

## **DIMENSION OF LIBRARIANS' MOBILE INFORMATION BEHAVIOR IN AN OPENNESS PARADIGM ERA**

<sup>1</sup>Zuraidah Arif, <sup>2</sup>Abd Latif Abdul Rahman, <sup>3</sup>Asmadi Mohammed Ghazali, <sup>4</sup>Muhammad Faizal Ilyia  
Mohd Ghazali  
Faculty of Information Management, Universiti Teknologi MARA (UiTM), Malaysia

### **ABSTRACT**

*Mobile information is a significant access point for human information activities. Theories and models of human information behavior have developed over several decades but have not yet considered the role of the user's computing device in digital information interactions. This paper reviews the literature that leads to developing a conceptual framework of a study on the librarian mobile information behavior. Based on the literature review, dimensions of mobile information behavior are identified, namely, dimension information needs, dimension information access, information retrieval and dimension of information use. The study is significant to understand the nature of librarians' behavior in searching, retrieving and using of information via the mobile device. Secondly the study would provide suggestions about various kinds of mobile applications which library can provide for their staff to improve their services.*

**KEYWORDS:** *Mobile information behavior, information behavior, mobile information, mobile devices*

## INTRODUCTION

According to Van Dijk (2006) digital divide is a term that refers to the gap between people in different demographic areas that have effective access to modern information communication technology infrastructure (computer, smartphone, internet) and thus do not have restricted access to modern information communication technology infrastructure. These issues have been a subject of discussion in many countries. One of the flexible and fastest spreading ICT devices in the last decade has been the mobile phone. Apart from phone call activities and short message service (SMS) exchanges, this mobile device called as a smartphone becomes the most flexible multimedia device for user (Westlund, 2008). The widespread adoption and utilization of mobile devices, have moved information interactions from the dwelling areas and workplaces to the street, and given fresh meaning to the daily routine of information access. Much work in the area of mobile information behavior has focused on how mobile search differs from desktop search, with the conclusion that it tends to be less tedious or more sophisticated and successful than desktop searching (Kamvar, Kellar, Patel & Yu, 2009). At the same time, people are performing complex information searching activities, such as browsing, downloading and sharing content, using mobile devices (Smith, 2012). Absar, O'Brien and Wenster (2014) given the unfettered nature of mobile use, also perform these activities are embedded in and influenced by constantly evolving situations of mobile user. Moreover, most academic and public libraries in modern times nowadays are trying to apply the Openness Concept to make give their citizen some freedom in searching information.

Openness can be defined in accessing, processing, publishing and disseminating information sources without any distraction of policies or acts and becomes easily achievable due to the spread of ICTs and mobile devices. Most information seekers or information users hope that democratization of information and knowledge is positively supported by the government sector (United Nations Educational, Scientific and Cultural Organization, 2015). This paper focuses on dimensions of mobile information behavior which are dimension of information need, dimension of information information access, dimension of information retrieval and dimension of information use that lead to the openness concept in library information science field. The objectives are:

- a) To formulate and evaluate a dimension of manager's mobile information behavior.
- b) To develop and validate mobile information behavior measurement in future research.

These dimensions will lead to formulation and evaluation of a model mobile information behavior among librarians in private and government sector.

## **LITERATURE REVIEW**

### **Information Behavior**

Information behavior has been the focus for many researchers include the highly developed behavioral model of information seeking strategies by Ellis (1989), Kuhlthau's (1993) Information search process, and Wilson's (1997) problem-resolving model. Fairer (1990) has defined information behavior as the way people think, search and use information. Additionally, Bates (2010) identified information behavior as the currently preferred term used to delineate the many ways in which human beings interact with information, especially, the ways in which people try to search and use the information they need. Information behavior is also a term of art used in library and information science to refer the type of human research behavior and to understand the human behavior relationship to information activities. Moreover, according to Wilson (2000) Information Behavior is the entirety of human behavior in relation to sources and channels of information, including both active and passive information seeking, and information utilization. Thus, it includes face-to-face communication with others, as well as the passive reception of information as in, for example, watching TV advertisements, without any intention to act on the information given.

