Conducting a Multinational Research on the Quality of Life and Occupational Health and Safety of Small and Medium Enterprise Workers in Developing Countries in Asia

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Abstract

The International Labour Organization estimated that annually, there are 2.3 million deaths resulting from occupational accidents and work-related illnesses worldwide. In 2015, a team of researchers from Malaysia, Thailand, Vietnam, and Indonesia conducted a multinational study assessing the quality of life and occupational health and safety of small and medium enterprise workers in the researchers' countries. This case study presents our experiences in conducting a multinational research, the challenges faced, and the strategies adopted to overcome the challenges. Among the challenges were physical distance, language and culture barriers, generalization of findings, discrepancies in research skills between countries, writing and authorship of papers, selection of team members, research funding, ethical approval, and sample selection. Strategies adopted to overcome the challenges included having continuous in-person meeting among all the researchers, collaboration and teamwork in assisting each other in terms of language and understanding one's culture, provision of research training to increase research competency, lending a hand to researchers who did not have adequate research skills such as statistical analysis and writing, application for additional research grants to fund the study without having to rely on a single grant, adherence to the Helsinki Declaration of Human Rights when ethical approval cannot be obtained due to absence of ethics committee, standardization of the definition of small and medium enterprise industry, and having agreed-upon guidelines on selecting the target industries for all participating countries. We hope that future researchers can benefit from our experiences and lessons learned when conducting a multinational research, especially in developing countries.

Learning Outcomes

By the end of this case, students should be able to

- Have a better understanding of how multinational research is conducted
- Understand the challenges of conducting international research collaboration
- Learn strategies for overcoming the challenges involved in multinational research

Project Context

This study started when I (Wah Yun Low) spent my sabbatical days at the Faculty of Public Health, Mahidol University in Bangkok, Thailand, as a visiting professor in 2014. The idea of this research started as a result of the establishment of the Association of Southeast Asian Nations (ASEAN) Economic Community (AEC), and together with two of my co-authors (Orawan Kaewboonchoo and Paul Ratanasiripong), we developed this research proposal for funding from Mahidol University. The funding came through, and this multinational research collaboration on occupational health and safety among small and medium enterprise (SME) workers was born.

Worker's health, safety, and wellbeing are important to the workers, their families, and their communities, as well as to the productivity, competitiveness, and sustainability of enterprises and nations’ economies (World Health Organization [WHO], 2010). However, the high prevalence of occupational accidents and illnesses is worrying in all areas of industries worldwide. It is estimated that annually there are 2.3 million deaths resulting from occupational accidents and work-related illnesses worldwide. In 2010, fatal occupational accidents and fatal work-related diseases comprised 350,000 and 1.9 million, respectively (Nenonen et al., 2014).

Although the Asian region is currently experiencing rapid globalization, modernization, and urbanization particularly among the developing countries (Asian Development Bank, 2014), occupational accidents and work-related illnesses are on the rise. Research suggested that the extensive industrialization in developing countries
contributed to the increase in occupational accidents (Hämäläinen, 2009). In SMEs, the hazardous working environment predisposes workers to occupational illnesses such as silicosis, musculo-skeletal injuries, chronic obstructive lung diseases, asbestosis, byssinosis, pesticide poisoning, and noise-induced hearing loss (Saiyed & Tiwari, 2004; Singh, Bhardwaj, & Deepak, 2010). A Malaysian study has also shown that globalization has a negative impact on employees' psychological health and job satisfaction, primarily due to job demands and reduced resources (Idris, Dollard, & Winefield, 2011). Several common occupational health risk factors had been found among SME workers from the ASEAN countries such as Vietnam, Thailand, Indonesia, and Malaysia, including prolong working hours (Angrave & Charlwood, 2015; Virtanen et al., 2009), adverse working conditions (Brauchli, Schaufeli, Jenny, Füllemann, & Bauer, 2013; Burgard & Lin, 2013), high work pressure (Bakker, Van Emmerik, & Van Riet, 2008), and low safety climate (Christian, Bradley, Wallace, & Burke, 2009). Furthermore, there is a lack of practical interventions and policies in developing countries to address psychosocial risks and work-related stress, violence, harassment, and unhealthy behaviors (Kortum & Leka, 2014). All these could affect workers' physical and mental health and overall quality of life.

In light of all the aforementioned factors, there is an urgent need to develop suitable workplace health and safety interventions. Early detection and identification of risk and protective factors are crucial for the development of targeted occupational health and safety programs for SME workers in the ASEAN region. Such programs would promote health and safety and enable SME workers to reach their full potential, resulting in maximum productivity. Furthermore, such programs would also alleviate the burden of healthcare costs for the employing institutions as well as increase productivity in each nation and in the entire AEC.

