CURRICULUM VITAE: ASSOCIATE PROFESSOR JULIA BECKER

PART 1

1a. Personal details							
Full name Dr		Julia	Susan		Becker		
Present position			Associate Professor				
Organisation/Employer		Massey University, Wellington					
Work telephor	ne	04 9793604			Mobile	0272849478	
Email		j.bec	cker@massey.ac	.nz			

1b. Academic qualifications

2012 PhD (Psychology), Massey University

1999 MSc Hons (Earth sciences) (First class), University of Waikato

1997 BSocSci (Geography, Earth science), University of Waikato

2024 Fellow of The Higher Education Academy (Reference: PR304994)

2019 Associate Fellow of The Higher Education Academy (Reference: PR173394)

1c. Professional positions held				
2022 - present	Associate Professor, Massey University			
2019 - 2021	Senior Lecturer, Massey University			
2004 - 2019	Senior Social Scientist, GNS Science			
2002 - 2004	Research Associate, Oxford Brookes University			
2000 - 2001	Hazards Scientist, Institute of Geological & Nuclear Sciences			
1999 - 2000	Education Officer, EXSCITE Science Centre			
1993 - 1999	Other Positions, Various institutions			

1d. Present research/professional speciality

Social Science: Natural Hazards Research; Emergency Management; Effective Warning Response; Disaster risk management; Community resilience; Evacuation planning; Risk Communication; Community Consultation; Survey design; Survey data analysis; Focus groups; Deliberative engagement; Interviewing.

1e. Total years research experience	27 years		

1f. Professional distinctions and memberships (including honours, prizes,				
scholarships	, boards or governance roles, etc)			
2023	Toka Tū Ake Natural Hazards Commission (NHC) University			
	Research Prog. Grant (Public education for natural hazards) 450k.			
2023	Named investigator in MBIE Endeavor 'Sliding Lands' programme			
2022	MURF grant, Massey University, Volcano Scenario research, 10k			
2022	Promotion to Associate Professor, Massey University			
2021	Earthquake Commission Research (now NHC) Foundation Biennial			
	Award: 69k (Volcano Risk Communication)			
2021-24	Elected to New Zealand Society for Earthquake Engineering			
	Management Committee			
2021	MURF grant, Massey University, for Canterbury Earthquake			
	preparedness research, 6k			

QuakeCoRE grant for ShakeOut Earthquake Drill research,15k
QuakeCoRE IP2 (Thriving Residential Communities) co-lead
Appointed Deputy Director (Research), Joint Centre for Disaster Research, Massey University
Emergency Management Public Affairs "Highly Commended" award for excellence in Emergency Communication research (Napier Hill)
Ministry of Business Innovation and Employment, COVID-19 funding for redevelopment of the Psychosocial Framework \$126k.
Ministry of Business Innovation and Employment, COVID-19 funding for redevelopment of the Psychosocial Framework
Named investigator in 'COVID-19 Pandemic in Aotearoa NZ: Impact, inequalities & improving our response' \$500k (University of Otago)
Named collaborator in 'Improving effectiveness and equity in the operation of COVID-19 self-isolation' \$180k (University of Otago)
Massey University Strategic Investment Fund (SIF): Building a community of practice towards the conceptualisation of citizen-led low-cost early warning systems. 150k (with Rai Prasanna and team)
Member of the Joint Centre for Disaster Research team awarded the Massey University Research Medal for 2019.
Part of the 'It's Our Fault' team, winner of the Supreme Award at the 2019 Science New Zealand National Awards
Invitation to be a Primary Investigator for QuakeCoRE
Emergency Management Public Affairs award for excellence in
research on Emergency Communication
Resilience to Nature's Challenge National Science Challenge: Leader of Resilience in Practice Model
QuakeCoRE: Grant
New Zealand Coastal Society: Terry Healy Project Award, 2017 -
Earthquake Commission Research Foundation: EQC research
NZ Hazards Platform: Theme Leader: Societal Theme
QuakeCoRE: Grant for Research for research on perceptions of low risk seismic hazards
Ministry of Civil Defence and Emergency Management: NZ ShakeOut Earthquake Drill Steering Group
New Zealand Society for Earthquake Engineering: Member Emerald Literati Network: Best Research Paper Royal Society of New Zealand: ISAT Grant IPCC: Invited reviewer for Ch. 11 IPCC report NZ Society for Risk Management: Member University of Waikato: 1st Prize, Student Oral Paper University of Waikato: Masters Scholarship

