Journal of Information Systems and Informatics
Vol. 5, No. 4, December 2023 e-ISSN: 2656-4882 p-ISSN: 2656-5935
DOI: 10.51519/journalisi.v5i4.614 Published By DRPM-UBD

Measuring the Benefits of the Skill Academy's Online Training Platform

Endi Putro[1], Juditha Averil[2]

[1,2]Universitas Kristen Krida Wacana, Jakarta, Indonesia
Email: endiputro@ukrida.ac.id[1], juditha.2018si005@civitas.ukrida.ac.id[2]

Abstract

The research purpose is to prove the truth of an internal survey of 96,406 users of the Academy Skills platform. The results of the survey stated that after participating in the training the user felt an increase in skills. Verification of the correctness of the survey uses a combination of the Delone and McClean (DM) models and the Technology-to-Performance Chain (TPC) model which has 5 constructs: System quality, information quality, service quality, task-Technology Fit, and Net Benefit. The method used in this study is a quantitative method through the development of identified constructs. Quantitative data was obtained from a questionnaire distributed to 96 respondents using the Skill Academy platform. The result of this study is that the constructs of system quality, information quality, and service quality have a positive effect on task-technology fit, and the task-technology fit construct has a positive effect on net benefits. In other words, the skills academy platform has quality systems, information, and services that allow tasks to be accommodated so that the impact is beneficial for users.

Keywords: System Quality, Information Quality, Service Quality, Tas-Technology Fit, Net Benefit.

1. INTRODUCTION

The Skill Academy by Ruangguru is an online training platform that provides various classes to improve hard skills and soft skills. Skill academy users can be grouped into several groups including students, professionals, and the general publics. A survey by Skill Academy internal parties of 96,046 users resulted in 96% of users experiencing skills development, 73% of users being assisted in getting a new job, and 66% of users experiencing an increase in income after attending classes at Skill Academy.

The percentage of survey results shows that the Skill Academy platform has succeeded in achieving the skills development goal of 96%. This study aims to confirm the success of the Skill Academy platform in terms of a combination of

This work is licensed under a Creative Commons Attribution 4.0 International License.

two models namely (1) Delone and McClean (DM) Models, (2) Technology-to-Performance Chain (TPC) Models.

The DM model is a model used to measure the success rate of information systems [1] (Figure 1). In the Delone and McClean model, the success of the information system is shown by the "Net Benefit" construct. The "Net Benefit" construct is influenced by the user's willingness to use which is indicated by the "Intention to Use" construct and user satisfaction is indicated by the "User Satisfaction" construct. The two variables "Intention to Use" and "User Satisfaction" are influenced by the quality of the three constructs namely "Information Quality", "System Quality", and "Service Quality".

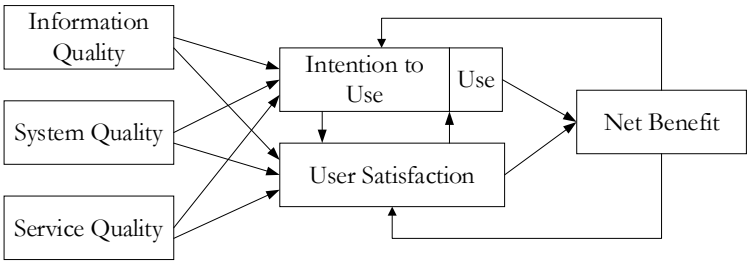

Figure 1. Delone and McClean's Model

The TPC model is a model used to measure the ability of technology to help individuals perform their tasks[2] (Figure 2). The measure of technological capability results from the Task Technology-Fit (TTF) construct which is influenced by two constructs: (1) Task Characteristics, namely individual activities that transform inputs into outputs, and (2) Technology Characteristics, namely tools used by individuals in completing tasks. The size of the TTF will affect the construct of utilization or the benefits of technology and have an impact on performance or the construct of performance impacts. Both TTF and Utilization constructs affect the Performance Impact construct.

