](https://ama.com.au/careers/becoming-a-doctor)
- Federal Emergency Management Agency. (2007). *Principles of Emergency Management. Emergency Management Higher Education Program*. Federal Emergency Management Agency. Retrieved from [http://training.fema.gov/hiedu/docs/emprinciples/0907_176%20em%20principles12x18v2f%20johnson%20\(w–o%20draft\).pdf](http://training.fema.gov/hiedu/docs/emprinciples/0907_176%20em%20principles12x18v2f%20johnson%20(w-o%20draft).pdf)
- Federal Emergency Management Agency. (2011). *IS–I Emergency Manager: An orientation to the Position*. Federal Emergency Management Agency. Retrieved from <http://training.fema.gov/emiweb/is/is1lst.asp>
- Federal Emergency Management Agency. (2013a). *Toward more resilient futures–Putting foresight into practice*. Retrieved from [https://www.fema.gov/media–library/assets/documents/32393](https://www.fema.gov/media-library/assets/documents/32393)
- Feldmann-Jensen, S., Hackerott, C. S., Knox, C. C., Ramsay, J. D., McEntire, D. A., and Jerolleman, A. (2019). The scholarship of teaching and learning in emergency

- management and homeland security: Trends, gaps, barriers, and opportunities. In Waugh Jr, W. L. (Ed.). *Journal of Emergency Management*. 17(1), 27-34 Special Issue 1. Weston:MA. ISSN 1543-5865
- Ferguson, E. (2016). *Report of the special inquiry into the January 2016 Waroona fire*. Government of Western Australia, Waroona Fire Special Inquiry. Retrieved from <https://publicsector.wa.gov.au/waroona-bushfire-special-inquiry>
- Ferrier, N. (1999). Demographics and emergency management: Knowing your stakeholders. *The Australian Journal of Emergency Management*, 14(4), 2–5.
- Fine, S. A. (1957). A Reexamination of “Transferability of Skills”–Part II. (1957). *Monthly Labor Review*, 80(8), 938–948. Retrieved from <http://search.proquest.com/docview/1304499496/>
- Fire & Rescue NSW. (2017). *Fire & Rescue NSW Candidate Information Pack 2017*. Retrieved from <https://www.fire.nsw.gov.au/gallery/files/pdf/recruitment/2017%20FRNSW%20Candidate%20Information%20Pack.pdf>
- Fischer, H. W. (1998). *Response to disaster: Fact versus fiction & its perpetuation: The sociology of disaster (2nd Ed)*. University Press of America, MD
- Fitzgerald, G., Rego, J., Ingham, V., Brooks, B., Cottrell, A., Manock, I.,... Archer, F. (2017). Teaching emergency and disaster management in Australia: Standards for higher education providers. *The Australian Journal of Emergency Management*, 32(3), 22–23.
- Flick, U. (2017). Mantras and Myths: The Disenchantment of Mixed-Methods Research and Revisiting Triangulation as a Perspective. *Qualitative Inquiry*, 23(1), 46–57. <https://doi.org/10.1177/1077800416655827>
- Foster, H., Whittaker, J., Handmer, J., Keating, A. & Lowe, A. (2013). Regional Victoria in 2021: changes and implications for the emergency management sector. *The Australian Journal of Emergency Management*, 28(2) April
- Frank, J. R. (2005). *The CanMEDS 2005 Physician competency framework. Better standards. Better physicians. Better care*. The Royal College of Physicians and Surgeons of Canada, Ottawa
- Furler, J., Harris, E., Harris, M., Naccarella, L., Young, D. & Snowdon, T. (2007). Health inequalities, physician citizens and professional medical associations: an Australian case study. *BMC Medicine*, 5(1), 23–23. <https://doi.org/10.1186/1741-7015-5-23>
- Gabčanová, I. (2011). The employees–the most important asset in the organizations. *Human Resources Management & Ergonomics*, 5(1), 30–33. Retrieved from https://frcatel.fri.uniza.sk/hrme/files/2011/2011_1_03.pdf
- Gallup. (2013). *State of the Global Workplace Report 2013: Employee Engagement Insights for business leaders worldwide*. Retrieved from

- http://www.securex.be/export/sites/default/.content/download-gallery/nl/brochures/Gallup-state-of-the-GlobalWorkplaceReport_20131.pdf
- Gallup. (2015). *State of the American Manager: Analytics and advice for leaders*. Retrieved from <https://www.gallup.com/services/182138/state-american-manager.aspx>
- Gautam, N. & Mishra, V. (2014). *Gender Balancing Disaster Management – Analysis*. Retrieved from <http://www.eurasiareview.com/04122014-gender-balancing-disaster-management-analysis/>
- Gelfand, T. (1993). The history of the medical profession. 1119–1151. In Bynum, W. F. & Porter, R. (Ed.). *Companion Encyclopedia of the History of Medicine – Volume 2*. Taylor & Francis: New York: NY
- Geoscience Australia. (2012). *Natural Disasters*. Retrieved from <http://www.ga.gov.au/earth-observation/basics/gallery/natural-disasters.html>
- Given, L. M. (2008). *The Sage encyclopedia of qualitative research methods*. Los Angeles, Calif.: Sage Publications. ISBN 1–4129–4163–6.
- Glannon, W. & Ross, L. (2002). Are doctors altruistic? *Journal of Medical Ethics*, 28(2), 68–69. doi.org/10.1136/jme.28.2.68
- Glasse, S. (2008). *Developing a collaborative educational pathway for emergency management education in New Zealand*. Emergency Management Academy of New Zealand, Palmerston North: N.Z.
- Goldman Sachs. (2014). *Who we are – People and culture* [Website]. Retrieved from <http://www.goldmansachs.com/who-we-are/people-and-culture/>
- Gonçalves, G., Sousa, C., Pereira, M., Pinto, E., and Sousa, A. (2018). Sensation seeking and risk perception as predictors of physical and psychological safety behaviour in risk and non-risk professions, 85–89. In Ares, P. M., Baptista, J. S., Barroso, M. P., Carneiro, P., Cordeiro, P., Costa, N., Melo, R. B., Miguel, A. S., and Perestrelo, G. (Ed.). *Occupational Safety and Hygiene VI*. CRC Press:Balkema. [Proceedings of the 6th International Symposium Occupational Safety and Hygiene (SHO 2018)]. Guimaraes, Portugal, 26–27 March 2018. ISBN 978–1–138–54203–7
- Good Universities. (2019). *Types of Law Degrees Australia* [Website]. Retrieved from <https://gooduniversities.com.au/law-degree-types-australia.html>
- Gordon, O. (2019, December 26). Bushfire Building Council calls for more retrofitting of homes in fire areas. *ABC News*. Retrieved from <https://www.abc.net.au/radio/programs/pm/bushfire-building-council-calls-for-more-retrofitting-of-homes/11827788>
- Goss, K. (2011). *Foundation for higher education accreditation in emergency management: History and benefits*. Retrieved from <https://training.fema.gov/hiedu/docs/foundation%20of%20em%20-%20ffhea%20-%20history%20and%20benefits.pdf>