1g. Total number of <i>peer</i> <i>reviewed</i> publications and patents	Journal articles	Books, book chapters, books edited	Conference proceedings	Patents
	106	7	50	0

PART 2

2a. Research publications and dissemination (more available on request) Peer-reviewed journal articles

- Das, M.; **Becker, J. S.;** Doyle, E. E.; Charlton, D., Clive, M. A., Krippner, J., ... & McBride, S. K. 2025. The communication of volcano information in New Zealand–a narrative review. New Zealand Journal of Geology and Geophysics, 1-18.
- Das, M.; **Becker, J.;** & Doyle, E. E. 2025. 'One big team working together'-Shifting narratives to encourage civic participation and collective action in disaster preparedness. International Journal of Disaster Risk Reduction, 105218.
- **Becker, J. S.;** Vinnell, L. J.; Doyle, E. E.; McBride, S. K.; Paton, D.; & Johnston, D. M. 2024. A decade of shaking in the Garden City: the dynamics of preparedness, perceptions, and beliefs in Canterbury, New Zealand, and implications for earthquake information. Frontiers in Communication, 9, 1410333.
- Das, M.; **Becker, J.;** & Doyle, E. E. 2024. Fostering civic participation and collective actions for disaster risk reduction: Insights from Aotearoa New Zealand case studies. International Journal of Disaster Risk Reduction, 114, 104954.
- Doyle, E. E.; Thompson, J.; Hill, S. R.; Williams, M.; Paton, D.; Harrison, S. E.; Bostrom, A.; & Becker, J. S. 2024. Differences in perceived sources of uncertainty in natural hazards science advice: lessons for cross-disciplinary communication. Frontiers in Communication, 9, 1366995.
- Mizrahi, L., Dallo, I., van der Elst, N. J., Christophersen, A., Spassiani, I., Werner, M. J., ... Becker, J.; Han, M.; Kuratle, L., Marti, M.; & Wiemer, S. 2024. Developing, testing, and communicating earthquake forecasts: Current practices and future directions. Reviews of Geophysics, 62(3), e2023RG000823.
- Mowll, R.; Anderson, M. J.; Logan, T. M.; Becker, J. S.; Wotherspoon, L. M.; Stewart, C.; Johnston, D.; & Neely, D. 2024. A new mapping tool to visualise critical infrastructure levels of service following a major earthquake. Progress in Disaster Science, 21, 100312.
- Paton, D.; Becker, J. S.; Johnston, D. M.; Buergelt, P. T.; Tedim, F.; & Jang, L. J. 2024. The development and use of Community Engagement Theory to inform readiness interventions for natural hazard events. Australasian Journal of Disaster and Trauma Studies, 28(1).
- Paton, D.; Buergelt, P. T.; Becker, J. S.; Doyle, E. E.; Jang, L.; Johnston, D. M.; & Tedim, F. (2024). Transformative approaches to disaster risk reduction: Social, societal, and environmental contributions to post-disaster capacity building. Australasian Journal of Disaster and Trauma Studies, 28(1).
- Wein, A. M.; McBride, S. K.; Becker, J. S.; Christophersen, A.; Doyle, E. E.; Gerstenberger, M. C.; & Potter, S. H. 2024. Long-term communication of aftershock forecasts: The Canterbury earthquake sequence in New Zealand. International Journal of Disaster Risk Reduction, 114, 104878.
- Vinnell, L. J.; Tan, M. L.; Prasanna, R., & **Becker, J. S.** 2023. Knowledge, perceptions, and behavioural responses to earthquake early warning in Aotearoa. *Frontiers in Communication,* 8, 1229247.
- Mowll, R.; **Becker, J.;** Wotherspoon, L.; Stewart, C.; Johnston, D.; & Neely, D. 2023. Infrastructure planning emergency levels of service for the Wellington region, Aotearoa New Zealand–An operationalised framework. *Bulletin of the New Zealand Society for Earthquake Engineering*, 56(4), 234-249.

Mowll, R.; Becker, J.; Wotherspoon, L.; Stewart, C.; Johnston, D.; & Neely, D. 2023. Creating a 'planning emergency levels of service' framework–a silver bullet, or something useful for target practice?. *Resilient Cities and Structures*, 2(2), 1-12.

