Research Article

Conceptualizing BYOD Readiness Index for Predicting Individual's Productivity

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Abstract: *Readiness Index Predictors will be developed to predict the level of an individual's productivity as a result of adopting bring-your-own-device (BYOD) concept. This predictor is capable of helping institutions to plan their BYOD strategies in preparing their users in BYOD implementation. For the purpose of determining the predictors and impacts of the subject matter, a methodology known as a Systematic Literature Review (SLR) was used. Findings of the SLR searches were uploaded into EndNote to lead the systematic literature searches, and further analysis was performed to remove irrelevant literature and duplicate results. Various parameters are expected to be included as part of the predictors, such as user experiences, readability and ease of use.*

1. INTRODUCTION

BYOD Readiness Index Predictors is developed in order to determine the level of individual's productivity by adopting bring-your-own-device (BYOD). This predictor also will help institutions to plan their BYOD strategies in preparing their users in BYOD implementation. Bring-your-own-device or commonly known as BYOD is defined as bringing your personal gadget or devices such as laptop, tablets, smartphones or any other facilities or gadget to the organization or institution (Rosman et al., 2022).

1.1 BYOD Trends

Information and communication technologies are facing with rapid evolution and changes where it affects many sectors including business and education. Students in higher institutions and employees in organizations are allowed to bring their own personal devices in order to complete their tasks. BYOD allow people to use one single device for dual use which is it can be used for personally or professional purposes (Disterer & Kleiner, 2013). Most of higher institutions in developed countries have adopted and implemented BYOD strategies to help students to increase their engagement and enhance their learning experience (Ruxwana, Msibi & Mahlangu 2018). Research conducted by Deyan

(2019) found that 63% of US organization had implemented BYOD practices by 2011 and this figure had increased to 78.48% by 2018. In China, there is also increase in BYOD penetration in 2015 which 70% of Chinese worker using their own mobile devices at workplace (Chen & Chen, 2020). A study conducted by Kock & Futcher (2016), found that 89% of students, faculty and non- academic staff of higher institution in US are allowed to access their network by using their own personal devices.

1.2 The needs for BYOD Predictors

As BYOD become a trend, BYOD predictor is developed in determining the level of individual's productivity in adopting and implementing BYOD. Finding from research shows that allowing people to use their personal devices in doing their tasks may benefits in increasing their productivity (Weeger, Wang, & Geewald, 2016). French, Guo, and Shim (2014) in their research stated that 80% of users who are using their own personal devices feels they are more productive in doing their works. Therefore, this predictor intent to help organization and institution to plan their strategies in preparing their using in implementing BYOD.

2. METHOD & MATERIAL

2.1 Prototype Development

This study used and adapted the prior work of a previous study to explore for BYOD predictors (Erfanmanesh et al., 2012). The subtopics that follow, as well as Figure 1, explain the general procedure. The first stage is to determine the topic's predictors and impacts (for example, BYOD competency). Following that, the instrument was created by incorporating the prior research items.
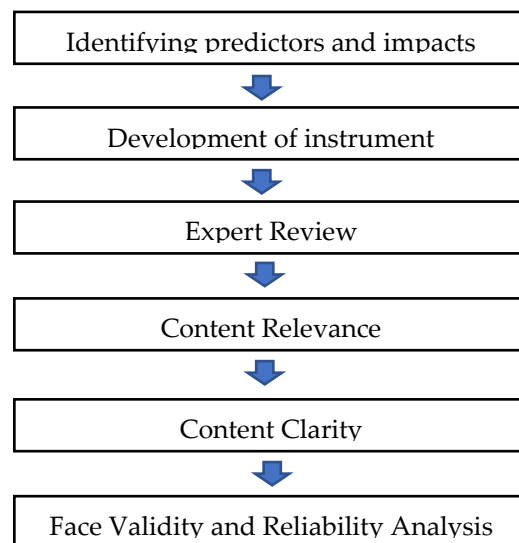

Figure 1. Research Methodology.

2.1.1 The Process of Determining Predictors and Impacts

For the purpose of determining the predictors and impacts of the subject matter, a methodology known as a Systematic Literature Review (SLR) was used. SLR is a method of synthesising scientific evidence to provide a response to a particular research question in a manner that is both open and reproducible. In addition, SLR integrates all evidence that has been published on the subject and evaluate the quality of the evidence that has been published (Lame, 2019). In this study, the SLR concept has been adapted from a previous literature (Rahimi et al., 2019). It follows the procedure: (1) SLR begins with the leading journal, (2) performs a backward search for relevant publications, and (3)

performs a forward search to evaluate citing publications. Search terms that are specifically used include (1) Bring Your Own Device, (2) BYOD, (3) readiness index, (4) productivity, (5) BYOD competency, and (6) individual performance are the specific search terms. Several prestigious online databases, including Scopus, IEEE Explore, ProQuest, and Emerald, were used to gather the literature. Aslib Journal of Information Management, International Journal of Information Management, Information System Research, Scientific Data, Journal of Librarianship and Information Science, Journal European Journal of Information Systems, Journal of Academic Librarianship, and others are among the top journals were also included.

