Pakistan Journal of Commerce and Social Sciences
2024, Vol. 18(3), 651-675
Pak J Commer Soc Sci

Integrating Religiosity with Technology Acceptance Model (TAM) and Technology Organization Environment (TOE) Frameworks: A Study on ICT Adoption in Micro and Small Enterprises

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Article History

Received: 30 May 2024 Revised: 11 Sept 2024 Accepted: 27 Sep 2024 Published: 30 Sept 2024

Abstract

This study aims to develop an innovative TOE-TAM-Religiosity model that combines the TOE framework, TAM, and religious dimensions in adopting Information and Communication Technology (ICT) in organizations, especially micro and small businesses (SMEs). The TOE-TAM-Religiosity Model describes and analyzes the complex interactions between organizational factors, perceptions of technology, and religious values. Religion in this context refers to cultural and ethical values that influence individual and organizational attitudes towards applying technology. Influence user attitudes and intentions when adopting ICT. This research involved 399 respondents who were SMEs who were determined using the Slovin formula. To test the causal relationship of the data in this research using a PLS-based structural equation approach using the SmartPLS as an analysis tool. This research found a positive influence between technology, organization, environment, Religiosity, perceived usefulness (PU) and perceived ease of use (PEU) on ICT adoption. Furthermore, PU can bridge technology and ICT adoption, while PEU can be a bridge between organizations and ICT adoption. The results of this research can provide a framework and guidelines for SME management to improve their business performance after implementing ICT.

Keywords: Technology organization environment, Technology acceptance model, religiosity, ICT adoption, MSEs, Perceived usefulness, Perceived ease of use.

1. Introduction

In 2022, Indonesia will be third in Asia in internet usage, with users reaching 204.7 million, just behind China and India (InternetWorldStats, 2022). Indonesia's digital landscape is dominated by social media, particularly Facebook, which has 129.9 million users and significant e-commerce activity, with 158.6 million transactions via digital payments (Hootsuite, 2022). This rapid digital growth creates an environment that supports organizational adaptation and development, especially for MSEs, which play an essential role in competition in the global market (Lubis & Junaidi, 2016).

Even though the digital era offers many opportunities, the adoption rate of ICT among SMEs in Indonesia is still low, with an adoption rate of 10% (BPS, 2023). This low utilization reflects the large performance gap between large and small companies, which hinders SMEs from achieving optimal market and sales growth goals (Kumar et al., 2024; Nazir & Khan, 2024; Ritz et al., 2019). Various developing countries consider SMEs to have a very important role in building the economy, creating various jobs, and helping to overcome various poverty that occurs in their countries (Nazir & Khan, 2024;Afolayan et al., 2015; Tarutė & Gatautis, 2014). During the monetary crisis that hit Indonesia in 1997 and 1998, based on various historical data, it was shown that SMEs had resilience and a level of adaptation that tended to be good when compared to medium-scale businesses or larger businesses (Octavia et al., 2020).

Various problems can be seen widely which generally appear in various developing countries, this can be reflected in the low adoption of ICT elements in various SMEs, so this case requires a more practical solution (Kumar et al., 2024; Nazir & Khan, 2024). Although ICT is able to improve and change various strategies at the micro level, various existing literature has explained that the implementation produced by SMEs to face various challenges that are more complex and related to the level of operational efficiency, effectiveness, to competitiveness owned by a company (Shailer et al., 2000), in addition, various perceptions in terms of improving work results and intentions to carry out behaviors that tend to be broader also have an influence on the trend of technology use, so that various factors that can influence such as religiosity factors, are able to provide a very important role in the process of making various decisions with various considerations that are close in terms of ethics and morals (Venkatesh & Davis, 2000).

Many researchers use models or frameworks to view organizational behaviour when adopting ICT, such as the TAM, TOE, Theory of Planned Behavior (TPB) and Theory of Reasoned Action (TRA) (Ahmad & Kasim, 2020; Bryan & Zuva, 2021; Hameed & Gamagedara Arachchilage, 2016; Handra, 2022; Hannoon, 2019; Kumar et al., 2024; Nazir & Khan, 2024; Novita & Helena, 2021; Sallehudin et al., 2019). Tornatzky & Fleischer, (1990) and Rogers (2003) provide consideration in looking at organizational behaviour to adopt ICT to choose the TOE framework compared to other theories because TOE involves factors from three domains, namely technology, organization and environment, and TOE is flexible. It can be expanded to accept more factors that help identify drivers and barriers

to technology adoption (Pudjianto & Hangjung, 2010). Apart from that, several researchers also use the religiosity factor to examine the behaviour of ICT adopters in an organization. The religiosity factor can be relevant for measuring ICT adoption because religion and spiritual beliefs can influence individual attitudes and behaviour towards technology (Majid, 2021; Sholihah et al., 2023; Sudarsono et al., 2022).

However, further research is needed with the aim of examining the various aspects that arise comprehensively, and there is no research conducted in integrating a religion in the TOE and TAM models that exist in the analysis of an organization's intention to adopt ICT. Thus, the research conducted often produces a relationship that is considered contradictory to the various factors that have been explained above.

