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## Article

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# A Community Needs Assessment Model on heatwave-related health risks in the elderly: A pitch

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## Abstract

The pitch template initiated by Faff (2015, 2021) is employed in this pitching research letter (PRL) for my PhD research topic. It not only facilitates a systematic approach for researchers to articulate a research idea critically but also aids new PhD students and novice researchers in overcoming the uncertainties in their early research stage. This PRL comprises the introduction and brief review of the pitching template, followed by a personal reflection regarding the implementation of the framework and its benefits.

**Keywords:** Pitching Research; Community Needs Assessment Model; Heatwave; Health Risks; the Elderly

**JEL codes:** I18, Q54

## 1. Introduction

This paper intends to review the pitch template introduced by Faff (2015, 2021) and its application to my academic research topic—environmental health related to heatwaves. I am currently a PhD candidate at Griffith University School of Medicine and Dentistry approaching completion. Upon reflection on the early stages of my research, one of the most pronounced obstacles was identifying and proceeding with a novel research topic that contributes to one's research. However, I was acquainted with the academic research process when I participated in Professor Robert Faff's

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enlightening course—The Process of Research in Business (RBUS6914)—during the second semester of my PhD. During the course, students employed a two-page template when assigned pitches associated with their research topics, encouraging them to articulate their thoughts succinctly. The pitch activity and constructive feedback from Professor Faff enriched the students’ thought processes while interpreting literature, developing a visionary research proposal, and so on. Thus, the pitch template assisted me in overcoming the difficulty mentioned earlier. Since then, the course has provided a foundation for my PhD research and dissertation; simultaneously, it has increased my assurance to tackle a research topic.

The pitching framework also functions as a guidance tool for the cogent organisation of research ideas, critical evaluation of data, and systematic development of a methodology. In addition to that is the generation of original research ideas that substantially contribute to the research community and stakeholders. All of these can be accomplished while aligned with the researcher and journal’s interests and is tangible to achieve when conducting research and experiments. As a result, the skills developed are invaluable for PhD students and relevant to the preparation of confirmation documents and potentially high-quality publications.

The remainder of this PRL is arranged as follows: Section 2 briefly describes the finalised pitch, Section 3 details my personal reflections on the new knowledge and skills acquired from the application of the pitch template, and Section 4 delivers concluding remarks.

## **2. Brief review of the implementation of the pitch template**

The completed pitch research adhering to the framework proposed by Faff (2015, 2021) on the subject of heatwaves and health (Item A) is appended in Table 1. A primary research question (Item B) follows that. It identifies the potential strategies that could be employed to assist the development of a heatwave adaptation plan to accommodate the health needs of the elderly (people aged 60 years and over) in Malaysia, based on a comprehensive Community Needs Assessment (CNA) Model developed by Chu (1994). Understanding existing research and debates pertinent to the research topic is conducive to building the knowledge for writing a persuasive research paper. Nevertheless, the vast amount of information offered in the literature can become overwhelming, at times, for novice researchers applying filters to find the most relevant articles. Thus, the “cocktail glass” approach suggested by Faff (2015), which describes the iterative process of refining likely topics after traversing and reading literature, can herein be beneficial to narrow the most critical papers to the chosen topic (Item C). It must also accentuate the “known” and “unknown” facets of the topics, prompting further investigation. The key papers were selected per the criteria proposed by Faff (2015, 2021), namely, those recently published in top-tier journals written by experts in the field.

One of the more recent and applicable research papers is “Comparison of health risks by heat wave definition: Applicability of wet-bulb globe temperature for heat wave criteria” by Heo *et al.* (2019). The study assessed the health effects of heatwaves occurring in various cities or provinces in South Korea between 2011 and 2014 and was published in a well-reputed environmental science and health journal, *Environmental Research*, with an impact factor of 8.431 and in Quartile 1.

The second seminal paper selected, by Zhang *et al.* (2021) examined the interaction between residential greenness and heatwave days and mortality among the elderly in diverse climate regions of China from 2000 to 2014. It was published in one of the United Kingdom’s leading journals, *Environmental Pollution*, with an impact factor of 9.988 and Quartile 1.

The third key research paper selected, by Sahani *et al.* (2022) was published in *Sustainable Cities and Society*, a journal with a high impact factor of 10.696 and is ranked in Quartile 1 as indicated by the Scimago Journal and Country Rank (2022). The study analysed the risk of heatwaves on mortality in two different regions of the United Kingdom using all-cause daily death record data between 1981 and 2018. It observed an increasing trend for the maximum temperature of Southeast England and Aberdeenshire. However, the minimum mortality temperature is 2°C lower for Aberdeenshire than Southeast England. Likewise, in Malaysia, where heatwaves are becoming a serious issue, an adaptation plan for the population and, specifically, the vulnerable group – the elderly – should be devised and implemented.