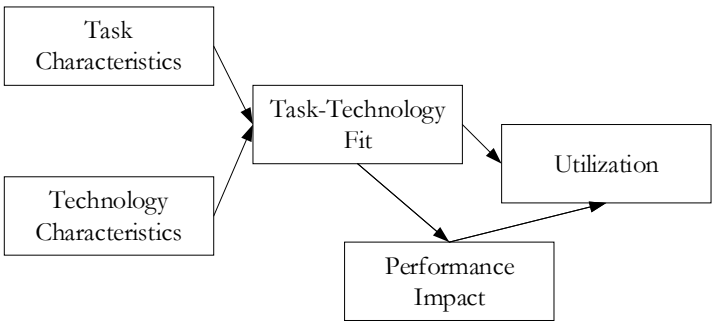

Figure 2. The Technology-Performance Chain

Several studies have used the DM and the TPC models separately to determine the benefits of technology for users. [3] conducted research to determine the success of go-pay using the DM model in serving customers making online payments. [4] developing the DM model from three quality constructs to seven quality constructs. And add to the construct of customer satisfaction with usefulness and use. The structured construct is used to measure e-learning user satisfaction in UK Universities. [5] tested the TPC on the Regional Management Information System or Sistem Informasi Manajemen Daerah (SIMDA). The SIMDA is a financial application used by local governments throughout Indonesia to manage regional finances. The findings in this study are that task characteristics and technology characteristics affect TTF, utilization and performance impact. [6] tested e-voting technology at Senior High School in Bantul whether it was in accordance with the tasks carried out. Technology testing uses the TTF with the constructs of task characteristics, technology characteristics, and individual characteristics.

This study combines the DM and the TPC models to find out whether skill academy is useful for its users. The merging of the DM and the TPC models aims to obtain the benefits of technology from two perspectives, namely the perspective of information systems and technology. The research model is shown in Figure 3.

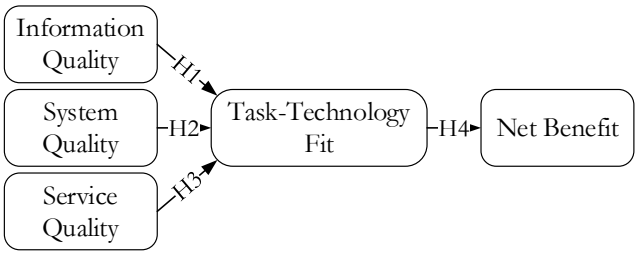

Figure 3. The Research Model

The operational definitions and construct indicators of the research model are explained in Table 1.

Table 1. The operational definitions and construct indicators

Construct	Operational Definition	Indicator
System Quality (SQ)	How good is the hardware, software, policies, and procedures in the information system so that it can provide information according to user needs[7]	1. Ease of use 2. Convenience of Access 3. Usability of system features and functions

Construct	Operational Definition	Indicator
Information Quality (IQ)	The quality of the resulting output, namely the information has the characteristics desired by the user[8] [9] [10]	1. Relevant 2. Reliability 3. Content 4. Present
Service Quality (ServQ)	The services provided are realized in accordance with user expectations [11]	1. Guarantee 2. Responsive
Task-Technology Fit (TTF)	The ability of information systems to provide features that match the tasks performed by users[12]	1. Realization of Needs 2. Compatibility 3. Quality of Information 4. Production Timeliness
Net Benefit (NB)	Positive impact on the use of information systems that can contribute to individuals, groups or organizations[1]	1. Increased knowledge 2. Knowledge sharing 3. Benefits

From the next research model, hypothesis development is carried out:

1. ***H1*: System Quality (SQ)** has a positive influence on **Task-Technology Fit (TFT)**.
2. ***H2*: Information Quality (IQ)** has a positive influence on **Task-Technology Fit (TFT)**.
3. ***H3*: Service Quality (ServQ)** has a positive influence on **Task-Technology Fit (TFT)**.
4. ***H4*: Task-Technology Fit (TFT)** has a positive effect on **Net Benefit (NB)**.