Therefore, this research was prepared to develop a more innovative model by combining the TOE framework, TAM, and religious dimensions to overcome the various gaps. Another aim of this research is to build a theoretical and comprehensive model to understand the factors that encourage and inhibit ICT adoption. Apart from that, it is hoped that the model from this research can provide more practical insight for SMEs in strengthening their commitment to the various technologies they will adopt and the business performance they carry out.

2. Literature Review and Hypotheses Development

2.1. Technology and Perceived Usefulness (PU)

The technology created has a big influence on the PU, so this shows that the higher the level of sophistication and relevance of the technology applied, the greater the utility felt by each individual or organization towards the technology. So, if a technology has the ability to facilitate a person's work or is able to increase the level of efficiency, then the resulting view of its various uses tends to produce a positive view (Venkatesh et al., 2003). Several studies have shown that technology can have a significant impact on PU. (Tripopsakul, 2018) researched the factors influencing entrepreneurial students' decisions to adopt social media as a business platform in Thailand. This research involved a survey of 357 entrepreneurial student respondents living in Thailand. The results show that technology influences PU. These findings are consistent with previous studies examining adopting other types of ICT (Ahmad et al., 2019). Based on the factor loading results from SEM analysis, the technological context has the most substantial positive impact on PU. Based on the explanation above, the following hypothesis can be proposed.

- H1: Technology has a positive effect on perceived usefulness.

2.2. Organizational Characteristics and Perceived Ease of Use (PEU)

The relationship between organization and PEU suggests that organizational characteristics, such as policies, procedures, and work culture, can influence how easy an individual or organization feels to use technology. When organizations create an

environment that supports and facilitates the excellent use of technology, the PEU will increase. Conversely, if organizational barriers hinder technology use, PEU will decrease (Davis, 1989). Several studies have shown that organizational factors can significantly influence perceived ease of use. (Tripopsakul, 2018) examined the factors that influence student entrepreneurs' decisions to adopt social media as a business platform in Thailand, and the results show that organizations influence PEU. Another study by Gutierrez et al. (2015) explored organizational culture's influence on PEU in using cloud computing systems by business professionals in the UK. The results show that the organizational factors studied significantly influence the perceived ease of use of cloud computing services in the UK. Based on the explanation above, the following hypothesis can be proposed.

- H2: Organization characteristics have a positive effect on perceived ease of use.

2.3. Perceived Usefulness (PU) and ICT Adoption

PU in ICT adoption refers to an individual's or organization's belief that using ICT provides benefits or added value in the performance of its activities. When individuals or organizations believe that ICT will help increase productivity and efficiency or achieve their goals, they are more likely to adopt the technology (Kumar et al., 2024; Nazir & Khan, 2024). In other words, the higher the level of PU towards ICT, the greater the possibility that a person or organization will accept and apply this technology in their activities (Davis, 1989). (Tripopsakul, 2018) examined the factors influencing entrepreneurial students' decisions to use social media as a business platform in Thailand. The research results show that PU positively and significantly affects individuals' intentions to use social media. Eze et al, (2021) also found similar results in their research, the research was related to the adoption of existing technology among lecturers at a university in Nigeria, India, so that in this study the PU produced tended to be significant so that it could influence various teacher intentions in adopting various technologies. So, based on the explanation above, the following hypothesis can be proposed.

- H3: Perceived usefulness has a positive effect on ICT adoption.

2.4. Perceived Ease of Use (PEU) and ICT Adoption

PEU influences the adoption of ICT, which can be used to see how easy it is for individuals or organizations to utilize ICT in their daily activities or work. In addition, the TAM model is a root of this concept which provides the opinion that a perception related to the ease of use of technology is a key factor in influencing the intention of individuals or organizations to accept and adopt their various technologies ((Kumar et al., 2024; Nazir & Khan, 2024; Davis et al., 1989). Investigations into the impact of PEU on ICT adoption have been conducted in previous studies. Shukla & Sharma (2018) conducted research on the various impacts of PEU generated on the implementation of mobile shopping applications carried out by each consumer, resulting in a statement that PEU has a positive and significant impact on consumer intentions in using various mobile shopping applications. Another

study is a study conducted by Aulawi et al. (2020) which can examine the various influences of PEU on various adoptions in terms of technology in an application-based service, resulting in a fact that PEU significantly has a positive impact on individual intentions in using an application based on transportation services, and produces that PEU significantly has a positive impact on individual intentions in utilizing applications based on transportation services. So, based on the explanation above, the following hypothesis can be proposed.

- H4: Perceived ease of use has a positive effect on ICT adoption.

2.5. Religiosity and ICT Adoption

Often, the religiosity that a person has is associated with various moral and ethical values, so that every person who has religious beliefs is able to provide an assessment of a technology from a moral and ethical perspective that can be applied in the teachings that they practice. This can influence their decisions to accept or reject certain technologies, especially if the technology conflicts with their spiritual values. Although research on the influence of religion on ICT adoption is limited, several studies are exploring this relationship. Charag et al. (2020) found that religiosity influences the intention to use mobile banking among Islamic banking customers in Kashmir. This finding aligns with Majid (2021) research findings, which also found that religion influences SMEs' intentions to use Sharia Fintech. Research by Majid, 2021; Sholihah et al. (2023); Sudarsono et al. (2022) show that religiosity has a positive effect on the adoption of mobile banking services. From Muslim customers. These results state that the higher a person's level of religiosity, the greater their intention to use technology. Based on the explanation above, the following hypothesis can be proposed.