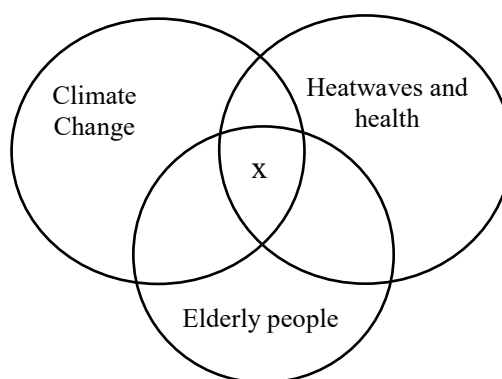
Three primary factors (Item D) served as the impetus for the study. Despite its climatological importance, a significant research gap is that Southeast Asia regions such as Malaysia are limited by scarcity in heatwave research and empirical findings. First, most of the research has been conducted in developed and well-resourced countries with varied heatwave susceptibility patterns, implying that results could not be generalisable to the context of Malaysia. Second, prior literature noted that heatwaves, while not causing damage to infrastructure, still lead to an increase in morbidity and mortality, in particular to the most vulnerable group, the elderly, and, as a result, are a concerning issue. According to Marmot (2005), the ageing population in Malaysia is projected to double between 2020 and 2040, with an associated rise in demand for health services. In the long run, it will be a challenge to the healthcare system because the number of patients and the elderly requiring care could be increased by climate events such as heatwaves. Third, heatwaves have not yet attracted sufficient attention from the Malaysian Government compared to flood events, inferring that the nation is restricted by inadequate climate change policy targeted at older generations and the public.

The paper proceeds with the template being constructed around a “3–2–1” design. The “3” denotes the core concepts of the research project, precisely the Idea, Data and Tools. The Idea section (Item E) elaborates on the objective and central theme that drove the research. The aim is to investigate the health risks associated with

heatwaves for the elderly in Malaysia and perform a CNA to develop an adaptation strategy plan for policymakers. The independent and dependent variables are as distinguished. In continuation is the Data section (Item F), which outlines the required source of data and methodology employed to gather qualitative and quantitative data. The Tools section (Item G) lists the methods to clean the data and the preferable software to analyse results and determine outcomes.

The next critical component of the pitch, represented by “2”, stimulates the consideration of the two questions: What is New? (Item H) and So What? (Item I), by evaluating the respective novelty of the outcomes of one’s research and its significance. A simple tool, the “Mickey Mouse” Venn diagram or similar to contextual fields as proposed by Professor Cordia Chu, can be implemented to redirect researchers towards visualising the “innovation” of their research as depicted by the junction connecting the three pillars of the study in Figure 1. The straightforward visual representation aids in the clarification of concepts and thereafter eliminates time lost to uncertainties and confusion in later stages of the research process. My research topic incorporated three relevant areas of literature, as identified in Figure 1. The novelty of my research is that it will fill the knowledge gap concerning heatwaves in equatorial regions in Southeast Asia, specifically in Malaysia, and understand the population’s (the elderly) health needs, consequently leading to the development of a potential heatwave adaptation strategy plan.

**Figure 1. Mickey Mouse Diagram depicting the novelty of the pitch**



The “1” refers to the primary goal of the paper. Considering the above questions, this meant that the Contribution (Item J) of the research could quickly be outlined, that is, the comprehensive information derived from the CNA findings can enhance local strategies in response to mitigating health risks from heatwaves and assisting policymakers in formulating a holistic policy for the elderly of Malaysia. Finally, the Other Considerations section (Item K) challenges researchers to conceptualise the weaknesses and strengths of the research model, ethical issues, external support that may be required, or risks of obsolescence.

### 3. Personal reflection on the pitching template

When I was at the early stage of my research career with limited experience, I found it slightly challenging to progress with a novel research topic without a streamlined approach to convey my respective research ideas. However, after learning the pitch template, it has become a valuable tool to be adopted into my research endeavours. The compact layout of the two-page template assists researchers in understanding that research is a non-chronological process whereby the “Motivation” section could be identified prior to defining a research question because they link with each other. This also redirects researchers’ attention from the specifics of programs and formulas used for the “Data” and “Tools” sections, as research is an iterative process. Other benefits are also illustrated below.

First, it is imperative for researchers to review and understand the existing literature around the scope of study to identify the gaps and comprehend the sections that should be incorporated in their paper. In this regard, the template's visual methods and metaphoric techniques facilitate critical thinking skills, enabling me to filter the most pertinent research paper and examine whether potential flaws exist in its explanations of logical concepts or research design. The skills are also applied in the “Other Considerations” aspect of the template, which drives me to envisage the strengths and weaknesses of the practical and theoretical impacts of the proposed research. Had it not been cognisant in advance, it could result in unnecessary difficulties during the research effort if encountered with an unforeseen risk. A consideration is that it is indispensable to place an external request for secondary data from the Malaysian Meteorological Department and the Ministry of Health Malaysia. Furthermore, collaboration with policymakers in Malaysia is essential, to implement policies and regulations that would ensure the elderly’s health needs and safety, in particular during a heatwave.

