Mobile Devices and Research Work in Social Science

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ABSTRACT

Mobile technologies have long been adopted in pure science research. However, their use in social science research has been largely ignored. The objective of this study is to understand how mobile devices support social science research. To achieve this purpose, we adopted observation as a methodology to determine actual usage of mobile devices by ten individuals involved in research works, including research administrators, researchers, and research assistants. Our findings indicate that social science researchers use mobile devices to support the task of reviewing literature and gathering data. The use of mobile devices also broadens the researchers' abilities to capture and store multimedia research data and facilitates data access and analysis. Researchers also utilise mobile devices to support the management of their research projects, including communicating with other researchers and coordinating activities amongst them. They also optimize mobile devices in planning, organizing, leading and controlling their research process. In conclusion, mobile devices have become increasingly useful as multitask tools for researchers, and have evolved into ubiquitous research instruments for social science research.

Keywords: Mobile Devices, Observation, Qualitative Methodology, Research Work, Social Science

INTRODUCTION

The usage of mobile technologies in support of research activities within the disciplines of pure science, including zoology and geology is well documented in the literature. For example, mobile devices have been utilized in zoology for species tracking purpose (Anderson & Quinn, 2007; Chambers et al.,

2011), while their usage in geology involved analysing and monitoring the content of soils and movements of tides (Kahle et al., 1998; Schmidt et al., 2003). However, based on our review of literature, studies on the use of mobile technologies to assist research activities in the social sciences are lacking. Social science research can be categorized into applied and academic research. Applied research involves the diagnosing of existing business or societal problems and providing implementable solutions to improve existing managerial practices or policy making. Meanwhile, academic research consists of an examination of a research problem, and systematic data gathering and analysis, which result in the creation of new knowledge (Stuart, McCutcheon, Handfield, McLachlin, & Samson, 2002). While both applied and academic research appear to be straightforward, in reality, their phases are highly iterative.

The use of mobile technologies has now become ubiquitous, and has become popular in assisting many business activities. In parallel, based on our literature review, many research have been conducted on the use of mobile technologies in the context of the business world at the levels of service providers, corporate users, and individual users. However, it is not well known how mobile technologies are utilized to support researchers in the social sciences in carrying out their research. This gap has to be fulfilled because the knowledge about how mobile technologies are able to support research can be leveraged to increase the efficiency and effectiveness of research activities.

The absence of such studies could result in the loss of opportunities in optimizing the increasing technological potential of mobile devices.

The objectives of this study are: 1) to understand the activities of social science research and 2) to comprehend the utilization of mobile devices in supporting these research activities. To achieve these objectives, we utilized observation as the methodology, and monitored the activities of ten individuals engaged in research in research institutions and their use of mobile devices to support their tasks. In this study, we define mobile devices as smartphones, tablet computers and laptop computers, while fixed devices as desktop computers.

LITERATURE REVIEW

Present studies on mobile technologies can be approached from the perspective of a) mobile service providers, b) corporate users, and c) individual users of mobile devices, which can be internal (employees) or external users (consumers). Studies on *service providers* normally look at issues such as network infrastructure, mobile telecommunication protocols and standards, as well at the level of services. For example, Lehr and McKnight (2003) describe the similarities and differences between the use of 3G and Wi-Fi in delivering data wirelessly. Ballon (2007) examines the effects of the new alternative wireless technology (AWT) on the business model of service providers in Europe in terms of opportunities and challenges offered by

the new technology. He also suggests that convergence of this technology with those currently prevailing will cause evolution in the providers' business strategies.

Studies on *corporate users* mainly focus on the applications of mobile technologies (m-commerce) by business firms. For instances, Barnes (2002) examines how the use of mobile devices helps businesses to add value in their delivery process to the customers and predicts an increase in convergence of wired and wireless communications technologies. Ngai and Gunasekaran (2007) classify studies of mobile technologies for businesses into three major categories, which are m-commerce theory and research, technological and infrastructure issues, and m-commerce practices. From 2009, researchers have started to view mobile business as an eco-system comprising of numerous groups of providers, suppliers and customers (see Basole, 2009). In recent years, studies on service providers and corporate users have not been given much attention in comparison with those of individual mobile users.

