



Migrant Preparedness from Earthquake Hazard in Bandung City

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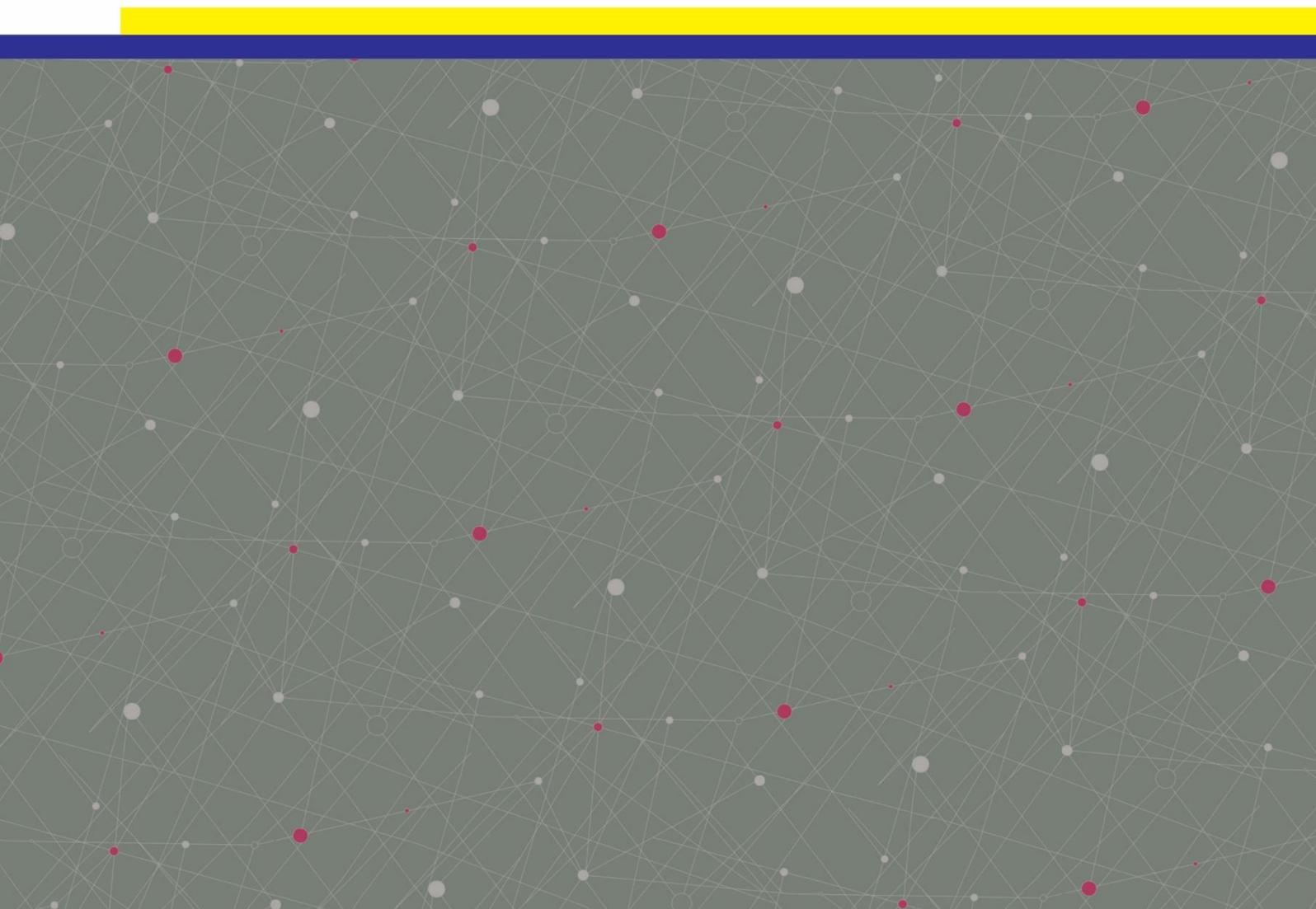
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Migrant Preparedness from Earthquake Hazard in Bandung City

