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Technological Skills and Job Employment in Universities in Saudi Arabia

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Abstract:

Due to the rate of youth unemployment in Middle East precisely Saudi Arabia, this study investigates the relationship between technological skills and job employment among the unemployment youth in Saudi Arabia. Specifically, the study examined how technological related skills such as IT, computer skills and internet related skills predict job employment among the unemployed youths in Riyadh, Saudi Arabia. The study adopted a cross-sectional research design with quantitative questionnaire survey approach. The population of the study covered all the unemployed youths in Riyadh, Saudi Arabia, however, only 350 of them was selected through purposive sampling technique. The questionnaire survey was distributed and retrieved via self-administered procedure. The data was analysed using SPSS version statistical tool while both correlation and regression analyses were employed to determine the correlation and relationship between the independent and dependent variables. In all, the study found overall support for the hypothesis that technological skills such as IT skills, ICT, internet related skills etc were statistically and significantly related to job employment among the unemployed youth in Saudi Arabia. Therefore, the study concludes that technological skills such as IT skills, ICT, internet related skills etc. significantly affect job employment among the unemployed youth in Saudi Arabia. In line with this, the study provided discussion on the findings as well as the implications for practice and future research. Limitations of the study are also offered.

Keywords: Technological skills, Job seeking, Employment, Marketable skills, Employment opportunities, Saudi Arabia.

1. Introduction

Generally, there is lack of job employment among the youths in the Arab countries in which Saudi Arabia is not excluded (Kamel, 2014). Also, observed that the region has experienced youth unemployment rate higher than that of any other area in the world at 28.6%. A similar study by (Jalbout & Farah, 2016) equally pointed out that there is lack of employment opportunities among the youths in the Middle East. In Saudi Arabia for example, the unemployment has continued to grow; however, the government has in the recent times, expects its unemployment rate to decrease starting from 2019 from its current level of 12.9

percent (Alhamad, 2014). According to its Minister of Economy and Planning, Mohammed bin Mazyad Al-Tuwaijri, the unemployment rate is to start retreating from 2019 (Alhamad, 2014); (Al-khateeb, 2019b). (Kamel, 2014) noted that the Middle East is characterized by numerous problems including an overwhelmingly young population of which many of them are graduates; massive unemployment; a growing need for a variety of skills and capacities to achieve economic development.

In line with the above, studies have claimed that the unemployment rate among the youths in Middle East is caused by their lack of technological skills (Zabadi & Al-Alawi, 2016). (Aljaber, 2018) have revealed that Arab countries including Saudi Arabia have strongly endorsed technology as an agent for higher education transformation with the aim of meeting the challenges of a globalized knowledge economy, unfortunately, it appears that there are still poor technological skills in many countries of the world including Saudi Arabia (Al-Asmari, 2008). For example, the study by (Al-Asmari, 2008) observed that only few Arab citizens including Saudi actually possess the necessary technological skills to cope with the new *challenges* in the global environment which is technological driven. The study suggested that the government should double their effort towards raising the *technological skills of the job seekers* especially among the graduates in the country. (Baqadir, Patrick, & Burns, 2011) claimed that there is still skills (among which technological skills) gap in Saudi Arabia, thus the more reason why their youths are unemployable. (Kamel, 2014) observed that variety of skills and capacities including technological skills are needed in Saudi Arabia for better economic development, while (Zabadi & Al-Alawi, 2016) affirmed that technology usage and skills are highly significant among Saudi citizens.

The problem of unemployment is not only peculiar to Saudi Arabia but appears to be global. For example in Nigeria, it was equally discovered that the youths are unemployable due to the lack of technological skills (Salami, 2013). (Martin & Leurent, 2017) Observed that technology has become an integral aspect of work processes and being current on the latest technology is now a condition for securing employment. The study further noted that in the global world, the ability to use technology is an essential skill and veritable tool in the present dynamic business environment of which any job seeker must possess. However, it has been found that most job seekers do not possess these technological skills (Otokunefor, 2011). The studies by (Otokunefor, 2011) acknowledged that many graduates, mostly from the developing countries are presently unemployable due to the fact that they lack the necessary and required skills and abilities for the job or the position to perform the tasks, yet some organizations continued to hire these applicants without the prior necessary ability and skills, thus creating more problems than solving them. Sequel to this, it is obvious that there is strong correlation between technological skills and securing a job.