- H5: Religiosity has a positive effect on ICT adoption.

2.6. Environmental Factors and ICT Adoption

Environmental factors play a determining role in individuals' or organizations' adoption of ICT. In this context, the environment includes various external factors influencing how ICT is received, adopted and used (Rogers, 2003). Various studies have been conducted exploring how the environment can influence the adoption of ICT in various contexts. Harun et al. (2022) conducted a study related to how the environment is an external factor that can influence the adoption of big data technology. In addition, they also concluded that several environmental factors such as competition, external support provided, and several issues of a proviso nature cannot have a significant influence on the intentions of educational institutions in Malaysia to adopt various big data technologies.

Hikmet et al. (2008) conducted a study by paying attention to the environmental impacts generated by organizations that provide encouragement for technological innovation, the availability of resources, and various cultures that provide support in implementing technology, all of which have a major influence on the adoption of digital technology in

order to provide health services. Gutierrez et al. (2015) also provide support for this finding, by showing that various environmental factors such as competitive pressure and relationships with business partners have a significant influence on the intentions of an organization in the UK to adopt cloud-based computing technology. So, based on the arguments outlined, it can be formulated in the hypothesis below.

- H6: The environmental factors have a positive effect on ICT adoption.

2.7. Mediation of Perceived Usefulness (PU) Between Technology and ICT Adoption

The application of ICT is influenced by the PU provided, so if individuals assess technology as something very valuable in order to increase the level of efficiency, productivity, or quality of life that they get, then they are likely to have the ability to adopt this technology. Various understandings are obtained in depth regarding how PU can act as a mediator in a relationship between technology and ICT adoption, so that this allows an organization to develop more effective technology to increase the level of perception of the usefulness of the technology they have, so that this can provide encouragement for wider adoption and use (Venkatesh et al., 2003). In addition, research conducted by Tripopsakul (2018) was able to identify various factors that influence entrepreneurial decisions made by students in adopting social media so that this can provide a more positive influence on the relationship between technology and adoption. In addition, this is also an indication that the perception obtained regarding the benefits of social media as a business platform can have an impact on various decisions in adopting the technology.

- H7: Perceived usefulness plays a mediating role between technology influence and ICT adoption.

2.8. Mediating Role of Perceived Ease of Use Between Technology and ICT Adoption

Based on the TAM theory, PEU is a very crucial factor that is able to influence the user's intention to adopt and use a technology, so this shows that when technology has the ability to be easily understood by its users, this gives them the possibility to accept it and also improve their abilities. Perceived ease of use mediates the relationship between technology characteristics (functionality, Usability, and technological superiority) and user behavior (e.g., technology adoption). In the context of ICT adoption, convenience is felt to be an essential factor influencing individual or organizational decisions in using or adopting a technology (Davis, 1989). Tripopsakul (2018) examined the factors affecting entrepreneurial students' decisions in Thailand to use social media as a business platform and found that PEU positively influenced the relationship between organization and technology adoption. These results confirm perceptions regarding the ease of use of social media as a platform. The business world plays a role in influencing consumer decisions when adopting technology.

Research by Puspitaningtias et al. (2022) investigated the factors influencing the adoption of social media technology among micro, small and medium enterprises (MSMEs). Research findings show that PEU functions as a mediator between organizational factors

and social media adoption among MSMEs. Based on these results, the following hypothesis is formulated.

- H8: Perceived ease of use plays a mediating role between organizations influence ICT adoption.

Based on the description above, the conceptual framework of this research is presented in Figure 1 below:

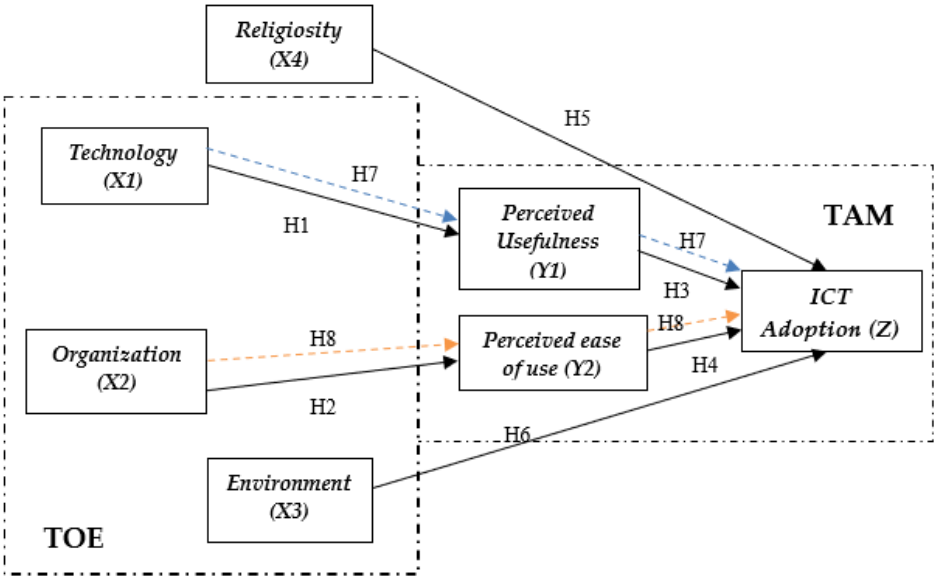

Figure 1: Conceptualization of Research Model

As shown in Figure 1. The conceptual model of this research consists of 4 (four) exogenous latent variables, namely Technology, organization, environment, and religiosity and 3 (three) endogenous latent variables, namely PE, PEU, and ICT Adoption. The relationship between the seven latent variables is causal, where technology will influence PE and will also impact Technology adoption. Organization will influence PEU and affect ICT adoption; and PE, PEU, environment, and religiosity will influence ICT adoption.