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Abstract

This paper aims to assess migrant preparedness to earthquakes. It is based in the West Java province of Indonesia, specifically in the capital, Bandung City. The city is prone to the multi-hazard disaster risk caused by its close proximity to the Lembang fault line. This paper attempts to define international students as temporary migrants and utilizes survey questions directed to migrants, in order to try to best extract information regarding the understanding, preparedness and experience of earthquakes. In this case, we approached international students from Australia that underwent academic exchange programs with a university in Bandung. The results show that migrants have similar degrees of motivation, previous experience, information and communication, and trust in authorities, which in effect also affects their level of preparedness toward earthquake hazard in Bandung City. The results were then broken down more thoroughly in an attempt to determine the cause of the similarity in each attribute. This paper also discusses through what means these attributes could be increased in order to achieve a sufficient level of preparedness and identified several recommendations.

Keywords:

Migrants; earthquake; preparedness; international students

1. Introduction

The need to prepare the wider public for natural hazards has been recognized in the Sendai Framework for Disaster Risk Reduction, specifically in Priority 4 (UNISDR, 2015). In developing a robust people-centred multi-hazard risk communications strategy, the framework requires extensive cultural and social requirements as input, considering aspects such as language, local knowledge, demographic information, and preparedness levels, among others. The importance of language in risk communication cannot be overstated, especially in the case of monolingual ethnic groups, minority or otherwise. Different cultural groups have different ways of perceiving and responding to risk communication. This is a result of their collective prior experiences, the language with which they communicate, awareness of natural hazards around them, and level of trust towards disaster information, and to a larger extent, the government itself (Kasperson, Goulding and Tuler, 1992; Lindell and Perry, 2003).

The presence of the Lembang Faultline in West Java, located around 10 km away from Bandung City, means that the city's populace of more than 2 million people are vulnerable to earthquake hazard (Daryono *et al.*, 2018; Statistics of Bandung Municipality, 2018). Included in the citizen populace are several sub-populations who have varying levels of vulnerability towards earthquake risk in Bandung city due to a variety of reasons, such as biological sensitivity and socio-economic factors (Balbus and Malina, 2009).

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The sub-population that this paper focuses on is migrants, more specifically international students that are currently undergoing, or have undergone, formal higher education in several private and public universities in Bandung. While there may be issues in classifying international students as migrants, (King and Raghuram, 2013) stated that students bring desirable skills which could potentially be further developed in the countries they move to, hence promoting knowledge sharing and co-producing. However, despite their significance, research into international students as migrants are still lacking (Hazen and Alberts, 2006; Findlay, 2011), more so their vulnerability from earthquake hazard in cities they visit for academic purposes, which for this paper will be Bandung City.

Defining the term “prepared” in relation to migrants’ experience with natural hazards is less clear. The literature on this topic is generally in agreement that a migrant being prepared for disasters involves more than just the migrants themselves. It requires a multipronged approach that involves multiple actors. Beyond the migrants, these actors include local authorities, government institutions, NGOs, even extending to national governments outside the country being affected by the disaster (for example, foreign embassies and consulates).

Trust in authorities is an important factor in migrant preparedness. If migrants (even more so irregular migrants) lack enough degree of trust in authorities, it can cause delays or hinder their ability to acquire help and assistance. The MICIC report goes on to state that beyond authorities themselves, the legal institutions and policies that exist in relation to the authorities is pertinent towards migrant experiences in crisis. For example, “clear laws and policies on migrants’ eligibility for different types of assistance in the event of a crisis promote certainty” (MICIC, 2016). Certainty for migrants in processes that the authorities take allows them to have greater confidence in the authorities. Migrant preparedness extends beyond the migrants themselves. The role of trust in institutions plays a significant role in the overall safety of migrants in crisis. The following section will delve deeper into important aspects of migrant preparedness.

This paper will attempt to answer two main research questions, namely: to what extent are international students, as migrants, prepared for an earthquake in Bandung City; and what factors affect their respective level of preparedness. The objective of this paper will be to identify migrants’ preparedness levels, level of trust in authorities, motivation, communication and information, and previous experiences with disasters. The paper will present a literature review on the subject of migrant preparedness and natural hazards, and continue to provide the results of the survey, discussion, conclusion, and recommendation

2. Literature Review

There are several key pieces of literature related to the topic of migrant preparedness to natural disasters and seismic activity both regarding Indonesia and around the world. There is a large body of work related to Latino migrants, mainly farmers, from Mexico and Central America in the southern states of the US. Such research has served as a basis for a research methodology relating to Australian migrants in Bandung, Indonesia.

