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THE APPLICATION OF PAPERLESS AND GREEN THEORY IN NATIONAL DEFENCE UNIVERSITY OF MALAYSIA: A CONCEPTUAL STUDY

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Abstract

The green environment through electronic government is seen increasingly more useful in today's economy and business due to its effectiveness and applicability in various fields. Paperless is the reduction of paper usage practiced by the employees in many workplaces which is an important element in national electronic government today. Despite the rapid acculturation of paperless systems in many organizations, researchers have argued that it is yet to promote and establish a paperless practice that leads to sustainable and reliable approaches especially in the working environment at the National Defense University of Malaysia (NDUM) due to high perceived profitability by the stakeholders. Evidence shows that the traditional use of the paper-based process in daily working practices leads to many weaknesses, risks, and financial burdens. This implies that it will be very important to truly embed behavioral intention (desire towards paperless practice) within a community of NDUM if individual perceptions of the use of information technology (IT) in the e-government service is the motivator factor. The paper aims to propose a study on the relationship of perceived organizational support dimensions (IT, management and peer supports) within the paperless context which is grounded by a famous theory namely Technology Acceptance Model (TAM). A literature study is used as a method to yield related findings. Thus, this paper provides a research model (conceptual) to extend the knowledge of how organizational support influences employees' behavioral intention in practicing paperless. This study is then constructed into possible research hypotheses for future empirical researches. The model of research will provide a beneficial guideline for strategies determination in promoting e-government services, particularly the paperless based service.

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INTRODUCTION

Paper is one of the most critical inventions of mankind. The usage is unregulated and has negative effects. Only the activities of each citizen would have a huge effect on the solution to the global issue of pollution of Earth's air space. Wood pulp is the main raw material for printing. Cellulose is derived from forest trees, especially spruce, pine, and birch, but also eucalyptus, poplar, chestnut, and other seeds (Obiora, 2017).

The green environment is part of the rubric to promote the sustainable development of the Institute of Higher Learning besides of other six rubrics - corporate, students, staff and community governance, relationships with the external industry and prolonged improvements (Larrán et al., 2015; Saadatian et al., 2009). According to Legacy (2004), vision and mission are important for mentioning goals towards sustainable development and how to achieve them. Therefore, researchers believe that the theme and terms towards green environment should be placed in the vision and mission of a university to achieve that concept. Niko (Roorda, 2001) believes that an institution of higher learning can participate in environmental audits to promote green environment practices. Researchers argue, as a university it is necessary for a green environment practice campaign to all its citizens such as the acculturation of paperless practice.

The paperless campus is often focused around the usage of less paper and more technologies to carry out learning exercises. Having less paper is just as much about utilizing resources as it is about electricity. It is helping to save both the forests and the earth. It growing social resources and reduces the loss of natural property. In reality, the paperless campus increases the social or human capacity of students and professors and reinforces and extends their connection (Iqbal, H., & Ahmed, 2015). Several universities, especially in emerging and

underdeveloped countries, wanted to set up a paperless campus. There are undoubtedly praiseworthy initiatives, but there are often flaws in the execution of the construction of a new paperless campus. Developing and underdeveloped countries have a strong cultural expectation to easily adapt their creditors to the paperless environment, but they have budgetary deficits to set up a paperless campus in their respective universities. Besides, the efficiency of continuing electricity depends on paperless academic activities. However, uninterrupted energy is uncommon in reality in developing and underdeveloped countries. A paperless campus, therefore, does not always take shape. State grants and technological assistance, super device suppliers, investors in growth and donor organizations play a significant role in creating an undisclosed campus.

The paperless practice has been given attention over the last three decades in line with the rapid development of information technology and communication (Shah, S., & Tiwari, 2010). In conjunction with this, the use of various forms of information technology-based equipment began to evolve in the organization and many researchers have predicted the practice of paperless intensively began in 2000 and later (Andersen, N., & Turner, 1994). It is technically supported by the electronic medium usage in communications, data filing, transmission as well as data acceptance that lead to the transformation of tradition-based paper-based process practices to paperless. In the context of promoting a green environment for an organization, scholars have acknowledged that the approach to the paperless process provides its role in the form of its advantages/benefits such as work efficiency, high productivity, sustainable environment and profit generation.