2. METHODS

The method used in this research is quantitative. Research data were obtained from questionnaire responses distributed to 96 respondents. Respondents are people who have attended Skill Academy training classes. The number of respondents is determined using Lemeshow's formula to obtain the minimum sample size from the population[13]:

$$n = \frac{p(1-p)(Z_{1-\frac{\alpha}{2}})^2}{d^2} \quad (1)$$

Where n = minimum number of samples required, Z = Standard value of the distribution according to the value of α = 0.05 = 1.96, p = estimated maximum estimate = 0.5, d = fault tolerance (10%). From Equation 1, it is obtained:

p-ISSN: **2656-5935** http://journal-isi.org/index.php/isi e-ISSN: **2656-4882**

$$n = \frac{0.5 \times 0.5 \times 1.96^2}{(0.1)^2} \quad (2)$$

$$n = \frac{0.9604}{0.01} = \mathbf{96.04} \quad (3)$$

The results of calculations based on the formula above, the minimum number of respondents is 96.04. The measuring scale used in the questionnaire is a Likert scale, with a scale of 1-5 (Table 2).

Table 2. The Scale of Questionnaire

Category	Scale
Strongly Disagree (SD)	1
Disagree (D)	2
Neutral (N)	3
Agree (A)	4
Strongly Agree (SA)	5

The questionnaire design is compiled from the research model construct (Table 3). Each item of statement is submitted to find out the value of the user's perception of the Skill Academy platform.

Table 3. The Questionnaire

System Quality (SQ)	
SQ1	I found the Skill Academy platform easy to use.
SQ2	Most of the features and functions in the Skill Academy platform are useful to me
SQ3	The Skill Academy platform is convenient to use.
Information Quality (IQ)	
IQ1	The various classes and information presented on the Skill Academy platform are relevant to my needs
IQ2	The information and training classes presented by the Skill Academy platform are quality and useful
IQ3	Information and training classes on the Skill Academy platform can really be trusted to increase knowledge and skills
IQ4	The information and training classes presented by the Skill Academy platform are in accordance with current conditions
Service Quality (ServQ)	
ServQ1	I feel safe in accessing the information and training classes I need on the Skill Academy platform because the information presented can be accounted for.

ServQ2	I can contact the Skill Academy if there are problems when accessing the Skill Academy platform.
Test-Technology Fit (TTF)	
TTF1	The Skill Academy platform has realized my needs regarding increasing skills and knowledge
TTF2	The features on the Skill Academy platform are suitable for supporting my learning activities
TTF3	The features on the Skill Academy platform can help me follow the lessons in the training class that I take part in
TTF4	I can easily understand the information presented by the Skill Academy platform
TTF5	The Skill Academy platform provides information and training classes according to what I need quickly and precisely
Net Benefit (NB)	
NB1	Skill Academy improves my knowledge and skills
NB2	Skill Academy allows me to share the knowledge that I get easily
NB3	It is easy for me to get a job after attending a training class at the Skill Academy

Processing of respondents' data responses is done in a way: (1) statistical instrument test, and (2) hypothesis testing. Test the data instrument through validity and reliability tests. The validity test is carried out to find out whether the instruments used in the questionnaire are valid in measuring the variables studied. The testing technique used is the *Corrected Item-Total Correlation* method, with the following testing criteria:

- If the *Corrected Item-Total Correlation* value is $r > r_{table}$, then the instrument statement in the questionnaire is declared valid.
- If the *Corrected Item-Total Correlation* value is $r < r_{table}$, then the instrument statement in the questionnaire is declared invalid.