- Graves, M.A. (2015). Emergency Manager Certificate. In *Professionals in Emergency Management* [LinkedIn]. Retrieved from <https://www.linkedin.com/groups/106846/>
- Green III, W. G. (2000). *A study of core functions in emergency management as reflected in training requirements for professional certification*. Universal–Publishers.
- Green, D. (1984). The 1918 Strike of the Medical Profession against the Friendly Societies in Victoria. *Labour History*, (46), 72–87.
<https://doi.org/10.2307/27508646>
- Grist, R. E. (2007). *The changing paradigm of emergency management: Improving professional development for the emergency manager*. Portland State University. (Doctoral dissertation). Portland State University, USA.
- Haddow, G. D., Bullock, J. A. & Coppola, D. P. (2011). *Introduction to emergency management (4th ed.)*. Burlington: Butterworth Heinemann.
- Handmer, J., (2008) Risk Creation, Bearing and Sharing on Australian Floodplains. *International Journal of Water Resources Development*, 24:4, 527-540, DOI: 10.1080/07900620801921439
- Harper, P. (2006). *Emergency Management Information Development Plan – 1385.0*. Canberra: Australian Bureau of Statistics. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/1385.02006?OpenDocument>
- Head, B., and Crowley, K. (2015). *Policy Analysis in Australia*. Policy Press. University of Bristol, Bristol
- Head, G. (2012). *How it is. State of the NSW Public Sector Report 2012*. NSW Public Service Commission. Retrieved from <http://www.psc.nsw.gov.au/sopsr/2012/>
- Health Workforce Principal Committee. (2012). *Consultation paper: Options for regulation of paramedics* (July 2012). Retrieved from https://ris.pmc.gov.au/sites/default/files/posts/2012/07/options_for_regulation_of_paramedics_consultation_paper.pdf
- Heesen, R., Bright, L. K. & Zucker, A. (2016). Vindicating methodolotical triangulation. *Synthese*. (2019) 196:3067–308, <https://doi.org/10.1007/s11229-016-1294-7>
- Henri, C. (1999). The Sydney hailstorm; the insurance perspective. *The Australian Journal of Emergency Management*, Summer 1999–2000, 16–18
- Henstra, D. (2010). Evaluating Local Government Emergency Management Programs: What Framework Should Public Managers Adopt? *Public Administration Review*. Oxford, UK: Blackwell Publishing Ltd.
doi.org/10.1111/j.1540-6210.2010.02130.x

- Hepple, L. (2009). Chaos theory. In Gregory, D. (2009). *The dictionary of human geography (5th ed.)*, 78–80. Chichester, U.K.; Wiley–Blackwell.
- Hillis, D. J. & Grigg, M. J. (2015). Professionalism and the role of medical colleges. *The Surgeon, Journal of the royal Colleges of Surgeons of Edinburgh and Ireland*. 13(2015), 292–299
- Holmes, C. (2012). *Queensland Floods Commission of Inquiry: Final Report*. Brisbane: Queensland Floods Commission of Inquiry. Retrieved from <http://www.floodcommission.qld.gov.au/publications/final-report/>
- Hosseini, M. & Izadkhah, Y. (2010). Training emergency managers for earthquake response: challenges and opportunities. *Disaster Prevention and Management*, 19(2), 185–198. doi.org/10.1108/09653561011037995
- Hsieh, H. F. & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative health research*, 15(9), 1277–1288. doi:10.1177/1049732305276687
- Hutchison, E. (2020, Jan. 09). As fires rage, we must use social media for long-term change, not just short-term fundraising. *The conversation*. Retrieved from <https://theconversation.com/as-fires-rage-we-must-use-social-media-for-long-term-change-not-just-short-term-fundraising-129446>
- Institute for Higher Education Policy. (1998). *Reaping the Benefits: Defining the Public and Private Value of Going to College*. The New Millennium Project on Higher Education Costs, Pricing, and Productivity. The Institute for Higher Education Policy. Retrieved from www.ihep.com.
- Insurance Council of Australia. (2011). *2011 Year in Review*. Sydney, Australia: Insurance Council of Australia Limited. Retrieved from www.insurancecouncil.com.au
- International Association of Emergency Managers. (2019a). *History of the IAEM Certification Program* [Website]. Retrieved from <https://www.iaem.org/certification/history-of-cem>
- International Association of Emergency Managers. (2019b). *CEM News* [Website]. Retrieved from <https://www.iaem.org/Certification/Certification-News>
- International Association of Fire Fighters & International Association of Fire Chiefs. (2009). *Police and Fire Consolidation: An Ineffective Use of Resources*. Retrieved from <https://www.iaff.org/09News/PDFs/PSOSystems.pdf>
- J.P.Morgan. (2014). *Culture* [Website]. Retrieved from https://www.jpmorgan.com/pages/jpmorgan/about/culture_new
- Jay, C. (2015, March 25). Move from Mt Macedon triggers emergency overhaul. *Australian Financial Review*. Retrieved from <http://www.afr.com/news/politics/move-from-mt-macedon-triggers-emergency-overhaul-20150325-1m77ew>

- Jones, D. J. (2000) Quote. In Tedlock, B. 'Ethnography and ethnographic representation' pp. 455-486. In Denzin, N.K. and Lincoln, Y.S. (Ed.). *The Handbook of Qualitative Research (2nd ed.)*, London: Sage Publications.
- Jones, K. (2007). Categorical data analysis. In Gregory et al., (Ed). *The Dictionary of Human Geography. (5th ed.)*. Chichester, U.K.; Wiley–Blackwell.
- Kansas Emergency Management Association. (2019). *Kansas Certified Emergency Manager Program* [Website]. Retrieved from <https://www.kema.org/certification>
- Keeley, B. (2007). Human Capital: How What You Know Shapes Your Life. *OECD Insights*, 27, 150. doi.org/10.1787/9789264029095–en. Retrieved from <http://www.oecd.org>.
- Keelty, M. (2013). *Sustaining the Unsustainable – Police and Community Safety Review, Final Report*. Brisbane: Queensland. Department of the Premier and Cabinet.
- Keelty, M. (2011). *A shared responsibility: The report of the Perth Hills Bushfire February 2011 Review*. Perth: W.A. Government of Western Australia.
- Keenan, R. (2020, January 6). There's only one way to make bushfires less powerful: take out the stuff that burns. *The conversation*. Retrieved from <https://theconversation.com/theres-only-one-way-to-make-bushfires-less-powerful-take-out-the-stuff-that-burns-129323>
- Kendra, J. M. (2007). Chapter 2: Geography's contributions to understanding hazards and disasters. In McEntire, D. A. (Ed.), *Disciplines, disasters, and emergency management: The convergence and divergence of concepts, issues and trends from the research literature*. Springfield, Ill: Charles C Thomas Publisher.
- Kennedy, B. (2015, April 16). Anger at closure of Australian Emergency Management Institute in Mt Macedon. *Herald Sun*. Retrieved from <http://www.heraldsun.com.au/leader/north-west/anger-at-closure-of-australian-emergency-management-institute-in-mt-macedon/news-story/5e21e0a8cffa62da105d74010e632605>
- Kern, F. G. (2018). The trials and tribulations of applied triangulation: Weighing different data sources. *Journal of Mixed Methods Research*, 12(2), 166–181 <https://doi.dox.org/10.1177/1558689816651032>
- Kiker, B. (1966). The Historical Roots of the Concept of Human Capital. *Journal of Political Economy*, 74(5), 481–499. doi.org/10.1086/259201
- Kjelland, J. (2008). Economic returns to higher education: Signaling v. human capital theory; An analysis of competing theories. *The Park Place Economist*, 16(1), 70–77.
- Kotler, P., Brown, L., Burton, S., Deans, K. & Armstrong, G. (2010). *Marketing (8th ed.)*. Frenchs Forest, N.S.W: Pearson Australia.