3. Methodology

The data source in this research uses primary data, where information is obtained directly from respondents, namely MSE owners in Jambi Province, Indonesia, or from primary sources, which are then processed and analyzed to identify solutions or overcome problems relevant to this research. The population in the study included all MSE owners spread across Jambi Province, Indonesia.

3.1. Measures

Based on the framework and hypotheses prepared, this research includes 4 (four) exogenous latent variables and 3 (three) endogenous latent variables. Exogenous latent variables include Technology, Organization, Environment, and Religiosity. Meanwhile, endogenous latent variables include PU, PEU, and technology adoption. This research uses 32 measurement items to find the relationship between these variables. All items are taken from various existing literature. The measurement scale in this study uses a 5-point Likert scale. Answers in categories 1 were most disagreed with, and 5 were most agreed.

3.2. Data Collection

Before distributing the questionnaire to respondents, a pilot test was carried out on 30 samples. The pilot test carried out in this research aims to test the effectiveness of the survey instrument (questionnaire) that will be distributed to respondents (Abdillah & Hartono, 2015). From the pilot test results, it was stated that 32 measurement items in the research were declared valid. Using the Slovin technique formula for sample determination, a sample size (n) of 399 respondents was obtained. In this research, a proportional sample is obtained using a probability sampling technique with a sampling method, namely proportional random sampling. After the sample size was determined based on each region in Jambi Province, Indonesia, distribution was carried out using the proportional random sampling method using the web-based Random Integer Generator application (https://www.random.org/integers/) on the list of MSEs obtained from the Department of Cooperatives and MSMEs Jambi Province, Indonesia. This research uses Structural Equation Modeling (SEM) causality analysis based on components or variances, known as Partial Least Squares (PLS), using SmartPLS 3 software.

3.3. Demographic Profile of Respondents Methodology.

Factors that influence SMEs actors in adopting technology, information and communication generally come from the MSEs' internal characteristics. By therefore, to analyze the factors that influence the use of ICT In this study, researchers used respondent characteristics which include gender, business category, age, education level, occupation, income business per month, type of ICT used, business location, length of business, and religion. as seen in Table 1 below.

Table 1: Characteristics of Respondents

Information		**Amount**	**Presentation**	**Total number**	**Presentation**
Gender	Man	180	45.11%		
	Woman	219	54.89%		
Total				**399**	**100%**
Business Type Category	Culinary Business	216	54.14%		
	Fashion Business	28	7.02%		
	Education Business	1	0.25%		
	Automotive Business	18	4.51%		
	Agribusiness	18	4.51%		

	Tour & Travel Business	4	1.00%		
	Creative Product Business	28	7.02%		
	Internet Technology Business	36	9.02%		
	Beauty Business	12	3.01%		
	Cleaning Services Business	9	2.26%		
	Children's Needs Business	6	1.50%		
	Printing Business	23	5.76%		
Total				**399**	216
Age	< 20	44	11.03%		
	20 - 30	135	33.83%		
	31 - 40	111	27.82%		
	41 - 50	76	19.05%		
	51 - 60	28	7.02%		
	> 60	5	1.25%		
Total				**399**	**100%**
Education	Elementary school	10	2.51%		
	Junior High School	25	6.27%		
	Senior High School	243	60.90%		
	Bachelor	116	29.07%		
	Master	5	1.25%		
Total				**399**	**100%**
Work	Civil servant /Lecturer/ Teacher	14	3.51%		
	Private employees	16	4.01%		
	Entrepreneur	276	69.17%		
	Students	49	12.28%		
	Retired/Housewife/Other	44	11.03%		
Total				**399**	**100%**
Monthly Business Income	Less than 2 million Rupiah	111	27.82%		
	2 to 6 million Rupiah	210	52.63%		
	7 to 10 million Rupiah	46	11.53%		
	More than 10 million Rupiah	32	8.02%		
Total				**399**	**100%**
ICT Used	Using a computer	20	5.01%		
	Using the Internet	263	65.91%		
	Using Computers and the Internet	116	29.07%		
Total				**399**	**100%**
How long it takes to start a business	1-3 Years	154	38.60%		
	4-5 Years	95	23.81%		
	6-7 Years	61	15.29%		
	8-9 Years	26	6.52%		
	Over 9 Years	63	15.79%		
Total				**399**	**100%**
Religion	Islam	383	95.99%		
	Hindu	0	0.00%		
	Christian	13	3.26%		
	Buddha	3	0.75%		
Total				**399**	**100%**