Burke et al assessed the preparedness of Latino migrants in Eastern North Carolina. Burke et al, “assessed the awareness, perceived risk, and practices regarding disaster preparedness and response resources and identified barriers to utilization of community and government services during or after a natural disaster” (Burke et al, 2012). It used a combination of both qualitative and quantitative data including interviews and surveys to show a number of key factors in migrant preparedness. Among

the most important of factors identified included access to information (particularly access to Spanish language information) and motivation (Burke et al, 2012). Given the migrants temporary status, there was less motivation to prepare, less community engagement and cultural competence, as well as lack understanding of and experience with natural disasters (Burke, Bethel and Britt, 2012).

Even though this migrant group has significant differences to Australians in Indonesia as a migrant group, there are a number of key factors to preparedness that cross both groups. Furthermore, the research methodology from the Burke et al paper proved to be an effective method to gather results that could be used for this paper.

(Carter-Pokras *et al.*, 2007) examined Latino migrants from a wider array of countries in Washington DC and not based on a single occupation. Similar to (Burke, Bethel and Britt, 2012), Carter-Pokras et al determined a number of key factors in Latino immigrant preparedness to disasters as well as the preparedness of necessary authorities to assist this group (Carter-Pokras *et al.*, 2007). Additionally, the paper also dealt with “perceptions of risks among Latin American immigrants, and their preferred and actual sources of emergency preparedness information (including warning signals)”.

The interplay between how the focus group would prepare for an emergency and how they would subsequently interact with authorities allowed this paper to assess two perspectives of the issue. The research methodology involved asking the participants to define emergencies, offer different types of emergencies, attempt to identify warning signs and necessary sources of information in the event of an emergency. Similar to the previously mentioned paper, the paper was able to gather data on the reasons as to why a migrant may or may not be prepared. Their research suggested that key factors included motivation, a lack of information and a lack of time to prepare themselves. Furthermore, there were similarities across the papers, including the access to Spanish-language information as a crucial component of this migrant group being properly prepared.

In his research, Simon Butt provided important information and statistics regarding the nature of disasters in Indonesia, the preparedness of authorities across the board and their disaster responses. It was an important work for this project as it contextualised Indonesia’s ability to effectively deal with natural disasters as well as the importance of disaster preparedness at a government level. For example, “between 1980 and 2010, Indonesia experienced 321 natural disasters, causing 192,474 deaths (at an average of 6,209 per year), causing an estimated loss of US\$23 billion (an average of US\$761 million/year)” (Butt, 2014).

Butt looked at a wide range of factors that contribute to Indonesia’s capability to manage disasters. In so doing, he identified a number of the country’s greatest obstacles in disaster management being a dense population, low construction standards and geographic terrain. Former President Susilo Bambang Yudhoyono stated that disasters were Indonesia’s greatest national security threat, proving the need for the country to better prepare itself. The paper also provides important geographical statistics that demonstrate the difficulty Indonesia faces in dealing with natural disasters. For example, approximately 65 percent of Indonesia’s population lives within 50 kilometres of the coast and approximately 75 percent of the country’s cities are located in coastal areas, making them more susceptible to tsunamis (Butt, 2014). Although the government has significantly increased the budget for disaster risk reduction from US\$2.14 million in 2010 to US\$21.4 million in 2011, a lack of funding and effective use of funds remains a hindrance to better preparation and response to disasters.

The MICIC organisation released another report in 2017 entitled “Migrants in Disaster Risk Reduction: Practices for Inclusion.” This served as an important recent piece of literature that took an

international perspective to the role of governments in assisting migrants in disasters as well as their commitments. Whilst this paper concurred with the other major works of literature on the topic, the primary factors that hinder migrant preparedness consist of “limited language proficiency, limited knowledge of their destination’s hazards, laws, institutions and markets, limited social networks, a lack of trust in authorities, restrictions on mobility, and discrimination, hostility and xenophobia” (MICIC, 2017).