- Kwon, D. B. (2009). *Human capital and its measurement* [The 3rd OECD World Forum on “Statistics, Knowledge and Policy”: Charting progress, building visions, improving life – proceedings]. Busan, Korea – 27–30 October. Retrieved from <http://www.oecdworldforum2009.org>
- Labadie, J. (1984). Problems in local emergency management. *Environmental Management*, 8(6), 489–494. doi.org/10.1007/BF01871574
- Landau, S. (Ed.). (1999). Confident. In *The new international Webster’s compact dictionary of the English language* (International encyclopedic ed). Trident Press International. Naples: FL
- Lateral Economics. (2011). *Fairfax Lateral Economics Index of Australia’s Wellbeing Final Report*. Fairfax Media. Retrieved from <http://pandora.nla.gov.au/pan/80835/20140120-1439/www.lateraleconomics.com.au/outputs/Fairfax+Lateral+Economics+Index+of+AustraliaONE+a%2527s+Wellbeing+Final+Report.pdf>
- Lauder, D. (2008). *Implications of decision theory for emergency services and applications within the SA Metropolitan Fire Service* [Paper presented at the International Bushfire Research Conferences]. Adelaide: Australia. Retrieved from <http://www.afac.com.au>
- Lawrence, D., Kyron, M., Ridders, W., Bartlett, J., Hafekost, K., Goodsell, B. & Cunneen, R. (2018). *Answering the Call: National Survey of the Mental Health and Wellbeing of Police and Emergency Services*. Australia: The University of Western Australia.
- Law Society of NSW. (2019). *Continuing Professional Development (CPD)* [Website]. Retrieved from <https://www.lawsociety.com.au/practising-law-in-NSW/working-as-a-solicitor-in-NSW/your-practising-certificate/CPD>
- Leichter, M. (2015, May 6). Human Capital Theory Doesn’t Explain Law Grad Earnings. *The American Lawyer*. Retrieved from <http://www.americanlawyer.com/id=1202725675567/Human-Capital-Theory-Doesnt-Explain-Law-Grad-Earnings?slreturn=20160725214154>
- Lewis, J. (2012). The Good, The Bad and The Ugly: Disaster Risk Reduction (DRR) Versus Disaster Risk Creation (DRC). *PLoS Currents*, 4, e4f8d4eaec6af8–e4f8d4eaec6af8. <https://doi.org/10.1371/4f8d4eaec6af8>
- Lewis, W. A. (1954) Economic Development with Unlimited Supplies of Labour. *Manchester School, The*, 22: 139–191. doi:10.1111/j.1467-9957.1954.tb00021.x
- Lewis, M. (2014). Medicine in colonial Australia, 1788–1900. *The Medical Journal of Australia*, 201(1), 5–10. <https://doi.org/10.5694/mja14.00153>
- Lindell, M. & Perry, R. (2004). *Communicating environmental risk in multiethnic communities*. Thousand Oaks, Calif: SAGE.

- Lindell, M., Prater, C. & Perry, R. (2007). *Introduction to emergency management*. Hoboken, N.J: Wiley.
- Lucus, V. (2007). Review of Emergency Management: Concepts and Strategies for Effective Programs. *Journal of Homeland Security and Emergency Management*, 4(2), 1346. doi.org/10.2202/1547-7355.1346
- Machlup, F. (1982). Issues in the Theory of Human Capital : Education as Investment. *The Pakistan Development Review*, 21(1), 1–17. doi.org/10.30541/v21i1
- Macquarie Dictionary. (2019). Competent. In *Macquarie Dictionary Online*. Macmillan Publishers Australia [Website]. Retrieved from https://www.macquariedictionary.com.au/features/word/search/?search_word_type=Dictionary&word=competent
- MacKenzie, I. S. (2017). *The Cyclone Debbie Review: Lessons for delivering value and confidence through trust and empowerment. Report 1: 2017-18*. Queensland Office of the Inspector-General Emergency Management.
- MacQueen, L. R. (2009). *Professional paths into emergency management: Promoting gender and multi-disciplinary considerations*. (Unpublished master's dissertation). Royal Roads University, Canada.
- Maestri, N. & Aletti, G. (2008). Professional Training and Surgical Education. *Journal of Medicine and The Person*. 6(4). 155–159
- Manock, I. D. (2001). Tertiary emergency management education in Australia. *The Australian Journal of Emergency Management*, 16(2), 4–6.
- Matthews, J. A. & Herbert, D. T. (Ed.). (2004). *Unifying geography: common heritage, shared future*. Psychology Press.
- Maddison, M. (2020, March 8). Female firefighters are nothing new yet '50:50 between men and women is a long way off' in Queensland. *ABC News*. Retrieved from <https://www.abc.net.au/news/2020-03-08/female-fire-fighters--not-new-but-remain-in-minority-queensland/12027990>
- Mazzoni, A. (2019, November, 26). AFP staffer is found dead in a Melbourne hotel after she emailed a suicide note accusing police of 'toxic bullying' - the 6th member of the force to kill themselves in two years. *Daily Mail*. Retrieved from <https://www.dailymail.co.uk/news/article-7726111/Female-Australian...olice-officer-dead-Melbourne-hotel-suicide-note.html?ITO=applenews>
- McArdle, D. (2017). *Australia's Emergency Managers – Towards Professionalisation*. (Unpublished master's thesis). Monash University, Melbourne.
- McArdle, D. (2001). Education and Training for the Emergency Management Profession. *Australian Journal of Emergency Management, The*. 16 (2), 1.