### **Mobile Information Behavior**

Mobile information behavior is a significant access point for the librarians in handling information activities through the mobile devices and aligning it with the concept of human information behavior. The growing use of mobile devices increases the number of applications that have been developed to support mobile social information interaction between mobile users (Church, Cousin & Oliver, 2012). Example include applications than contain information about web page ranks and application of sharing search result for information seekers (Kotani, Nakamura & Tanaka, 2011), or travel information among proximal users (Yang, Hwang & Shih, 2012). For instance, Teevan, Morris and Azenkot (2014) designed an application with a collaborative mode activated by changing the phone's orientation. Collectively, these applications presume that information sharing takes place in real time with co-located others. According to the report, one out of every three smartphone users search for a business's contact information (Lee, 2013).

## **Information Need**

Nowadays the number of mobile device usage is rapidly increasing. For instance, in 2013, over 967 million units of smartphone were sold to consumers (The Statistic Portal, 2015). Mobile devices such as smartphones and tabs are popular since the proliferating of mobile social applications. Most managers, including librarians use their mobile application such as traveler applications, business apps, and communication apps through mobile devices for varied purposes. In order to fulfill information needs many managers (librarians) use their smart phone devices regardless of space, time and geographical location. Mobile device becomes the must item as it is always ready for use and become a popular way for users to full fill their information need by interconnection, contents and self-expression via mobile applications.

According to Faibisoff and Ely (1974) information need is considered as a generic term with information demand or information requirement and information desire as a subset. A mobile device enables a person to fulfill their demand for information as fast as they can, and able to search their information desire at any time. As the increasing of smartphone usage, a lot of mobile social applications have been increased to meet the needs of information and social requests of users (Zhu, Hui, Chen, Fu and Li, 2011). Almost all managers, including librarians have a mobile device and use it to retrieve information they need. Therefore, the information retrieved using a mobile device has to be presented in a different way than on a desktop computer. The needs for information occur without time or place barrier such as searching for language translation in the middle of conversation. Thus, Heimonen (2009) stated that recurring information needs as habits that appear from an individual interest and practicality. Although it is difficult to tell what actually a manager does with their mobile device such as a smartphone, but a mobile device always fulfills the demand and desire for information in order to seek answers or reduce a person's uncertainty at any time, as a mobile device is always ready to be used.

### *Seeking Answers*

Seeking answers become a trigger in fulfilling one's information needs. According to Ellis, Wilson, Ford, Foster, Lam, Burton and Spink (2002) Information Seeking Behavior is the intention and action of seeking answers for accurate information in order to stratify some goals, which librarians may interact with a database or world wide web. Today, almost all managers have smartphones to fulfill their demands or desires for information need. Meanwhile, mobile information behaviors include enthusiastically seek for information to fulfill information needs, or

accidentally bump into information and sometimes evade the information ( Zhu, Hui, Chen, Fu and Li, 2011).

### *Reduce Uncertainty*

Many literatures states that a mobile device was used mainly for obtaining information (Balasubramanian, Peterson, & Jarvenpaa, 2002). Many keep close their smartphone as it assists them in their everyday life. Many use their smartphones to search for a health condition, such as looking for symptoms of a disease and its treatment. In the United States, 62 percent of smartphone users used their devices to look up for information about a health care (Smith, A 2015). It shows that by having smartphone is more convenient to fulfill information needs as it helps in reducing the uncertainty feeling at any time and place. Smartphone users may use the internet wirelessly or any relevant mobile applications (apps). There are three characteristics of applications on mobile device customization (to attain personal information), convenience (easy access to information and services (Balasubramaniam, Peterson and Jarvenpaa, 2002), and content ( to retrieve updated and in-depth information).

The theory of uncertainty reduction indicates that the beginning of a relationship is characterized by the high level of uncertainty. As people feel unpleasant about uncertainty, they comfort the feeling through seeking information from and communicating with others (Berger, 1987; Weiss et al. 2008). In today's environment, many communications happen virtually, as people tend to socialize and communicate through a virtual community.