A few studies have been conducted related to the quality of life of SME workers in Asia (Chattopadhyay, Chattopadhyay, & Kaltenthaler, 2014; Kittipichai, Arsa, Jiraongsuwan, & Singhakant, 2015; Lu et al., 2014), but these studies focused on individual countries. In 2014, we set out to conduct a multinational study, assessing the quality of life and occupational health and safety of SME workers among four ASEAN countries: Thailand, Malaysia, Vietnam, and Indonesia. The findings of the study may inform the development of a standard occupational health and safety management system for ASEAN.

While conducting this research, we obtained a better understanding of how multinational research is conducted, encountered challenges, and learned ways of overcoming those challenges. Given the increasing globalization and need to conduct multinational research, we present here our experiences in conducting a multinational research in the hopes that future researchers can benefit from our experiences and lessons learned.

**Project Methodology**

This study involved four countries: Malaysia, Indonesia, Thailand, and Vietnam. The reasons for selecting these four nations were as follows: Indonesia has the largest population in ASEAN, Malaysia has a high standard of occupational health and safety management system, Thailand is centrally located and the regional transportation hub for both business and personal travel, and Vietnam is a nation undergoing industrial development.

This study was a cross-sectional quantitative survey design, whereby the data collection was carried out from August 2014 to April 2015. In this study design, both dependent and independent variables were collected at one specific point in time from a sampling population. Research teams were set up in each of the four countries to oversee the data collection in their respective country. Prior to actual data collection, in-person research meetings were set up for all research collaborators from each individual country. The first meeting was conducted in July 2014 in Bangkok; at this meeting, the researchers met and got acquainted and the project details were finalized.
Also discussed at this meeting were the logistics of the project, including timeline, instruments, and the industries from which to collect data. Following this initial meeting, several other meetings were held in other locations in the respective countries to track the progress of the study.

This study took 18 months to complete based on the duration of the research grant obtained from Mahidol University, Thailand. The study questionnaire comprised questions on socio-demographic factors including lifestyle, occupational health, and safety-related questions based on the literature review as well as various scales such as the Brief WHO Quality of Life (WHOQOL) questionnaire, the Work Ability Index (WAI), and 21-Item Depression Anxiety Stress Scale (DASS-21) Inventory. Prior to the actual fieldwork, the questionnaires were forward- and back-translated to ensure that the conceptual meaning of the questions was preserved while being culturally relevant to each of the countries involved. The questionnaire was also validated in a pilot test involving 50 participants in the respective countries. Cronbach’s alpha values for the various scales ranged as follows: WHOQOL, .88 to .92; WAI, .55 to .89; and DASS-21, .86 to .97. Some questions were modified based on the participants’ feedback to improve clarity. Ethics clearance was obtained from countries that have an ethics committee.

The target SMEs for this study were food and textile industries in each of the countries. For this research, a small enterprise was classified as an enterprise with fewer than 50 employees, whereas a medium enterprise comprised 50 to 250 employees. SMEs were selected in the cities of Kuala Lumpur, Jakarta, Bangkok, and Can Tho. The various SME workers were randomly selected based on a random sampling frame. Finally, the total number of participants in this study was 2,098 workers: Indonesia, \( n = 545 \) (from 17 food companies and 13 textile companies); Malaysia, \( n = 500 \) (from 20 food companies and 28 textile companies); Thailand, \( n = 517 \) (from 14 food companies and one textile company); and Vietnam, \( n = 536 \) (from five food companies and three textile companies).

In each country, we employed and trained enumerators to assist the participant workers with completing the questionnaire. SME workers aged 18 years and older were asked to complete a structured questionnaire, which assessed their quality of life, work ability, depression, anxiety, and stress. Subsequent meetings were conducted in Kuala Lumpur, in Can Tho, and in Bandung, Indonesia, at which we discussed primarily the progress of data collection in each country, data analyses, and write-up of the findings.

**Challenges Faced and the Strategies to Overcome**

While conducting the research, we faced several challenges including physical distance, language and culture barriers, generalization of findings and discrepancies in research skills between countries, writing and authorship of papers, research funding, ethical approval, and sample selection.

**Geographical, Language, and Cultural Challenges**

**Geography**

With this study being conducted in four different countries, it was very important to be organized and plan all the steps and timeline in advance. After team members were identified, we held an initial in-person meeting in Thailand to finalize the details of the project, including the timeline, the instruments to be used, and the industries from which to collect data. The meeting enabled all researchers to get to know each other and understand the cultural contexts of the various collaborative countries. We also decided to meet in-person approximately once every 6 months and rotate meeting location to each of the four countries. In between the in-person meetings, all
research activities and processes were coordinated via e-mail.