Additionally, the pitch template offers a systematic approach to guide the structure of my research design. For my PhD, I examined the topic of heatwave-related health risks for the elderly in Malaysia, because, according to world literature, the elderly is the most vulnerable to the consequences of a heatwave. Having experience utilising the pitch template, it made identifying the key papers based on the motivation of this topic easier, following the organisation of pertinent quantitative and qualitative data to address the research question. However, the sections detailing “What’s new?” and “Contributions” challenged me to realise the novelty of the research topic and ask, “So what?” to examine how the study may impact different stakeholders. A key takeaway I have gained from the completion of the framework is that research should inspire the creation of innovative knowledge or, alternatively, build upon existing knowledge. Moreover, researchers should be aware that the knowledge and resources from the study should ideally solve a prevailing problem, benefit the research end-users, and also contribute to the environment, economy and community.

Finally, the template assists me in narrowing a broad research topic down to a concise and relevant aspect of the study. The simplification of ideas discussed provides more clarity to supervisors, fellow scholars, and those whose area of specialisation is not in environmental health. This, in turn, facilitates valuable suggestions and feedback, which could be imperative to the improvement of the research. The pitch framework has been a steep learning curve for me, heightening my knowledge of the application of Faff's template and its value in the research community.

## 4. Conclusion

This PRL summarises the practice of applying the pitch research template initiated by Faff (2015, 2021) to the academic research topic regarding environmental health during the initial stages of my PhD journey. The template has been a convenient resource for novice or experienced researchers to deliver a detailed and attentive research project on paper and orally, facilitating efficient communication of key elements with the targeted audience. The gain from the familiarity in using it has yielded enormous benefits, including identifying elements that were of the essence to the success of the research project. For that reason, I recommend this template to all researchers, independent of their research background.

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**Table 1. Completed 2-page pitch template on “A Community Needs Assessment  
Model on heatwave-related health risks in the elderly”**

Pitcher's Name	Kun Hing Yong & Cordia Chu	For category	Environmental Health	Date Completed	20 <sup>th</sup> December 2022
(A) Working Title	A Community Needs Assessment Model on heatwave-related health risks in the elderly: A pitch				
(B) Basic Research Question	What potential strategies can be employed to assist the development of a heatwave adaptation plan for accommodating the health needs of the elderly in Malaysia based on a comprehensive Community Needs Assessment (CNA) model?				
(C) Key Paper(s)	<p>Heo, S., Bell, M.L., &amp; Lee, J. (2019) "Comparison of health risks by heat wave definition: Applicability of wet-bulb globe temperature for heat wave criteria", <i>Environmental Research</i>, vol.168: 158-170.</p> <p>Sahani, J., Kumar, P., Debele, S. &amp; Emmanuel, R. (2022) "Heat risk of mortality in two different regions of the United Kingdom", <i>Sustainable Cities and Society</i>, vol.80: 103758.</p> <p>Zhang, H., Liu, L., Zeng, Y., Liu, M., Bi, J. &amp; Ji, J. S. (2021) "Effect of heatwaves and greenness on mortality among Chinese older adults", <i>Environmental Pollution</i>, vol.290: 118009.</p>				
(D) Motivation/Puzzle	Heatwave-related illnesses ranging from mild to fatal can potentially affect the global community, particularly the elderly, due to their increased susceptibility with age. Prior literature predicts that the elderly population, those aged 60 and above, will increase significantly, with a substantial proportion of them residing in low- and middle-income countries like Malaysia. The equatorial location of Malaysia means it poses a higher risk to the health of the elderly; however, a heatwave is yet to be declared a climate-related disaster within the country, and the elderly is yet to be included in its climate change policy. This study aims to investigate and analyse empirical evidence of heatwave-related health risks associated with the elderly. Existing studies examining the correlation between heatwaves and health focus on countries such as the United States, Europe, China, and Australia. In contrast, research is limited in Southeast Asia countries which are also climate-vulnerable regions, in particular Malaysia. Consequently, the results may not be generalisable to Malaysia as heatwave vulnerability varied spatially not only across world regions but also within a country.				
THREE					
(E) Idea?	The core objective is to investigate the change in heatwave trends in Malaysia to identify its correlation with the health risks of the elderly and, subsequently, evaluate their health needs in the community. This study will be guided by the CNA model, exploring expressed, normative, felt, and comparative needs of the community or certain services. Various researchers in the global community have adopted the CNA model in developing solutions tailored to meet the users' needs. In this regard, the expressed needs refer to the frequency of hospital services utilisation among the elderly during heatwave events. The normative needs are characterised by the expert or professional's opinions regarding the health needs of older adults. Thirdly, the felt needs are actions considered essential by the elderly to mitigate the effects of a heatwave in their community. Finally, the comparative needs analyse the services provided in an area with another area of similar population characteristics as the foundation to determine the needs for service provision to the elderly. These stakeholders are pertinent in facilitating the successful development of an adaptation strategy plan for policymakers. The primary independent variable of this paper is heatwaves, while health risks of the elderly are the dependent variable.				
(F) Data?	<p>i) Qualitative data will be obtained through semi-structured in-depth interviews with stakeholders, focus group discussions with experts and professionals as well as applied observations on the living/ environmental conditions of the elderly.</p> <p>ii) Quantitative data such as daily-all causes excluding external causes of hospitalisation and mortality among elderly aged 60 and above will derive from the Ministry of Health Malaysia. However, daily weather data will be sourced from the Malaysian Meteorological Department.</p>				
(G) Tools?	R programming software will be used to analyse the cleaned quantitative data regarding daily data of hospitalisation and mortality rates while NVivo software will be employed to perform analysis on the qualitative data collected from fieldwork.				