The reliability test is carried out to measure a questionnaire instrument that can be trusted and has a good level of consistency. The reliability test uses the Cronbach's Alpha method with a reliable value greater than 0.60. Hypothesis testing uses simple linear regression analysis which describes the relationship of one independent variable with one dependent variable. Hypothesis testing is carried out through t test and Determination coefficient test (R^2). t test is a test to find out whether the independent variable has an influence on the dependent variable. Basic decision making on the t test as follows:

1. Based on t value
   - If the value of $t < t_{table}$, then the hypothesis is rejected.
   - If the value of $t > t_{table}$, then the hypothesis is accepted.

2. Based on significance value
   - If the significance value on the t test > 0.05, then the hypothesis is rejected.
   - If the significance value in the t test < 0.05, then the hypothesis is accepted.

Testing the coefficient of determination aims to determine how much the contribution of the independent variables in the regression model can explain the dependent variable [14]

3. RESULTS AND DISCUSSION

There are three results and discussion of the results in this study. The first and second results serve to ensure a valid and reliable questionnaire. The third result is to determine the relationship between constructs in the research model (H0, H1, H2, H3). The discussion is to find out how much the independent construct influences the dependent construct.

3.1. Validity test

The results of the validity test on all indicators show the r value is greater than the r_{table} value. So that all the indicators used in this study are declared valid and worthy of being used as a measuring tool (Table 4).

Table 4. The result of validity test

Construct	Indicator	r	r_{table}	Result
System Quality	SQ1	0,505	0,2006	Valid
	SQ1	0,477	0,2006	Valid
	SQ2	0,528	0,2006	Valid
Information	IQ1	0,507	0,2006	Valid
Quality	IQ2	0,688	0,2006	Valid
	IQ3	0,656	0,2006	Valid
	IQ4	0,530	0,2006	Valid
Service Quality	SERQ1	0,445	0,2006	Valid
	SERQ2	0,445	0,2006	Valid
Task-Technology	TTF1	0,502	0,2006	Valid
Fit	TTF2	0,526	0,2006	Valid
	TTF3	0,538	0,2006	Valid
	TTF4	0,489	0,2006	Valid
	TTF5	0,396	0,2006	Valid
	NB1	0,403	0,2006	Valid
Net Benefit	NB2	0,522	0,2006	Valid
	NB3	0,343	0,2006	Valid

3.2. Reliability test

The test results show that the Cronbach's Alpha value obtained from the calculation results has a value above 0.6. Based on this, it can be concluded that all constructs are declared reliable and fit to be used as measuring instruments.

Table 5. The Result of reliability test

Construct	Cronbach's Alpha	Result
System Quality	0,687	Reliable
Information Quality	0,786	Reliable
Service Quality	0,616	Reliable
Task-Technology Fit	0,729	Reliable
Net Benefit	0,601	Reliable

3.3. Hypothesis tests and Discussion

Hypothesis testing is done through qualitative data processing which produces three values. First, the t value indicates whether a construct has an effect or not on other constructs. Second, the regression value which shows the linear equation of the influence of one construct with another construct. Third, the R-square value, which shows how much influence one construct has on another construct. (Table 6).

Table 6. The Result

Hypothesis	Path	t Value	Influence	Regression value	R-square
H1	SQ → TTF	7.014	Positive	9.373 0.946	0.344
H2	IQ → TTF	9.507	Positive	8.145 0.789	0.490
H3	ServQ → TTF	5.025	Positive	13.253 0.996	0.212
H4	TTF → NB	6.819	Positive	2.834	0.331

Notes:
*) t table: 1.98552, **) Significant at the 0.05 level, ***) Value of significance: 0.000

3.3.1. H1: SQ has a positive influence on TTF

Based on the test results in table 6, a t value of 7.014 is obtained, and a significance value of 0.000. The t value is greater than t_{table} and the significance value obtained

is smaller than 0.05. This shows that there is a positive and significant influence between SQ and the TTF. The regression model equation is obtained as follows:

$$Y=9.373+ 0.946X$$

The regression equation model is interpreted: α = 9.373, states that if the SQ has a value of 0, then the TTF value is expected to increase by 9.373. β = 0.946, states that any increase in the value of the SQ will increase the value of the TTF by 0.946. The result of calculating the coefficient of determination of this regression model is 34.4%. This result means that the SQ has an influence of 34.4% on the TTF. While the rest, namely 65.6%, is caused by other factors that are not included in this regression model.

