

Information System Project Success based on User Experience at the Village Administration Office

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Abstract—Rejection of some Information Systems, among others, is because users do not have experience in using them so that the Information System is said to fail to be implemented. In Village Administration Office, there are many problems related to supporting the use of Information Systems, especially regarding user experience. The purpose of this study is to measure the success of an Information System project based on User Experience. The model used is the result of integrating the User Experience model with the Information System Project Success model. 73 samples were collected through online surveys with a simple random sampling method. The least partial structural equation modeling method with Smartpls 3.3.3 was used to analyze the data. The results of the study found that the character of the experience of users of Information Systems in Village Administration Office stated that they were able to use Information Systems by 49%. 51% of the respondent's educational background is High School graduates, and 34% of the positions are operators. Meanwhile, the most influential factor of Information System Projects Success based on User Experience is the Quality System, while the quality of the system itself is influenced by the constructs of Usability, Affect, and User Value. The findings in this study will contribute to research in the field of Information Systems, particularly research on the success of Information Systems projects and User Experience. In addition, research results will contribute to policymakers in the application of Information Systems, especially in rural areas.

Keywords—measure, integration, information systems project success, user experience, rural areas

I. INTRODUCTION

The village has started to become the object of implementing information systems at this time, but in its implementation, there are still some problems that might be interesting to solve for some researchers [1, 2]. Some information system project builders never pay attention to whether the information system they make will have a level of sustainability in use [3], as if the construction is just a project [1, 4].

Policymakers certainly want that information system projects should be able to contribute greatly to the progress of a region [5, 6], but failures in its application are still common [1, 7, 8]. These findings are comparable to those of several prior research, which found that User Experience influences failure in the deployment of Information Systems. [9-12].

This research was conducted in several Village Administration Offices that already use Information Systems in rural areas. The aim is to determine the characteristics of the user and what variables affect the success of an Information System project. Based on the above problems and to guide this research, the problem questions are:

RQ1: What are the characteristics of the Information System User Experience in the Village Administration Office?

RQ2: What has had the most influence on the Information Systems Project Success based on the User Experience of the Village Administration Office?

The structure of this paper is staked in five parts. The introduction contains background exposure to the problem, objective, and research question. The second part is a literature review. The next stage is an explanation of the research method, including procedures, population and samples, data collection, sampling, tools, data analysis, and points of interpretation. The results and analysis section includes the results of descriptive and inferential analysis, contributions, limitations, and research recommendations supported by other studies. And finally, the concluding section, summarizes the paper, concerning the points that are highlighted in all sections.

II. LITERATURE REVIEW

In this research, three factors form the framework in the literature review, namely: User Experience, Information Systems Project Success, and measurement of the impact of using information systems.

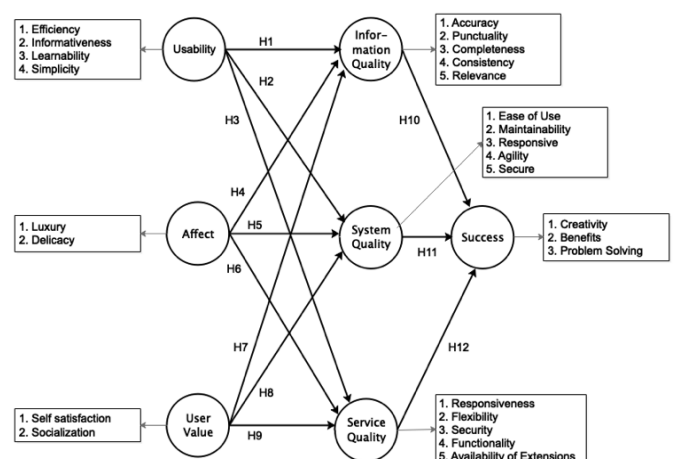


Fig. 1. The research models

These three factors relate to the previously created model, namely the integration model of the User Experience model [9-12] with the Information Systems Project Success [1, 2, 4, 13] model as shown in Figure 1. The model's formation is based on previous research and theory. User experience is defined as a person's impression and response as a result of anticipating the use of a product, system, or service, according to several studies [9-12, 14-16]. Some scholars argue that when it comes to connecting with products, systems, and services, the user interface must be incorporated [8, 9, 14, 17-19]. So that in this study the researchers included the constructs of Usability [20-28], Affect [29, 30], and User Value [30-32] in the User Experience [9-12] model, where the usability construct consisted of indicators of Efficiency [33-36], Informativeness [20-28], and Learnability [37], and Simplicity. In the construct Affect consists of indicators of Luxury [29, 30] and Delicacy [29, 30]. Meanwhile, in the User Value construct, there are indicators of Self-Satisfaction [38-42] and Socialization [21, 23, 43, 44]. Meanwhile, other researchers stated that as a condition of real experience, three elements were suggested, namely Usability, Affect, and User Value from User Experience as a construction [9-12].

