GENDER DIFFERENCES IN DIGITAL COMPETENCE AMONG SECONDARY SCHOOL STUDENT

Siti Noorsuriani Maon*

Department of International Business and Management Studies
Universiti Teknologi MARA, Puncak Alam Campus
Malaysia
sitinoor123@uitm.edu.my

Naffisah Mohd Hassan

Department of International Business and Management Studies
Universiti Teknologi MARA, Puncak Alam Campus
Malaysia
naffi885@uitm.edu.my

Noorain Mohammad Yunus

Department of International Business and Management Studies
Universiti Teknologi MARA, Puncak Alam Campus
Malaysia
noorainyunus@uitm.edu.my

Sri Fatiany Abdul Kader Jailani

Department of Technology and Supply Chain Management Studies
Universiti Teknologi MARA, Puncak Alam Campus
Malaysia
fatiany@uitm.edu.my

Erne Suzila Kassim

Department of Technology and Supply Chain Management Studies
Universiti Teknologi MARA, Puncak Alam Campus
Malaysia
ernekassim@uitm.edu.my

**Corresponding author's Email: sitinoor123@uitm.edu.my*

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Office # 6, First Floor, A & K Plaza, Near D Watson, F-10 Markaz, Islamabad, Pakistan,

editor@readersinsight.net

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A b s t r a c t

Digital technologies have become powerful tools in today society in many aspects. However, without proper knowledge and guidance, youth is being challenged with potential hazards of cybercrimes. Hence, the purpose of this study was to compare who is at a greater risk of cybercrimes, and to assess whether there is a significant difference in the digital competency between girls and boys at rural areas. Digital competence was measured as technology, cognitive, ethical knowledge and communication, and cybersecurity was measured as intellectual property, privacy, accuracy and accessibility. Questionnaires were distributed to selected secondary schools. Based on the t-test analyses of 211 responses, the findings indicate there is a significant difference in the attitude toward ICT usage between male and female students, as well as significant differences in the behavior of troubleshooting, staying safe online and being credible and in the ethical knowledge. Comparing the cybersecurity traits, gender differentiates the privacy concerns, accuracy and accessibility behavior. As the results are alarming, specific concerns and focus must be placed on youth digital technology usage and education for ensuring they are not neglected, and exposed as cyber victims, but also to raise a responsible e-society with excellent digital citizenship attributes.

R e s e a r c h H i g h l i g h t s

The three most common digital activities among the students were listening to music, visiting social media and networking and playing online games. Female students are more listening to music and are more active in social media and networking, while male students more interested in playing online games. On the other hand, the use of email, work with learning software and media sharing were the least three digital activities.

In term of digital competence, there was a significant difference in the ethical knowledge dimension between gender, but there was no significant difference in the technological, cognitive and communication dimensions of digital competence between male and female students.

There was a statistically significant difference between male and female students, in terms of digital behaviour for both computer and internet. Male students were more slightly less likely to do unethical digital behaviour related to computer and internet activities compared to female students.

R e s e a r c h O b j e c t i v e s

As cyber-crime issues rise, it is strongly suggested that educators need to be trained on how to educate digital responsibilities in order to provide students with a digital ethical foundation. However, those who are yet to be connected remain cut off from the benefits of digital

technologies and remain further behind, thus requiring students to be competent in the use of digital technologies. The purpose of this study was to compare who is at higher risk of cyber-crimes, and to assess whether there is a significant difference in the digital competency between girls and boys at rural areas.