- McCaughey, J., Daly, P., Mundir, I., Mahdi, S. & Patt, A. (2018). Socio-economic consequences of post-disaster reconstruction in hazard-exposed areas. *Nature Sustainability*, 1(1), 38–43. doi.org/10.1038/s41893-017-0002-z
- McDonald, P. (2019, May 28). Acclaimed brain surgeon Professor Charlie Teo defends prices for his life saving-expertise. *ABC News*. Retrieved from <https://www.abc.net.au/news/2019-05-28/charlie-teo-defends-prices-after-criticism-from-colleague/11155648>
- McEntire, D. A. (2007). *Disciplines, disasters, and emergency management: The convergence and divergence of concepts, issues and trends from the research literature*. Springfield, Ill: Charles C Thomas.
- McEntire, D. A. & Marshall, M. (2003). Epistemological problems in emergency management: Theoretical dilemmas and implications. *American Society of Professional Emergency Planners Journal*, 10, 119–129
- McGrath, J. (2012, February 27). Your most valuable assets are your people. *Sydney Morning Herald*. Retrieved from <http://www.smh.com.au/small-business/managing/your-most-valuable-assets-are-your-people-20120226-1twgn.html>
- McGregor, K. (2007). Meteorology, Weather and Emergency Management (pp. 15–31). In McEntire, D. A. (Ed). *Disciplines, Disasters and Emergency Management: The Convergence and Divergence of Concepts, Issues, and Trends from the Research Literature*. Charles C Thomas Publisher, Springfield, Illinois:USA.
- McGregor, L. & Moriarty, H. (2003). The Professional Status of Medical Scientists in Australia: A Nationwide Survey of Medical Scientists, Other Health Professionals and the General Public. *Australian Journal of Medical Science*, 24(3), 140–155.
- McGuirk, P. M. & O'Neill, P. (2010). Using questionnaires in qualitative human geography. Hay, I. (Ed.). *Qualitative Research Methods in Human Geography (3rd ed.)*. Don Mills, Ontario:Canada. Oxford University Press.
- McKinnon, S., Gorman-Murray, A. & Dominey-Howes, D. (2017). Disasters, Queer Narratives, and the News: How Are LGBTI Disaster Experiences Reported by the Mainstream and LGBTI Media? *Journal of Homosexuality*, 64(1), 122–144. doi.org/10.1080/00918369.2016.1172901
- McLennan, J. (2008). *Issues facing Australian volunteer-based emergency services organisations: 2008 – 2010: A Report Prepared For Emergency Management Australia (EMA) as a Response to a Request by the Ministerial Council for Police and Emergency Management*. Retrieved from https://www.researchgate.net/publication/308363351_Issues_facing_Australian_volunteer-based_emergency_service_organisations_2008-2010
- McNamara, S. (2012). Does it take too long to become a doctor? *Medical Journal of Australia*, 196(8), 528–530. doi.org/10.5694/mja12.10619

- Melbourne Metropolitan Fire Brigade. (2014). *Post Incident Analysis Report: Lacrosse Docklands: 673–675 La Trobe Street, Docklands – 25 November 2014*. DocCentral # 1009072. Retrieved from http://www.mfb.vic.gov.au/Media/docs/Post_Incident_Analysis_for_Lacrosse_Docklands_-_25_11_2014%20-%20FINAL-dd61c4b2-61f6-42ed-9411-803cc23e6acc-0.PD
- Menhart, M. (2019). *How much can Australia's economy withstand? Climate change is a risk to the success story of the Australian economy*. Munich RE. Retrieved from <https://www.munichre.com/topics-online/en/climate-change-and-natural-disasters/climate-change/how-much-can-australias-economy-withstand.html>
- Mertens, D. M. & Hesse-Biber, S. (2012). Triangulation and Mixed Methods Research: Provocative Positions. *Journal of Mixed Methods Research*, 6(2), 75–79. doi:10.1177/1558689812437100
- Merton, R. (1972). Insiders and Outsiders: A Chapter in the Sociology of Knowledge. *American Journal of Sociology*, 78(1), 9–47. doi.org/10.1086/225294
- Middelmann, M. H. (Ed.). (2007). *Natural hazards in Australia: identifying risk analysis requirements*. Canberra: Geoscience Australia.
- Mihm–Herold, W. (2010). *Considering human capital theory in assessment and training: Mapping the gap between current skills and the needs of a knowledge-based economy in northeast Iowa*. (Doctoral dissertation). Iowa State University: Iowa
- Mincer, J. (1958). Investment in Human Capital and Personal Income Distribution. *Journal of Political Economy*, 66(4), 281–302. doi.org/10.1086/258055
- Minichiello, V., Aroni, R. & Hays, T. (2008). *In-depth interviewing: principles, techniques, analysis (3rd ed.)*. Frenchs Forest, NSW: Pearson Education Australia.
- Ministry of Civil Defence & Emergency Management. (2019). *MCDEM e-Bulletin*. Retrieved from <https://www.civildefence.govt.nz/resources/e-bulletin/>
- Missouri Emergency Management Association. (2019). *MoCEM Program*. Retrieved from <http://momepa.org/cms/index.php?page=mocem-program>
- Morales, A. L. M. (2002). *Urban disaster management: A case study of earthquake risk assessment in Cartago, Costa Rica*. (Thesis). Utrecht University, Netherlands
- Moore, D. & Schatz, D. (2017). The three faces of overconfidence. *Social and Personality Psychology Compass*, 11(8). Retrieved from <https://doi.org/10.1111/spc3.12331>
- Morgan, M. (2019). The Post-Incident Review Process: Can you correct the weakness. *Disaster Recovery Journal*. Retrieved from <https://www.drj.com/drj-world-archives/risk-analysis/the-post-incident-review-process-can-you-correct-the-weakness.html>

- Morri, M. & Jones, G. (2010, July 5). NSW Police hold state of secrecy on crimes including rap and murder. *Daily Telegraph*. Retrieved from <http://www.dailytelegraph.com.au/nsw-police-hold-state-of-secrecy-on-crimes-including-rape-and-murder/story-e6freuy9-1225887766556>
- Moseley, L. (2004). Educational Needs for Disaster Management. *The Australian Journal of Emergency Management*, 19(4), 28–31.
- Mulilis, J. (1999). Gender and Earthquake Preparedness: A Research Study of Gender Issues in Disaster Management: Differences in Earthquake Preparedness Due to Traditional Stereotyping or Cognitive Appraisal of Threat? *The Australian Journal of Emergency Management*, 14(1), 41–49, 50.
- Multihazard Mitigation Council. (2005). *Natural Hazard Mitigation Saves – An independent study to assess the future saving from mitigation activities*. Washington, D.C.: National Institute of Building Sciences. Retrieved from <https://www.nibs.org/page/reports>
- Multihazard Mitigation Council. (2018). *Natural Hazard Mitigation Saves – 2018 Interim report*. Washington, D.C.: National Institute of Building Sciences. Retrieved from https://www.nibs.org/page/ms2_downloadwith correct 2019
- National Integration Center. (2008). *National Incident Management System: Five-year NIMS training plan*. Retrieved from <https://www.hsdl.org/?view&did=483645>
- Ndanu, M. C. & Syombua, M. J. (2015). Mixed Methods Research: The Hidden Cracks of the Triangulation Design. *General Education Journal*, 4(2), 46–67
- New South Wales Police. (2011). Emergency Management. Retrieved from http://www.police.nsw.gov.au/community_issues/emergency_management
- Nicholls, N. (2020, January 5). The bushfires are horrendous, but expect cyclones, floods and heatwaves too. *The conversation*. Retrieved from <https://theconversation.com/the-bushfires-are-horrendous-but-expect-cyclones-floods-and-heatwaves-too-129328>
- Nirupama, N. & Etkin, D. (2009). Emergency Managers in Ontario: An Exploratory Study of Their Perspectives. *Journal of Homeland Security and Emergency Management*, 6(1), 1464. doi.org/10.2202/1547-7355.1464
- Nirupama, N. & Etkin, D. (2012). Institutional perception and support in emergency management in Ontario, Canada. *Disaster Prevention and Management*, 21(5), 599–607. doi.org/10.1108/09653561211278725
- Norman, S. & Coles, E. (2003). Order Out of Chaos?: A Critical Review of the Role of Central, Regional, and Local Government in Emergency Planning in London. *The Australian Journal of Emergency Management*, 18(2), 98.
- Northern Territory Emergency Service. (2019). *Emergency Management* [Website]. Retrieved from <https://www.pfes.nt.gov.au/emergency-service/emergency-management>