Findings of the SLR searches were uploaded into EndNote to lead the systematic literature searches, and further analysis was performed to remove irrelevant literature and duplicate results. A total of 150 papers were identified as potentially useful for further investigation. The literatures were assessed by skimming the papers and paying close attention to the abstract and conclusion. As a result, the following five (5) factors were chosen: knowledge, skills, ability, task productivity, and task satisfaction. Figure 2 depicts a summary of the SLR procedure.
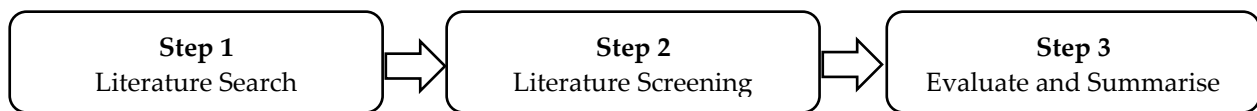
Step 1 Literature Search	→	**Step 2** Literature Screening	→	**Step 3** Evaluate and Summarise

Figure 2. Summary of SLR process.

2.2 Conceptual Design

The concept of bring-your-own-device or BYOD can be traced from multiple disciplines such as in Information systems (IS), business and management. BYOD is the tendency of individual to connect their owned devices to the network such as mobile phone in their workplace.

Based on literature search, one of the main theme or dimensions that was identified is individual readiness. A strategy of BYOD Readiness Index will be transform a concept or idea into visual which is the underpinning of a successful design process. It will relate to the concept of BYOD readiness to predicting individual's productivity.

The use and knowledge of technology is quiet dynamic as it changes day by day and everyone try to adapt to new technologies (Andriole, 2012). BYOD is very productive as long as it follows the rules and aware of necessary deterrent measures (Topaloglu & Kirar, 2017).

Process in designing the conceptual model will be relating to determine the purpose of BYOD predictors and the problem intend to address. Once the problem statement been outlined, identify the audience by understanding their interest on BYOD. Guidelines and policies of inclusivity and accessibility will help to study the behaviour of the user.

Various parameters can be adapting like user experiences, readability and ease of use to know the individual's performance. Choices of parameters can be identifying based on work of other researchers as this process will help to improve the conceptual design for this study. The process of brainstorming will help to group related ideas into a solid statement that will express the concept of BYOD readiness and to achieve the research objectives.

3. DISCUSSION

3.1 Potential application

BYOD Readiness Index Predictors suggests few factors to be used by institutions in conducting their survey to collect information regarding their institutions' members readiness to implement the BYOD strategies. Some of the recommended factors namely technological readiness, individual readiness, contextual readiness and organisational readiness (Rosman et al., 2022). In Malaysia, there are several issues that need to be consider implementing BYOD in education. The issues that need to be consider are knowledge of the teachers, social issues, infrastructure, security, health concerns, and financial resources, etc (Yusri Hakim et.al, 2018). For the school to successfully use BYOD, a teacher's technical knowledge of ICT and safety-related knowledge when using the internet is crucial. According to Hayati (2018), teachers still struggle to deal with new technologies. If instructors are technically proficient, they can help the schools embrace BYOD to raise the standard of learning in Malaysia. This situation prove the needs of BYOD Readiness Index Predictors which can help school and organization to manage and overcomes any issues regarding implementation of BYOD in workstyle.

3.2 Commercialization value

BYOD adoption in organisations has increased in recent years, with the goal of improving organisational cost savings, employee job satisfaction, and employee productivity in both government and private institutions (Khalid Almarhabi, Adel Bahaddad & Ahmed Mohammed Alghamdi, 2023). BYOD Readiness Index for Predicting Individual's Productivity is an innovation that helps individual and organization to preparing themselves in adopting BYOD in their work style. This predictor also can help organization to plan for training and adopting their working style that can support BYOD such as technology that can support all employee devices, workspace design that are ergonomic which can help their employee comfortable in doing task and also can help in managing their financial budget. Thus, BYOD readiness index is really good in helping organization and user in doing and managing their task.

3.3 Challenges and opportunity

BYOD introduced new challenges due to the exponential development in the number of cyber security events and privacy risks, which disrupted and fractured the institution security environment (Palanisamy et al., 2020). Although numerous strategies and processes for mitigating the risk associated with BYOD have been developed and implemented, they continue to offer a challenge as corporate and government institutions networks are exposed to inherent vulnerabilities produced by the BYOD threat landscape (Ali & Kaur, 2021: Shim et.al, 2013). Institutions that want to deploy BYOD strategies therefore need to invest in adequate infrastructure and personnel training (Siani,2017).

Despite these challenging encounters, BYOD readiness index predictors allows institutions to decide and plan on their institutions' BYOD strategies to ensure that their institution members are mentally and technologically prepared for the BYOD practice. BYOD strategies may play an important role in an institution's quest to go paperless, which has major ecological and economic benefits, increasing the productivity and satisfaction of members in the institutions (Safar, 2018). BYOD initiatives could alleviate some of the budget tension by making efficient use of resources towards other strategic plans of the institutions (Siani, 2017). BYOD readiness index predictors may also be used as a channel for educating and promoting the advantages of BYOD practices to all members of the institutions.

4. CONCLUSION

Implementation of BYOD can give many benefits for both organization and institution. However, it is important to know level of readiness of the users in implementing BYOD. Readiness may come in various aspects such as technological readiness, individual readiness, contextual readiness and organisational readiness. When this readiness is identified, it will help organizations and institutions to successfully implement BYOD and it can help to promote their users' productivity.

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