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PERSONALITY TRAITS AS FACTORS AFFECTING E-BOOK ADOPTION AMONG COLLEGE STUDENTS: DOES PERSONALITY MATTER?

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Abstract

Electronic materials such as e-book have become increasingly accepted as learning tools in the classroom nowadays. This study investigated the relationships between the big five personality traits: conscientiousness, agreeableness, neuroticism, openness to experience, and extroversion with e-book adoption among college students. Pearson Product Moment Correlation and Multiple Regressions were conducted to analyze the data. Results revealed statistically significant relationships between the personality traits (conscientiousness, agreeableness, openness to experience, extraversion) and e-book adoption. Implications of the findings are also discussed.

Keywords: Personality Traits, E-Book, Technology Adoption

1. Introduction

Why do individuals adopt new technologies? This question has emerged as an important concern among information systems researchers. This concern rooted in the assumption that any system that is not utilized will not result in expected efficiency and effectiveness. Therefore, there is an increase in academic research focusing on examining the determinants of computer technology acceptance and utilization among users (such as Moore and Benbasat, 1991; Davis, 1989).

Even though e-books are just like any other technology, their unique characteristics differentiate them from websites or other related Internet technology (Bansal, 2010). Van der Velde and Ernst (2009) in their study suggested that electronic book or e-book is similar to a print book but with a different type of medium; either paper or electronic. Therefore it is of no surprise that most authors (such as Cox and Mohammed, 2001; Rao, 2003) have referred to e-book as text that is available in the electronic format.

The issue of students adopting e-book as learning tools is very crucial especially to the newer generation of students. These millennial generation or "Net Generation" whose born after 1981 was stated by Gregory (2008) as the generation that possess "the information age mindset". It is more surprising to note that even while the internet is continually gaining popularity, the usage of e-books especially among this newer generation of students is still very slow (Anuradha and Usha, 2006).

Before proceeding, we need to operationalize the term innovation. Rogers (2003) defined an innovation as an idea, practice, or object perceived as new by an individual or other unit of adoption. These ideas or objects does not need to be new and does not necessarily have to be better or more beneficial than any previously identified idea or object. Sometimes innovation can be very abstract as ideas or very concrete like a new piece of computer-based

technology. However, this article only focuses on the use of e-book as a particular type of innovation of interest.

The adoption and diffusion of innovations literature was the theoretical base for most of the adoption researches. Basically, previous literatures stated that individuals' perceptions about using any type of innovation are assumed to influence their adoption behavior (Sahin, 2006; Moore and Benbasat, 1991). Other significant theoretical models that attempt to explain the relationship between user attitudes; perceptions, beliefs, and actual system use include the theory of reasoned action (TRA) (Ajzen and Fishbein, 1980), the theory of planned behavior (TPB) (Ajzen and Madden, 1986), and the technology acceptance model (TAM) (Davis, 1989). Among all the mentioned theoretical models, TAM appears to be the most widely accepted among researchers. This is mainly due to two reasons; TAM's parsimony and also the fact that TAM has enjoyed a relatively long history in the research literature which supports it.

2. The Big Five Personality Traits

Prior literature suggests the use of the Big Five Personality Traits. These traits which are; openness, conscientiousness, extroversion, agreeableness, and neuroticism are five empirically supported dimensions of personality being used to describe personality (Digman, 1990). The Big Five Personality Traits are also known as the Five Factor Model (FFM) (McCrae and John, 1992). The term "Five-Factor Model" has been commonly associated with studies of traits using personality questionnaires (McCrae and John, 1992) and personality investigators agree that personality is best captured by the five factor model (McCrae and John, 1992). The five factors are:

2.1. Openness to Experience

Openness to experience dimension describes individuals who are willing to try new and different things (Devaraj *et al.* 2008). Among the traits of openness to experience are; having wide interests, being imaginative, insightful, attentiveness to inner feelings, preference to variety, and intellectual curiosity (McCrae and John, 1992). Devaraj *et al.* (2008) also stated that individuals low on openness prefer a more stable life and feel very uncomfortable with change. Therefore, individuals high in openness are assumed to have positive attitudes and cognitions toward accepting job related technology because they are less threatened by the change implied in adopting technology. These individuals willingness to try new things will eventually influence their judgment about the utilization of the technology.

2.2. Conscientiousness Personality

Conscientiousness people are individuals who are dependable, organized, persistent and achievement-oriented (Barrick and Mount, 1996). This is the main reason why Individuals high on conscientiousness could motivate themselves to perform tasks that they would like to accomplish. Prior research by Salgado (1997) has stated that conscientiousness is one of the best predictors of performance. Furthermore, conscientious individuals are generally more reliable, more motivated and more hardworking. Since usage of technology is rooted in improving performance, therefore individuals high on conscientiousness were assumed to have a high acceptance level to technology adoption.