Based on the results of Table 1, the characteristics of respondents according to business type are primarily found in the culinary business sector, with a total of two hundred and sixteen (216) people or 54.1%. For age characteristics, respondents of productive age between twenty (20) to thirty (30) years dominate up to 33.8% of all respondents. Judging from the level of education, it can be seen that more respondents had a senior high school education, the most dominant being 60.9% of all respondents. Judging from the job characteristics, it is known that the respondent's job as an entrepreneur/entrepreneur is 69.2% more dominant than other respondents. Judging from their business income, respondents with business income between 2 million and less than 6 million numbered two hundred and ten (210) people, which is 52.6% higher than the income of other respondents. For ICT use, respondents who only use the Internet in their business are 65.9% more dominant than those using computers or both. The characteristics of the length of time needed to start a business show that the period is one (1) to three (3) years, with the highest value being 38.6%. Meanwhile, the religious characteristics believed by SMEs owners show that Muslim respondents dominate 96% of the total respondents.

4. Data Analysis and Results

The type used in this research is explanatory research. In this research, data analysis is divided into two categories, namely descriptive statistics and inferential statistics. Descriptive statistical analysis provides an empirical description of the data collected in this research, using average statistics as one of the descriptive methods. Inferential statistics in this research use component or variance-based SEM causality analysis, known as PLS. This research uses SmartPLS software version 3.0. This is because the theoretical basis component in PLS can be used on a solid or weak theoretical basis, even exploratory (Solimun, et al., (2019); Ghozali, (2011). In the initial stage, the researcher evaluated the instrument before the questionnaire was given to the research respondents. This evaluation process aims to measure and ensure the accuracy of the instruments used and test the reliability of the questionnaire. Evaluation of the research instruments involves testing the validity using the product moment correlation method and testing the reliability using the Cronbach alpha formula try to be involved in evaluating this research instrument, and calculations are carried out using SPSS 22 software. After all the research instruments are valid, then questionnaires are distributed to 399 SMEs owners from various regions in Jambi, Indonesia. Next, inferential statistical analysis is carried out by conducting discriminant validity testing for each indicator of each variable in this research, structural model testing (inner model), and hypothesis testing to see the direct effect and mediation effect.

4.1. Measurement Model Assessment

At the beginning of testing for this research model. Testing the convergent validity of the research model was carried out. Each indicator is considered reliable if it has a load factor value above 0.70. However, a value range between 0.5 to 0.6 can still be justified (Ghozali & Latan, 2015). In this research, to ensure the quality of the research model, the minimum loading factor value is 0.7. The three latent indicators of technology have a minimum threshold value of 0.7. All five organizational latent indicators have a minimum threshold

value of 0.7. For the four latent environmental indicators, only three have a minimum threshold value, namely 0.7, while one indicator is below the threshold, namely government support (X3.1) of 0.341. The five latent indicators of religiosity have a minimum threshold value of 0.7. The five PU latent indicators have a minimum threshold value of 0.7. The five PEU latent indicators have a minimum threshold value of 0.7. Finally, the five latent indicators of Technology Adoption have a minimum threshold value of 0.7. Furthermore, latent indicators that are below the threshold, namely Government Support (X3.1), will be dropped from this research model. In this way, the construction of the initial research model will change after indicator reduction and become the final research model. After that, retesting was carried out in which each latent indicator had a minimum threshold of 0.7.

Discriminant validity in SEM measures the degree to which a test is uncorrelated with other tests that assess a different trait. This is evaluated along with convergent validity, and the measurement of how different the constructs are from each other is measured. To test discriminant validity, three tests were applied: Heterotrait-Monotrait Criteria, Fornell-Larcker criteria, and cross loading.

Table 2: Fornell-Larcker Criterion

	ICT Adoption	**PEU**	**Environ-ment**	**PU**	**Organiz-ation**	**Religiosity**	**Techn-ology**
Techn. Adopt	0.903						
PEU	0.797	0.926					
Environment	0.798	0.655	0.885				
PU	0.789	0.736	0.798	0.918			
Organization	0.755	0.713	0.745	0.716	0.800		
Religiosity	0.536	0.463	0.559	0.488	0.583	0.960	
Technology	0.750	0.703	0.642	0.734	0.785	0.503	0.902

The Heterotrait-Monotrait ratio (HTMT) results shown in table 3 show that each construct has a value below 0.90, so it can be confirmed that the construct has adequate discriminant validity.

Table 3: Heterotrait-Monotrait Ratio (HTMT)

	ICT Adoption	**PEU**	**Environ-ment**	**PU**	**Organiz-ation**	**Relig-iosity**	**Techn-ology**
Technology Adoption	-						
PEU	0.837	-					
Environment	0.880	0.719	-				
PU	0.869	0.769	0.878	-			
Organization	0.833	0.777	0.864	0.786	-		
Religiosity	0.557	0.478	0.611	0.504	0.639	-	
Technology	0.821	0.768	0.732	0.797	0.896	0.541	-

The next stage will be to validate discriminant analysis to ensure that each construct in the research model can be differentiated from other constructs. The results of this analysis are presented in Table 4.