In the next factor, namely Information Systems Project Success, several researchers [1, 2, 4, 13] explained that Information Systems Project Success is a scientific study that studies the successful application of an information system between the demands of policymakers and the state of the user environment [5, 6]. This research involved the construct of Information Quality [1, 2, 4, 13] with indicators of Accuracy, Punctuality, Completeness, Consistency, and Relevance [1, 2, 4, 13]. In the System Quality construct [1, 2, 4, 13] there are indicators of Ease of Use, Maintainability, Responsive, Agility, and Secure [1, 2, 4, 13]. The Service Quality [1, 2, 4, 13] construct consists of indicators of Responsiveness, Flexibility, Security, Functionality, and Availability of Extensions [1, 2, 4, 13]. Whereas in the construct of Information Systems Project Success [1, 2, 4, 13], there are indicators of Creativity, Benefits, and Problem Solving [1, 2, 4, 13].

Several academics have measured the influence of using information systems on many topics, such as acceptability, contentment, building success, and readiness [20, 24, 45-50]. In detail, the reciprocal relationship between constructs is clearly shown in the Information System model used. Likewise, this indication is in line with the trend of many Information Systems studies [24, 51-58] which develop research models by adopting and combining previous information systems models.

III. RESEARCH METHOD

The study was completed in eight steps which are described in the research procedure as shown in Figure 2.

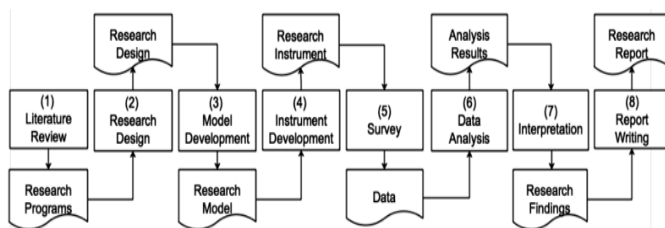


Fig. 2. The research procedure

The literature review is the first step taken as an element in shaping the research program. The second stage is the research design, which is the stage in designing research, moving on to the model development stage. In the development stage, the model generates a new model that combines two models (User Experience model with Information Systems Project Success model) to produce a research model and research instruments. Following the creation of the models and instruments, a survey was conducted to collect data (data gathered by distributing questionnaires via Google forms), which was then evaluated and evaluated before the findings were published. Researchers distributed 270 (number of villages) copies of the questionnaire via Google forms to several village offices in rural areas based on the experience of respondent profiles (obtained 73 samples from Slovin calculations). The questions given are the results of the variables and indicators contained in the model.

IV. RESULTS AND ANALYSIS

A. Demographic Information

Respondent demographic data as a percentage is presented in Table I. 12 demographic categories were asked of the respondent, namely Gender, Age, Education, Job Position, Work Experience, Information Systems Use Ability, Experience using Information Systems, Level of Skill to Use Information Systems, Participation in Information System Use Training, Support from the Office Regarding Training in the Use of Information Systems, Support from the Office Regarding Facilities in the Use of Information Systems, and Support from Offices Regarding Infrastructure in the Use of Information Systems.

TABLE I. USER EXPERIENCE PROFILES AND INFORMATION SYSTEM USER PROFILES

Demography		%
Gender	Male	88
	Female	12
Age	≤ 18 th	18
	19 th -29 th	32
	30 th -40 th	40
	41 th -51 th	11
	≥ 52 th	0
Education	Primary school	0
	Middle school	0
	High school	51
	Diploma	8
	Bachelor	41
	Master	0
Job Position	Chief of village	18
	Village secretary	16
	Administrative coordinator	32
	Operator	34
Work Experience	≤ 2 years	12
	3-6 years	47
	7-10 years	22
	≥ 11 years	19
Information System Use Ability	Able	49
	Not capable	48
	Unknown	3
Experience using Information Systems	≤ 2 years	27
	3-6 years	26
	7-10 years	0
	≥ 11 years	0
	Not experienced	47
Level of skill to use Information Systems	Very skilled	16
	Skilled	11
	Less skilled	25

Demography		%
	Unknown	48
Participation of Information System use training	Ever	48
	Never	52
Support from the office regarding training in the use of Information Systems	Exist	45
	Nothing	55
Support from the office regarding facilities in the use of Information Systems	Exist	63
	Nothing	37
Support from offices regarding infrastructure in the use of Information Systems	Exist	45
	Nothing	55

In this study and according to the demographic data in Table I, the majority of respondents are 64 respondents (88%), 29 people (40%) are 30-40 years old, 37 respondents (51%) are High School graduates, 25 respondents (34%) work as operators in the village office, 34 respondents (47%) have 3-6 years working experience, 36 respondents (49%) say they can use the Information System, 34 respondents (47%) say they have no experience in the use of the information system, 35 respondents (48%) say they do not know about the level of ability the user has in using the Information System, 38 respondents (52%) say that they have never participated in the training on using the Information System, 40 respondents (55%) say they are not supported by the In the training of using the Information System, 46 respondents (63%) state the facilities are supported in using the Information System, and 40 respondents (55%) say the infrastructure is not supported in its use of Information Systems. When analyzed from the results of demographic data on User Experience and Information System users in Rural Areas, even with high educational backgrounds, it is seen that they are trying to always learn in the use of Information Systems, even though they do not know about their level of ability [20, 59-61]. Limited facilities do not become an obstacle in carrying out work [20, 59-61], especially those demanded by policymakers.