Consequently, the report outlines how such situations leave migrants vulnerable to disasters (MICIC, 2017). Additionally, the report goes further than other works by stating that “the Sendai Framework explicitly recognizes that migrants’ knowledge, skills and capacities can be useful in the design and implementation of Disaster Risk Reduction (DRR), and call for national and local governments to engage them in relevant activities” (UNISDR, 2015) This is a strong call to include migrants in disaster management consulting processes and to include them on an institutional level. Additionally, the social and economic flow-on effects of such an approach can be disseminated from the report. For example, when migrants feel that they are not safe in a foreign country and that the government of the country does not consider them important enough to take the necessary measures to protect them, it reduces the desire of migrants to come to that country. This can have effects on sectors such as tourism and any other industry that requires significant amounts of foreign workers. This report plays an important role in advocating for the inclusion of migrant perspectives into disaster preparedness.

Moreover, this paper also made a case for the ethical aspects of government involvement in migrant preparedness. The report argues that there is “an indisputable ethical case for an inclusive approach that guarantees all migrants rights that are equal to those of the rest of the

population” (MICIC, 2017). Following on from this statement, the report says that “states bear the responsibility to ensure the safety of all persons in their territory in the face of disasters, regardless of their nationality or migration status” (MICIC, 2017).

The report uses the Philippines as a case study to prove its findings. The research shows that access to data is crucial for this area of study and is often hard to acquire because of the transitory nature of migrants and the legal status of certain migrants. Nonetheless, the report reaffirms the importance of data on the condition and experiences of migrants. The report uncovers that “87 per cent of the migrants in the case study have only one-way access to early warning and early response systems through face-to-face contact with the emergency response teams, and no access to feedback mechanisms” (MICIC, 2017). This lack of two-way information highlights a clear hindrance in preparing migrants for disasters. Furthermore, the fact that face-to-face communication is required lowers the effectiveness and efficiency of information dissemination

3. Methods

The research aspect of this project consisted of survey questions sent out to a group of Australian migrants in Bandung, Indonesia studying at UNPAR. At the time of the survey, they had spent approximately three months in Bandung with a small few having spent a majority of their year in Indonesia studying in cities such as Yogyakarta. The survey consisted of ten questions that consisted of a set of questions to produce qualitative data. The qualitative questions were structured in a way that tried to facilitate further explanation on the part of the participants rather than “yes or no” questions. Furthermore, the questions were designed with reference to specific measures of preparedness. Such measures included the motivation of the migrant to prepare, previous experience with disasters, communication ability, access to information and understanding of and trust in the various authorities.

There were several limitations that the project faced when collecting data. Given the small sample size and homogeneity of the group it was always going to be difficult to get a large spread of answers and strong diversity of opinion. The fact that the background, language, and social make-up of the Australian migrants were generally similar was a limiting factor. It meant that most of the participants had similar perceptions, basic knowledge and understandings of the nature of earthquakes, how to prepare and what to do in the event of and after earthquakes.

The term ‘background’ includes specific characteristics such as age, previous experience with disasters or earthquakes, language ability (there were varying degrees of ability to speak in Indonesian but for the majority of participants their Indonesian language ability were close to none), as well as motivation and belief in the likelihood of an earthquake. Whilst these factors undoubtedly did limit the scope of the research, the research methodology and participants still allowed for useful knowledge to be gained for future study and work on preparing migrants as the majority of international students who come to Bandung fit into the general description of the participants, whether they are Australian or not

4. Result

This section will give a breakdown of the results from the survey questions based on the categories: Motivation, Previous Experience, Communication and Information and Trust in Authorities.

1. Motivation

In terms of how motivated the participants were to prepare themselves for an earthquake, the results were found to be aligned with findings in the literature review. Almost all the participants showed a very small degree of motivation to prepare themselves, some even went as far to suggest that they had “zero” motivation. Whilst the temporary nature of the participants in Bandung (some here for less than four months) meant that their motivation was always going to be low, the reasons behind this are important. The reasons stated for the lack of motivation of migrants were twofold: a lack of belief in the likelihood or possibility of an earthquake occurring that would directly affect them; and lack of knowledge in preparing for an earthquake, which led to complete inaction

The results indicate that apathy isn’t a factor in shaping motivation for preparedness across migrants. Answers from the participants included statements such as “I just don’t really see an earthquake happening so I don’t want to spend time preparing for it, if I did think it was going to happen though, I probably would.” It shows that the migrant’s motivation to prepare is heavily influenced by his/her awareness or knowledge level regarding earthquake hazard in Bandung City. In other words, because they do not strongly believe in, or are aware of, the likelihood of an earthquake, they do not prepare.