2.3. Extroversion Personality

Extroversion concerns the extent to which individuals are gregarious, assertive, and sociable versus reserved, timid, and quiet (Salgado, 1997). This trait refers to the ability to adapt socially. Prior study by Devaraj *et al.* (2008) argued that individuals high in extroversion are naturally inclined to care about their image and other social consequences of behaviors, and therefore are more likely to form intentions to act based upon their perceptions of the opinions of significant others.

2.4. Agreeableness Personality

Agreeableness concerns the degree to which individuals are cooperative, warm, and agreeable versus cold, disagreeable, and antagonistic (Salgado, 1997). It is a tendency to be pleasant and accommodating in social situations reflecting individual differences in concern for cooperation. Agreeable traits include courteous, trusting, cooperative, empathic, and helpful and they also have an optimistic view of human nature (Barrick and Mount, 1996). Agreeableness is assumed to be most strongly related to technology beliefs when that technology fosters collaboration, cooperation, and task accomplishment (Devaraj *et al.* 2008).

2.5. Neurotic Personality

Neuroticism concerns the degree to which the individual is insecure, anxious, depressed, and emotional versus calm, self-confident, and cool (Salgado, 1997). These people are often characterized by insecurity, anxiousness, hostility, self-conscious, shy and sometimes have trouble controlling urges and delaying gratification (Devaraj *et al.* 2008). Individuals low in neuroticism are emotionally stable and well-adjusted; in contrast, those high in neuroticism are anxious, self-conscious, paranoid, and prone to negative emotions and negative reactions to work-related stimuli (Devaraj *et al.* 2008).

3. Personality and Technology Adoption

Prior research suggests that individual characteristics could potentially affect technology acceptance. Several prior studies have examined the role of individual characteristics such as personality factors on technology adoption (Devaraj *et al.* 2008), while other studies (such as Agarwal and Prasad, 1999; Burton-Jones and Hubona, 2005) have also found that individual differences are significant factors in technology adoption. However, despite these findings, only a few studies utilizing Technology Acceptance Model (TAM) or its constructs have concentrated on the effects of these individual differences.

4. Aim of Study

The aims of this study were threefold:

1. To find out the relationship between the big five personality traits and students adoption of the e-books as learning tools.
2. Secondly, using the big five personality traits as framework, the study intended to get a clear picture of how each traits will significantly predicts the adoption of e-books among college students.
3. To predict the combined contributions of the personality traits to the variance in the adoption of e-books.

5. Methods

5.1. Participants

Participants were 91 students (38 males and 53 females) who voluntarily participated in this study at a university college in Selangor. These students were purposely selected because they indicated that they had been using e-books as a learning tool for one of their course. 46 students were diploma students, and 45 were degree students. Ideally, responses from a convenience sample is useful in two ways; developing research hypotheses and for identifying issues (Fricker and Schonlau, 2002; Henry, 1990).

5.2. Materials and Procedure

Participants completed a demographics questionnaire. Students' adoption in this study is evaluated through two ways; their perceived ease of use of the e-books as learning tools and also their perceived usefulness of the e-books as learning tools. These were evaluated using a questionnaire adopted from Davis (1989). Both perceived ease of use ($\alpha = .88$) and perceived usefulness ($\alpha = .73$) produced reliable Cronbach-alpha values. The personality traits were measured using a-44 item Big Five Inventory-Short Form (Benet-Martínez and John, 1998). The Big Five Personality Inventory produced reliable Cronbach-alpha value for the following five traits: neuroticism ($\alpha = .71$), extraversion ($\alpha = .72$), agreeableness ($\alpha = .75$), openness to experience ($\alpha = .82$), and conscientiousness ($\alpha = .78$).

6. Data Analysis

Pearson Product Moment Correlation and Stepwise Multiple Regressions were conducted to analyze the data. All the negatively worded items were reversed during the analysis.

7. Results

The first aim of the research was to find out the relationships between personality traits and adoption of e-books. The statistically significant positive and negative correlation among the variables and technological adoption of e-book are presented in Table 1.