Extant research that have focused on *individual users* normally examine the elements related to their use such as usage, type and variety of usage, and types of utilized technology. Recent studies on mobile technologies are mainly in education and medicine. For example, Looi et al. (2010) describe the application of mobile device in facilitating the delivery of learning materials without interruption, termed as "seamless learning". They believe that the use of mobile devices can lessen the gap between formal and informal learning. Ellaway, Fink, Graves, and Campbell (2014), on the other hand, studied how medical students utilize mobile devices for learning and their attitudes regarding their use. They found that students employ different types of devices when learning, which depend on the different contexts and curriculum. Ally and Prieto-Blázquez (2014) describe the role of mobile technology in extending the reach of education, assisting educators in enriching the content of materials in multimedia format, as well as allowing education to be a personal experience for students. Boruff and Storie (2014) conclude that mobility and multiple applications of mobile devices influence medical students and staff to use the devices and widen the adoption of the devices by them. They predict that the devices will act as a catalyst in supporting future learning and practices of medicine.

There are a number of studies on the use of mobile technologies in politics and tourism. In the context of politics, Monterde and Postill (2014) suggest smartphone as an important device in helping political parties to organize their political activities (such as rallies and protests) and disseminate information regarding their views to their supporters and the public. In tourism, Wang, Xiang, and Fesenmaier (2014) conclude that it is vital to know the actual extent of the use of smartphones by users and point out that users learn to use smartphone in their daily activities before utilizing the device to help them to become mobile-savvy tourists. As smartphones becomes more affordable and with their users more familiar with its use

they begin to adopt it for other non-regular usage such as for travelling.

Conceptual Framework

Figure 1 shows the conceptual framework of this study. We conceptualize the research process to include five activities: a) formulating the research problem, b) collecting the data, c) analysing the collected data, d) deriving conclusions from the analysis, and e) disseminating research findings. In our study's context, researchers may utilize their mobile devices to assist them in carrying out their research activities. For example, based on the wide body of literature on mobile devices in learning and education, we perceive multiple potentials of the use of mobile devices, particularly to support problem definition and formulation. Furthermore, many research findings related to policies and academic studies are now widely disseminated on the internet and they are accessible to the targeted audience through various mediums, including mobile devices. Similarly, the use of online surveys in soliciting data from respondents is also increasingly popular. However, beyond these observations, very few studies have focused on the use of mobile devices in support of research work.
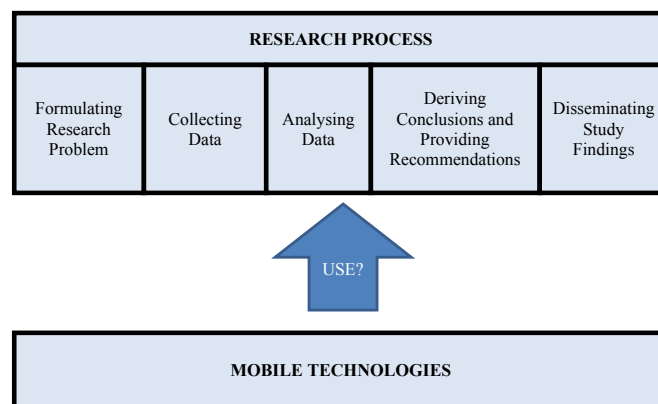

Figure 1. Study's Conceptual Framework

RESEARCH METHODOLOGY

We utilized observation as our research methodology which according to Merriam (2009), is suitable when researchers have the opportunity to directly watch participants' behaviour in the research setting. We were granted access to participants workplace and thereby observe their research-related activities first hand. Data obtained from the observations was further enriched by explanations on the use of the devices by the participants. These explanations were induced by our direct questioning based on a list of questions derived from our conceptual framework. Each observation was done in half-day sessions.

The study involved observing ten individuals, who performed research-related tasks. They consisted of four research administrators, three researchers, and three research assistants. Four of them were involved in policy-based research and six in social science academic research. All participants' names reported in this study are pseudonyms.