### **Information Access**

Soon, the smartphones will become the competitor to other devices as the primary platform for information access. Smartphones becomes a preferences because it works as a mobile phone, provides internet wirelessly, and its productivity application such as email. Therefore, Thompson (2008) proposes that public libraries should give attention on information service and access despite of the physical collection, as users happen to be more dependent on this ability. Therefore, the span of access of data repositories will have to grow. Meanwhile, Smolla (1993) stated that librarians should provide information and make it accessible to the general public. Besides, smartphones can act as an intermediary between potential users and the information itself (Mathiesen & Fallis 2008)

### *Physical Access*

The term physical access refers to an access or right to use the documents that represent information or in other word the process of receiving documents that are required (Svenonius, 2000). Thus, physical access is the ability of physically getting access to the computer system. The term access itself refers to a “source pertinent to an inquiry, to comply with the evidence that result in acquiring the knowledge desired” (Buckland M. 1991). Moreover, during Information access activity, user need physical device like the electronic structures that hold the information, and ways to retrieve the information (Jaeger & Bowman, 2005). Despite that, there are also challenges in assessing information such as identification of right sources, its availability, and price in order to fulfill the information need.

### *Social Access*

The conceptualization of descriptive norms is the atmosphere that tells us what it is (environment). Therefore, the social aspects of information access is based on the theory of normative behavior (Burnett, Besant, & Chatman, 2001), in which within specific social contexts, information behaviors is like other day-to-day activities must be seen as normative situation. The theory stated that the value of information is not collective; however, it has embedded within the customs and attitudes of a particular social world. The smartphone technology enables that any information from around the world to be shared widely and faster effortlessly. Despite of the difficulty in confirmation of its reliability, accuracy, and trustworthiness of the information, it creates awareness in a short time. According to Smith (2015) in his study stated the feature of a smartphone that regularly in use by respondents are 97 percent use it for text messaging, 92 percent use for voice or video calls, 89 percent use the internet, 88 percent use for emailing, and 75 percent use for social networking. Apart from that, smartphone used to keep up-to-date with breaking news, and to share or to learn on what happening. Therefore, a person may use stories around the world for casual conversation in order to maintain a connection, or to engage in “small-talk.” (Burnett, Besant, & Chatman, 2001). Thus, for some people asking for records on national security is acceptable, however, for others the act is considered as inappropriate (Mart, 2006; Smith, 2007).

### *Intellectual Access*

Intellectual access includes the way information is categorized, organized, displayed, and represented. As information is available in various disciplines, and is being represented in many formats, having a good searching skill is vital to enable accessing the right information. Therefore, by learning intellectual access, is enable to disclose the appropriate ways of making information accessible whenever users retrieved the information and it brings the request and the information in an efficient manner through the representation of available information sources (Jaeger & Bowman, 2005). Since intellectual access factors include the quantity and readability of information provided, as well as possible connections between documents, knowing how to request records and how to pursue adjudication are also mechanism of intellectual access (Grunewald, 1998; Tankersley, 1998). Thus, to know the way in accessing information, a person needs to have searching skill in order to access the information.

### **Mobile Information Retrieval & Use**

Many researches in Mobile Information Retrieval defined Mobile information retrieval differently based on their context of studies and the nature of content to deliver in conferences and journals. At least five international conferences, including International Conference on Ubiquitous Computing, International Journal on Human Computer Interaction and International Conference on Mobile Data Management have focused on this topic. Meanwhile, for journals, Mobile Information Retrieval always be as the main theme lately.

### **Content Adaptation Aspect**

The reason that mobile information retrieval is unique as compared to traditional information retrieval lies is the aspect of ecology. The context of mobile information retrieval includes location information context, cameras and ability of running a social network in its environment. Furthermore, the availability of GIS sensors to detect the location and position of an individual making MIR as superb device and technology used by users.

### **Context Awareness Aspect**

In technical perspective, Mobile Information Retrieval is concerned with the representational, modelling, indexing and retrieving multiple media of information through mobile devices. Multiple media of information are referred as texts, graphics, image, sound, animation, audio, video and their possible combinations (Tsai,Etoh, Xie, Lee & Yang, 2010).