Accordingly, practical experience has also shown that most people need some technological skills to be able to find job today. Therefore, acquiring basic or possessing these technological skills and being familiar with using them may open up a wide range of employment opportunities and increase marketability in the workplace. For now, it is likely that a modern job would require one to be familiar with at least some technological skills such as ability to use computer applications. Computer literacy means understanding what

computers can and cannot do. Even if computer usage is not required for some jobs, it's well worth the while learning some of the basics of information technology, for example how to send and receive emails, use the internet effectively, and use word processor and spreadsheet software. (Kroenke & Boyle, 2015) affirmed that technological skills are the most important skills that would make any job seeker relevant and marketable. The author noted that the only job security that exists is "a marketable skill and the courage to use it. These marketable skills including technological skills which are in the form of for him, every potential employee needs to be able to assess, evaluate, and apply emerging technology to businesses for efficiency and effectiveness. Owing to this weakness, the present study attempts to link technological skills to employment in Saudi Arabia. In other words, the study examined the relationship between technological skills and job employment among the unemployed graduates in the district of Riyadh in Saudi Arabia.

2. Literature Review

2.1 What is Technology?

(Mullins, 2007) defined technology in reference to microelectronics and microprocessors as applied in manufacturing processes, information processing, service provision, and products themselves. That is, there are technologies aimed for manufacturing, engineering, design, information capture, storage, transmission, analysis, and retrieval and those employed in the provision of services to customers, clients, patients, etc.; and those that relate to the product itself.

For the purpose of this study, the technologies meant for information capture, storage, transmission, analysis, and retrieval would be the only focus. The reason is that the study would be carried out on some service providing organizations. Basically, technology is seen as a tool and not as a strategy (Seeley, 2006). (Pinheiro, 2010) stated that technology should come after strategy and strategy after objectives. This means that an organization sets the objectives, which translate into strategies that determine the technological tools to effectively carry out the strategies for the actualization of the set objectives. Technology is therefore a new way, other than an old approach, of carrying out tasks, assignments, and activities, towards achieving the goals and objectives of an organization to reduce cost, time wasting in order to improve quality of products and services rendered to the total customers. Therefore, the term "technology" will be used to mean information capture, storage, transmission, analysis, and retrieval for service firms, while technological tools would mean the equipment, software and devices used to carry out information capture, storage, transmission, analysis, and retrieval for service firms (Mullins, 2007; Pinheiro, 2010).

Rendering of services in the banking industry of the world today are being affected and influenced by different types of technology. Technology in most service firms, such as the banks, provided the required forces through various forms by which services are rendered. According to (Dauda & Akingbade, 2011), technology may be in form of machine, equipment, information and communication made up of knowledge, tools, method and system directed to work in specific manner. Technology is made up of the physical hardware that is visible to the eye. It is also the physical structure and logical equipment such as, the

computer systems, tablet PCs, fax machines, and automated teller machines, while the software is the application that makes the physical hardware operational. (Khalil, 2000) sees technology as a result of human's learned and acquired knowledge or technical skills regarding how to do things well. The systems view of technology includes elements such as skills and infrastructure. Engineers are confronted with this perspective in their professional activities. They ponder daily on how to make such configurations, and make them work, how to maintain them in working order, and perhaps expand them. This view of technology, as configurations that work, captures the aspects neglected or at least black boxed by the focus on tools. The configurations can look like tools (e.g., a natural gas combined cycle turbine) but include the skills necessary to install and operate the turbine and manage the situations (including infrastructures, division of labour, and cultural norms) in which they can be handled productively, and will thus work.

2.2 The Relationship Between Technological Skills and Employment: Empirical Framework

The study by (Aljaber, 2018) on the challenges and opportunities of formal e-learning in Arab countries focused on the e-learning experiences and endeavors by some Arab countries. The study discussed on the different factors that affect the diffusion of Internet-based modalities in these states such as ICT infrastructure, internet access, gender, language, learning culture, stakeholders' attitudes, quality assurance, and policy.