Methodology

The target population of this study was school children in rural areas. Using purposive sampling technique, a total of 240 samples were obtained from all schools that have been determined. A survey questionnaire was used to collect data, and it consists of three sections; including 1) the demographics and pattern of digital usage 2) digital competence and cybersecurity and 3) frequency of digital behaviour. These survey questions of digital competence used a 5-point Likert scale (from 1 – very unskillful to 5 – very skillful). Cybersecurity was measured as intellectual property, privacy, accuracy and accessibility. These questionnaire items were assessed using a 5-point Likert Scale (from 1 – strongly disagree to 5 – strongly agree). These items measurement was based on frequency in nature (from 1 – never to 5 - always). These items were selected from past related research and subsequently modified to fit the cyber-ethics issues and digital behavior and belief. Both descriptive and inferential statistics were applied using statistical package for social science software (IBM SPSS version 23.0). Simple frequencies were used to study the characteristics of respondents. Comparison analysis was conducted to assess gender gaps, particularly in the area of digital competency and behaviour.

Results

In total, 211 were valid for data analysis; including female students represent 54% of the respondents and male students represent 46%. The findings indicated that 60% of students were from lower level and upper level were 39%. Home (38%) and school (22%) were the common places that the students had the Internet connection. The most three common digital activities among the students were listening to music (73%), visiting social media and networking (67.3%) and playing online games (63%). The t-test analysis revealed no significance differences were found in the visual literacy, understanding technical concepts, organizing data, information research, and communication and respect others between male and female students. However, there was a significantly difference in troubleshooting ($t(209) = 3.057$; $p = 0.002$) and stay safe online ($t(209) = -2.871$; $p = 0.005$). Moreover, the findings showed that a statistically significance difference in privacy ($t(209) = -2.871$; $p=0.005$), accuracy ($t(209) = -3.531$; $p=0.001$) and accessibility ($t(209) = -2.406$; $p=0.017$) constructs between male and female students. Finally, the study found that there was a statistically significant difference between male and female students, in terms of digital behaviour for both computer ($t(209) = 6.047$; $p<0.001$) and internet ($t(209) = 4.878$; $p<0.001$).

Findings

Nearly half of female students get connected to Internet at home. Female students are more listening to music and participating in social media and networking, whereas male students more interested in playing online games. In digital competence, ethical knowledge dimension was only found significant difference between gender; with a small effect based on Cohen's (1988) benchmark. Male students were more slightly rare doing unethical digital behaviour relevant to computer and internet activities compared to female students. Based on Cohen's (1988) benchmark, digital behavior related to computer has a large effect and internet digital behaviour was considered as fairly large effect.

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Author's Biography

Siti Noorsuriani Maon is an associate professor at the faculty business management. She received her PhD from the University of Queensland (UQ), Australia in 2013. She is actively participated in a number of research and community projects that are relevant to her interest. She has received several research grants; including internal and national grants. Her research interests include management, health behavior, health informatics and technological intervention to improve health.

Naffisah Mohd Hassan is a senior lecture at Faculty of Business and Management, Universiti Teknologi MARA (UiTM), Malaysia. She received her PhD from University of Wollongong, Australia. She has published papers in various journals and conference proceedings. She is an active member of community engagement projects with NGOs. She has organized a number of

community projects to raise awareness, understanding and acceptance of autism within Muslim communities.

Noorain Mohamad Yunus is a senior lecturer at the Faculty of Business and Management, Universiti Teknologi MARA (UiTM), Malaysia. She received her PhD from the International Islamic University Malaysia (IIUM). She has published papers in several journals and conference papers. She has received a number of research grants; including internal and national grants.

Sri Fatiany Abdul Kader Jailani is a senior lecturer at faculty business. She is currently completing a PhD at International Islamic University Malaysia (IIUM). She received a bachelor's degree and a master's degree in Information Technology from Universiti Teknologi MARA Malaysia. Her current field placement is with the Universiti Teknologi MARA. Her research area including information technology, sustainability and social networking.

Erne Suzila Kassim is an associate professor at the business faculty. Erne received her Bachelor Degree from Indiana University in Bloomington, USA, majoring in Economics and Sociology, MSc and PhD in IT, mainly specializing in digital innovations. She has been awarded with research grants for projects in e-learning, green IT, e-commerce and IT for micro-enterprises. Her research interests include social networking, social innovation and value creation