Without the in-person meetings, this research project might not have been completed. All the researchers for this project were very busy with their various responsibilities. Having clear deadlines for tasks to be completed prior to each in-person meeting enabled the project to progress in a timely manner. We tried to hold meetings via Skype between the in-person meetings, but we were not able to do so due to issues with technology infrastructure in some countries as well as the limited technological skills of some researchers. Geography was a barrier as the concept “out of sight, out of mind” did apply in this research project. If there had been no in-person meetings for accountability, some of the four countries would have been unable to finish the data collection process.

Language

Language is another issue we had to deal with as English is not the main language used in Asia. Given that English is the second or even third language in all of the nations involved in this study, it was not surprising that there were some barriers that occurred throughout the research process. The competency of English language among the researchers varied greatly, leading to communication challenges during discussions and the writing-up process. The variations of English spoken due to accents, way of speaking, as well as inadequate skills in English have resulted in misunderstanding and misleading information among the researchers from different nations. Some instructions given might not have been understood completely due to the language barrier.

We learned that the collaboration and teamwork in assisting each other was very important in trying to understand one another on what was discussed as well as in paper write-ups. For example, at times in some of our meetings, researchers tried to adapt to the level of English spoken by other researchers by speaking slower and paraphrasing when the other researchers could not understand. Also, researchers from one nation, who have a better command of English, would try to help their co-researchers from their own country to understand what was deliberated at the meetings by speaking their own national language. Although these language issues resulted in the meetings taking a little longer than planned, nevertheless, with patience and a highly cooperative team, we managed to overcome the language barrier. Everyone understood the ideas and suggestions that were discussed and consensus was reached on how the study would be carried out and completed. Future multinational research could benefit from having a translator to address any language barriers among researchers.

The original questionnaire for this study was developed in English and later translated to various languages for use in different nations. To ensure the validity and reliability of the findings, the questionnaire was forward- and back-translated to preserve the conceptual meaning of the questions. Furthermore, the questionnaire was also statistically tested for its psychometric properties (testing internal consistency; Cronbach’s alpha) in a pilot study prior to the actual survey.

Research Culture

Research culture not only differs between countries but also between higher learning institutions within each country. In certain higher learning institutions, where research is not a priority, the research interest, agenda, and activity might be minimal or non-existent. This can affect research in many ways in terms of

1. Research skills, when research capacity building is not often provided;
2. Research progress, when researchers are faced with bureaucracy and subjected to unnecessary procedures to conduct a research;
3. Research ethics, when there is no local ethics committee that could affect ethical conduct of research in the
Research output, when there is a lack of incentives provided for publishing.

The strategies to address the impact of research culture are described in the following sections: “Discrepancies in Research Skills among Researchers in the Participating Countries,” “Research Funding” and “Ethics Approval.”

A healthy and conducive research environment and aspirations among the researchers are important for the success of any research, and all the more for a multinational research collaboration. To cultivate research culture, efforts are needed to promote interest in conducting research as well as ensuring necessary resources such as skills training are provided. The fact that all the researchers in this study participated in this international research collaboration is a testament that they are interested and committed to research, even though some came from institutions with a lack of research culture. Researchers from institutions with higher research culture constantly motivated and reminded others to stay focused, determined, and to strive to achieve their own research goals as well as sharing their research experience, knowledge, and skills with researchers from institutions with a lack of research culture.

Instilling a good and healthy research culture has to start at the higher management level with support given by the university to direct research activities and forge multinational research collaboration.

Research Output

Because the data gathered were from participants from four countries, which varied in terms of culture and language, generalization of findings might be a bit difficult due to heterogeneity of sampling.

Among the researchers’ institutions, some institutions provide incentives for research publication, whereas some could not contribute in terms of financial support, such as for costs to publish in open access journals. Hence, this affected our research output. Therefore, in institutions where incentives and support for publishing are provided, there will be more publication output. To address this issue, institutions with the financial resources can help by paying any publication fees. Alternatively, one could also publish in international journals where there is no charge for publication fee.

Team Work Collaboration

Discrepancies in Research Skills Among Researchers in the Participating Countries

Another research collaboration issue is when various researchers in the partnership have differing levels of research competency. To address this issue, research training and intra-personal teaching among researchers were provided to increase the competency of researchers on the team. In addition, more time was spent on preparation, such as standardizing the questionnaires among the various participating countries, preparing ethics applications, and determining the samples, before the actual research started. Furthermore, these issues became increasingly challenging during data analysis. Those researchers with more advanced skills in data analysis helped the less-skilled researchers perform the analysis. When working together on a research project, we found that it is helpful for researchers to share their research and statistical knowledge and skills. Due to these challenges, the progress of the project was slower than proposed in the schedule, but nonetheless, we managed to achieve the timeline, despite the difficulties faced.