From the study, it is noted that some Arab countries including Saudi Arabia have adopted information technology as an agent for transformation of higher education to meet the challenges of a globalized knowledge economy. Also, (Ahmed, Ghashem, Aalsalem, & Khan, 2017) presented Thin Client Technology for higher education at Universities of Saudi Arabia with special attention to its implementation, challenges and lesson learned. Being a comparative analysis design, the study compared Thin Client Technology among Saudi Arabian Universities. Its major objective is to provide the details and comparison of successful implementation of Thin Client technology in various universities of Saudi Arabia. Among the observations, the study concluded that there is need for urgent training for on new technology usage among the Saudi Arabia citizens (e.g. graduate, staff etc.).

(Kamel, 2014) noted that the Middle East is characterized by numerous problems including an overwhelmingly young population of which many of them are graduates; massive unemployment; a growing need for a variety of skills and capacities to achieve economic development. This implies that the graduates in the Middle East indeed Saudi Arabia need variety of skills and capacities, and these skills and capabilities are not technologically related skills such as IT, ICT, internet related skills, general computer skills etc.

(Zabadi & Al-Alawi, 2016) through a stratified random sampling technique and well-structured questionnaire found that the attitude towards technology usage and skills among the university students in University of Business & Technology (UBT)-Saudi Arabia-Jeddah were highly significant. (Xanthidis, Wali, & Nikolaidis, 2013) acknowledged that there is slow progress in the e-learning from various employment statuses including individuals and

educational institutions in Saudi Arabia. They observed that this slow progress can be attributed to the problems in the local telecommunications and other infrastructures. In an attempt to investigate the skills gap in Saudi Arabia, (Baqadir et al., 2011) observed that both technical education and vocational skills failed to offer Saudi students including the graduates' sufficient vocational training to equip them with the necessary skills sort for by the employers. They noted that skills gap among which technological skills still exist in Saudi Arabia. Thus, the graduates become unemployable as a result of the lack of these technological skills.

(Jalbout & Farah, 2016) has reported that lack of technological adaption by the Middle East region has affected the people on the few work opportunities available to them. They claimed that Arab youth required technological skills such as data-driven decision making, analytical skills, interconnected world etc. to be able to cope with the new work environment. The study among others recommends that the Middle East should develop new skills that would prepare their youth for the jobs of the future. From this simple analysis, one can equally find a link between technological skills and seeking employment. Equally, *(Lucky, Minai, & Hamzah, 2014) identified lack of general technological skill in particular computer skills among many employees in the organizations across the globe. They argued that organizations need to train and re-train those employees with little or no knowledge of technological skills for the proper handling of their jobs in the organization. (Kroenke & Boyle, 2015) argued that technological skills are the only surviving skills that guaranteed employment and then ensure job security in any modern organisation. Also, (Watson, Boudreau, & Chen, 2010) concur that technological skills are the only skills that may sustained any organization.*

In the work of (Opara, Olotu, & Maclayton, 2010), electronic internet, telephone banking and computerization of services were identified as components of technology that have greatly influenced Relationship Marketing Orientation (RMO) to yield increase in Business Performance (BP). The study observed that recent transformation in the Nigerian banking operations led to the introduction of electronic banking, ATM, telephone and computerization of services which eventually led to trust, confidence, commitment and loyalty on the part of the customers.

The study found that efficient information about communication systems enhances the practice of RMO in the banking industry. This view was consistent with the findings of the study which showed strong, positive and significant correlation experienced between RMO and Business Performance as represented by increase in Market share due to advocacy; high Customer retention due to efficient services supported with technology and Cost reduction, through the use of Component Based Model and electronic banking. The influence of technology goes beyond structural relationships, but also affects the culture prevalent in the organization studied. They concluded that, to enhance desired value from both quality products and quality services of the Nigerian banks, technology is needed to offer improved quality services to customers in order to meet their needs and put smiles on their faces.

Another perspective is (Dauda & Akingbade, 2011) selected variables, which measured the relationship between technological innovation and organizational competitiveness; between

employee innovation and motivation, to test their relationships. In the study, respondents were randomly selected from selected manufacturing industry in Lagos State, Nigeria. This was in addition to series of individual interviews at all levels of the manufacturing companies conducted to monitor activities that were transpiring as a result of human resource management strategies, such as motivation, wages, allowances or fringe benefits, industrial relations, work environment, top management performance and others. Data were analyzed with socio-economic and political forecasting methods based on nuances and complex interplay of forces that characterized them; in addition to inferential statistical methods of regression, ANOVA and factor analysis to justify the construct validity of the items in the questionnaire. It was found that skilled labours that are necessary for managing technological change and human resource were lacking in most of the industries. The newly invented sophisticated technologies from developed countries were not available for purchase by the Nigerian manufacturing industry as a result of the patent rights being enjoyed by the inventors. In addition, irregular power supply also affected the manufacturing industry's ability to cope with technological change. It was concluded that technological change had significant relationship on employee skills and employee performance. The study recommended that employees should upgrade their skills to cope with technological change in order to be relevant in the company.