Based on the **H1** test results, the better the SQ possessed by the Skill Academy training platform, the better the TTF will be. This shows that the system functionality on the Skill Academy platform is appropriate in supporting trainees while participating in learning on the platform. Research conducted in [15] and [16], in different cases, confirms that there is a positive and significant influence between between the quality of the system provided and the suitability of the technology used. The Skill Academy platform has indicators of system quality that allow the technological infrastructure to be used according to the information needs of users. The first indicator is ease of use, where the trainees find it easy to access the Skills Academy platform features. The second indicator is convenience of access, where trainees feel comfortable with the availability of Skills Academy platform features. The comfort of the trainees is seen in the Skills Academy platform in the accuracy of providing needs. The third indicator is usability of system features and functions, where the features and functions of the system are felt by the trainees according to the required needs.

3.3.2. H2: IQ has a positive influence on TTF

Based on the test results in table 6, a t value of 9.507 is obtained, and a significance value of 0.000. The t value is greater than t_{table} and the significance value obtained is smaller than 0.05. This shows that there is a positive and significant influence between IQ and the TTF. The regression model equation is obtained as follows:

$$Y=8.145+ 0.789X$$

The regression equation model is interpreted: α = 8.145 states that if the IQ has a value of 0, then the TTF value is expected to increase by 8.145. β = 0.789, states that any increase in the value of the IQ will increase the value of the TTF by 0.789. The result of calculating the coefficient of determination of this regression model is 49%. This result means that the IQ has an influence of 49% on the TTF. While

the rest, namely 51%, is caused by other factors that are not included in this regression model.

Based on the **H2** test results, the better the IQ possessed by the Skill Academy training platform, the better the TTF will also occur. The results of this study are in line with the results of research by [17], which states that good information quality will result in the information produced being in accordance with the user's task in studying or working. The Skill Academy platform has information quality indicators that allow the technology to be used according to user needs. The first indicator is relevant, where the information possessed by skills academy is in accordance with user needs. The suitability of the needs of these users is shown by the many training options on the skill academy platform. The second indicator is reliability, where the information possessed by skills academy has a solid foundation, is supported by trusted sources, and is verified through valid methods. Information reliability at the Skill Academy can be seen in the placement of professional instructors who function as the delivery of training information. The third indicator is content, where the information received by the training participants can be trusted to add skills. Just like in the second indicator, the Skill Academy training participants' trust in the information received is caused by professional instructors. The fourth indicator is present, where the information received by the training participants is the latest information. Still the same as the second and third indicators, Still the same as the second and third indicators, Skill Academy training participants receive the latest information from practitioners.

3.3.3. H3: ServQ has positive influence on TTF

Based on the test results in table 6, a t value of 5.025 is obtained, and a significance value of 0.000. The t value is greater than t_{table} and the significance value obtained is smaller than 0.05. This shows that there is a positive and significant influence between the ServQ and the TTF. The regression model equation is obtained as follows:

$$Y=13,253+ 0,996X$$

The regression equation model is interpreted: $\alpha = 13.253$ states that if the ServQ construct has a value of 0, then the TTF value is expected to increase by 13.253. $\beta = 0.996$, states that any increase in the value of the ServQ will increase the value of the TTF by 0.996.