According to Creswell (2007), the tasks involved in observation include a) choosing a study's setting to observe participants –in our case, it was the office of the researchers; b) identifying the study's participants –for our study, they were individuals involved in research work, such as project managers, researchers and research assistants; c) deciding on the role of the researchers who will conduct the observation, either they are to act as pure observer or as participative observers –in this study, we assumed the role of pure observer and were not involved in the works of the participants; d) preparing a protocol for observation –in this study, we designed an observation sheet which included cues for research functions and mobile apps or devices that were utilized; e) performing the actual observation and record the data accordingly– in our case, each observation was recorded using video camera, smartphone camera, audio recorder and note-taking; and finally, f) completing the observation and exiting the setting.

Critiques of observation technique have pointed out that observers could affect or be affected by the setting of the observation and thus lead to misinterpretation of findings. To overcome this issue, we conducted all observations in a team of two, which allowed consensus amongst the observers, and thus, helped to reduce the biasness in the interpretation. Fernald and Duclos (2005) suggest that the use of teams is suitable in conducting qualitative research particularly for studies that involve large volume of data. Moreover, we did observations on different functions of research activities and on different types of researchers, which provided us with a more comprehensive understanding on the use of mobile devices in support of research work. In this study, we had established a five-person expert team with all the needed expertise for the study. Our research team consisted of two senior academics who co-led the project, two members who assumed the role of technical specialists in data collection and storage, and one member to provide administrative assistance.

Data was collected through viewing and recording the behaviours of the participants. Data collection was concluded after observations on the eighth, ninth and tenth participants did not yield new insights or new findings; Rather, the additional gathered data affirmed the existing findings. This, according to Merriam (2009), is the point where data had reached saturation and as such, data collection process could be ended.

Data collected from observations were recorded through audio recorder and note taking (field notes). In addition, visual images of the participants' actual activities using our smartphones' cameras and digitally recorded the participant's activities via a video recorder were also made. All audio

recordings were transcribed immediately after each observation. The data was stored in a folder together with the notes and other digitalized data. Field notes, transcripts from the audio recording, images and video files constituted the dataset of the study.

Based on our analysis we derived a description of the research functions of each participant and how mobile devices are utilized to support them. The analysis was illustrated in the form of images of the research work and their descriptions. A selected sample of these images and descriptions are presented in Appendix A. Second, the data of each observation was compared to the data obtained from observations from a similar group of participants in order to generate common themes. Third, the results of the existing comparison were then compared against those of different groups of participants. The study's conclusions are as follows.

FINDINGS

Research Administrators: Devices that are utilized by them and their functions

There were four research administrators involved in this study. Two of them, Rizal and Muhammad, were from a government's policy research institutions while the other two, Khalidah and Azizah, were from two academic research institutions. Appendix A shows selected of illustrations derived from the images captured during the observation of two of the four research administrators involved in this study. It also provides the description on the research activities performed by the participants and the technologies utilized by them in support of their research activities.

Rizal and Muhammad were the heads of the respective departments in a Malaysian economic research institute and involved in formulating policies for the country. They were also responsible for coordinating policy-related research activities with other internal agencies and external stakeholders. Rizal's team was directly involved in policy research concerning Malaysia's natural environment, while Muhammad's team was responsible for conducting policy research on internal security of the country.

Rizal and Muhammad utilized their mobile devices to organize their work via some sort of "To-Do-List" and "Calendar" applications. They also brought their mobile devices to research meetings for the purpose of retrieving documents including past minutes and other related files stored in their smartphones. Usage of mobile devices were also influenced by their respective departments' policy green office policy. After a meeting, Rizal and Muhammad would use their mobile devices and give directions to their subordinates. Muhammad took photos using his smartphone as evidences for his monitoring of the research activities. Muhammad and Rizal's mobile devices were provided by their employers, who also paid for the devices' monthly service expenses.

As an academic research administrator, Khalidah, on the other hand, was responsible for the planning, organizing, leading, and controlling research activities at her

institute. The activities she performed include managing research grants, allocating grant money, organizing research competency workshops, setting up writing and publishing workshops, preparing progress reports, as well as developing research profiles and records of research output. Khalidah used her smartphone to complete her office tasks at home because she did not have a computer set up at home. When she was in the office, she used her smartphone as a supplementary device for activities such as following up on certain office tasks, and communicating with her personal assistant. Sometimes, she would use 'WhatsApp', a mobile social messaging application for smartphones, to communicate with other project team members. Her other office tasks, such as preparing and completing written report, memo, working papers, were all completed using the office's desktop computer. Like Rizal and Muhammad, Khalidah's mobile devices was provided by her employer, who also paid for the devices' monthly service expenses.