Table 1. Correlation matrix of technology adoption of e-book, conscientiousness personality, agreeableness personality, neurotic personality, extroversion personality and openness to experience

| Variables | PEOU | PU | CO | AG | NEU | OPEN | EV |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----|
| PEOU | - | | | | | | |
| PU | 0.677(**) | - | | | | | |
| CO | 0.275(**) | 0.472(**) | - | | | | |
| AG | 0.286(**) | 0.463(**) | 0.727(**) | - | | | |
| NEU | 0.146 | 0.352(**) | 0.728(**) | 0.676(**) | - | | |
| OPEN | 0.171 | 0.374(**) | 0.676(**) | 0.548(**) | 0.497(**) | - | |
| EV | 0.264(**) | 0.377(**) | 0.719(**) | 0.621(**) | 0.660(**) | 0.673(**) | - |

** Significant ($p < 0.05$)

Conscientiousness significantly and positively correlated with perceived ease of use ($r = 0.275$, $p < 0.05$); agreeableness with perceived ease of use ($r = 0.286$, $p < 0.05$); and finally extroversion with perceived ease of use ($r = 0.264$, $p < 0.05$). However, both neuroticism and openness to experience did not correlate with perceived ease of use.

Conscientiousness significantly and positively correlated with perceived usefulness ($r = 0.472$, $p < 0.05$); agreeableness with perceived usefulness ($r = 0.463$, $p < 0.05$); neuroticism with perceived usefulness ($r = 0.352$, $p < 0.05$); openness to experience with perceived usefulness ($r = 0.374$, $p < 0.05$); and extroversion with perceived usefulness ($r = 0.377$, $p < 0.05$).

There were also significant positive relationships among the variables. Hence, conscientiousness correlated with agreeableness ($r = 0.727$, $p < 0.05$); conscientiousness correlated with neuroticism ($r = 0.728$, $p < 0.05$); conscientiousness correlated with openness to experience ($r = 0.676$, $p < 0.05$); and conscientiousness correlated with extroversion ($r = 0.719$, $p < 0.05$).

Agreeableness correlated with neuroticism ($r = 0.676$, $p < 0.05$); agreeableness correlated with openness to experience ($r = 0.548$, $p < 0.05$); and conscientiousness correlated with extroversion ($r = 0.621$, $p < 0.05$). Neuroticism correlated with openness to experience ($r = 0.497$, $p < 0.05$); and neuroticism correlated with extroversion ($r = 0.660$, $p < 0.05$). Finally, openness to experience also correlated with extroversion ($r = 0.673$, $p < 0.05$).

The second and third aim of this study was to estimate the relative contributions of the predictor variables to the variance in e-book technological adoption and also to predict the combined contributions of the personality traits to the variance in technological adoption of e-books. To this end, the stepwise multiple regression analysis was computed with perceived ease of use as the dependent measure and the personality traits being predictors. At step 1 of the analysis agreeableness entered into the regression equation and was significantly related to perceived ease of use, $F(1.89) = 7.91, p < 0.05$. The multiple correlation coefficient was 0.29, indicating approximately 8.2% of the variance of the perceived ease of use could be accounted for by agreeableness. Other personality traits did not enter into the equation at step 2 of the analysis. Thus, perceived ease of use is significantly predicted by agreeableness. The regression equation for predicting perceived ease of use was; Predicted perceived ease of use = $0.34 \times \text{agreeableness} + 2.71$

A stepwise multiple regression was then conducted to evaluate whether perceived ease of use and all the five personality traits were necessary to predict perceived usefulness. At step 1 of the analysis perceived ease of use entered into the regression equation and was significantly related to perceived usefulness $F(1.89) = 75.27, p < 0.05$. The multiple correlation coefficient was 0.68, indicating approximately 45.8% of the variance of the perceived usefulness could be accounted for by perceived ease of use. At step 2 of the analysis, conscientiousness entered into the regression equation and was significantly related to perceived usefulness $F(2.88) = 53.08, p < 0.05$. The multiple correlation coefficient was 0.73, indicating approximately 54.7% of the variance of the perceived usefulness could be accounted for by both perceived ease of use and conscientiousness. Thus the regression equation for predicting perceived usefulness was; Predicted perceived usefulness = $0.34 \times \text{conscientiousness} + 0.49 \times \text{perceived ease of use} + 0.68$

8. Discussion

Two constructs were introduced in the Technology Acceptance Model (TAM). The two constructs are perceived usefulness (the belief that using an application will increase one's performance) and perceived ease of use (the belief that one's use of an application will be free of effort). Both perceived usefulness and perceived ease of use could predict an individual's attitude concerning the use of an application and thus, positively affect the individuals' intentions to use and adopt any technology. Furthermore, perceived ease of use positively affects the perceived usefulness, and both perceived ease of use and perceived usefulness are influenced by external variable.