- Miranda, C.; Toma, C.; Stephens, M.; & **Becker, J.** 2023. Predictions of Damage to Timber-Framed Houses. II: Aligning Social and Engineering Predictions of Earthquake Damage before and after Strengthening. Natural Hazards Review, 24(4), 04023038.
- Tan, M. L.; Vinnell, L. J.; Valentin, A. P. M.; Prasanna, R.; & Becker, J. S. 2023. The public's perception of an earthquake early warning system: A study on factors influencing continuance intention. *International Journal of Disaster Risk Reduction*, 97, 104032.
- Doyle, E. E.; Thompson, J.; Hill S.; Williams, M.; Paton, D.; Harrison, S.; Bostrom, A., & Becker, J. 2023. Where does scientific uncertainty come from, and from whom? Mapping perspectives of natural hazards science advice. International Journal of Disaster Risk Reduction, 96, 103948.
- Vinnell, L. J.; Becker, J. S.; Doyle, E. E.; & Gray, L. 2023. COVID-19 vaccine intentions in Aotearoa New Zealand: Behaviour, risk perceptions, and collective versus individual motivations. *Current Research in Ecological and Social Psychology*, 4, 100082.
- Miranda, C.; **Becker**, J. S.; Toma, C. L.; Vinnell, L. J. 2023. Homeowners' Perceptions of Seismic Building Performance and Implications for Preparedness in New Zealand. *Natural Hazards Review*, 24(1), 04022047.
- **Becker, J. S.;** Blake, D.; Thompson, J.; Vinnell, L. J.; Doyle, E. E. (2022). Communicating evacuation information to multi-storey apartment dwellers: a case study of the 2016 Kaikōura earthquake in Te Whanganui-a-Tara (Wellington), Aotearoa New Zealand. New Zealand Journal of Geology and Geophysics, 1-15.
- Becker, J. S.; Vinnell, L. J.; McBride, S. K.; Nakayachi, K.; Doyle, E. E.; Potter, S. H.; Bostrom, A. (2022). The effects of earthquake experience on intentions to respond to earthquake early warnings. Frontiers in Communication, 7, 857004.
- Blake, D.; **Becker, J.;** Hodgetts, D.; Hope, A. (2022). The 2016 Kaikōura Earthquake: Experiences of Safety, Evacuation, and Return for Apartment Dwellers in Te Whanganui-a-Tara, Aotearoa New Zealand. International Journal of Mass Emergencies & Disasters, 40(1).
- Bostrom, A.; McBride, S. K.; **Becker, J. S.;** Goltz, J. D.; de Groot, R. M.; Peek, L.; ... Dixon, M. (2022). Great expectations for earthquake early warnings on the United States West Coast. International Journal of Disaster Risk Reduction, 82, 103296.
- Dryhurst, S.; Mulder, F.; Dallo, I.; Kerr, J. R.; McBride, S. K.; Fallou, L.; & Becker, J.
 S. (2022). Fighting misinformation in seismology: Expert opinion on earthquake facts vs. fiction. *Frontiers in Earth Science*, 10, 937055.
- Miranda, C.; **Becker, J. S.**; Toma, C.; Vinnell, L.; Johnston, D. M. 2021. Seismic experience and structural preparedness of residential houses in Aotearoa New Zealand. *International Journal of Disaster Risk Reduction*, 102590.
- **Becker, J. S.;** Potter, S. H.; Vinnell, L. J.; Nakayachi, K.; McBride, S. K.; Johnston, D. M. 2020. Earthquake early warning in Aotearoa New Zealand: a survey of public perspectives to guide warning system development. *Humanities and Social Sciences Communications*, 7(1), 1-12.
- **Becker, J.S**.; Potter, S.H.; McBride, S.K.; Gerstenberger, M.C.; Christophersen, A. 2020 Forecasting for a fractured land: A case study of the communication and use of aftershock forecasts from the 2016 Mw Kaikōura earthquake in Aotearoa New Zealand. *Seismological Research Letters*, https://doi.org/10.1785/0220190354