2. Previous experience

Similar to the results in the previous section, the results indicated that the migrants had almost no prior experience of an earthquake. One participant stated that he had previous experience with earthquakes. However, he stated that it was “very minor” and “really just a few small tremors to the point that we didn’t even really worry about it”. The data shows that respondents’ experience with earthquakes are close to none.

3. Communication and Information

Almost all of the literature on effective communication and information sharing during disasters agrees that effective risk communication with a range of actors is paramount. The survey reiterated that notion. The survey contained several questions in relation to both communication and

information. These included questions about who the migrants would try to contact first and why; where they would source information (specifically trustworthy and English-language information); and how they would communicate in the event that telecommunication capabilities were down and standard communication methods such as mobile phone use was unavailable.

In terms of who they would contact first, the answer was almost exclusively ACICIS. Failing ACICIS, other students said more broadly that they would try to contact UNPAR (the migrants' host university). After failing UNPAR, they would simply try to contact one another. These results are somewhat to be expected. In terms of first point of contact whilst initial safety may still be in question, more traditional authorities such as embassies or consulates and local authorities such as the police may not be the best source to contact for Australian migrants in Bandung.

The following questions, regarding where migrants would acquire the necessary information in the event of a disaster, produced a more diverse array of results. Whilst nearly all of the responses involved sources from the internet, the sources themselves were varied. Seven of the participants stated the Australian Government website "SmartTraveller"; three sighted Facebook/social media; two said they would just wait for ACICIS to contact them (either by WhatsApp or Facebook); and two said they "would just Google it".

These results show that the participants still lacked a strong understanding of where to get the best information. In the initial event of a disaster, it is unlikely that first response information would be coming through in English. English sources would generally be produced when international media reports and embassies and consulates get involved. Interestingly, none of the migrants mentioned anything about acquiring information from local sources such as their university's local counterparts, local community members closest to their immediate vicinity, and local news. It shows that interaction of any kind with locals regarding important and timely disaster information are disregarded

4. Trust in Authorities

A significant amount of papers on the subject suggest that trust in authorities is an integral part of the institutional side of migrant preparation for disasters. The survey included one simple question regarding whether the participants would trust local authorities to treat them, as a non-Indonesian, in the same way that they would an Indonesian. The responses received a degree of diversity. Some gave simply positive answers such as "I have no reason to think that they (authorities) wouldn't" and almost absolute answers such as "yes, I am very confident that there would be no discrepancy (between non-Indonesians and Indonesians)".

Alternatively, there were some that said it would depend on the severity of the disaster and the strain that the local authorities were placed under. Finally, there were some that showed a low degree of trust in authorities with responses such as "I think the local authorities would want to look after Indonesians more than foreigners for cultural reasons". These results show that the participants did not have a clear consensus regarding trust in authorities. However, it is positive that there were some (approximately a third of the total respondents) who showed a high degree of trust in authorities. The reasons for this could be many and could even include the fact that they may not have had much experience with the local authorities. This could explain why the inverse is true for the participants who showed a low level of trust. Regardless of the reason behind the answer, trust in authorities means that one of the key hurdles for migrant preparedness has already been overcome and allows for a better working relationship between migrants and authorities

Discussion

1. Motivation

This category of answer suggests that the main challenge in motivating migrants' preparedness is their perception of the likelihood of disasters. In other words, because they do not strongly believe in the likelihood of an earthquake, they are not motivated to prepare. Their cultivated belief is invariably linked to their knowledge and awareness levels of earthquake hazard in their surrounding environment. Given that the participants come from Australia, a country that is extremely fortunate in that it experiences a very small threat of natural disasters in comparison, a lack of knowledge on how to prepare is to be expected.