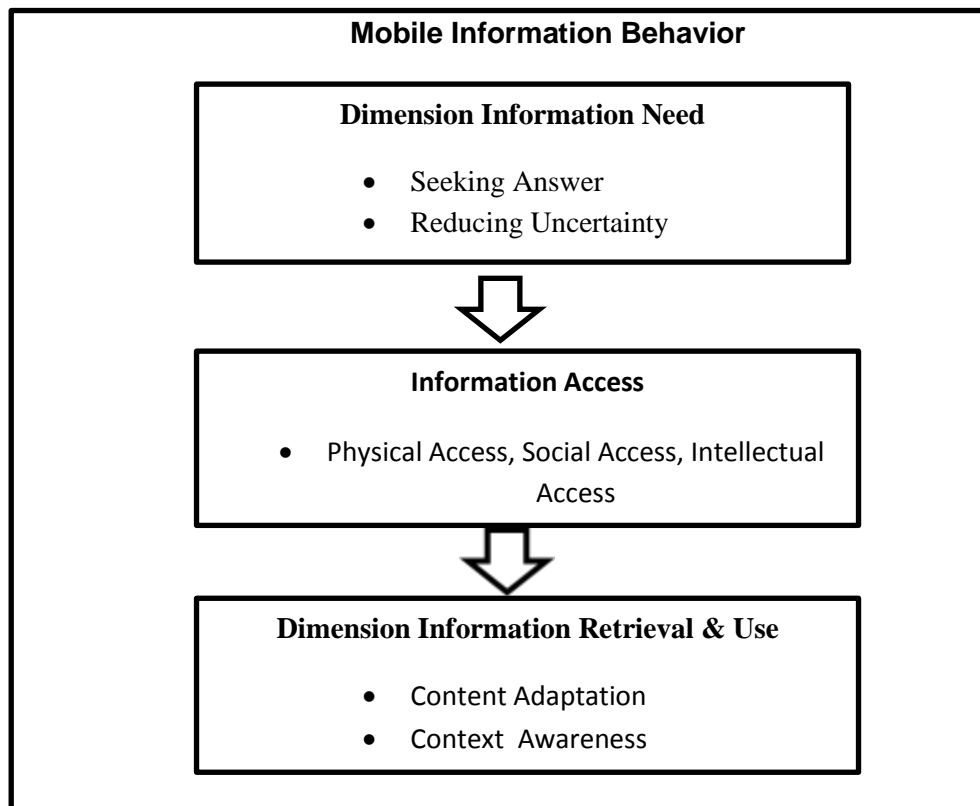
## Characteristics of Mobile Information Retrieval

Generally, the uniqueness of Mobile Information Retrieval is their ability to retrieve relevant results/ information resources and/or information artifacts in a very quick time and convenient ecology through their connection among various digital information environments at difference contextual levels. Therefore, Mobile Information Retrieval should include all these aspects:

### Theoretical Framework

This section demonstrates the theoretical framework for this study. Miles and Huberman (1994) defined a conceptual framework as a visual or written product, one that explains, either graphically or in narrative form, the main things to be studied on the key factors, concepts, or variables and the presumed relationships among them. This study is conducted to identify the theoretical framework of managers' mobile information behavior (Dimension Information Need, Dimension Information Access, Dimension Information Retrieval and Dimension Information Use) among librarians in private and government sector. These dimensions contribute to a model of librarians' mobile information behavior. The dimensions of this study focus on accuracy of information based on librarian need that can be used, retrieved and maintained through the librarians' mobile devices.

**Figure 1 shows the conceptual framework of the study:**





## **CONCLUSION**

In the nutshell, the advancement of information technologies has drastically introduced a new paradigm of information behavior which is known as the Openness Paradigm Era. This new paradigm has also changed the ways librarians interact, operate, search and disseminate valuable and accurate information to be used without any constraints of time, spaces, location and devices. Therefore, libraries should prepare themselves to understand this new behavior. Consider revising, this research has been conducted to contribute towards the development of a new measurement mobile information behavior scale, by analyzing the three dimensions of mobile information behavior namely Mobile Information Needs, Access, Retrieval and Use. This study is significant to understand the nature of librarians' behavior in searching, retrieving and using the information through the mobile device. Secondly the study would also provide suggestions about various kinds of mobile applications which library can provide for their staff to improve their services

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