B. The statistical analysis results

In data processing for statistical analysis using Smartpls 3.3.3, previously made a CSV file in Microsoft Excel as raw data from the results of the questionnaire, the stages by evaluating the Internal Consistency Reliability using Composite Reliability, Reliability Indicators, Convergence Validity, and Discriminant Validity [32, 62-64]. This step is to determine whether a hypothesis is based on a research model [24, 51-58]. Furthermore, knowing the value of endogenous latent variables in the path model and the final step is to assess the contribution of exogenous constructs to endogenous latent variables.

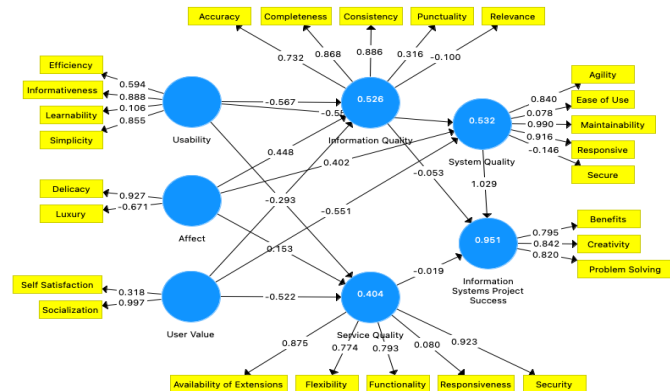


Fig. 3. Results of the outer model assessment

In Figure 3, several indicators are valued below 0.708, including Efficiency and Learnability indicators in the Usability construct, Luxury indicators in the Affect construct, indicators of Self-Satisfaction on the user Value construct, indicators of Punctuality and Relevance in the construct of Information Quality, indicators of Ease of Use and Secure in the construct of System Quality, and indicators of Responsiveness in the construct of Service Quality. The removal of these indicators is analyzed for their impact on the Average Variance Extracted and the Reliability of the Composite.

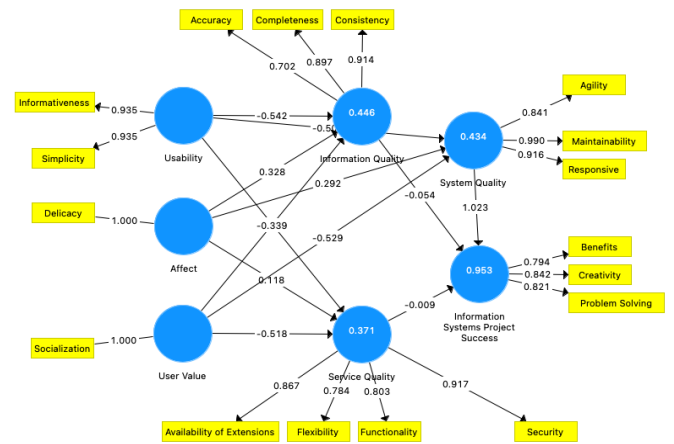


Fig. 4. Results of the outer model assessment by deleting some indicators

Figure 4 is an overview of the results after eliminating the indicators which have a value of 0.708, and it is confirmed that the Composite Reliability for all reflective constructs is higher and the value increases.

TABLE II. RESULTS OF THE DISCRIMINANT VALIDITY

Construct	Item	Usability	Affect	User Value	Information Quality	System Quality	Service Quality	Information Systems Project Success
Usability	Informativeness	0.865	-0.371	-0.380	-0.539	-0.407	-0.384	-0.437
	Simplicity	0.866	-0.355	-0.386	-0.579	-0.374	-0.369	-0.372
Affect	Delicacy	-0.419	1.000	0.255	0.509	0.369	0.209	0.371
	Socialization	-0.442	0.255	1.000	-0.038	-0.261	-0.277	-0.292
Information Quality	Accuracy	-0.791	0.626	0.400	0.756	0.560	0.517	0.535
	Completeness	-0.346	0.238	-0.237	0.707	0.621	0.573	0.673
	Consistency	-0.292	0.261	-0.260	0.759	0.752	0.610	0.782
System Quality	Maintainability	-0.387	0.350	-0.265	0.820	0.930	0.855	1.092
	Responsive	-0.283	0.326	-0.282	0.755	0.833	0.727	0.980
	Agility	-0.512	0.292	-0.137	0.701	0.856	0.880	0.997
Service Quality	Flexibility	-0.320	-0.045	-0.203	0.396	0.503	0.588	0.552
	Security	-0.463	0.292	-0.230	0.796	0.961	1.008	1.010
	Functionality	-0.184	0.115	-0.244	0.500	0.664	0.684	0.727
Information Systems Project Success	Availability of Extensions	-0.396	0.219	-0.218	0.665	0.790	0.840	0.820
	Creativity	-0.302	0.337	-0.175	0.627	0.864	0.559	0.740
	Problem Solving	-0.230	0.205	-0.205	0.478	0.728	0.601	0.625