In the case of international students, their transition from native to host country are usually facilitated by a separate organization or collective body of people. They help international students get settled in a host country by providing information on basic needs such as accommodation options, viable transportation modes, currency value and exchange, and rudimentary communication as well as other information that relates to the safety and wellbeing of the international students such as emergency contacts and travel warnings. These organizations, which usually are affiliated with the host universities, would be the ideal source of information pertaining disaster hazards and preparedness. They would also represent the most logical choice for disaster awareness intervention.

For Australian migrants in UNPAR, ACICIS is the organisation responsible for the management of the migrants whilst in Indonesia in the course of their pre-determined academic duration.

2. Previous Experience

Experience is an important factor in migrant preparation. The literature is generally in agreement in that people who have had previous experience with earthquakes (or indeed any disaster) are more likely to be better prepared in the event of one. Whilst this may not mean that they have all the appropriate mechanisms in place (such as a disaster relief kit) the fact that they have been in the situation before gives them greater ability to act rationally.

In terms of the ramifications of this for the paper they are to some extent inconsequential. Real world experience regarding earthquakes cannot be artificially manufactured but it simply keeps the results in line with expectations. Furthermore, because the migrants had not had previous experience with earthquakes it further elucidates the need to properly prepare migrants for earthquakes. It is to be confidently expected that Australian international students will continue to reside in Indonesia for short to medium term periods, especially through ACICIS. Therefore, it is even more important to make sure that these migrants understand the nature of earthquakes, have adequate mechanisms in place and clear guidelines on what to do in the event of an earthquake

3. Communication and Information

ACICIS is able to act as a direct line of communication to these institutional bodies on their behalf. Additionally, ACICIS has important information on the processes in place in the event of a disaster and therefore the students have more trust in ACICIS' ability to manage them. Contrastingly, a further reason that could not be ignored for ACICIS being the first port of contact and no other group is simply a strong familiarity with the organisation. Therefore, the participants, one can assume, felt more comfortable dealing with them

Utilizing internet search for timely and trustworthy information also has its drawbacks. There would be a delay in English-language information and the validity of the sources and accurateness of the information would be questionable. Whilst the “SmartTraveller” website is a reliable source as it comes from the Australian Government, its information is second hand. Whilst the Australian Government has access to levels of Indonesian Government and authorities that other sources do not, its information only comes as quick as the Indonesian authorities can provide it, the Australian Government then has to synthesize it and upload it to their website. Consequently, the time delay can be significant, which in the event and initial moments of a disaster can be very costly

Whilst there is not necessarily a “perfect” or “correct” answer as every disaster is different and therefore every response to it is different, trying to contact ACICIS is certainly a good method. ACICIS as an organization can communicate with local authorities in Indonesian, has experience dealing with local authorities and are very efficient and effective in their communication ability with the students that they manage. Whilst all sources must wait for the information to be released by the authorities, ACICIS has the advantage of being able to consume the information and then tailor it to the needs of the migrants. This can allow for an ease of understanding as a result of less confusion and can allow for action to be taken quicker. Ultimately, the varied sources of information that the participants said they would use show that there is no consensus on where to find the appropriate information and there is a lack of a streamlined process. Given the importance of communicating information in the event of a disaster, this is an area of disaster preparedness for migrants that could significantly be improved, the following “recommendations” section will deal with this issue

Conclusions and Recommendations

Ultimately, this paper has sought to conduct an analysis based on research data about migrant preparedness to earthquakes in the Bandung, West Java region of Indonesia. With “migrant” referring to Australian international students at UNPAR in Bandung, it used survey questions as a way of acquiring qualitative data which was then synthesised, analysed and discussed. From this point, recommendations were then made. The main factors gathered from the data included: motivation, previous experience, communication and information and trust in authorities.

The recommendations that resulted from this data is aimed at a range of actors, including the migrants themselves, management authorities and organisations (for example universities who host international students), local authorities, federal governments, embassies and consulates and other non-government organisations. Finally, the recommendations that are found in this paper, among many, aim to enhance the migrant’s knowledge of how to prepare, their understanding of what being prepared looks like and local authorities’ ability to enhance trust between themselves and migrants.

The following section will give conclusions and recommendations for each category of survey results. This is with the exception of “previous experience” because as stated earlier, it is impossible to manufacture and artificially create real world disaster experiences.