Over the years, universities have become significant receivers of the email. The document is used to print student schedules, handouts, quizzes, exams,

assignments, study, books, and to track student attendance. The diminishing volume of paper is only the starting point, but the primary aim is to reduce the use of paper. Therefore, the productivity of stakeholders such as academics, the administration, students and all the divisions that operate the university can be increased for any university, paper spendings such as producing copies, copying and processing, and extending university stakeholders' immediate reaction (Obiora, 2017).

The practice of paperless in the university which has its niche in defense and security could be the model to other training organizations in defense and security industry towards the efficiency and sustainability of producing talented and credible arm forces personnel who should serve for the stronger national defense and security in future. This may not only focusing on the traditional defense and security approaches, moreover, but it also emphasizes strongly on the international relations defense and security. Indirectly, the practice of paperless itself supports the Green Theory in the international relation approach that relates to the concept of environmental security which eliminates environmental threats globally (Dyer, 2018).

The role of paperless practice in supporting the concept of green theory in the approach of international relations is by embedding green human resource management (HRM). Green Human Resource Management is about a combination of environmental management into human resources management (Renwick et al., 2008). Green HRM also is referred to as the extent of Green HRM practices in relating to the functional and competitive tools of human resources management (Jose Chiappetta Jabbour, 2011). Functional or dimensions of GHRM relate to the area of recruitment, performance management, and appraisal, training and development and compensation (Renwick et al., 2008;

Jabbour et al., 2010).

In the recent defense and security industry mainly in the defense management discipline, the implementation of green HRM is significant because it sustains the HRM practices in leading various types of misconducts of defense management. For instance, paperless recruitment and selection would ensure a highly clean employment outcome of new arm forces personnel who finally are qualified and able to realize not only the traditional defense and security in fact, beyond it.

Thus, by understanding the close relationship between paperless and green environment mainly in the current perspective of defense and security, an initial conceptual study must be proposed to fill in the theoretical gaps and finally succeeding the government agenda through purely green defense university and defense industry.

LITERATURE REVIEW

Scholars certify that the practice of paperless can be reinforced through the support of information technology (IT) facilities. For example, the provision of modern and reliable IT tools and equipment such as the fiber optic cable for high-speed internet access has become the basis of individual confidence building for a positive perception in implementing paperless based work.

Furthermore, the assistance of information technology personnel is also important in affecting the perceived ease of use of technology (Mahmood et al., 2001; Thatcher et al., 2008). The reason is the IT personnel provide their co-workers in the form of support on how to use technology in less complex ways. Besides, they also explain the importance of technology that can benefit employees and organizations in general. Indirectly these IT staff who are co-workers in the organization either among of them or with individuals in other departments also play a role in motivating the practice of

paperless operations in the organization.

While direct support in the IT aspect is important to influence individual awareness of the ease of use and technology implementation, it is recognized that management support also serves to provide a comfortable environment and to promote the use of paperless offices. In fact, explanation by the management to give a broad awareness of the possible activities and changes and the advantages of paperless offices with organizational goals is crucial to create positive perceptions on the technology application (Mahmood et al., 2001; Thatcher et al., 2008). This is reinforced in the initial opinion by Davies (1989) and later argument by Crespo et al. (2008) on individual beliefs of the simple application and usefulness of IT that directly affects the individual intentions or desires towards the use of the paperless office ("The Paperless Office," 2009). Therefore, this study found that the need for IT support, the influence of IT staff and at the same time, the support of the management complementing the contributing factors on individual perceptions and desires for the paperless process.

Strengthening the individual's desire for paperless processes, the role of management support in formulating organizational policies in line with government policies is seen to be an effective mechanism. It combines government policies related to paperless government, green environment, and public sector information technology with organizational policies in the aspects of information technology and green environments. Importantly, is the awareness and understanding of the staff on the existence of this policy and its implementation is seen to have an impact on the desire for paperless processes. This opinion is consistent with the results of the study and opinions by McLeod et al. (McLeod et al., 2004), and also Umi Asma and Zawiyah (Asma et al., 2009) which clarify the government's recommendations

through its policy that is integrated into the organization's policy pertaining the electronic records management system has affected the reduction of paper usage in the filing of organizational data. It is consistent with Umi Asma and Zawiyah (2009) who suggested that employees were motivated to implement this electronic record management system as a result of the initiative and a clear understanding of the enforced policies given by the senior authorities. Meanwhile, Wilfredo and Crystal (2013) emphasized that campus residents should be educated and guided to make them realize and concern about the sustainable campus environment.