TABLE III. RESULTS OF THE CONSTRUCT RELIABILITY AND VALIDITY, AND R SQUARE

Construct	Item	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted	R ²	R ² Adjusted
Usability	Informativeness	0.857	0.857	0.933	0.875		
	Simplicity						
Affect	Delicacy	1.000	1.000	1.000	1.000		
User Value	Socialization	1.000	1.000	1.000	1.000		
Information Quality	Accuracy	0.788	0.786	0.879	0.711	0.446	0.422
	Completeness						
	Consistency						
System Quality	Maintainability	0.903	0.909	0.941	0.842	0.434	0.410
	Responsive						
	Agility						
Service Quality	Flexibility	0.868	0.906	0.908	0.713	0.371	0.343
	Security						
	Functionality						
	Availability of Extensions						

Construct	Item	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted	R ²	R ² Adjusted
Information Systems Project Success	Creativity	0.756	0.762	0.859	0.671	0.953	0.951
	Benefits						
	Problem Solving						

All external indicators load on the structure more than cross-loading with other constructs, as shown in Tables II and III, and the square root of AVE is higher than the highest correlation with other constructs [32, 62-64]. PLS-SEM aims to maximize the R² value of endogenous latent variables in the path model. So, the goal is a high R² value [32, 62-64]. Meanwhile, the correct interpretation of the R² value level depends on the particular model and research discipline. In general, R² values of 0.75 (substantial), 0.50 (moderate), or 0.25 (weak) [32, 62-64]. The R² value of the construct of endogenous Information Systems Project Success is high. Meanwhile, the endogenous constructs of Information Quality, System Quality, and Service Quality are moderate respectively.

TABLE IV. F SQUARE

Construct	Usability	Affect	User Value	Information Quality	System Quality	Service Quality	Information Systems Project Success
Usability				0.395	0.332	0.359	
Affect				0.163	0.127	0.018	
User Value				0.170	0.406	0.351	
Information Quality							0.029
System Quality							4.755
Service Quality							0.000
Information Systems Project Success							

From Table IV, it is obtained that the value of f² from the exogenous construct Usability to construct endogenous Information Quality, System Quality, and Service Quality is high value. The f² value of exogenous constructs Affect towards constructing endogenous Information Quality has a high value, while the endogenous construct System Quality is medium value, and the endogenous construct Service Quality has no contribution. The f² value of the construct exogenous User Value to the construct endogenous Information Quality, System Quality, and Service Quality is of high value. The value of f² of the construct exogenous Information Quality to the construct endogenous Information Systems Project Success is moderate. The value of f² from the exogenous System Quality construct to the endogenous Information Systems Project Success construct is of high value. Whereas the value of f² of the exogenous construct of Service Quality to the construct of endogenous Information Systems Project Success has no contribution. The effect size f² allows an assessment of the contribution of exogenous constructs to the R² value of the endogenous latent variable. The f² values of 0.02, 0.15, and 0.35 indicate the effect of small, medium, or large exogenous constructs, respectively, on endogenous constructs [32, 62-64].

The results of the bootstrap in assessing the significance of the path coefficients and following the minimum number of bootstrap samples are at least equal to the number of valid observations (5,000). The number of cases is equal to the number of valid observations in the original sample [32, 62-64]. The critical values for the two-tailed test are 1.65 (significance level = 10%), 1.96 (significance level = 5%), and 2.57 (significance level = 1%), in which case the path coefficient with the probability of error is considered. 5% or less as significant [32, 62-64]. To assess the significance of the path coefficient, a significance level of 5% and a one-tailed test was used. Significance level 1.64.

The results from Table V in terms of assessing the significance of the path coefficients are obtained as shown. The Affect construct has no significant effect on Service Quality, the User Value construct has no significant effect on Information Quality, the Information Quality construct does not significantly influence the Information Systems Project Success to construct, and the Service Quality construct has no significant effect on Information Systems Project Success. While other results, exogenous constructs significantly influence other endogenous constructs.