1. Motivation

As previously stated, the two main impediments to the participants preparing themselves for earthquakes were a lack of belief that an earthquake would actually affect them, and a lack of knowledge on how to actually prepare themselves. Essentially, what these results suggest is a change in the mentality of the students towards preparedness for natural disasters. This would best be done through educational processes such as orientation programs both before arrival, upon arrival and

during their time in Indonesia. Whilst the migrants did receive an orientation about living in Indonesia, the section on the threat of disasters was very limited. Based on the results of this survey, it clearly did not shape the students' motivation to prepare themselves.

Consequently, this paper recommends a strong and thorough orientation program for all migrants upon arrival in Bandung, as well as concrete action to ensure and verify that all migrants have a disaster kit and have knowledge of exactly where to go and who to contact. Whether it be the ACICIS organisation or UNPAR, the university at which the students were studying that provide the orientation, their needs to be specific actions to ensure migrants are prepared in this way. To ensure this, a preparing a disaster kit session during orientation this can actually be preparing a disaster kit with the migrants during the orientation session. This way it can be verified that they have one in their house from day one.

In order to ensure that the migrants do not simply just hear the words and speeches during the orientation, a follow up session can be done at the halfway point of the semester. Not only would this give the organisations running the session crucial data on how much information the migrants obtained and retained from the initial session, but it would be a way to ensure that the migrants remain prepared throughout their time in Indonesia.

2. Communication and Information

As previously stated, ACICIS is a good first point of contact for the migrants in the event of an earthquake. The fact that almost all the participants said they would use ACICIS as the first organisation that they contacted is a positive result. It means that their decision in who can provide them with the best information at the quickest pace is by and large the most effective and efficient decision. Furthermore, it puts them already in contact with an organisation that knows the migrants personally and who can rationally approach a disaster situation due to likely previous experience. However, ACICIS as the first point of contact and as the main or best source of information are not necessarily synonymous.

This paper recommends that in the event that ACICIS could not communicate the necessary information and other sources were required, the "SmartTraveller" website and other official sources of information from the Australian Government would indeed be the best source for the migrants to use. This is based on reliability of Australian Government sources, because the main interest of the Australian Government in disaster events is protecting Australian nationals and citizens. Additionally, they have a slightly different interest to local and federal authorities involved in the situation and can tailor their response to the specific group of Australian migrants. Furthermore, any information coming out of official Australian Government channels would be in English. All previously stated literature desperately stresses the point that information in the language of the migrant is absolutely crucial to avoid unnecessary delays or misunderstandings.

This needs to be more routinely covered in the proposed orientation sessions. The fact that many of the participants did not cite the Australian Government as a main source of information shows that the orientation sessions did not adequately instruct the participants on this matter. Furthermore, it is even more troubling that participants first response, even after attending orientation days, would be "just Google it". More thorough orientation sessions that give the migrants a better understanding of all the potential challenges they would face during an earthquake, including access to information, is needed.

3. Trust in Authorities

The results of the survey showed that there was a mixed response in terms of the migrants' level of trust for the local authorities. It is quite difficult to manufacture trust in authorities which can only come from experience with the authorities themselves. The onus is on the authorities to show that they can and should be trusted by non-Indonesians just as much as by Indonesians. There is a greater challenge in changing this because it requires institutional change as well as operational change. For example, a high degree of trust will inevitably come from ease of communication. However, when authorities and migrants do not speak the same language or have limited capacity to communicate in a common language their ability to enhance trust through communication is severely hindered.

Additionally, Indonesian authorities already operate with limited resources, both financially and in human capacity. Asking authorities to dedicate additional resources to provide for alien groups, may be seen by locals as unnecessary use of resources. Furthermore, it is natural to expect a lesser degree of trust when there are two different cultures involved. What may be an expression of confidence in Indonesian authorities could be interpreted differently by Australian migrants. The nature of building trust in disaster situations is based around the two groups' ability to prove to one another that they are a reliable partner which can be difficult to do during times of disaster.