The result of calculating the coefficient of determination of this regression model is 21.2%. This result means that the ServQ has an influence of 21,2% on the TTF. While the rest, namely 78,8%, is caused by other factors that are not included in this regression model.

p-ISSN: **2656-5935** http://journal-isi.org/index.php/isi e-ISSN: **2656-4882**

The test results of **H3** support the results of a study conducted by [18] who stated that the existence of good service quality on the Skill Academy platform will support users in carrying out their duties. In different cases, research [15] and [16] gave results that there was a significant influence between the quality of services provided and the use of appropriate technology. The Skill Academy platform has service quality indicators that allow the technology to be used according to user needs. The first indicator is guarantee, where the Skill Academy platform guarantees that training participants will meet the necessary requirements. The training participants felt that the training material obtained was useful for increasing knowledge and skills. The second indicator is responsive, where training participants feel that they immediately get a response when facing problems with access to the skill academy platform.

3.3.4. H4: TTF has a positive influence on NB

Based on the test results in table 6, a t value of 6.819 is obtained, and a significance value of 0.000. The t value is greater than t_{table} and the significance value obtained is smaller than 0.05. This shows that there is a positive and significant influence between the TTF and the NB. The regression model equation is obtained as follows:

$$Y=2,834+ 0,450X$$

The regression equation model is interpreted: $\alpha = 2.834$ states that if the TTF has a value of 0, then the NB value is expected to increase by 2.834. $\beta = 0.450$, states that any increase in the value of the TTF will increase the value of the NB by 0.450.

The result of calculating the coefficient of determination of this regression model is 33.1%. This result means that the TF has an influence of 33,1% on the NB. While the rest, namely 66,9%, is caused by other factors that are not included in this regression model.

Based on **H4** test results, it can be said that the better the level of the Task-Technology Fit the greater the Net Benefit received by users. The Net Benefit is the impact of using systems, information, and service quality in improving the quality of individual or organizational performance[19]. The Skill Academy platform has task-technology fit indicators which enables the trainees to benefit. The first indicator is realization of needs, where the Skill Academy platform is felt by the training participants to be able to realize the need to improve skills and knowledge. The second indicator is compatibility, where the Skill Academy platform is felt by the training participants to be in accordance with the needs of increasing skills and knowledge. The third indicator is quality of information, where the Skill Academy platform is felt by the training participants to help the

training process be followed properly and provide the benefit of adding skills and knowledge. The fourth indicator is production timelines, where the training participants feel that the skill academy platform training schedule is held on time.

4. CONCLUSION

Measuring benefits using a combination of the DM model and the TPC model confirms that the Skill Academy Platform is successful in improving user skills. The skill improvement of Skill Academy platform users can be seen from the NB construct. The NB construct proves that the Skill Academy platform benefits users. The NB construct is positively influenced by the TTF construct. Users feel that the Skill Academy platform meets user needs in carrying out their duties. The TTF is positively influenced by three constructs: SQ, IQ, and SerQ. IQ has the greatest influence compared to SQ and ServQ in influencing TTF. The information system, the information and the services owned by the Platform Skill Academy are of good quality to benefit users.

REFERENCES

[1] W. H. DeLone and E. R. McLean, "The DeLone and McLean model of information systems success: A ten-year update," in *Journal of Management Information Systems*, M.E. Sharpe Inc., 2003, pp. 9–30. doi: 10.1080/07421222.2003.11045748.

[2] D. L. Goodhue and R. L. Thompson, "Task-Technology Fit and Individual Performance," 1995.

[3] I. Kaniawulan, H. Hendrayani, and C. Furqon, "Successful Digital Payment Information System Services Using Delon and McLean Models," 2022.

[4] D. Al-Fraihat, M. Joy, R. Masa'deh, and J. Sinclair, "Evaluating E-learning systems success: An empirical study," *Comput Human Behav*, vol. 102, pp. 67–86, Jan. 2020, doi: 10.1016/j.chb.2019.08.004.

[5] W. Abdillah and A. Saepullah, "Model Technology to Performance Chain (TPC) in Implementing Accrual-Based Sistem Informasi Manajemen Daerah (SIMDA) Finance: Empirical Evidence from Local Government of Indonesia," *Jurnal Dinamika Manajemen*, vol. 9, no. 1, pp. 56–68, Jun. 2018, doi: 10.15294/jdm.v9i1.14652.