Azizah's responsibilities as an academic research administrator were similar with Khalidah's. However, the way she utilized mobile devices was more extensive than Khalidah. In completing her work, Azizah was mobile-centric and heavily dependent on her mobile devices which was provided by her employer, who also paid the monthly service expenses. She usually used her smartphone for online search and communicate with her subordinates. If more complex and longer communication were

required, Azizah would use her desktop computer to send out emails. Sometimes, she would bring along her tablet into meetings and presentations so that she would not have to carry around bulky paper-based documents. She also utilized her mobile devices to scan any needed information which she would later download into her desktop computer. Azizah felt that without her mobile devices, it would be difficult for her to complete her tasks on time. She also used her smartphone to monitor her subordinates' work and as well as organize her own daily activities.

Researchers: Devices that are utilized by them and their functions

In this study, we conducted observations on three researchers. One of them, Cik, was an academic researcher, while the other two, Najmi and Murni, were policy researchers.

Cik was a doctoral researcher who employed qualitative research for her Ph.D. In completing her research, she did half of her work at a workstation in her office, and half at home. At the point of our observation, she was at the stage of data analysis, and dealt with data from her own interview transcripts as well as other published documents (secondary sources). She spent considerable amount of time rereading her interview transcripts, searching and reading for published documents, coding the transcripts as well as interpreting the data of her study. She utilized her smartphone to search and peruse online materials for her research. She kept her research data in 'Dropbox', an online hosting file storage

(cloud storage), which was an application for both computers and mobile devices, so that she could easily retrieve them anywhere. Sometimes, when she was at the office, she used the mobile device along with her desktop computer. The latter was mainly utilized for writing her thesis, performing direct coding, and searching for research materials on the internet. Cik also performed online searches via her smartphone at the office using her own data plan, especially when the internet connection at the office was unstable. At home, she utilized the smartphone and a laptop computer; the laptop computer was mainly utilized for heavy reading of research materials. The smartphone was useful for her to be connected with other doctoral students. She also used her smartphone to record interview sessions, take photos of her respondents and capture relevant documents that were not available on the internet. Cik also utilized her smartphone as a storage device, thereby removing the need to carry a USB flash drive or portable hard disk.

Najmi was a policy researcher whose mobile device was not paid for by his employer. However, he was entitled to request to reimburse the monthly expenses of the mobile device. His job responsibilities included to screen and monitor allocations of research budgets provided to, and supervise consulting works done by, Malaysian governmental agencies and other external parties in relation to Malaysian defence projects. He was also directly involved in conducting several research projects. For this purpose, he needed to attend many meetings. He used his smartphone to receive and peruse emails when he was out of the office. However, he would only reply to or send out emails using his desktop computer at the office. Furthermore, the desktop computer was vital for his work as all of his office documents were stored in the hard-disk of the computer. Najmi did not use or any cloud storage because the documents he handled were confidential. He owned a smartphone of an older model that only enabled basic internet connection. This situation forced him to monitor his emails on his desktop computer more frequently to ensure that he would not miss any urgent information or instruction. Moreover, he was not keen on using social messaging applications such as 'WhatsApp', as he found them to be intrusive. He also felt that his job responsibilities did not require him to use such applications.

Murni was a policy researcher who owned a smartphone and a tablet computer, both that she bought using her own money. Her main job responsibility was to monitor and coordinate the funding provided by her unit to others. She also managed research projects related to government policy. At the office, she usually utilized her desktop computer to complete her tasks. However, when she was out of the office, she mainly used her smartphone. She depended on the phone to forward emails to her superior and colleagues. If she was out on field trips, she utilized her smartphone's camera to capture images of the research sites. When operating in the office environment, she made use of 'WhatsApp' application to

communicate with other people. However, for formal communication with external parties, she would prefer to use emails. She also no longer needed to bring paper-based documents to meetings as she kept the scanned copies of the same in her tablet's hard-disk, which she would bring along into meetings. However, she could not use her smartphone and tablet computer to edit or format the documents and thus had to depend on her office desktop computer to perform such tasks.