Consequently, the main recommendation that this paper makes, which is supported by literature, is for an enhanced approach and care of authorities towards migrants. This means making no discrepancy between a national or citizen and a foreigner or migrant in the event of a disaster. Again, this would require an institutional change (and to some extent cultural change) within local authorities. In order to achieve this, it would have to be done through retraining programs. Teaching local actors involved in disaster relief to consider a migrant as just as deserving of their attention, time and resources as a citizen of Indonesia. This is even more important for irregular migrants (not the focus of this paper but still necessary for authorities to consider), as it alleviates them of any fear of prosecution or deportation in using the services of authorities. Indonesian Government should invoke more moral and humanitarian reasons for increasing their disaster relief budget and specifically including funds for migrants. This would avoid local authorities being resistant to helping migrants because they feel they have to take resources from somewhere else in order to help them.

Ultimately, the institutional change that is required amongst authorities to ensure that migrants have a high degree of trust in them is one that will take a significant degree of time. However, the main challenge is changing the mentality of local authorities towards migrants, this can foreseeably be achieved through retraining them and placing an emphasis on the importance on migrants as equals to Indonesians.

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References

- Balbus, J. M. and Malina, C. (2009) 'Identifying vulnerable subpopulations for climate change health effects in the United States', *Journal of Occupational and Environmental Medicine*, 51(1), pp. 33–37. doi: 10.1097/JOM.0b013e318193e12e.
- Burke, S., Bethel, J. W. and Britt, A. F. (2012) 'Assessing disaster preparedness among latino migrant and seasonal farmworkers in eastern North Carolina', *International Journal of Environmental Research and Public Health*, 9(9), pp. 3115–3133. doi: 10.3390/ijerph9093115.
- Butt, S. (2014) 'Disaster Management Law in Indonesia: From Disaster to Response?', in *Asia-Pacific Disaster Management*. Berlin: Springer.
- Carter-Pokras, O. *et al.* (2007) 'Emergency preparedness: Knowledge and perceptions of Latin American immigrants', *Journal of Health Care for the Poor and Underserved*, 18(2), pp. 465–481. doi: 10.1353/hpu.2007.0026.
- Daryono, M. R. *et al.* (2018) 'Earthquake Geology of the Lembang Fault, West Java, Indonesia', *Tectonophysics*. Elsevier B.V, p. #pagerange#. doi: 10.1016/j.tecto.2018.12.014.
- Findlay, A. M. (2011) 'An Assessment of Supply and Demand-side Theorizations of International Student Mobility', *International Migration*, 49(2), pp. 162–190. doi: 10.1111/j.1468-2435.2010.00643.x.
- Hazen, H. D. and Alberts, H. C. (2006) 'Visitors or immigrants? International students in the United States', *Population, Space and Place*, 12(3), pp. 201–216. doi: 10.1002/psp.409.
- Kasperson, R. E., Gouling, D. and Tuler, S. (1992) 'Social distrust as a factor in siting hazardous facilities and communicating risks', *Journal of social issues*, 48(4), pp. 161–187.
- King, R. and Raghuram, P. (2013) 'International Student Migration: Mapping the Field and New Research Agendas', *Population, Space and Place*, 19(2), pp. 127–137. doi: 10.1002/psp.1746.
- Lindell, M. K. and Perry, R. W. (2003) *Communicating environmental risk in multiethnic communities*. 7th edn. Sage Publications.
- MICIC (2016) *Guidelines to Protect Migrants in Countries Experiencing Conflict or Natural Disaster*.
- MICIC (2017) *Migrants in Disaster Risk Reduction*. Available at: <http://www.preventionweb.net/go/53351>.
- Statistics of Bandung Municipality (2018) 'Bandung Municipality in Figures'. Available at: <https://bandungkota.bps.go.id/publication/download.html?nrbvfeve=YTI3ODJhZTYyMDQyYjFhZWU5MWZiNGJj&xzmn=aHR0cHM6Ly9iYW5kdW5na290YS5icHMuZ28uaWQvcHVibGljYXRpb24vMjAxOC8wOC8xNi9hMjc4MmFINjIwNDJiMWFIZlZTkxZmI0YmMva290YS1iYW5kdW5nLWRhbGFtLWFuZ2thLTIwMTguaHRtbA%252>.
- UNISDR (2015) *Sendai Framework for Disaster Risk Reduction 2015 - 2030*. doi: A/CONF.224/CRP.1.