- Norton, M., Mochon, D. & Ariely, D. (2011). The IKEA effect: When labor leads to love. *Journal of Consumer Psychology*, 22(3), 453–460.
doi.org/10.1016/j.jcps.2011.08.002
- Office of Emergency Management. (2019). *About Us* [Website]. NSW Department of Justice. Retrieved from <https://www.emergency.nsw.gov.au/Pages/about-us/about-us.aspx>
- Ortlieb, E. (2015). Just graduating from university is no longer enough to get a job. *The Conversation*, 11. Retrieved from <https://theconversation.com/just-graduating-from-university-is-no-longer-enough-to-get-a-job-36906>
- Oxford University Press. (2003a). Emergency. In *The Concise Oxford English Dictionary*. Oxford, U.K.: Oxford University Press.
- Oxford University Press. (2003b). Disaster. In *The Concise Oxford English Dictionary*. Oxford, U.K.: Oxford University Press.
- Oxford University Press. (2003c). Profession. In *The Concise Oxford English Dictionary*. Oxford, U.K.: Oxford University Press.
- Pachauri, R. K. & Meyer, L (Ed.). (2014). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. IPCC. Retrieved from https://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf
- Paley, S. (2008). Positivism. In Given, L. M. (ed.). *The Sage Encyclopaedia of Qualitative Research Methods*. Volume II. Thousand Oaks:CA
- Paramedicine Board of Australia. (2019). *Fact sheet: Using the title 'paramedic' after 1 December 2018*. Retrieved from <https://www.paramedicineboard.gov.au/Professional-standards/FAQ/Fact-sheet-Using-the-title-paramedic-after-1-December-2018.aspx>
- Paramedics Australasia. (2014). *Case for National Registration for Paramedics*. Retrieved from <https://www.paramedics.org/advocacy/registration/the-case-for-national-registration-for-paramedics/>
- Parker, D. & Handmer, J. (1992). *Hazard management and emergency planning: perspectives on Britain*. London: James & James.
- Parle, W. & Brown, A. (2005). *Educational Needs Survey Report: Fire and Emergency Management Program*. Oklahoma State University. Retrieved from <http://training.fema.gov/EMIWeb/edu/surveys.asp>
- Parliamentary Counsel's Office. (2011). *How to read legislation, a beginner's guide (1st ed.)*. Government of Western Australia– Department of the Attorney General. Retrieved from http://www.department.dotag.wa.gov.au/_files/How_to_read_legislation.pdf

- Peerbolte, S. & Collins, M. (2013). Disaster management and the critical thinking skills of local emergency managers: correlations with age, gender, education, and years in occupation. *Disasters*, 37(1), 48–60. doi.org/10.1111/j.1467-7717.2012.01291.x
- Pelling, M., O'Brien, K., and, Matyas., D. (2015) Adaptation and transformation. *Climatic Change*, 133:113–127. [http://doi 10.1007/s10584-014-1303-0](http://doi.10.1007/s10584-014-1303-0)
- Pettit, J. (2009). Professional development lacking in Australian Security managers [Letter to the Editor]. *Australian Security Magazine Online*. Retrieved from <http://www.securitymanagement.com.au/articles/professional>
- Phillips, B. D., Neal, D. M. & Webb, G. R. (2012). *Introduction to emergency management*. Boca Raton, FL: CRC Press.
- Pine, J. (2007). Chapter 14: The contributions of management theory and practice to emergency management. In McEntire, D. A. (Ed.). *Disciplines, disasters, and emergency management: The convergence and divergence of concepts, issues and trends from the research literature*. Springfield, Ill: Charles C Thomas.
- Prepare for Australia. (2016). *Study for an engineering degree at an Australian university or college* [Website]. Retrieved from <http://www.prepareforaustralia.com.au/studying/program-courses-degree-certificate-university-tafe-college/engineering.aspx>
- Preston, A. (1997). Where are we now with human capital theory in Australia? *Economic Record*, 73(220), 51–78. doi:10.1111/j.1475-4932.1997.tb00979.x
- Prime Minister of Australia. (2020, January 06). National Bushfire Recovery Agency. [Media Release]. <https://www.pm.gov.au/media/national-bushfire-recovery-agency>
- Productivity Commission. (2005). *Australia's Health Workforce: Productivity Commission Research Report 22 December 2005*. Melbourne: Productivity Commission.
- Professions Australia. (1997). *Definition of a profession* [Website]. Retrieved from <http://professions.com.au/definitionprofession.html>
- ProHR. (2013). *People will always be the greatest asset* [Website]. Retrieved from <http://prohr.com/people-will-always-be-the-greatest-asset/>
- Pryor, W. (2010). *Pathology, professionalism, portfolios and progress: a phenomenological study of professional identity formation in pathology, and the development of an educational model to promote professionalism*. (PhD dissertation). The University of Sydney, Sydney
- Putnam, R. (2000). *Bowling alone: The collapse and revival of American community (1st ed.)*. New York: Simon & Schuster.
- Queensland Government. (2019). *Disaster Management– Glossary*. Retrieved from <https://www.disaster.qld.gov.au/dmg/Glossary/Pages/default.aspx>