TABLE V. THE SIGNIFICANCE OF PATH COEFFICIENTS

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values	Decisions
Usability -> Information Quality	-0.542	-0.559	0.102	5.303	0.000	Significant
Usability -> System Quality	-0.501	-0.501	0.125	4.009	0.000	Significant
Usability -> Service Quality	-0.550	-0.556	0.118	4.675	0.000	Significant
Affect -> Information Quality	0.328	0.341	0.096	3.426	0.001	Significant
Affect -> System Quality	0.292	0.295	0.107	2.734	0.006	Significant
Affect -> Service Quality	0.118	0.118	0.103	1.144	0.253	Not Significant
User Value -> Information Quality	-0.339	-0.327	0.176	1.926	0.055	Not Significant
User Value -> System Quality	-0.529	-0.533	0.113	4.666	0.000	Significant
User Value -> Service Quality	-0.518	-0.527	0.107	4.858	0.000	Significant
Information Quality -> Information Systems Project Success	-0.054	-0.062	0.115	0.472	0.637	Not Significant
System Quality -> Information Systems Project Success	1.023	1.009	0.162	6.303	0.000	Significant
Service Quality -> Information Systems Project Success	-0.009	0.020	0.122	0.073	0.942	Not Significant

The results of the study found that the character of the experience of users of Information Systems in Village Administration Office stated that they were able to use Information Systems by 49%. 51% of the respondent's educational background is High School graduates, and 34% of the positions are operators. Meanwhile, the most influential factor of Information System Projects Success based on User Experience is the Quality System [1, 2, 4, 13], while the quality of the system itself is influenced by the constructs of Usability, Affect, and User Value [9-12].

V. CONCLUSION

Based on the results presented in the demographic information section and the presentation of the results of statistical analysis, it can be concluded that the character of the experience of users of Information Systems in the Village Administration Office states that they are capable of using information systems as much as 49%, although 48% stated unknown when asked about the level of ability to use information systems. 51% of the respondent's educational background is High School graduates, 34% of the positions are operators, and 52% have never attended training in the use of information systems. Meanwhile, the most influential factor in the Information System Projects Success based on User Experience is the quality of the system, while the quality of the system itself is influenced by the constructs of Usability, Affect, and User Value. When analyzed using a combined method, although the results of the respondent's demographic profile can be stated that operators in the Village Administration Office who have good performance even though they are not supported by several facilities, claim to need a quality information system to help complete their work effectively and efficiently. This research is expected to contribute to research in the field of information systems, especially research on the Information Systems Projects Success and User Experience. In addition, the research results will contribute to policymakers in the application of information systems, especially in rural areas

and do not close in suburban or urban areas. The more findings from several studies that will be carried out by both the researchers themselves and other researchers, the more they will refine the model from the integration of the user experience model with the project success information systems model.