Team Members

For some institutions in some countries, there is limited or no incentive for researchers to publish research
manuscripts. This became a challenge for our research team as the research representatives from the institution that has no incentive for peer-reviewed publication have not produced any draft of the promised manuscript they are in charge of writing. In the future, it would be very important to be more selective of who gets included in the international research team. Possible selection criteria for team members from each country would include (a) strong work ethics, (b) history of publications, (c) good team player, (d) a good command of English, (e) good statistics skills, (f) adequate infrastructure and resources from their university to assist with the research project, and (g) ability to deliver by the agreed-upon deadlines. However, in a low-resource developing country, it may not be possible to include all these selection criteria.

It would be equally important to have clear agreement in the beginning as to the consequences of not meeting deadlines that the research team has agreed upon. For example, if a researcher cannot deliver the data needed for the study (even after given extensions), the team has to be able to seek alternate team members from that country to replace the researcher who could not deliver. Otherwise, continued unreliability becomes an issue for the team. Another important lesson we learned is that countries with more than one representative on the research team have a higher productivity rate than those with only one representative on the team. However, this also depends on the individual funding obtained from each country.

Writing and Authorship of Papers

English is prerequisite for many international publications, and as mentioned previously, the process of writing a research paper can be challenging when some research team members have low command of English and writing skills. Problems occurred when we were not able to produce a quality English research paper. We tried to resolve the issues by consulting researchers who had competent English skills and asking them to lend us a hand. Another issue we faced, which is a universal problem in research, involved the authorship of manuscripts. Some researchers on the team questioned who should be listed as the first author on the manuscripts: the main writer of the paper or the holder of the research data. Often the first author is granted the most attention in a research paper, although other co-authors may have contributed as much, so it can be frustrating to not be able to equally uphold the efforts of all researchers who collaborated. As a consensus, we acknowledged that much work has to be done for a researcher to write and complete a manuscript and thus that person would be recognized with lead authorship.

Research Funding

Adequate financial support for any research is of utmost importance, especially so for a multinational research. Unfortunately, as noted by Joseph LaDou (2003), the financial allocation for occupational health research received little attention from governments of developing countries compared with other health issues. Our research project encountered a similar financial issue. The main funding for the project was sponsored by Mahidol University; however, the funding amount was far from enough to cover all the expenses required throughout the research process for all the participating countries. With the exception of University of Malaya, which successfully applied for a local research grant, the other individual countries were dependent entirely on the research grant from Mahidol University. By having additional funding, the Malaysian team was able to recruit more researchers to be involved in the study as well as sponsor the team’s travel to research project meetings. In contrast, the main research grant sponsored travel for only one representative for the other countries’ teams. When planning and conducting a similar cross-national study in the future, it would be beneficial if each country were able to secure additional funding.
Process of Research

Ethics Approval

Obtaining ethics approval from every country was another challenge for us. Ethics approval is crucial to ensure the welfare of all participants and minimize risks. Unfortunately, not all the institutions of higher learning involved had an active local ethics committee. Some ethics committees took more time to process the study ethics application than others, and as a result, the overall process of research was delayed. For example, in Indonesia, our counterparts took 6 months to obtain the ethics approval as their ethics committee meets only once a year to vet ethics applications. For Vietnam, where ethics approval was not available, we decided to take account of the Helsinki Declaration of Human Rights developed by the World Medical Association (2013), which states that while the primary purpose of medical research is to generate new knowledge, this goal can never take precedence over the rights and interests of individual research subjects. Medical research involving human subjects may only be conducted if the importance of the objective outweighs the risks and burdens to the research subjects. (pp. 1-3)

Regarding this issue, we suggested the development of an ASEAN ethics committee which would safeguard all the research conducted across countries within ASEAN. Provided the establishment of the AEC intensely increases interaction among the countries, more and more multinational research projects are likely to be conducted in ASEAN. Thus, a more systematic ethics approval system no doubt will help to enhance the research process and standardize ethical regulations.

Sample Selection

The sample of the study was taken from the SME industries in all four countries. Therefore, the definition of a SME industry is hard to be standardized among the participant countries due to the varied economic background. In view of this, the research team agreed that a small enterprise would be classified as an enterprise with fewer than 50 employees, whereas a medium enterprise would be classified as an enterprise with 50 to 200 employees. Apart from that, the research team had to come up with the agreed-upon guidelines on the target industries, which was food and textile industries. These industries were chosen because they were commonly found in all four participant countries.

Exercises and Discussion Questions

1. What are the challenges of conducting a multinational study?
2. What strategies can be employed to overcome the challenges?
3. What are the strengths of multinational research collaboration?
4. What are the negative aspects, if any, in conducting a multinational research collaboration?
5. What should be of concern in terms of the differences in contexts, culture, law, and regulation among participants from multinational collaborative research?

Further Reading

References