The study investigated the relationship between the big five personality traits and students adoption of e-book as a learning tool. It was found that in deciding whether to adopt e-book as learning tool, significant positive association existed between agreeableness and perceived ease of use. Similarly, significant positive association also existed between conscientiousness and perceived usefulness. This shows that students with agreeable personality such as empathetic, interested in people, friendly, considerate and generous perceived e-book as an easy to use learning tool. This would probably be due to them having an optimistic view on human nature, full of hope and are confident in successful outcome of their actions and future.

In addition, students who exhibited conscientiousness personality traits such as being prepared and paying attention to details were found to perceive e-books as a useful learning tool. This indicated that students who find e-books as useful learning tools are usually organized and thorough which enables them to be calm in stressful conditions of adopting new technologies such as e-book. As a conclusion, the present study demonstrates that, while there are some indicators that personality traits predicts the adoption of e-book, there are also a large of questions yet to be addressed. One thing that remains clear is that e-books are a form of learning tools that is gaining in popularity. As such, it is important for social researchers to continue to examine this emerging technological trend to fully understand its effects on the overall learning processes.

References

- Agarwal, R., and Prasad, J., 1999. Are individual differences germane to the acceptance of new information technologies? *Decision Sciences*, 30(2), pp.361–391.
- Ajzen, I., and Fishbein, M., 1980. *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice Hall.
- Ajzen, I., and Madden, T.J., 1986. Prediction of goal directed behavior: Attitudes, intentions, and perceived behavioral control. *Journal of Experimental Social Psychology*, 22, pp.453-474.
- Anuradha, K.T., and Usha, H.S., 2006. Use of e-books in an academic and research environment: A case study from the Indian Institute of Science Program. *Electronic Library and Information Systems*, 40(1), pp.48–62.
- Bansal, G., 2010. Continuing e-book use: Role of environmental consciousness, personality and past usage. In: *Proceedings of Americas Conference on Information System (AMCIS)*, 2010, pp.456-456.
- Barrick, M.R., and Mount, M.K., 1996. Effects of impression management and self-deception on the predictive validity of personality constructs. *The Journal of Applied Psychology*, 81(3), pp.261–272.
- Benet-Martínez, V. and John, O.P., 1998. Los Cinco Grandes across cultures and ethnic groups: Multitrait multimethod analyses of the Big Five in Spanish and English. *Journal of Personality and Social Psychology*, 75(3), pp.729–750.
- Burton-Jones, A. and Hubona, G.S., 2005. Individual differences and usage behavior: Revisiting a technology acceptance model assumption. *Advances in Information Systems*, 36(2), pp.58–77.
- Cox, A. and Mohammed, H., 2001. FreePint Newsletter 80. *FreePint Newsletter*. [online] Available at: <<http://www.freepint.co.uk/issues/010201.htm>>
- Davis, F.D., 1989. Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS Quarterly*, 13(3), pp.319–340.
- Devaraj, S., Easley, R.F., and Crant, J.M., 2008. Research note-How does personality matter? Relating the five-factor model to technology acceptance and use. *Information Systems Research*, 19(1), pp.93–105.
- Digman, J. M., 1990. Personality structure: Emergence of the five-factor. *Annual Review of Psychology*, 41, pp.417–440.
- Fricke, R.D. and Schonlau, M., 2002. Advantages and disadvantages of internet research surveys: Evidence from the literature. *Field Methods*, 14(4), pp.347–367.
- Gregory, C.L., 2008. "But I want a real book" An investigation of undergraduates' usage and attitudes toward electronic books. *Reference & User Services Quarterly*, 47(3), pp.266–273.
- Henry, G.T., 1990. *Practical sampling*. Newberry Park, CA: Sage, p.24.
- McCrae, R.R., and John, O.P., 1992. An introduction to the five-factor model and its applications. *Journal of Personality*, 60(2), pp.175–215.
- Moore, G.C., and Benbasat, I., 1991. Development of an instrument to measure the perceptions of adopting information technology innovation. *Information System Research*, 2(3), pp.192 – 222.
- Rao, S.S., 2003. Electronic books: A review and evaluation. *Library Hi Tech*, 21(1), pp.85–93.
- Rogers, E., 2003. *The diffusion of innovations*. Fifth Edition. New York: The Free Press, p.11.
- Sahin, I., 2006. Detailed review of Rogers "Diffusion of innovations theory and educational technology-related studies based on Rogers". *The Turkish Online Journal of Educational Technology*, 5(2), pp.14–23.
- Salgado, J.F., 1997. The Five Factor Model of personality and job performance in the European Community. *The Journal of Applied Psychology*, 82(1), pp.30–43.
- van der Velde, W. and Ernst, O., 2009. The future of eBooks? Will print disappear? An end-user perspective. *Library Hi Tech*, 27(4), pp.570–583.