REFERENCE

- [1] S. Nizamani, K. Khoubati, I. A. Ismaili, S. Nizamani, S. Nizamani, and N. Basir, "Testing and validating the ERP success evaluation model for higher education institutes of Pakistan," *International Journal of Business Information Systems*, vol. 25, no. 2, pp. 165-191, 2017, doi: 10.1504/ijbis.2017.083682.
- [2] A. Subiyakto, A. R. Ahlan, M. Kartiwi, and S. J. Putra, "Measurement of the information system project success of the higher education institutions in Indonesia: a pilot study," *International Journal of Business Information System*, vol. 23, no. 2, pp. 229-247, 2016, doi: <https://doi.org/10.1504/IJBIS.2016.078908>.
- [3] C. Moucheraud *et al.*, "Sustainability of health information systems: a three-country qualitative study in southern Africa," *BMC health services research*, vol. 17, no. 1, p. 23, 2017.
- [4] A. H. Reed and M. G. Angola, "Risk management usage and impact on information systems project success," in *Start-Ups and SMEs: Concepts, Methodologies, Tools, and Applications*: IGI Global, 2020, pp. 1065-1084.
- [5] D. N. Utama, L. I. Lazuardi, H. A. Qadrya, B. M. Caroline, T. Renanda, and A. P. Sari, "Worth eat: An intelligent application for restaurant recommendation based on customer preference (Case study: Five types of restaurant in Tangerang Selatan region, Indonesia)," pp. 1-4, 2017, doi: 10.1109/ICoICT.2017.8074654.
- [6] F. Nento, L. E. Nugroho, and Selo, "Model E-Readiness Untuk Pengukuran Kesiapan Pemerintah Daerah Dalam Penerapan Smart Government : Studi Kasus Pemerintah Provinsi Gorontalo," *Seminar Nasional Inovasi dan Aplikasi Teknologi di Industri (SENIATI)*, pp. B27.1-6, 2017.
- [7] L. D. Hughes, N. P. Rana, and A. C. Simintiras, "The changing landscape of IS project failure: an examination of the key factors," *Journal of Enterprise Information Management*, vol. 30, no. 1, 2017.
- [8] J.-C. Hong, K.-H. Tai, M.-Y. Hwang, Y.-C. Kuo, and J.-S. Chen, "Internet cognitive failure relevant to users' satisfaction with content and interface design to reflect continuance intention to use a government e-learning system," *Computers in Human Behavior*, vol. 66, pp. 353-362, 2017.
- [9] J. Hussain *et al.*, "Model-based adaptive user interface based on context and user experience evaluation," vol. 12, no. 1, pp. 1-16, 2018.
- [10] A. Constantinides, M. Belk, C. Fidas, and G. Samaras, "On Cultural-centered Graphical Passwords: Leveraging on Users' Cultural Experiences for Improving Password Memorability," in *Proceedings of the 26th Conference on User Modeling, Adaptation and Personalization*, 2018: ACM, pp. 245-249.
- [11] Y. Du, C. Liu, and Y. Zhang, "Research on the Adaptability of Underground Soft Guidance and Culture Based on Memorability," in *International Conference of Design, User Experience, and Usability*, 2018: Springer, pp. 620-634.
- [12] H.-j. Lee, K. K.-h. Lee, and J. J. J. o. U. S. Choi, "A structural model for unity of experience: connecting user experience, customer experience, and brand experience," vol. 14, no. 1, pp. 8-34, 2018.
- [13] D. T. N. Thanh D. Nguyen, and Tuan M. Nguyen, "Information Systems Success: The Project Management Information System for ERP Projects," *Conference Paper in Lecture Notes of the Institute for Computer Sciences - February 2016 DOI: 10.1007/978-3-319-29236-6_20*, 2016, doi: 10.1007/978-3-319-29236-6_20.
- [14] H. Al-Samarraie, A. Eldenfria, and H. Dawoud, "The impact of personality traits on users' information-seeking behavior," *Information Processing and Management*, vol. 53, no. 1, pp. 237-247, 2017, doi: 10.1016/j.ipm.2016.08.004.
- [15] R. K. Nielsen and L. Graves, "'News you don't believe': Audience perspectives on fake news," no. October, pp. 1-8, 2017. [Online]. Available: https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2017-10/Nielsen%26Graves_factsheet_1710v3_FINAL_download.pdf.
- [16] C. Saunders, M. Wiener, S. Klett, and S. Sprenger, "The Impact of Mental Representations on ICT-Related Overload in the Use of Mobile Phones," *Journal of Management Information Systems*, vol. 34, no. 3, pp. 803-825, 2017, doi: 10.1080/07421222.2017.1373010.
- [17] F. Ludolph, "Model-based user interface design: Successive transformations of a task/object model," in *User Interface Design*: CRC Press, 2018, pp. 81-107.