<b>TWO</b>	<b>Two key questions</b>
<b>(H) What's New?</b>	Most studies examined the effects of climate change on factors such as the environment, human health and food production in the context of developed nations. To the best of the researcher's knowledge, research associated with heatwaves' characterization, trends and vulnerability assessment in heatwave-vulnerable countries like Malaysia is scarce. My proposed research is "A Community Needs Assessment Model on heatwave-related health risks in the elderly: A pitch". This study would be the first to address the connection between heatwaves and the elderly's health risks in Malaysia. It will also be carried out by employing a CNA model, which will augment the existing literature surrounding the context of a heatwave and elderly health.
<b>(I) So What?</b>	The elderly population in Malaysia is expected to double in the near 20 years between 2020 and 2040. Understanding the effects of heatwave on the senior population is crucial since failing to do so implies that this issue will persist which could exacerbate morbidity and possibly mortality rates of the elderly. In the long run, healthcare systems may encounter challenges and heightened pressure to cope with this increased demand for health services. Thus, with the detailed results and insightful views from various stakeholders using the CNA model, the elderly, local communities and policymakers may benefit from the development of a viable adaptation strategy plan that could be included as part of a government policy if significant trends are identified.
<b>ONE</b>	<b>One bottom line</b>
<b>(J) Contribution?</b>	<p>Contribution of this research are as follows:</p> <ul style="list-style-type: none"> <li>• Theoretical implications:             <ol style="list-style-type: none"> <li>i. This will be the first paper that investigates the connection of heatwaves with the elderly's health in the context of a developing nation with a rapidly increasing elderly population using a needs-based analysis, and subsequently proposes an adaptation strategy plan to reduce the elderly's health risks.</li> <li>ii. Provides a heightened understanding of health impacts and a heatwave itself from different regions, locations and adaptive capacity of the Malaysian population.</li> </ol> </li> <li>• Practical implication:             <ol style="list-style-type: none"> <li>i. The findings from this research will offer insights into future policy implications and assist policymakers in formulating a holistic and revised plan to improve the elderly's health. Additionally, it could enhance local adaptation strategies and response options to mitigate the health risks from heatwaves and also be applied to neighbouring countries facing similar circumstances.</li> <li>ii. Bridges research gaps and enriches scholarship in the field of heatwaves and the elderly's health.</li> </ol> </li> </ul>
<b>(K) Other Considerations</b>	<ul style="list-style-type: none"> <li>• Might need to seek <b>collaboration</b> from government authority (e.g., Ministry of Health, Department of Statistics and Department of Meteorology, Malaysia) and also Economic Planning Unit Malaysia to approve to conduct fieldwork in Malaysia.</li> <li>• <b>Target journal:</b> Journal of Public Health, Environmental Health Perspectives</li> <li>• <b>Ethic clearance:</b> Conducted based on agreement with Human Research Ethics by the Griffith University Human Research Ethics Committee and Medical Research &amp; Ethics Committee. This ensured anonymity and confidentiality in the personal information that respondents provided. All respondents were also requested to provide informed consent before interviews or focus group discussions and could withdraw at any stage as they wish, these were all communicated clearly before interviews to ensure transparency.</li> <li>• <b>Funding:</b> No funding for this research.</li> <li>• <b>Low obsolescence risk:</b> Climate change, heatwaves, and the elderly's health are ongoing issues.</li> </ul>