The findings of the work of (Dauda & Akingbade, 2011) revealed that "the adoptions of new technologies in the recent years had improved the performance and profitability of Nigerian Manufacturing Industry. They further established that workers performances had also increased due to the use of new technology, but workers skills had not improved sufficiently to cope with technological change. Also, that technological change had also not significantly improved the performance and working condition of some workers. Furthermore, the findings of the same study emphasized that management had also not substantially benefited from investment in technology due to antagonistic relationships between management and workers union for better condition of employment, which had undermined the benefits of the new equipment and machines or technological change. It has also led to low morale and productivity, corruption among all categories of the workers and poor industrial relations climate in the Nigerian manufacturing industry" (Dauda & Akingbade, 2011).

3.Methodology

3.1 Research design

The study made use of a cross-sectional research design technique. It also adopted a quantitative research approach of survey questionnaires. These methods are very common and suitable in social science research. The approaches are known to be faster and easier in terms of gathering information within a limited time (Sekaran & Bougie, 2016).

3.2 Population of the study

The population of the study covered 350 unemployed youths in the district of Riyadh in Kingdom of Saudi Arabia.

3.3 Sampling technique

Due to lack of data access on the total number of the unemployed graduates in Riyady district, Kingdom of Saudi Arabia, the study adopted a purposive sampling technique to select 350 unemployed graduates who then participated in the study. Studies such as (Al-khateeb, 2019b) support purposive sampling technique in situation where the sample frame cannot be obtained. Also, by using a purposive sampling technique, it means that only those respondents who are relevant to the study are selected to participate in the study.

3.4 Instrumentation-Operationalisation of Variable

This indicates how the variables under investigation were measured. The survey questionnaire was given to selected unemployed graduates in the district of Riyadh in Saudi Arabia to ascertain their attitudes about being technologically literate and being able to be employed. This study covered two major variables namely technological skills and job employment. The technological skills as measured and operationalised in study reflect basic office IT skills, ICT, internet related skills, basic Microsoft Office applications and computer skills. These were equally measured using 8 items adapted from (Ehikhamenor, 2003); (Agboola, 2003), while 5 items equally adapted from IT studies reflecting various aspects of employments in the academic institution were used to measure employee retention. Accordingly, all items in the scale were measured on a five-point Likert-scales (1 = strongly disagree, 5 = strongly agree).

3.4 Data collection procedure and Data Analysis Techniques

A self-administered survey questionnaire was distributed to gather the needed information from the participants. In all, a total of 350 questionnaires were distributed to the respondents, but only 218 were retrieved and these 218 returned were considered usable. Hence, the total usable copies of questionnaire for this study are 218 representing 62.3%. Finally, the data was analysed using the Statistical Package for Social Sciences (SPSS) version 21.

3.5 Unit of analysis

For this study, the unit of analysis is the individual youth in Saudi Arabia. There are youths who are unemployed and have been unable to get employment for sometimes. These individuals reside within the district of Riyadh in Kingdom of Saudi Arabia.

3.6 Hypotheses development

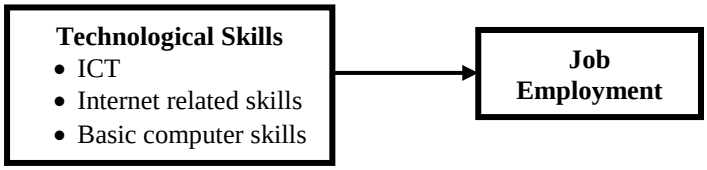

Figure 1 indicates a relationship between Technological Skills and Employment

Based on the discussion and the conceptual model above, the following hypotheses below are formulated:
H1: Technological Skills will significantly affect Job Employment in academic institutions.