Research and Administrative Assistants: Devices that are utilized by them and their functions

Our study involved two research assistants, Nadine and Eja, as well as a research administrative assistant, Faye.

Nadine and Eja worked as academic research assistants and their responsibilities were to provide the assistance needed by the lead researchers of their respective research projects and team members. Nadine assisted her lead researcher in an edited book project; handling correspondence from authors and with the bursar's office regarding financial matters and also liaising with illustrators and language editors.

Nadine had her own workstation in a separate office room, but most of the time, she would do her work together with her lead researcher in the latter's office. The lead researcher's office had two desktop computers, one with an extra monitor to enable collaborative writing and document reviewing by both the lead researcher and her assistant or other research members

simultaneously. Another desktop computer was meant to be used by the research assistants. Nadine utilized her mobile devices' cameras to capture important information in order to make her work easier, for example, taking snapshots of claim letters which were later sent to the lead researchers or other team members for their record keeping. Sometimes, she shared information received from the bursar's office with other research team members through her mobile devices in her task to coordinate the processing and disbursing of claims related to the research grants. The communication and coordination were mainly conducted through her smartphone's 'WhatsApp' application, however, for more urgent matters, she would make direct phone calls. While for longer and detailed communication, Nadine would write emails via the office's desktop computer. She also normally depended on her smartphone, tablet and laptop (the latter she mainly used at home) in order to access various information related to her research work. This was done for example through searching and reading online journal articles. Nadine also optimized the use of several mobile applications such as 'Calendar' and 'Evernote', which assisted her in planning for her daily activities. She also maintained a diary application on her smartphone in order to allow her lead researcher to monitor the progress of her work.

Eja's primary tasks were to assist her supervisor in journal submission, as well as to help in the revision of manuscripts. She also provided the support in designing

and preparing materials for academic presentations such as making power-point slides and videos. Her work physically tied her to the office and made her depended on the desktop computer as she needed the workspace in order to complete her tasks. Personally, Eja was not a heavy user of smartphone or other communication gadgets. Perhaps because of this low usage preference, her superior did not regularly communicate with her using social messaging application via mobile devices. When she worked at home, she used her own laptop computer. Because her lead researcher did not have any internet connection installed at her residence, she relied on Eja to send out urgent emails or documents on her behalf outside of the office hours. Therefore, in Eja's case, her usage of mobile devices was mostly outside of her official working hours, whenever required.

Faye, on the other hand, was the personal assistant to an academic research administrator responsible for the planning, organizing, leading and controlling of the research activities at a research institute. Her job included managing research grants and managing research competency or writing or publishing workshops, as well as preparing progress reports, and developing research profiles for her institute. One of Faye's responsibilities was to gather the data from other researchers in the institute to prepare progress reports. To organize research workshops she needed to communicate with the instructors or trainers as well as potential participants at workshops.

She was also required to handle activities such as reimbursements and payments which required her to communicate with the bursar's office and the research centre responsible for research grants' allocation. Faye frequently used her smartphone for the above purposes while using the office's desktop computer for email purposes.

DISCUSSION

Our findings reveal that basic research tasks can be divided into five processes: a) formulating research problem, b) collecting data, c) analysing data, d) deriving conclusions, and e) disseminating research findings. Completing the five processes required researchers to perform research management activities such as planning, organizing, leading, communicating, coordinating, and controlling.

The findings also show that mobile devices have become ubiquitous in supporting the process of formulation of research problems, and data collection, while data organization's process are usually performed with laptop or desktop computers. For primary data collection, desktop computers are used to collect large volume of data although smartphones are used to inquire on the status of the replies. Specifically, for qualitative research, smartphones are used to gather primary data via recording of interviews and capturing of video and images. For data analysis, the process is performed mainly using desktop computers because their ease of use over mobile phones, which have the disadvantage of having smaller screens and keyboards.

This causes mobile devices usage to be cumbersome after a long period of use. Moreover, when analysing data, a researcher normally prefers a workspace where he or she could sit comfortably, thus an office setting with a desktop computer is more preferable than using a smartphone.