- **Becker, J. S.**; et al. 2020. Scoping the potential for Earthquake Early Warning in Aotearoa New Zealand: A sectoral analysis of perceived benefits and challenges. I, 101765. https://doi.org/10.1016/j.ijdrr.2020.101765
- Nakayachi, K., **Becker, J. S.**, Potter, S. H., & Dixon, M. (2019). Residents' Reactions to Earthquake Early Warnings in Japan. *Risk Analysis*. doi:10.1111/risa.13306
- **Becker, J.S.**; Paton, D.; Johnston, D.M.; Ronan, K.R.; McClure, J. 2017. The role of prior experience in informing and motivating earthquake preparedness. *International Journal of Disaster Risk Reduction, 22:* 179-193; doi: 10.1016/j.ijdrr.2017.03.006
- **Becker, J.S.**; Paton, D.; Johnston, D.M.; Ronan, K. 2014. Societal influences on earthquake information meaning-making and household preparedness. *International Journal of Mass Emergencies and Disasters*, *32(2)*: 317-352
- **Becker, J.S.**; Beban, J.G.; Saunders, W.S.A.; Van Dissen, R.J.; King, A.B. 2013. Land use planning and policy for earthquakes in the Wellington Region, New Zealand (2001-2011). *Australasian Journal of Disaster and Trauma Studies, 2013-1*: 3-16

Peer reviewed books, book chapters, books edited

- Tan, M. L.; Brown, A.; Stock, K.; Becker, J. S.; Kenney, C.; Lambie, E.; Cui, A.; & Prasanna, R. (2024). 'Balancing human needs with technology'—a design-led approach for exploring an earthquake early warning system in Aotearoa New Zealand. In Design for Emergency Management. Taylor & Francis.
- Doyle, E.E.H.; **Becker, J.S.** 2022.Understanding the Risk Communication Puzzle for Natural Hazards and Disasters. In: *Oxford Research Encyclopedia of Natural Hazard Science*. <u>https://doi.org/10.1093/acrefore/9780199389407.013.208</u>
- **Becker, J.S.**; Saunders, W.S.A.; Hopkins, L.; Wright, K.C.; Johnston, D.M. 2011. Preplanning for recovery. p. 525-550 In: Miller, D.S.; Rivera, J.D. (eds) *Community disaster recovery and resiliency: exploring global opportunities and challenges.* Boca Raton, Fla.: CRC Press.
- Johnston, D.M.; **Becker, J.S.**; Cousins, W.J. 2006. Lifelines and urban resilience. p. 40-65 In: Paton, D.; Johnston, D.M. *Disaster resilience: an integrated approach.* Springfield, III.: Charles C. Thomas.

Refereed conference proceedings

- Miranda, C.; Eade, C.; Brown, C.; **Becker, J**; & Hudson-Doyle, E. 2024. Communicating seismic risk with commercial building tenants: Preliminary results. *Proceedings of the 2024 New Zealand Society for Earthquake Engineering Annual Technical Conference, Wellington, NZ*, <u>https://repo.nzsee.org.nz/handle/nzsee/2702</u>
- Neupane, S.; Inch, P.; Becker, J.; Vinnell, L; Goded, Y.; & Prasanna, R. 2024. Analysis of Felt Detailed 'Final Comments' for the 2016 Kaikōura earthquake. Proceedings of the 2024 New Zealand Society for Earthquake Engineering Annual Technical Conference, Wellington, NZ, https://repo.nzsee.org.nz/handle/nzsee/2763.
- Hudson-Doyle, E., Thompson, J., Hill, S., Williams, M., Paton, D., Harrison, S., Bostrom, A; & Becker, J. 2024, April. Using mental models as a tool to understand perspectives of scientific uncertainty and effectively communicate

natural hazards science advice. *In EGU General Assembly Conference Abstracts* (p. 1438).