Table 4: Cross Loadings

	ICT Adoption	PEU	Environ-ment	PU	Organiz-ations	Relig-iosity	Tech-nology
X11	0,686	0,560	0,611	0,689	0,689	0,458	0,907
X12	0,677	0,619	0,564	0,681	0,705	0,458	0,930
X13	0,668	0,736	0,561	0,613	0,737	0,447	0,870
X21	0,658	0,560	0,650	0,649	0,826	0,483	0,673
X22	0,672	0,678	0,648	0,608	0,891	0,506	0,714
X23	0,473	0,445	0,500	0,417	0,726	0,459	0,489
X24	0,651	0,619	0,620	0,619	0,813	0,442	0,643
X25	0,535	0,510	0,546	0,545	0,729	0,446	0,591
X32	0,634	0,530	0,863	0,658	0,654	0,551	0,520
X33	0,711	0,619	0,873	0,698	0,628	0,444	0,563
X34	0,764	0,586	0,917	0,755	0,695	0,496	0,615
X41	0,522	0,455	0,553	0,479	0,574	0,959	0,499
X42	0,499	0,428	0,510	0,450	0,544	0,956	0,486
X43	0,526	0,449	0,557	0,487	0,578	0,967	0,483
X44	0,513	0,455	0,537	0,458	0,563	0,963	0,479
X45	0,511	0,435	0,523	0,467	0,537	0,955	0,470
Y11	0,810	0,654	0,727	0,910	0,665	0,461	0,687
Y12	0,822	0,665	0,751	0,926	0,661	0,447	0,693
Y13	0,797	0,685	0,746	0,915	0,681	0,435	0,667
Y14	0,825	0,699	0,723	0,927	0,637	0,447	0,657
Y15	0,805	0,677	0,715	0,913	0,645	0,448	0,665
Y21	0,752	0,924	0,632	0,712	0,661	0,436	0,656
Y22	0,705	0,930	0,582	0,662	0,652	0,391	0,659
Y23	0,716	0,925	0,572	0,637	0,652	0,436	0,631
Y24	0,751	0,921	0,619	0,681	0,673	0,442	0,658
Y25	0,763	0,931	0,627	0,714	0,661	0,438	0,651
Z11	0,890	0,726	0,752	0,826	0,667	0,485	0,693
Z12	0,894	0,686	0,668	0,753	0,670	0,482	0,671
Z13	0,890	0,747	0,664	0,735	0,688	0,464	0,648
Z14	0,907	0,717	0,749	0,814	0,693	0,463	0,669
Z15	0,933	0,720	0,759	0,855	0,691	0,520	0,703

Table 4 displays the cross-loading of each item used to measure the construct. Identifying and addressing cross-loadings is critical to ensuring measurement models have good discriminant validity, ultimately improving research results' reliability and interpretability. The results from Table 4 show that all loading indicators on the construct > cross-loading. This can be seen in the cross-loading value of the indicators for each variable in this research model, such as the Technology variable for each indicator, namely X11 with a value of 0.907, X12 with a value of 0.930 and X13 with a value of 0.870. For each indicator in the Organizations variable, namely X21 with a value of 0.826, X22 with a value of 0.891, X23 with a value of 0.726, X24 with a value of 0.813 and For the Environment variable, namely X32 with a value of 0.863, X33 with a value of 0.873 and X34 with a value of 0.917. For the Religiosity variable, namely X41 with a value of 0.959, X42 with a value of 0.956, X43 with a value of 0.967, X44 with a value of 0.963, and For the PU variable, namely Y11 with a value of 0.910, Y12 with a value of 0.926, Y13 with a value of 0.915, Y14 with a value of 0.927, and Y15 with a value of 0.913. For the PEU variable, namely Y21 with a value of 0.924, Y22 with a value of 0.930, Y23 with a value of 0.925, Y24 with a value of 0.921, and Y25 with a value of 0.931. For the ICT Adoption variable, namely Z11 with a value of 0.890, Z12 with a value of 0.894, Z13 with a value of 0.890, Z14 with a value of 0.907, and Z15 with a value of 0.933. These results show that the indicator loading value of each indicator is undoubtedly more significant than the cross-loading of other constructs. So, the model in this study meets the requirements for discriminant validity.

4.2. Structural Assessment Model

Next, this research will conduct an internal model evaluation test, including testing the significance of direct effects. Internal models, or structural models, refer to the evidence from the model. Table 5 shows the path coefficient values and P values to test the significance of the direct effect (total effect)

Table 5: Total Effect (Mean, STDEV, t-Values, P-Values)

	Original Sample	Sample Mean	Standard Deviation (STDEV)	t Statistic (|O/STDEV|)	P Values
PEU-> ICT Adoption	0.279	0.275	0.038	7,371	0,000
Environment -> ICT Adoption	0.174	0.180	0.049	3,535	0,000
PU-> ICT Adoption	0.511	0.510	0.046	11,094	0,000
Organization ->PEU	0.713	0.714	0.035	20,174	0,000
Religiosity -> ICT Adoption	0.060	0.059	0.030	1,979	0.048
Technology ->PU	0.734	0.739	0.044	16,730	0,000

Table 5 presents the significance test results, which show the direct influence relationship between the variables in the research model. To see the level of statistical significance in Table 5, you can look at the 't statistic' and 'p value' columns.