METHODS

This paper derives a research framework (Figure 1) from the literature review as discussed above as well as from the theoretical model foundation in Technology Acceptance Model (TAM) by Davis (1989). TAM explains the relationship between the perception of the use of technology and behavioral intention. The perception of the use of technology can be influenced by various determinant factors such as the perception of risk (Anna, A. C. A., & Yusniza, 2010), perception of organizational policy and perception of organizational support. In some cases, perception of the use of technology is associated closely in measuring the constructs that directly influence the behavioral intention.

Thus, for this study the measurement of perception of the use of technology whether usefulness or ease of use of technology has been contained in the measurement of any related independent variable. For example, the item that relates to the ease of use of technology is possible to represent the item of IT support as illustrated in Figure 1. Other independent variables used in the model are management support and peer support that may lead to intention towards paperless. Indeed, the measures of constructs that contain the element of the use of

technology would give a positive impact on behavioral intention (Agarwal & Prasad, 1999; Venkatesh & Davis, 2000). From that, there are hypotheses could guide this study:

- H1: There is a positive significant effect of IT support on intention towards paperless among the NDUM's employees.
- H2: Management support positively and significantly affects intention towards paperless among the NDUM's employees.
- H3: Peer's support influence intention towards paperless among NDUM's employees positively and significantly.

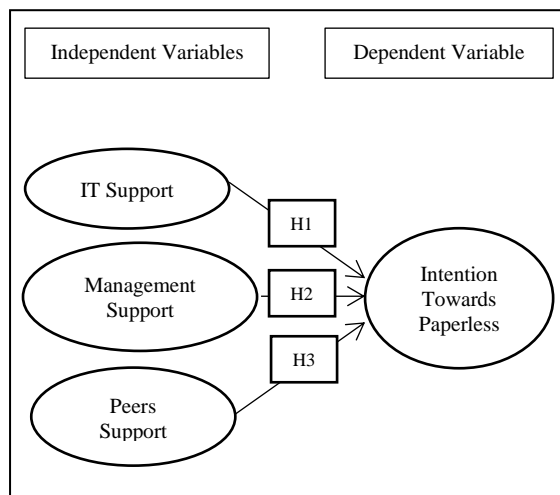


Figure 1. Research Framework
Source: Processed by Authors, 2020

RESULT AND DISCUSSION

The rising increase in paper output and use contributes to more significant negative environmental impacts for the future. Every tree is used for paper processing, which extracts from the environment every year about a ton of carbon dioxide (Iqbal, H., & Ahmed, 2015). The papermaking method often leads significantly to water and air emissions, crippling the energy cycle and destroying the carbon sink. Any alternatives will play a significant role in growing the office paper and university paper for forest conservation and environmental gradation. The paperless

campus is a modern pedagogical method, where most pedagogical practices rely on electronic devices.

In general, studies have found that the practice of paper-based processes has some weaknesses. Paper-based processes demonstrate the use of tangible documents, photocopies, archives, and searching for using tangible documents from file cabinets (Kissell, 2013). The paper-based process is inefficient, involves the cost of office space, and poses a security risk (Selvi et al., 2011). NDUM is facing high expenses of photocopies and printings activities which many thousands of ringgit need to be paid a year. Besides, Kissell (Kissell, 2013) states that the filing system requires a significant amount of physical space and inefficiency in finding the previous paper-filed. The average rental cost for physical filing space is estimated between five to six percent of the income for small and medium-categorized companies, and big organizations (Welsh, 2007). Non-paperless firms also face confidential risks as paper-based data are lost, damaged, misplaced, or fall into the wrong receivers (Mills-Senn, 2014). Those problems also faced by the NDUM that urged the university to act and solve it by forming some related committees. Brusco (2011) explains that many organizations are moving towards electronic filing because it uses small space and enhances security. Electronic filing makes the digital information easier to be searched and decreases the inefficiency of the employee due to the removal of work to find physical documents misplaced ("The Paperless Office," 2009).