- **Becker, J.S**.; Vinnell., L.J.; Doyle, E.E.H.; Paton, D.; McBride, S.K.; Johnston, D.M. 2023. Earthquake perceptions, beliefs, and preparedness in the Canterbury Region: A comparison before, during and after the Canterbury Earthquake Sequence in Aotearoa New Zealand. *Proceedings of the Australian Earthquake Engineering Society 2023 National Conference, 23-25 November 2023 Brisbane, Queensland, Australia.*
- Abeling, S.; Miranda, C.; & **Becker, J.** 2023. Public expectations of damage and disruption to existing multi-storey buildings in earthquakes. *Proceedings of the New Zealand Society for Earthquake Engineering (NZSEE) Annual Technical Conference, University of Auckland, Auckland, New Zealand, April 2023.*
- Tapuke, K.; Kaiser, L.; Johnston, D.; McCombe, G.; & Becker, J. 2023. Enhancing earthquake and tsunami preparedness and response in Kura Kaupapa Māori/Schools in Tairāwhiti and Waiāriki, Aotearoa New Zealand. Proceedings of the New Zealand Society for Earthquake Engineering (NZSEE) Annual Technical Conference, University of Auckland, Auckland, New Zealand, April 2023.
- McBride, S.K.; Bellizzi, J.; Ake, A.; Sumy, D.F.; Gin, S.; Stewart, C.; Santos-Hernandez, J.; Ohlendorf, S.J.; Cochran, E.S.; Ball, J.L; & **Becker, J.S.**, 2022. *Analyzing Behavioral Responses Captured on Video to the Hunga Tonga–Hunga Ha'apai Eruption, Atmospheric shockwaves, and Tsunami.* In AGU Fall Meeting Abstracts (Vol. 2022, pp. SY42A-03).
- Johnston, D.; Tan, M.; Harrison, S.; **Becker, J**.; Cui, A.; Potter, S. 2022. Opportunities for and challenges with utilising crowdsourced and citizen data in weather forecasts and warnings. Presentation at: *Integration of urban-related activities in WMO Workshop*, 13-15 June 2022, Geneva (and online). https://community.wmo.int/meetings/integration-urban-related-activities-wmo
- Bostrom, A.; McBride, S.K.; **Becker, J.S**.; DeGroot, R.M.; Goltz, J.D.; 2021. December. Understanding Perceptions and Attitudes in Washington, Oregon and California about ShakeAlert, the Earthquake Early Warning System for the United States of America. In *AGU Fall Meeting 2021*. AGU.
- **Becker, J.S.;** Vinnell, L.J.; Potter, S.; Tan, M.L.; Prasanna, R.; Nakayachi, K.; Francois-Holden, C.; Horspool, N.A.; Payne, B.A.; Johnston, D.M. 2020 . Perceived uses and responses to Earthquake Early Warning in Aotearoa New Zealand. In AGU Fall Meeting 2020. AGU.
- **Becker, J.S.**; Paton, D.; Johnston, D.M.; Kwok, A.; McClure, J. 2016. Twenty years of resilience research: from models to measurement. p. 1001-1011 In: Domingo, N.; Wilkinson, S. (eds) 6th International Conference on Building Resilience: building resilience to address the unexpected. Massey University; University of Auckland, NZ.
- **Becker, J.S.**; Johnston, D.M.; Paton, D.; Ronan, K. 2011. Earthquake information and household preparedness: results of interviews with residents in Timaru, Wanganui and Napier. paper 021 In: *Ninth Pacific Conference on Earthquake Engineering: building an earthquake resilient society, April 14-16, 2011, University of Auckland, Auckland, New Zealand.* Auckland, NZ: 9PCEE.

Other forms of dissemination (reports for clients, technical reports, popular press, etc)

Vinnell, L.J.; **Becker, J.S.;** Johnston, D.M. (2023). Overview of Behavioural Theories: Key Principles and Examples. *Disaster Research Science Report;* 2023/01 Wellington (NZ): Massey University. 20 p.

- Vinnell, L.J.; **Becker, J.S.;** Johnston, D.M. (2023). Behaviour Theory Considerations for the Natural Hazards Portal. *Disaster Research Science Report; 2023/02* Wellington (NZ): Massey University. 17 p.
- **Becker, J.S.;** Payne, B.A.; Paton, D. 2020. Understanding readiness for disasters on the East Coast, North Island, Aotearoa New Zealand: A summary of preparedness surveys. Disaster Research Science Report; 2020/05, Wellington (NZ): Massey University.101p.
- Payne, B.; Rushton, A; Johnston, D.; Becker, J.; MacDonald, C.; Mooney, M. 2021. An Evaluation of the Effectiveness of MPI Rural Recovery Advice Funds. Report prepared by the Joint Centre for Disaster Research (Massey University) for the Ministry for Primary Industries (MPI), October 2021.