The results of data analysis for the first hypothesis show that technology has a positive influence on PU. This can be seen from the path coefficient value of 0.734 with a p-value of 0.000. For the second hypothesis, it shows that the organization has a positive influence on PEU. This can also be seen from the path coefficient value of 0.713 with a p-value of 0.000. The third hypothesis shows that PU positively influences ICT adoption; this can be seen from the path coefficient value of 0.511 with a p-value of 0.000. The fourth hypothesis shows that PEU positively influences ICT adoption; this can be seen from the path coefficient value of 0.279 with a p-value of 0.000. The fifth hypothesis shows that religiosity positively influences ICT adoption; this can be seen from the path coefficient value of 0.060 with a p-value of 0.048. The sixth hypothesis shows that the environment positively influences ICT adoption. This can be seen from the path coefficient value of ICT adoption. This can be seen from the path coefficient value of 0.0174 with a p-value of 0.000. The results of these hypotheses show a statistically strong relationship between the variables in this research model.

Hypothesis testing was carried out by bootstrapping the model of this research to see the direct effect and mediation effect. The results of the bootstrapping model in this research can be seen in Figure 2 below:

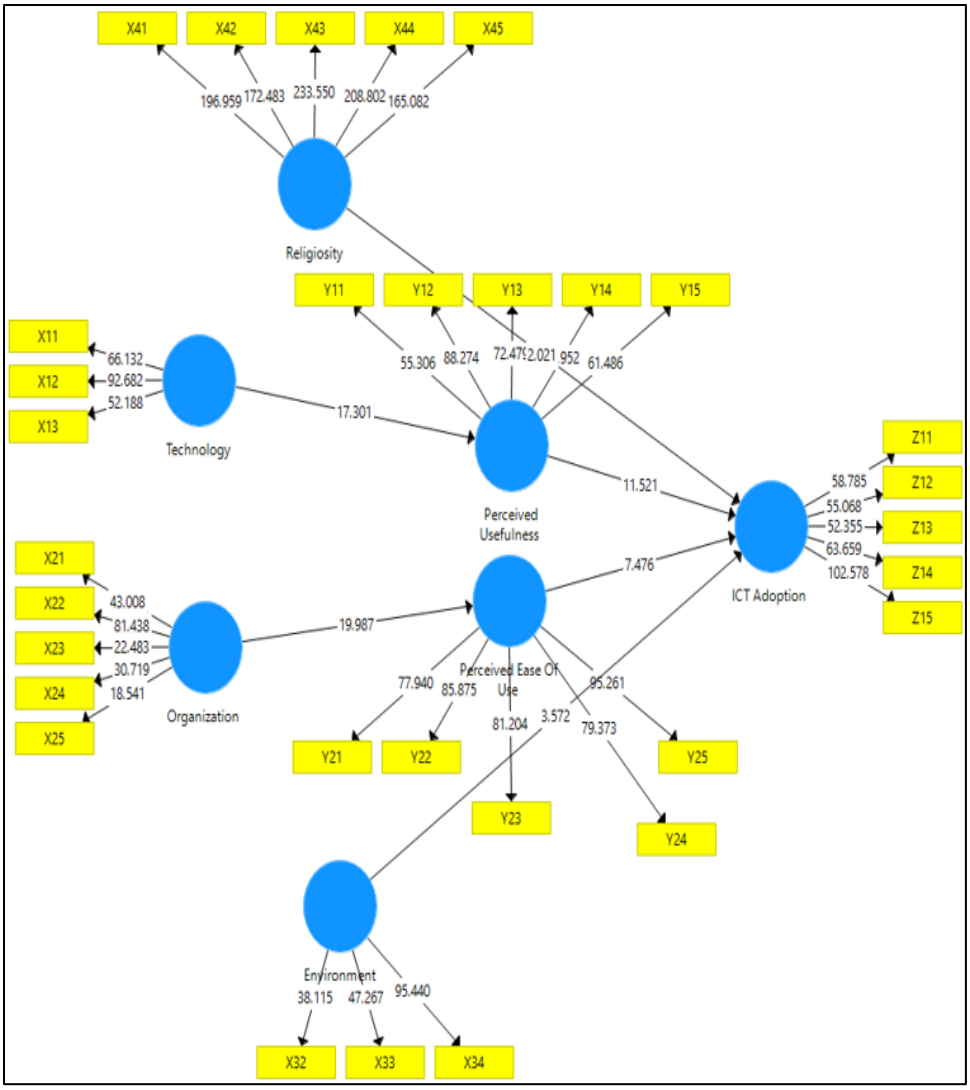

Figure 2: Structural Model – Hypotheses Testing

Based on the results of the data analysis that has been carried out, a summary of the results of hypothesis testing of the direct influence between variables in the research model can be seen in Table 6:

Table 6: Summary of Direct Effect Hypothesis Testing Results (Total Effect)

	Relationship Hypothesis	Original Sample	t Statistics (|O/STDEV|)	P Values	Decision
Technology ->PU	(+)	0.734	16,730	0,000	Hypothesis Accepted
Organization ->PEU	(+)	0.713	20,174	0,000	Hypothesis Accepted
PU-> ICT Adoption	(+)	0.511	11,094	0,000	Hypothesis Accepted
PEU-> ICT Adoption	(+)	0.279	7,371	0,000	Hypothesis Accepted
Religiosity -> ICT Adoption	(+)	0.060	1,979	0.048	Hypothesis Accepted
Environment -> ICT Adoption	(+)	0.174	3,535	0,000	Hypothesis Accepted