- Queensland Parliament. (2011). *Governor In Council and Executive Council in Queensland* [Factsheet]. Retrieved from https://www.parliament.qld.gov.au/documents/explore/education/factsheets/Factsheet_4.2_ExecutiveCouncil.pdf
- Quiggin, J. (1999). Human Capital Theory and Education Policy in Australia. *Australian Economic Review*, 32(2), 130–144. doi.org/10.1111/1467-8462.00100
- Rabbitt, E. (2003, November – December). *Insider research: The implications of conducting research in your home locale* [Paper presented at the Joint Australian Association for Research in Education (AARE) & New Zealand Association for Research in Education (NZARE) conference in Auckland, 2003]. Refereed Paper: RAB 03740.
- Radtke, R. (2008). Role Morality in the Accounting Profession – How do we Compare to Physicians and Attorneys? *Journal of Business Ethics*, 79(3), 279–297. <https://doi.org/10.1007/s10551-007-9380-x>
- Ratcliffe, S. (2016). Bernard of Chartres (d. c.1130). *Oxford Essential Quotations*. Oxford: Oxford University Press. Retrieved from <http://www.oxfordreference.com/view/10.1093/acref/9780191826719.001.0001/q-oro-ed4-00000952>
- Reddie, M. (2019, November 29). Gay cops accused of having 'loose morals' win landmark discrimination case against NSW Police. *ABC News*. Retrieved from <https://www.abc.net.au/news/2019-11-29/gay-cops-win-landmark-discrimination-case-against-nsw-police/11749158>
- Remus, S. (2014). What should I do next, as far as education or experience? In *Professionals in Emergency Management* [LinkedIn]. Retrieved from <https://www.linkedin.com/groups/106846/>
- Rio Tinto. (2014). *Our people are our most important asset* [Website]. Retrieved from <http://www.riotinto.com/sustainabledevelopment2013/social/health/health.html>
- Robson, C. (2002). *Real world research: A resource for social scientists and practitioner-researchers (2nd ed.)*. Oxford, UK: Blackwell Publishers.
- Rogers, W. & Ballantyne, A. (2010). Towards a practical definition of professional behaviour. *Journal of Medical Ethics*, 36(4), 250–254. <https://doi.org/10.1136/jme.2009.035121>
- Rohn, E. & Blackmore, D. (2009). A unified localizable emergency events scale. *International Journal of Information Systems for Crisis Response and Management (IJISCRAM)*, 1(4), 1–14.
- Ronoh, S., Gaillard, J. & Marlowe, J. (2015). Children with disabilities and disaster preparedness: a case study of Christchurch. Kotuitui: New Zealand. *Journal of Social Sciences*, 10(2), 91–102. doi–org.ezproxy1.library.usyd.edu.au/10.1080/1177083X.2015.1068185

- Roy Morgan. (2017). Roy Morgan Image of Professions Survey 2017: Health professionals continue domination with Nurses most highly regarded again; followed by Doctors and Pharmacists. *Australasian Business Intelligence*, Retrieved from <http://www.roymorgan.com/findings/7244-roy-morgan-image-of-professions-may-2017-201706051543>
- Royal Australian College of General Practitioners. (2019). *History of the RACGP* [Website]. Retrieved from <https://www.racgp.org.au/the-racgp/history/history-of-the-racgp>
- Rozenblit, L. and Keil, F. (2002). The misunderstood limits of folk science– an illusion of explanatory depth. *Cognitive Science Society*, September 1; 26(5): 521–562
- Salisbury, J. (2014). Education versus experience: Which is best? In *Harvard Business Review* [LinkedIn]. Retrieved from <https://www.linkedin.com/groups/3044917/>
- Schneider, R. (1993). The ethical dimensions of emergency management. *Southeastern Political Review*, 21(2), 251–267. doi.org/10.1111/j.1747–1346.1993.tb00362.x
- Schultz, T. W. (1961). Investment in human capital. *The American Economic Review*, 51(1), 1–17. Retrieved from <http://search.proquest.com/docview/1289676944/>
- Scott, K., Caldwell, P., Barnes, E. & Barrett, J. (2015). “Teaching by humiliation” and mistreatment of medical students in clinical rotations: a pilot study. *Medical Journal of Australia*, 203(4), 185–185. <https://doi.org/10.5694/mja15.00189>
- Sewell, T., Stephens, R., Dominey–Howes, D., Bruce, E. & Perkins, S. (2016). Natural disaster declarations in New South Wales, Australia between 2004 and 2014. *Nature Scientific Reports*, 6, 36369; doi:10.1038/srep36369
- Sexton, R. (2010, December 21). Victoria’s poor reporting hides use of force. *The Age*. Retrieved from <http://www.theage.com.au/victoria/victoria-polices-poor-reporting-hides-use-of-force-20101220-1937j.html>
- Sgobbi, F. & Suleman, F. (2015). The value of transferable skills. *Scottish Journal of Political Economy*, 62(4), doi:10.1111/sjpe.12079
- Sherry, M. (2008). Identity. In Given, L. M., (Ed.). *The Sage encyclopedia of qualitative research methods: Vol. I*. Los Angeles, Calif: Sage Publications.
- Shrivastava, S., Sonpar, K., & Pazzaglia, F. (2009). Normal Accident Theory Versus High Reliability Theory: A Resolution and Call for an Open Systems View of Accidents. *Human Relations*. 62. 1357-1390. 10.1177/0018726709339117.
- Sinclair, T. (2016). *Introduction to Social Policy analysis: Illuminating welfare*. Policy Press. University of Bristol: Bristol
- Siniscalco, M. T. & Auriat, N. (2005). Questionnaire design. In Ross, K. N. (Ed.). *Quantitative research methods in educational planning*. Paris: UNESCO International Institute for Educational Planning.

- Smallwood, R., Frank, I. & Walters, T. (2010). The Australian Medical Council: beyond the first 25 years. *Medical Journal of Australia*, 193(10), 566–567.
<https://doi.org/10.5694/j.1326-5377.2010.tb04061.x>
- Smee, B. (2019, December 30). ‘You have utterly no clue’: why ‘climate emergency’ is Australia’s ultimate outrage trigger. *The Guardian*. Retrieved from
<https://www.theguardian.com/australia-news/2019/dec/30/you-have-utterly-no-clue-why-climate-emergency-is-australias-ultimate-outrage-trigger>
- Smith, A. (1776). *An inquiry into the nature and causes of the wealth of nations*. eBook #3300. Retrieved from <http://www.gutenberg.org/3/3/0/3300/>
- Smith, A. (2008). Identifying nationally recognised emergency management skill sets: godsend or poisoned chalice? *The Australian Journal of Emergency Management*, 23(1), 58.
- Somers, S. (2007). Survey and assessment of planning for operational continuity in public works. *Public Works Management & Policy*, 12(2), 451–465.
doi10.1177/1087724X07308772
- South Australia Attorney General’s Department. (2009). *Understanding Legislation*. Retrieved from
<https://www.legislation.sa.gov.au/Web/Information/Understanding%20legislation/UnderstandingLegislation.PDF>
- Specter, A. (2005). Opening statement of Hon. Arlen Specter, A U.S. Senator from the State of Pennsylvania. In U.S. Government Printing Office. (2005). *Oversight of the USA Patriot Act. Hearing before the Committee on the Judiciary: United States Senate. Serial No. J-109-10*. Retrieved from
<https://www.hsdl.org/?view&did=469201>
- Spiewak, D. L. (2005). *Top 10 Core Competencies and Courses as Selected by Practicing Emergency Managers*. International Association of Emergency Managers. Retrieved from
<http://training.fema.gov/EMIWeb/downloads/Daryl%20Spiewak>
- Spiewak, D. L. (2012). CEM Corner: Core vs. program functions. In Thompson, K. (Ed.). *IAEM Bulletin*, 29(3) 5–6. Retrieved from
<https://www.iaem.com/page.cfm?p=resources/newsletter>
- Springer, C. G. (2009). *Emergency managers as change agents*. Retrieved from
http://digitalscholarship.unlv.edu/sea_fac_articles/346
- Stanley, E. M., Sr. & Waugh, W. L., Jr. (2001). Chapter 42: Emergency managers for the new millennium. In Farazmand, A. (Ed.). *Handbook of crisis and emergency management*, (693–702). New York: Marcel Dekker.
- State Coroner of New South Wales. (2017). *Inquest into the deaths arising from the Lindt Cafe Siege: Findings and recommendations*. Department of Justice.
- State Emergency and Rescue Management Act 1989 No 165 (NSW)*. Retrieved from
<https://www.legislation.nsw.gov.au>