- [18] L. Punchoojit and N. Hongwarittorm, "Usability Studies on Mobile User Interface Design Patterns: A Systematic Literature Review," *Advances in Human-Computer Interaction*, vol. 2017, pp. 1-22, 2017, doi: 10.1155/2017/6787504.
- [19] C. Paper *et al.*, "Human-Computer Interaction. User Interface Design, Development and Multimodality," vol. 10271, no. May, 2017, doi: 10.1007/978-3-319-58071-5.
- [20] U. Lah, J. R. Lewis, and B. Sumak, "Perceived usability and the modified Technology Acceptance Model," *International Journal of Human-Computer Interaction*, pp. 1-15, 2020.
- [21] D. Tao, F. Shao, H. Wang, M. Yan, and X. Qu, "Integrating usability and social cognitive theories with the technology acceptance model to understand young users' acceptance of a health information portal," *Health informatics journal*, vol. 26, no. 2, pp. 1347-1362, 2020.
- [22] M. Dawson, D. Walker, and S. Cleveland, "Systems Usability in Developing Countries: Case of Computing Use in Guinea," *International Journal of ICT Research in Africa the Middle East*, vol. 8, no. 1, pp. 31-40, 2019.
- [23] M. Li, "Usability Problems and Obstacles to Addressing Them in Health Information Software Implementations," in *International Conference on Social Implications of Computers in Developing Countries*, 2019: Springer, pp. 241-252.
- [24] D. Yuniarto, A. Subiyakto, E. Firmansyah, D. Herdiana, M. Suryadi, and A. A. Rahman, "Integrating the Readiness and Usability Models for Assessing the Information System Use," *2018 The 6th International Conference on Cyber and IT Service Management (CITSM)*, vol. 6th, CFP1837Z-PRT, pp. 713-718, 2018, doi: 10.1109/CITSM.2018.8674349.
- [25] R. J. M. Ventayen, K. L. A. Estira, M. J. De Guzman, C. M. Cabaluna, and N. N. Espinosa, "Usability Evaluation of Google Classroom: Basis for the Adaptation of GSuite E-Learning Platform," *Asia Pacific Journal of Education, Arts*, vol. 5, no. 1, pp. 47-51, 2018.
- [26] P. Joshi, A. Akbari, and R. B. Svensson, "Impact of Usability on Process Lead-Time in Information Systems: A Case Study," *Journal of Systems Software Development Times*, 2018.
- [27] F. Paz, F. A. Paz, J. J. Arenas, and C. Rosas, "A Perception Study of a New Set of Usability Heuristics for Transactional Web Sites," in *International Conference on Intelligent Human Systems Integration*, 2018: Springer, pp. 620-625.
- [28] A. Bilozor, M. Renigier-Bilozor, and R. Cellmer, "Assessment Procedure of Suburban Land Attractiveness and Usability for Housing," in *Baltic Geodetic Congress (BGC Geomatics)*, 2018: IEEE, pp. 91-96.
- [29] K.-Y. Kwahk, H. Ahn, and Y. U. Ryu, "Understanding mandatory IS use behavior: How outcome expectations affect conative IS use," *International Journal of Information Management*, vol. 38, no. 1, pp. 64-76, 2018.
- [30] S. Khodambashi and Ø. Nytrø, "Usability methods and evaluation criteria for published clinical guidelines on the web: A systematic literature review," *Communications in Computer and Information Science*, vol. 713, no. March, pp. 50-56, 2017, doi: 10.1007/978-3-319-58750-9_7.
- [31] A. A. Patwardhan, N. Pandey, and S. M. Dhume, "Integrated model for understanding Indian physicians' internet usage pattern: An empirical approach," *International Journal of Healthcare Management*, vol. 10, no. 1, pp. 19-33, 2017, doi: 10.1080/20479700.2016.1270385.
- [32] J. Luftman, K. Lyytinen, and T. B. Zvi, "Enhancing the Measurement of Information Technology (IT) Business Alignment and Its Influence on Company Performance," *Journal of Information Technology*, vol. 32, no. 1, pp. 26-46, 2017, doi: 10.1057/jit.2015.23.
- [33] I. Waris and I. Hameed, "Promoting environmentally sustainable consumption behavior: an empirical evaluation of purchase intention of energy-efficient appliances," *Energy Efficiency*, pp. 1-12, 2020.
- [34] Y. J. Kim and M. Brown, "Impact of domestic energy-efficiency policies on foreign innovation: The case of lighting technologies," *Journal of Energy Policy*, vol. 128, pp. 539-552, 2019.
- [35] K. A. Cook, A. M. Romi, D. Sánchez, and J. M. Sánchez, "The influence of corporate social responsibility on investment efficiency