Recognizing the shortcomings inherent in the paper-based process and the importance of adopting a paperless process approach particularly in this sophisticated information technology era, public universities have also taken the initiative to urge its staff to embrace paperless practices (Reaz, Hussain, & Khadem, 2007). This call complies with the

requirements and targets of paperless initiatives in the Malaysian public sector ICT framework as set out in the Public Sector ICT Strategic Plan of Malaysia 2011-2015 (The Malaysian Administrative Modernization and Management Planning Unit, 2011). This culture is appropriate when a university takes on the overall quality aspect and is in line with the status of an autonomous university that requires the operation efficiency in generating reasonable income and profit. Looking at current developments, the practices of this paperless need to be expanded and intensified by NDUM staff especially from administrative staff and lecturers. This is because the level of paper usage in various processes based on administration, teaching, and learning is high. Additionally, concerns arise if university staff are unwilling to fully utilize the information and communication technology which gives the advantages for paperless usage in their daily work tasks. This is due to their lack of awareness, skills, and belief in the use of that technology. So, they are constantly using traditional methods and approaches. This scenario is in line with the issues inherent in the study of Barker et al. (Barker et al., 2008) at Australian universities. In addition, the issue of university staff's intention towards paperless is also related to the question of Arzmi and Mohd Yahya (Bakar & Ariffin, 2013) on the extent to which academic staff in Malaysia is integrated with technology advancement that applied in electronic journals and how high they desire and use electronic journals in the effort to promote the paperless process. The features of this problem can affect the government's desire for all public and private sector agencies including universities to support the transformation program towards the full implementation of electronic government as considered a platform for complete government paperless (Azman, 2012).

Hence, there is a need for constant awareness and desire among NDUM

employees to practice the paperless process seriously and with integrity. In this regard, the need for a study and identification of factors that may influence the wishes of university employees to practice the paperless process. The literature review focuses on the discussion of identified factors from previous studies such as management support, support of existing information technology facilities and the influence of colleagues or co-workers. However, past studies on these factors are concentrated in the manufacturing and other services sectors. Studies in the higher education sector are more focused on technical discussions on paperless practices such as the development and operation of information technology systems in paperless practices. Hence, in the development of the research model of desirability towards paperless and filling the gaps from previous studies, the three factors mentioned above will be utilized as a determinant factor to influence the intention towards paperless among employees in National Defense University in Malaysia.

CONCLUSION AND LIMITATION

Creating a paperless university campus or educational institution is not a problem. The design of a paperless campus would play a significant role in the introduction of effective laws, strategies, and policies. Evidence has demonstrated that paperless is a radical movement that pushes in the direction of utilizing less paper and making deliberate choices on whether to use hardcopy papers. The goal of this project is to step ahead in a university setting without paper and at the same time doing so at a strategic pace. The paperless campus provides quality research and knowledge, eliminates soil degradation and damage, and promotes low-carbon cities. Several similar activities may add to the paperless leadership of public organizations or university campuses.

The essence of organizational support to the intention of paperless has been

explained by the previous studies. This study takes the initiative to share insights into its dimensions (IT support, management support and peers support) and giving valuable input on the paperless practice by NDUM employees. It is expected that all three antecedent factors will have a positive and significant impact on intention towards paperless. This is because the supports given by these three parties depict the usefulness of technology and the ease of use of technology that makes the employees feel comfortable and confident, thus, the desire to practice paperless.

There is some potential usefulness of this study. First, providing more well-equipped infrastructure for the IT system in supporting the paperless initiative. Second, exercising real and practical management by example in encouraging the subordinates for paperless. Third, initiate the train of trainers among the co-workers for the sharing of the ease use of technology knowledge and skills with others.

This study has some limitations that lead to less scope of knowledge expansion for future literature mainly in the area of paperless and green environment. From the previous studies, researchers found that only three determinants factors (IT Support, Management Support, and Peer Support) potentially would be used in generating a research framework for the next empirical study. The small amount of grant provided as well as time constraint affected the location selected (research at NDUM only).

This study could also be extended to other respondents such as employees from other UAs for better generalizability of findings. A huge number of respondents will generate more accurate perceptions in measuring the constructs utilized in the model of study. Besides, it is suggested for investigating other determinant factors such as employees' trust and employees' profiles that could construct a close relationship with intention towards

paperless in public universities.

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