- Stehr, S. D. (2007). The changing roles and responsibilities of the local emergency manager: An empirical study. *International Journal of Mass Emergencies and Disasters*, 25(1), 37–56.
- Stevens, D. (2013). *Redefining the emergency manager – A proposal for change. Emergency Management*. Retrieved from <https://www.govtech.com/em/training/Redefining-the-Emergency-Manager.html>
- Sturmer, J. (11 December, 2014). Poor Planning leaves Australia exposed to climate change and massive damage bills, CSIRO says. *ABC News*. Retrieved from [http://www.abc.net.au/news/2014-12-09/damage-bill-for-extreme-natural-disasters-could-top-\\$1-trillion/5955734](http://www.abc.net.au/news/2014-12-09/damage-bill-for-extreme-natural-disasters-could-top-$1-trillion/5955734)
- Sutkus, A., Cauley, P. & Ugarte, N. (2011). *What is the correct role of an emergency manager?* Sacramento: Center for Collaborative Policy, California State University. Retrieved from http://www.csus.edu/ccp/cesa/cesa_visioning_final_feb_2011.pdf
- Sweetland, S. (1996). Human Capital Theory: Foundations of a Field of Inquiry. *Review of Educational Research*, 66(3), 341–359. doi.org/10.3102/00346543066003341
- Szent-Gyorgyi, A. (1957). *Bioenergetics*. New York: Academic Press
- Talbot, J. & Jakeman, M. (2008). *SRMBOK: Security Risk Management Body of Knowledge*. Carlton South, Vic: Risk Management Institution of Australasia.
- Tallis, R. (2006). Doctors in society: medical professionalism in a changing world. *Clinical Medicine*, 6(1), 7–12. London: England. Retrieved from <https://doi.org/10.7861/clinmedicine.6-1-109>
- Tarrant, M. (2006). Risk and emergency management. *The Australian Journal of Emergency Management*, 21(1), 9–14. Retrieved from <http://search.proquest.com/docview/20540131/>
- Tasmania State Emergency Service. (2016). *Section Three – Emergency Management Arrangements*. Retrieved from <http://www.ses.tas.gov.au/h/em/publications/temp/temp8-section3>
- Tasmanian Government. (2018). *Department of Police, Fire & Emergency Management*. Retrieved from <http://www.dpem.tas.gov.au>
- Teague, B. (2014). *Hazelwood mine Fire Inquiry Report 2014. Victorian Government. PP no 342, Session 2010–2014*. ISBN 978-0-9925618-0-2
- Teague, B. (2010). *2009 Victorian Bushfire Royal Commission: Final Report, Summary*. Melbourne: The Commission.
- The Australian. (28 December 2014). CSIRO warns on ‘1 trillion’ natural disaster exposure. *The Australian*. Retrieved from <http://www.theaustralian.com.au/business/latest/csiro-warns-on-1-trillion-natural-disasters-exposure/news-story>

- The British Medical Journal. (1898). Australian Federation and the Medical Profession. *The British Medical Journal*. 1(1942), 780-780. Retrieved from www.jstor.org/stable/20253893
- The Lamp. (2008, May). AMA ‘Wobbly’ on health profession register. *The Lamp*, 65(4), 10. Retrieved from <http://link.galegroup.com.ezproxy1.library.usyd.edu.au/apps/doc/A178896900/AONE?u=usyd&sid=AONE&xid=0c0801d5>
- Tierney, K. J. (2007). Testimony on needed emergency management reforms. *Journal of Homeland Security and Emergency Management*, 4(3), 15-15. doi:10.2202/1547-7355.1388
- Tierney, M. (1994). On method and hope. In Gitlin, A. (Ed.). *Power and method: political activism and educational research*. New York:Routledge.
- Topp, W. S. (2019). Making the transition from law enforcement to emergency management: Organizational, occupational, and cultural issues. In Waugh Jr, W. L. (Ed.). *Journal of Emergency Management*. 17(1), 45-52 Special Issue 1. Weston:MA. ISSN 1543-5865
- Trainor, J. E. & Subbio, T. (2014). *Critical issues in disaster science and management: A dialogue between researchers and practitioners*. Washington, D.C.: FEMA. Retrieved from <https://training.fema.gov/hiedu/docs/critical-issues-in-disaster-science-and-management.pdf>
- Turoff, M., Hiltz, S. R., White, C., Plotnick, L., Hendela, A. & Yoa, X. (2009). The past as the future of emergency preparedness and management. *International Journal of Information Systems for Crisis Response and Management*, 1(1), 12–28.
- Tyler, J., and Sadiq, A-A. (2019), The essential skill set of a resilient emergency manager. In Waugh Jr, W. L. (Ed.). *Journal of Emergency Management*. 17(1), 35-43 Special Issue 1. Weston:MA. ISSN 1543-5865
- UK Essays. (November 2018). *Advantages Disadvantages Of Internet For Research Purposes Information Technology Essay*. Retrieved from <https://www.ukessays.com/essays/information-technology/advantages-disadvantages-of-internet-for-research-purposes-information-technology-essay.php?vref=1>
- United Nations Disaster Risk Reduction. (2017). *Terminology*. Retrieved from <https://www.unisdr.org/we/inform/terminology>
- United States Army. (2009). *Army Regulation 525–27: Military Operations: Army emergency management program*. Washington, DC: USA. Retrieved from http://www.apd.army.mil/ProductMaps/Administrative/AllPubsBySeries_Response.aspx?Series_Num=525
- United States Bureau of Labor Statistics. (2018). *U.S. Department of Labor, Occupational Outlook Handbook, Emergency Management Directors*. Retrieved