- and innovation," *Journal of Business Finance Accounting*, vol. 46, no. 3-4, pp. 494-537, 2019.
- [36] L. Barasa, P. Vermeulen, J. Knobens, B. Kinyanjui, and P. Kimuyu, "Innovation inputs and efficiency: manufacturing firms in Sub-Saharan Africa," *European Journal of Innovation Management*, vol. 22, no. 1, pp. 59-83, 2019.
- [37] D. R. Ghica and K. Alyahya, "On the Learnability of Programming Language Semantics," *J arXiv preprint arXiv:02319*, 2017.
- [38] P. Yu and S. Qian, "Developing a theoretical model and questionnaire survey instrument to measure the success of electronic health records in residential aged care," *PLoS ONE*, vol. 13, no. 1, pp. 1-18, 2018, doi: 10.1371/journal.pone.0190749.
- [39] R. Pauluzzo and E. F. Geretto, "Validating the EUCS Model to Measure the Level of Satisfaction of Internet Users in Local Banks in Italy," *Journal of Organizational and End User Computing (JOEUC)*, vol. 30, no. 1, pp. 66-81, 2018.
- [40] Y. J. Joo, H.-J. So, and N. H. Kim, "Examination of relationships among students' self-determination, technology acceptance, satisfaction, and continuance intention to use K-MOOCs," *Computers Education*, vol. 122, pp. 260-272, 2018.
- [41] W. Wipulanusat, K. Panuwatwanich, and R. A. J. I. J. o. O. A. Stewart, "Pathways to workplace innovation and career satisfaction in the public service: The role of leadership and culture," vol. 26, no. 5, pp. 890-914, 2018.
- [42] A. Subiyakto, R. Rosalina, M. C. Utami, N. Kumaladewi, and S. J. Putra, "The Psychometric and Interpretative Analyses for Assessing the End-User Computing Satisfaction Questionnaire," in *5th International Conference on Information Technology for Cyber and IT Service Management (CITSM) 2017* Denpasar, Bali, 2017: IEEE, doi: <https://doi.org/10.1109/CITSM.2017.8089282>.
- [43] L. Schmidhuber, D. Maresch, and M. Ginner, "Disruptive technologies and abundance in the service sector-toward a refined technology acceptance model," *Technological Forecasting and Social Change*, vol. 155, p. 119328, 2020.
- [44] Y. Li, Y. Chandra, and N. Kapucu, "Crisis coordination and the role of social media in response to COVID-19 in Wuhan, China," *The American Review of Public Administration*, vol. 50, no. 6-7, pp. 698-705, 2020.
- [45] M. N. Hassan and A. Deraman, "Pilot Study of ICT Compliance Index Model to Measure the Readiness of Information System (IS) at Public Sector in Malaysia," in *Science and Information Conference*, 2020: Springer, pp. 609-628.
- [46] A. Subiyakto, "Development of the Readiness and Success Model for Assessing the Information System Integration," *The 2nd International Conference on Science and Technology (ICOSAT)*, pp. 1-10, 2017.
- [47] H. Rafique, A. O. Almagrabi, A. Shamim, F. Anwar, and A. K. Bashir, "Investigating the acceptance of mobile library applications with an extended technology acceptance model (TAM)," *Computers & Education*, vol. 145, p. 103732, 2020.
- [48] S. A. Kamal, M. Shafiq, and P. Kakria, "Investigating acceptance of telemedicine services through an extended technology acceptance model (TAM)," *Technology in Society*, vol. 60, p. 101212, 2020.
- [49] C. Sagnier, E. Loup-Escande, D. Lourdeaux, I. Thouvenin, and G. Valléry, "User acceptance of virtual reality: an extended technology acceptance model," *International Journal of Human-Computer Interaction*, vol. 36, no. 11, pp. 993-1007, 2020.
- [50] D. Yuniarto, E. Firmansyah, and M. A. Helmiawan, "Technology Acceptance in Augmented Reality," *JOIN Journal Online Informatika*, vol. 3, no. Nomor 1, pp. 10-13, 2018, doi: 10.15575/join.v3i1.158.
- [51] Y. Dwi, S. A'ang, and A. R. Aedah, "Technology Readiness and Usability of Office Automation System in Suruban Areas," *TELKOMNIKA Telecommunication, Computing, Electronics and Control*, vol. 18, no. 2, pp. 676-684, 2020.
- [52] G. S. Bernadus, S. A'ang, and A. R. Aedah, "Benefit Realization Model of Information System Strategic Planning Success: A Proposed Model," 2020.
- [53] F. Esa, D. Yuniarto, D. Herdiana, S. Mulya, S. A'ang, and A. R. Aedah, "Integrating the Readiness and IS-Impact Constructs in the Rural Area Context: A Model Development," in *IOP Conf. Series: Materials Science and Engineering 662*, 2019: IOP Publishing, pp. 1-11.
- [54] A. Subiyakto, R. Abd Ahlan, M. Kartiwi, N. Hakiem, M. Q. Huda, and A. Susanto, "The Information System Project Profiles among Universities in Indonesia," *TELKOMNIKA Indonesian Journal of Electrical Engineering*, pp. 865-872, 2018.
- [55] D. Herdiana, D. Yuniarto, E. Firmansyah, M. Suryadi, A. a. Subiyakto, and A. B. A. Rahman, "Development of System Continuance Models for Assessing among Local E-Government in Indonesia," in *International Conference on Recent Innovations (ICRI)*, 2018.
- [56] A. Sani, T. Rahman, A. Budiyantra, and R. Doharma, "Measurement of readiness in IT adoption among SMEs manufacturing industry in Jakarta," in *Journal of Physics: Conference Series*, 2020, vol. 1511, no. 1: IOP Publishing, p. 012002.
- [57] A. Sani, Y. Khristiana, A. U. Zailani, and T. Husain, "E-Business Adoption Models in Organizational Contexts on The TAM Extended Model: A Preliminary Assessment," in *2020 8th International Conference on Cyber and IT Service Management (CITSM)*, 2020: IEEE, pp. 1-5.
- [58] B. Waseso and A. Rachman, "Developing Agile ICT Project Model using Input-Process-Output Logic," 2020.
- [59] D. Antoni, F. Jie, and A. Abareshi, "Critical factors in information technology capability for enhancing firm's environmental performance: case of Indonesian ICT sector," *International Journal of Agile Systems and Management*, vol. 13, no. 2, pp. 159-181, 2020.
- [60] L. Melián-Alzola, M. Fernández-Monroy, and M. Hidalgo-Peñate, "Information technology capability and organisational agility: A study in the Canary Islands hotel industry," *Tourism Management Perspectives*, vol. 33, p. 100606, 2020.
- [61] C. Y. Yoon, "Analyzing Enterprise Smart Business Capability in a Smart Technology Environment," in *2020 3rd International Conference on Information and Computer Technologies (ICICT)*, 2020: IEEE, pp. 224-229.
- [62] C. Nitzl, "Management Accounting and Partial Least Squares-Structural Equation Modelling (PLS-SEM): Some Illustrative Examples," vol. 267, pp. 211-229, 2018, doi: 10.1007/978-3-319-71691-6_7.
- [63] N. Kock and P. Hadaya, "Minimum sample size estimation in PLS-SEM: The inverse square root and gamma-exponential methods," vol. 28, no. 1, pp. 227-261, 2018, doi: 10.1111/isj.12131.
- [64] M. Sarstedt, C. M. Ringle, and J. F. Hair, "Partial Least Squares Structural Equation Modeling," *Handbook of Market Research*, no. May 2017, pp. 1-40, 2017, doi: 10.1007/978-3-319-05542-8_15-1.