Deriving conclusions and suggesting recommendations required in-depth understanding of the data and deep reflection on the part of the researcher. Thus, a researcher uses mobile devices to access his or her findings and performs repeated reading. Deep reflection allows the researcher to derive a better conclusion. In the dissemination process, a researcher submits his or her manuscript to journal or book editors and this is normally done using the office desktop computer. This is because a desktop, compared to a smartphone, is more convenient to use for rechecking errors before performing the final submission. Mobile devices, on the other hand, are frequently used to track and monitor the progress of a manuscript submission. Later, if a revision is required, the use of desktop computer is likely the preferred choice.

For policy-based research, the process of dissemination of findings involves submitting of white paper for approval from the higher authority and this submission normally requires the use of a desktop computer. Similarly, after the submission, a researcher waits for approval, and tracks and monitors the process by utilizing mobile devices. If this involved a new policy submission, the process may require more communications and direct calls using smartphone with the authority involved. Once the policy is approved and the implementation for the stakeholders is completed, a researcher is required to conduct personal visits and have face-to-face communication with the stakeholders, which required less use of the mobile devices. However, the devices will become useful for the tracking and monitoring purposes in the post-implementation stage.

Throughout the research process, a researcher needs to perform management activities such as planning, organizing, leading, communicating, coordinating, and controlling. For planning, decision making in regard to this process happens during meetings, in which mobile devices are utilized to search for information and store them for the purpose of discussion before decisions are made. For organizing, the use of mobile devices is more obvious among policy researchers as one of their main duties is to coordinate and monitor budget allocation, disbursement and monitoring. For formal organizing activities, desktop computers at the office are mostly utilized; however, for informal follow-ups, they are mostly done via quick email or 'WhatsApp' application through smartphones. For example, a research administrator utilizes his or her smartphone to disseminate information so that his or her subordinates will receive the information quickly to allow them to conduct prompt follow-ups. The use of mobile devices was also meant to motivate subordinates to deliver their work on a timely basis.

Mobile devices are used for communicating and coordinating information among the members of the research team. Research administrator bring mobile devices into meetings as the tools to assist quick access into the office information as well as for fast communication with the research assistants and other team members. In conducting short communications, such as forwarding emails or short messages, research administrators might require the use of mobile phones. However, if he or she needed to make a detailed communication, for example sending out an email with attachments, he or she might utilize a desktop computer at his or her office.

Figure 2 shows the emergent framework on the use of mobile technologies in basic research and research management tasks. The completion of both groups of tasks are supported by the use of multiple enabling technologies comprising mobile and fixed computing devices. The use of multiple technologies has now become ubiquitous as illustrated in Figure 2.The use of both types of devices needs the corporate as well as the technical supports, such as the availability of corporate sponsorship for devices, the proper design of workspace location, and the readiness of effective cable-based or wireless networks.

In summary, there are some similarities of research tasks in social science and pure science, particularly in the manner data is collected. (Anderson & Quinn, 2007; Chambers et al., 2011; Kahle et al., 1998; Schmidt et al., 2003). In the case of the social sciences, we have found that smartphones are used to capture audio interview data as well as static and moving images of human behaviours and their environment.
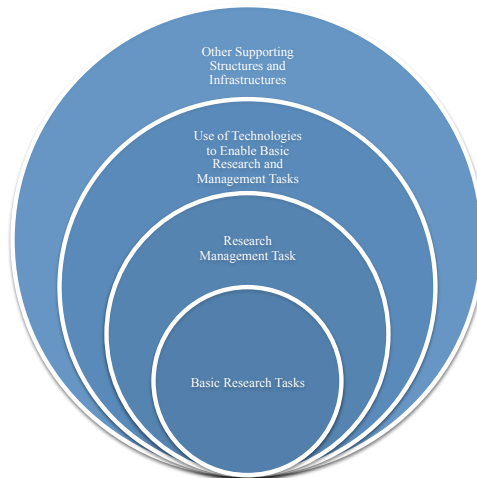
Figure 2. Emergent Framework on the Use of Mobile Technologies and Other Structures in Support of Research Work

CONCLUSIONS

Our findings reveal that social science researchers perform two types of activities: basic research tasks and research management tasks. In performing their basic research tasks, researchers use mobile devices to review the literature and gather data. They also utilizes mobile devices for managing research projects such as planning, organizing, leading, communicating, coordinating, and controlling. Particularly in communicating and coordinating with other researchers. The more the time researchers spent outside of their office, the more there will be the need for the use of mobile devices in support for their work. The greater the amount of communication, coordination and control activities the more dependent are researchers on mobile devices.