- from <https://www.bls.gov/ooh/management/emergency-management-directors.htm#tab-6>
- Verbeek, M. (2009). *Evolving Roles of Emergency Managers*. (Unpublished master's dissertation). Royal Road University, Canada.
- Victoria Government Gazette. (1862, May 24). *Supplement*. Victoria Government Gazette. Retrieved from http://www.austlii.edu.au/au/legis/vic/hist_act/mpao1862234.pdf
- Wahlquist, C. (2018, August 7). Victorian emergency chief resigns amid workplace bullying allegations. *The Guardian*. Retrieved from <https://www.theguardian.com/australia-news/2018/aug/07/victorian-emergency-chief-resigns-amid-workplace-bullying-allegations>
- Walsh, R. L. & Jolly, J. L. (2018). Gifted Education in the Australian Context. *Gifted Child Today*, 41(2), 81–88. <https://doi.org/10.1177/1076217517750702>
- Walters, A. (2014, November 13). NSW's very own Watergate. *Yahoo News*. Retrieved from <https://au.news.yahoo.com/nsw/a/25505910/nsws-very-own-watergate/>
- Wardle, J. (2013). Are there really monsters under the bed? Conspiracies and the complementary and alternative medicine professions. *Australian Journal of Herbal Medicine*, 25(3), 108–111.
- Waugh Jr, W. L. (2019). From the Editor. In Waugh Jr, W. L. (Ed.). *Journal of Emergency Management*. 17(1), 6 Special Issue 1. Weston:MA. ISSN 1543-5865
- Waugh, W. L. (2007a). Chapter 1: Local emergency management in the post-9/11 world. In Tierney, K. J. & Waugh, W. L. (Ed.). *Emergency management: Principles and practice for local government*. Washington, D.C: ICMA Press.
- Waugh, W. L. (2007b). Chapter 11: Public administration, emergency management, and disaster policy. In McEntire, D. A. (Ed.). *Disciplines, disasters, and emergency management: The convergence and divergence of concepts, issues and trends from the research literature*, 161–169. Springfield, Ill: Charles C Thomas.
- Waugh Jr, W. L. and Goss, K. C. (2019). The history of higher education in emergency management: The Emergency Management Institute, the National Science Foundation, and the William Averette Anderson Fund. In Waugh Jr, W. L. (Ed.). *Journal of Emergency Management*. 17(1), 7-11 Special Issue 1. Weston:MA. ISSN 1543-5865
- Waugh, W. L. & Tierney, K. J. (2007). *Emergency management: Principles and practice for local government*. Washington, D.C: ICMA Press.
- Waugh, W. & Streib, G. (2006). Collaboration and Leadership for Effective Emergency Management. *Public Administration Review*, 66(s1), 131–140. doi.org/10.1111/j.1540-6210.2006.00673.x

- Weaver, J., Harkabus, L. C., Braun, J., Miller, S., Cox, R., Griffith, J. & Mazur, R. J. (2014). An Overview Of A Demographic Study Of United States Emergency Managers. *Bulletin of the American Meteorological Society*, 95(2), 199–203. Retrieved from <http://ezproxy.library.usyd.edu.au/login?url=http://search.proquest.com/docview/1518671499?accountid=14757>
- Western Australia Department of Fire & Emergency Services. (2018). *WA Emergency & Risk Management*. Retrieved from <https://www.dfes.wa.gov.au/waemergencyandriskmanagement/Pages/default.aspx>
- Western Australia's Department of Training and Workforce Development. (2016). *Step 1: Job analysis*. Retrieved from <http://www.workplace-essentials.dtwd.wa.gov.au/workforce-development/attraction-and-recruitment/recruiting-employees/step-1-job-analysis>.
- White, G. F. (1945). *Human adjustment to floods: A geographical approach to the flood problem in the United States*. (Doctoral dissertation). University of Chicago: USA.
- White, A., and Here, M. (2017, November 30). Emergency Commissioner 'sorry' after Andrews Government warns state agency that bullying is not acceptable. *Herald Sun*. Retrieved from <http://www.heraldsun.com.au/news/victoria/emergency-commissione...-is-not-acceptable/news-story/e4266d0b4cb531017cecaf68404139d4>
- White, K. (2000). The state, the market, and general practice: the Australian case. *International Journal of Health Services*, 30(2), 285–308. <https://doi.org/10.2190/5D2K->
- Williams, C. (2015). *Analysing Official Documents. Doing international Research: Global and Local Methods*. London: SAGE Publications. doi:10.4135/9781473920361.n14
- Willis, E. (1988). Doctoring in Australia: a view at the bicentenary. (The Changing Character of the Medical Profession). *The Milbank Quarterly*, 66(2), 167–181. <https://doi.org/10.2307/3349921>
- Wilson, B. (2014). I have a question on education in EM. I wish to get my BS in EM. Do online schools hold any weight in this field compared to brick and mortar? Does for-profit vs. not-for-profit matter? In *Professionals in Emergency Management* [LinkedIn]. Retrieved from <https://www.linkedin.com/groups/106846/>
- Wilson, J. L. (2001). *The state of emergency management 2000: The process of emergency management professionalization in the United States and Florida*. Parkland, Fla.: Dissertation.com.

- Wilson, J. & Oyola-Yemaiel, A. (2001). The evolution of emergency management and the advancement towards a profession in the United States and Florida. *Safety Science*, 39(1), 117–132. doi:10.1016/S0925–7535(01)00031–5
- Winchester, H. P. M. (2010). Qualitative research and its place in human geography. Hay, I. (Ed.). *Qualitative Research Methods in Human Geography (3rd ed.)*. Don Mills, Ontario:Canada. Oxford University Press.
- Witherington, M. (2011). *What Do We Know About Recruiting Effective & Successful Fundraisers – Mitch Witherington*. Retrieved from <https://mitchellwitherington.wordpress.com/2011/02/28/what-do-we-know-about-recruiting-effective-successful-fundraiser-mitch-witherington/>
- Witt, J. L. (2011). Quote. In Haddow, G. D., Bullock, J. A. & Coppola, D. P. (2011). *Introduction to emergency management (4th ed.)*. Burlington: Butterworth–Heinemann.
- Wong, D. (2019). *Development and Validation of a Comprehensive Framework for Disaster Evaluation Typologies*. (Unpublished doctoral dissertation). Monash University, Melbourne.
- Woodbury, G. L. (2005). Critical curriculum for emergency management leaders: Three essential themes. *Journal of Emergency Management*, 3(2), 72–92.
- World Bank & United Nations. (2010). *Natural hazards, unnatural disasters: the economics of effective prevention*. World Bank, Washington, D.C
- World Economic Forum. (2013). *Global Risks 2013 (8th ed.)*. Retrieved from http://www3.weforum.org/docs/WEF_GlobalRisks_Report_2013.pdf
- World Meteorological Organization. (2013). Reducing and Managing Risks of Disasters in a Changing Climate. *Bulletin n°: Vol 62 (Special Issue) – 2013*. Retrieved from <https://public.wmo.int/en/bulletin/reducing-and-managing-risks-disasters-changing-climate>
- WorldAPP. (2013). *WorldAPP Products*. Retrieved from http://www.keysurvey.com/company/worldapp_products.jsp
- Wößmann, L. (2003). Specifying Human Capital. *Journal of Economic Surveys*, 17(3), 239–270. doi.org/10.1111/1467–6419.00195
- Wybo, J–L. & Lonka, H. (2002). Emergency management and the information society: how to improve the synergy? *International Journal of Emergency Management*, 1(2), 183–190.
- Yates, J. (1999). Improving the management of emergencies: enhancing the ICS. *The Australian Journal of Emergency Management*. Winter 1999, 22–28
- Younger, E., and Willingham, R. (2018, October 4). United Firefighters Union wins fight to suppress CFS, MFB Bullying investigation findings. *ABC News*. Retrieved from <http://www.abc.net.au/news/2018-10-04/fire-union-wins-court-fight-over-bullying-report/10337128?pfmredir=sm>

*“The global battle to reduce disaster losses by 2030
will be won or lost in Asia and the Pacific”*

Mami Mizutori

United Nations Secretary-General’s

Special Representative for Disaster Risk Reduction