Becker, J.S.; Coomer, M.A.; Potter, S.H.; McBride, S.K. 2017. New Zealand ShakeOut 2012: a survey evaluation one year on. Lower Hutt, N.Z.: GNS Science. *GNS Science report 2016/52.* 81 p.; doi: 10.21420/G2PS3C

Becker, J.S.; Paton, D.; Johnston, D.M. 2015. Communication of risk: a community resilience project. Lower Hutt, N.Z.: GNS Science. *GNS Science report 2015/66.* 30 p.

Becker, J.S. 2010. Understanding disaster preparedness and resilience in Canterbury: results of interviews, focus groups and a questionnaire survey. Lower Hutt: GNS Science. *GNS Science report 2010/50.* 92 p.

Becker, J.S. 2009. Observations from the Great Southern California Earthquake ShakeOut. Lower Hutt: GNS Science. *GNS Science report 2009/31.* 20 p.

Becker, J.S.; Saunders, W.S.A. 2007. Enhancing sustainability through pre-event recovery planning. *Planning Quarterly, 164:* 14-18

2b. Previous research work

Research title: Volcano Risk Communication

Principle Outcome: Focus groups and interviews with public and stakeholders to understand how information and communication can support decision-making for different stages of volcanic activity

Principal end-user: Public, GeoNet, NEMA/CDEM, local and central government, lifelines, etc.

Contact: Natural Hazards Commission Toka Tū Ake (NHC) - Earthquake Commission

Research title: Planning Emergency Levels of Service research **Principal outcome:** Social science research to understand how to implement Emergency Levels of Service for utilities, lifelines and infrastructure agencies. **Principal end-users and contact:** National Emergency Management Agency (NEMA), Civil Defence Emergency Management (CDEM) Groups, local and central government, lifelines and utilities agencies. **Research title:** Social benefits of Earthquake Early Warning (EEW) for NZ **Principal outcome:** Social science research to understand benefits of EEW in NZ. **Principal end-users and contact:** NHC Toka Tū Ake; National Emergency Management Agency (NEMA), US Geological Survey (USGS); Civil Defence Emergency Management (CDEM) Groups, local and central government, lifelines, education, etc.

Research title: Aftershock communication project

Principal outcome: Improve aftershock communication (including forecasts) by investigating the communication of aftershocks during Canterbury/Kaikōura earthquakes.

Principal end-users and contact: GeoNet, MCDEM, CDEM Groups, USGS

Research title: Public interpretation of earthquake information and preparedness, including the ShakeOut earthquake drill

Principal outcome: Social science research aimed at providing recommendations for how to improve earthquake education programmes.

Principal end-users and contact: NEMA, CDEM Groups, NHC

Research title: Community resilience

Principal outcome: Development of a model of resilience and guidelines on how to build resilience. CDEM Groups using recommendations to build/measure resilience. **Principal end-users and contact:** NEMA, Hawke's Bay other CDEM Groups, NHC

2c. Describe the commercial, social or environmental impact of your previous research work

- Research has informed risk communication regarding earthquake prone buildings, e.g., through MBIE guidance (tenant guidance) and working with agencies like Ministry of Education.
- Provision of research-informed public education and communication advice for NHC and NEMA, which has been applied into strategy and messaging.
- Research has helped update ShakeOut earthquake drill guidance and communication of ShakeOut messaging via NEMA.
- We have informed best practice aftershock forecasts and earthquake communications via GeoNet, but also for other end-users nationally (e.g. NEMA) and internationally (USGS forecasts for 2015 Nepal, 2019-20 Puerto Rico).
- We have assisted in updating best practice advice for Earthquake Early Warning communication and protective action response, e.g. for ShakeAlert in the USA.
- We have worked with local emergency management groups to implement research-informed resilience building and monitoring, e.g., in Hawke's Bay.

2d. Demonstration of relationships with end-users

In undertaking research, I have developed relationships with a variety of end-users from national and international organisations (e.g., NEMA, CDEM Groups, local authorities, Natural Hazards Commission Toka Tū Ake, United States Geological Survey, CIDIGEN Chile, Australian, US, UK and Japanese Universities, European earth science agencies, WMO), and Māori, including iwi, hapū and entities involved in managing emergencies. End-users are involved in development of the research, in undertaking the research, and in writing up the results. This partnership approach has been useful in ensuring valid research questions are being investigated and in gaining buy-in and support of the research.