4. Data Analysis and Results

4.1 Descriptive Analysis Result

The age bracket shows that majority are 40 years and above representing 61%. This is followed by 36-40 years accounting for 22.5% while others are 31-35 and less than 30 years accounting for 13.3% and 3.2% respectively. The gender result shows 59.6% for male while 40.4% is for the female. Also, the marital status revealed 71.1% for married while 28.9 is for the singles.
The descriptive result finally shows the years of experience of the participants which indicates that majority of them have 1-5 years of experiences accounting for 53.7%. This is followed by 6-10 years of experience accounting for 29.8%. Others are 11-15 years of experience and 16-20 years of experience representing 9.2% and 7.3% respectively.

4.2 Factor Analysis Result

This was conducted on the variables' technological skills and job employment and was coded as follows: (TS and JE). The essence of this was to determine their construct validity. For this, the principal component analysis with a varimax rotation was employed. All items subjected to factor analysis in this study are required to indicate 0.4 factors loading before being included into the factor as suggested by (Atyeo, Adamson, & Cant, 2001). Table 1 and Table 2 provide a detail result of the factor analysis results for all the variables which include factor loadings, variance explained, Eigenvalue and Kasier-Meyer-Olkin (KMO) among others.

Table 1. Factor analysis results technology skills.

Items	Codes	Components
		1
My technical know-how was among the sorted skills for my employment into this university.	TS5	.944
My ability to responsibly use appropriate technology to communicate, solve problems, and access, manage, integrate, evaluate and do my job was among the sorted skills for my employment into this university.	TS7	.939
My knowledge about computer and internet related skills were among the sorted skills for my employment into this university.	TS6	.935
My ability to use Up-to-date with the latest technologies was among the sorted skills for my employment into this university.	TS8	.884
My experience with computer, ICT and IT was among the sorted skills for my employment into this university.	TS2	.843
My capability on modern technology was among the sorted skills for my employment into this university.	TS4	.834
My ability to use modern technology was among the sorted skills for my employment into this university.	TS3	.830

Table 2. Factor analysis results job employment.

Items	Codes	Components
		1
I perceive that technology skill is very relevant to the nature of task I carried out my university.	JE3	.931
I may not be able to performance any task if I lack the relevant technological skills.	JE4	.927
My job or task requires application of some technological skills.	JE1	.924
The job I needed is somehow dependent on the use of technology.	JE2	. 921
Overall, I need technological capabilities, abilities and technical know-how for the type of job I needed.	JE5	.837
I missed my opportunities of getting the jobs because I do not possess the technological skills sorted for.	JE6	.921

4.3 Validity and Reliability

The validity was determined using the Kasier-Meyer-Olkin (KMO). For this, 0.5 and above is required by any item to consider acceptable as suggested by (Al-khateeb, 2019a). Table 3 shows KMO of .86 for technological skills indicating that the items are validated. Also, for job employment, a KMO of .81 is achieved. This also indicates that the items are validated. Further analysis test for the reliability revealed that all items are valid. The reliability was determined using the Cronbachs' alpha value of above 0.5 as suggested by (Al-khateeb, 2020)Thus, 0.5 Cronbachs' alpha was required by any item to be considered reliable. Table 3 shows a Cronbachs' alpha coefficient value of .96 and .95 for both technological skills and job employment respectively. Cronbachs' alpha coefficient values of .96 and .95 indicating that the items are reliable.

Table 3. The Validity and Reliability Results

Variables	No. of Items	KMO	Cronbach Alpha
Technological skills	7	.86	.96
Job employment	5	.81	.95

4.4 Correlation Analysis Result

The study made use of the Pearson correlation analysis technique to determine association between the two key variables. This was done after the basic assumptions such as ascertain the outliers, normality, linearity and homoscedasticity etc. The correlation analysis was to confirm the hypothesis in this study. The result in Table 4 indicates that technological skills is significantly associated with job employment where r=.92 ($p < 0.01$). This indicates high and strong correlation between technological skills and job employment. Thus, technological skills are strongly correlated with job employment as suggested by (Pallant, 2013).