ACKNOWLEDGEMENT

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APPENDIX A:

SELECTED OF CAPTURED IMAGES* OF MOBILE DEVICE USAGE IN RESEARCH WORK
(*All images have been transformed into illustrations to maintain anonymity of the study's participants)

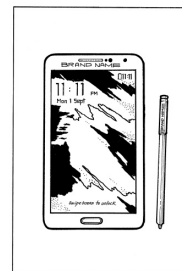Name: Rizal
Position: Deputy Director of Research Unit
Date: 3 July 2014
Venue: Government Research Institution #1

This is Mr. Rizal's work station at his office. While in the office, Mr. Rizal utilizes both his mobile phone and desktop computer. Even though he uses his mobile phone for work-related activities, he still prefers to use his desktop computer as it has a bigger screen which allows him to easily view the content when compared to his mobile phone's screen.

His unit has implemented a policy to minimize paper usage in supporting an environmental friendly workplace. Thus, the use of mobile device helps Mr. Rizal to view email or presentations without the need to print them out into hardcopies. The papers on his desk are important papers that really needed to be printed and they are usually the final copies.

Mr. Rizal's mobile phone, which include applications such as 'To-Do-List', Calendar, and 'Dropbox'.

Name: Najmi
Position: Policy Researcher
Date of Observation: 3rd July 2014
Venue: Government Research Institution #1

This picture shows Najmi at his workstation. He does not depend on his mobile phone when doing his work. He prefers to use the desktop computer compared to his mobile device when completing his work. He mainly uses the phone for his personal needs.

This is the smartphone model owned and used by Najmi. As shown in the picture, the phone's screen is small, thus less convenient to be used to view or edit files.

Name: Muhammad
Position: Deputy Director of Research Unit
Date of Observation: 4 July 2014
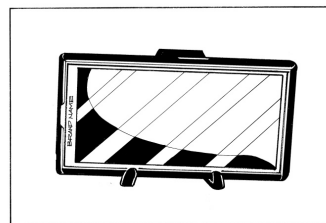Venue: Government Research Institution #2

This picture shows Mr. Muhammad's work station. He uses a desktop computer for his work and prints out a lot of physical documents. His smartphone is an important tool for Mr. Muhammad while he is in the office. His mobile phone is always located next to his desktop computer.

Mr. Muhammad's at his workstation, close-up, shown with his smartphone next to his office phone and desktop computer.

This is the smartphone used by Mr. Muhammad to perform his work..

Name: Murni
Position & Grade: Policy Researcher
Date: 4 July 2014
Venue: Government Research Institution #2

The above picture shows Ms. Murni at her work station. She can be considered as a gadget-savvy person. She uses her tablet computer to view files or presentations during meetings. This is due to her department's policy to minimize the use of physical papers. Although she heavily uses her smartphone for her work, she is also comfortable to do her work using the desktop computer.
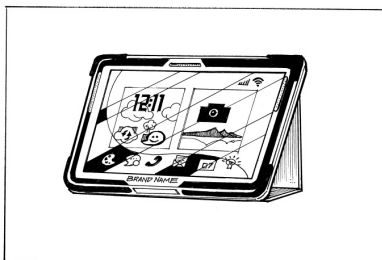
This picture shows the tablet computer that is used by Ms. Murni. This device helps her to view presentation slides, reply to emails, store files and many others.
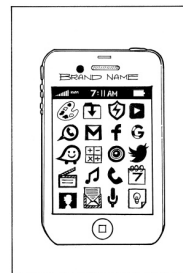
One of Ms. Murni's personal phones, which is used mainly for communications, such as replying to text messages and answering important calls. Ms. Murni owns two smartphones in which one is utilized for personal matters while the other is used for work.