[6] A. Ratnasari, A. A. Harahap, A. A. Anshori, and M. Alam, "Adopting task technology fit model on e-voting technology," *International Journal of Informatics and Communication Technology (IJ-ICT)*, vol. 10, no. 2, p. 148, Aug. 2021, doi: 10.11591/ijict.v10i2.pp148-158.

[7] J. M. Hudin, Y. Farlina, R. A. Saputra, A. Gunawan, D. Pribadi, and D. Riana, "Measuring Quality of Information System Through Delone Mclean Model in Online Information System of New Student Registration (SISFO PPDB)," *in 2018 6th International Conference on Cyber and IT Service Management (CITSM)*, 2018, pp. 1-6.

[8] K. P. Fadahunsi *et al.*, "Protocol for a systematic review and qualitative synthesis of information quality frameworks in eHealth," *BMJ Open*, vol. 9, no. 3, Mar. 2019, doi: 10.1136/bmjopen-2018-024722.

[9] R. Widiastuti, B. S. Haryono, and A. Said, "Influence of system quality, information quality, service quality on user acceptance and satisfaction and Its impact on net benefits (study of information system users lecturer performance load (BKD) in Malang State University)," *HOLISTICA–Journal of Business and Public Administration*, vol. 10, no. 3, pp. 111-132, 2019.

[10] S. Laumer, C. Maier, and T. Weitzel, "Information quality, user satisfaction, and the manifestation of workarounds: a qualitative and quantitative study of enterprise content management system users," *European Journal of Information Systems*, no. November 2016, 2017, doi: 10.1057/s41303-016-0029-7.

[11] Wasiran S., Antonius Darma S., and Yanuar Z. A., "Analysis of Cloud Computing Usage in Vocational School Environment Using Delone MClean," *International Journal of Computer and Information System (IJCIS)*, vol. 3, no. (4), pp.153-157, 2022.

[12] E. Murray, R. Acosta, and R. Avelar, "UB Lecturers Perception of LMS 4th Annual Management Information System Conference," 2021.

[13] S. K. Lwanga and S. Lemeshow, *Sample size determination in health studies : a practical manual*.

[14] Joseph F. Hair Jr., William J. Black, Barry J. Babin, and Rolph E. Anderson, *Multivariate Data Analysis*. pearson Prentice Hall, 2010.

[15] C. Tam and T. Oliveira, "Understanding the impact of m-banking on individual performance: DeLone & McLean and TTF perspective," *Comput Human Behav*, vol. 61, pp. 233–244, Aug. 2016, doi: 10.1016/j.chb.2016.03.016.

[16] A. Yuce, A. M. Abubakar, and M. Ilkan, "Intelligent tutoring systems and learning performance: Applying task-technology fit and IS success model," *Online Information Review*, vol. 43, no. 4, pp. 600–616, Jul. 2019, doi: 10.1108/OIR-11-2017-0340.

[17] X. Zha, H. Yang, Y. Yan, K. Liu, and C. Huang, "Exploring the effect of social media information quality, source credibility and reputation on

informational fit-to-task: Moderating role of focused immersion," *Comput Human Behav*, vol. 79, pp. 227–237, Feb. 2018, doi: 10.1016/j.chb.2017.10.038.

[18] J. Heinze and C. Matt, "Reducing the Service Deficit in M-Commerce: How Service-Technology Fit Can Support Digital Sales of Complex Products," *International Journal of Electronic Commerce*, vol. 22, no. 3, pp. 386–418, Jul. 2018, doi: 10.1080/10864415.2018.1462940.

[19] I. Y. Alyoussef, "Acceptance of e-learning in higher education: The role of task-technology fit with the information systems success model," *Heliyon*, vol. 9, no. 3, Mar. 2023, doi: 10.1016/j.heliyon.2023.e13751.