Table 4. Correlation Result of the Variables (N = 218)

Variables	TSQ	JEQ
Technological skills	1	
Job Employment	.918**	1

4.5 Standard Regression Analysis Result

This was conducted to determine the relationship between Technological Skills and Employment after fulfilling the basic assumptions such as ascertain the outliers, normality, linearity and homoscedasticity etc. The result depicted in table 5 revealed that technological skills are statistically significant with Employment ($p > 0.01$) with 92% beta. It shows that the independent variable is highly and strong related to the dependent variable.

able 5. Standard Regression Analysis Result

Variables	R Square	Adjusted R Square	F	Beta	t	Sig.	Decision
Technological skills	.843	.843	1162.995	.918	34.103	.000*	Supported

a. Dependent Variable: MJEQ; **p<0.01, = Significant, NS = Not Significant*

5. Discussions, Conclusions and Suggestions for Future Studies

The present study examined the relationship between technological skills and employment among the unemployed youth in Saudi Arabia. It examined how related technological skills such as reflect basic office IT skills, ICT, internet related skills, basic Microsoft Office applications and computer skills affect job employment among the unemployed youth in Saudi Arabia. In line with the objective and hypothesis, the study employed both Pearson correlation and the standard regression analysis techniques to examine both the association and the relationship between some technological skills and job employment among the unemployed youth in Saudi Arabia. The finding from the correlation analysis revealed that technological skills as a whole but not as an individual skill are strongly correlated with job employment among the unemployed youth in Saudi Arabia. In other words, it shows that technological skills are strongly connected to job employment of the unemployed youth in Saudi Arabia.

Further findings from the standard regression analysis also revealed a significant relationship between the technological skills and job employment among the unemployed youth in Saudi Arabia. In other words, the findings demonstrate that technological skills which are basic office IT skills, ICT, internet related skills, basic Microsoft Office applications and computer skills are statistically and significantly related to job employment among the unemployed youths in Saudi Arabia, suggesting that the unemployed youths are unemployed due to their lack of necessary technological skills such as computer skills and internet related skills. Thus, the possibility of the unemployed getting employed becomes very high when they possess the necessary technological skills.

Furthermore, what this means is that, applicants seeking job employment in Saud Arabia may not likely get it if they do not possess some required technological skills such as basic computer skills, such as skills in Microsoft word, PowerPoint, Microsoft excel etc. These skills would make an applicant exceptional and stand out among other applicants. It also suggests that the chances of securing any job employment are brighter if one possesses some required technological skills such as basic computer skills in Microsoft word, PowerPoint, Microsoft excel etc. This finding is in tune with the previous findings by (Kroenke & Boyle, 2015) who claimed that only those with marketable skills such as the technological skills and

knows how to apply these skills are likely to get jobs even in the midst of economic recession. Also, *(Lucky et al., 2014) affirmed that general technological skills in particular computer skills among many employees in the organizations across the globe are very essential and imperative. Hence, there is need for organization to train and re-train those employees with little or no knowledge of technological skills for the proper handling of their jobs in the organization. Equally,* (Baqadir et al., 2011) believed that there is a string correlation between technological skills and the type of employee an employer wants in Saudi Arabia. Therefore, potential employees should be able to possess those technological skills sorted by the employers in order to secure any job employment in Saudi Arabia. Otherwise, the graduates become unemployable as a result of the lack of these technological skills. The study by (Watson et al., 2010) *concur that technological skills are the only skills that may sustained any organization if the employees possess them. The higher the technological skills possess by the applicants the higher the possibility such an applicant is likely to get employed in any organization Saudi Arabia.* From the findings, it suggests that technological skills would be of high advantage to any applicant who possesses them. However, both the job seeker and the organization would significantly benefit from the technological skills. In summary, the statistics support the hypothesis that technological skills such as IT skills, ICT, internet related skills etc. are statistically and significantly related to job employment among the unemployed youth in Saudi Arabia. Therefore, the study concludes that technological skills such as IT skills, ICT, internet related skills etc. significantly affect job employment among the unemployed youth in Saudi Arabia.

6. Suggestions for Future Studies

The study only focused on the technological skills as a lump-sum without considering specific technological skills such as Microsoft skill, Microsoft excel skill etc., a more robust finding can be achieved if future studies can focus on some specific skills in technologies. In this case, analysis technique such as Structural Equation Modeling (SEM) in particular Partial Least Square (PLS) with analytical tool such as SmartPLS would be very useful and relevant. Secondly, since environment differs considerably, future studies in this area of study may want to consider using other universities across the world. In this case, the present study may be replicated, and the finding can be more generalized.

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