The next inner model evaluation test carried out in this research is the significance test of the indirect effect (intervening/mediation effect), namely: (1) testing whether PU mediates the relationship between technology and ICT adoption of MSEs in Jambi Province, Indonesia, (2) testing whether PEU mediating the relationship between organizations and ICT adoption by MSEs in Jambi Province, Indonesia. To be able to see the indirect influence between latent variables in this research can be seen in Table 7 below:

Table 7: Specific Indirect Effect (Mean, STDEV, t-Values, P-Values)

	Original Sample	Sample Mean	Standard Deviation (STDEV)	t Statistics (|O/STDEV|)	P Values
Organization -> PEU -> ICT Adoption	0.199	0.196	0.030	6,716	0,000
Technology -> PU -> ICT Adoption	0.375	0.377	0.042	8,845	0,000

Next, a mediation analysis was conducted to see the indirect influence between the latent variables in the research model. To determine the magnitude of the path coefficient, refer to the procedure developed by Cepeda et al., (2017). The results of the analysis are shown in table 8.

Table 8: Path Coefficients (Mean, STDEV, t-Values, P-Values)

	Original Sample	Sample Mean	Standard Deviation (STDEV)	t Statistics (|O/STDEV|)	P Values
PEU-> ICT Adoption	0.279	0.275	0.038	7,371	0,000
PU-> ICT Adoption	0.511	0.510	0.046	11,094	0,000
Organization ->PEU	0.713	0.714	0.035	20,174	0,000
Technology ->PU	0.734	0.739	0.044	16,730	0,000

The evaluation results of the structural model and the indirect effect influence the significance test according to the procedure proposed by Cepeda et al., (2017). can be seen briefly in Table 9.

Figure 9: Summary of Hypothesis Testing Results for Indirect Effect (Specific Indirect Effect)

	Original Sample	T Statistics (|O/STDEV|)	P-Values	Decision	Types of Mediation
Organization -> PEU -> ICT Adoption	0.199	6,716	0,000	Hypothesis Accepted	*Partial Mediation*
Technology -> PU -> ICT Adoption	0.375	8,845	0,000	Hypothesis Accepted	*Partial Mediation*

5. Discussion

This study has substantiated that technology significantly influences PU among MSEs in Jambi Province, Indonesia, with its adoption proving critical in enhancing work effectiveness, productivity, information quality, and long-term benefits. The dimensions of technology that impact PU include relative advantages, compatibility, and complexity. Other studies have also noted a positive correlation between PU and technology attributes, which has a degree of consistency with these findings (Ahmad et al. 2020; Hannoon, 2019; Qalati et al., 2020; Qin et al. 2020; Tripopsakul, 2018).

One of the quite important roles that can have an impact and influence on PEU in SMEs is the existence of an organizational structure, as well as several elements such as support provided by top management, the level of organizational readiness, costs incurred, and various aspects of culture and organizational size that directly have an impact on PEU, so that this provides convenience or actually becomes an obstacle to the adoption of ICT. The findings obtained in this study are also in line with previous research by emphasizing how important the infrastructure in an organization is in the adoption process (Gutierrez et al., 2015; Hannoon, 2019; Qalati et al., 2020; Qin et al., 2020; Tripopsakul, 2018).

PU can provide a significant direct influence so that it is able to provide predictions on ICT adoption, this has an impact on several user engagement metrics such as their intentions, their actual level of use, and the satisfaction obtained by users, so that this gives them the

possibility to provide recommendations on a technology. In addition, their findings also further strengthen them in a literature that emphasizes that PU is a very important factor in accepting a technology (Kumar et al., 2024; Abdekhoda et al., 2019; Erwanti, 2022; Gholami et al., 2018; Natakusumah et al.,2023; Qin et al., 2020; Usman et al., 2021).

Likewise, the adoption of ICT is influenced by PEU, which is able to influence various aspects such as ease of learning, having the ability to control the system, a higher level of flexibility, to the level of mastery and its general usefulness. The findings in this study also provide support for the theory of technology acceptance which states that the easier a technology is to use, the greater the likelihood that the technology will be adopted (Kumar et al., 2024; Abdekhoda et al., 2019; Erwanti, 2022; Gholami et al., 2018; Natakusumah et al., 2023; Usman et al., 2021).

Previous research has also shown that the business environment has an external role, so this is very important in creating a technology strategy in an organization that is consistent with the research produced. Several factors such as support and partners in business, perceived market trends, and pressures obtained by consumers are in fact key roles in adopting ICT. The study also identified various significant influences generated in the external environment on the adoption of information and communication technology (Charag et al., 2020; Erwanti, 2022; Majid, 2021; Natakusumah et al., 2023; Obeid & Kaabachi, 2016).

There is an indication that ICT adoption can be significantly influenced by religiosity as evidenced by people's participation in various religious activities, their practices, beliefs, and their level of adherence to religious teachings and the role of their religion in their lives which contribute as major predictors (Bhatti et al., 2016). Thus, the findings in this study underline that various religious values have an important role in making business decisions and implementing technology, and various other things that can strengthen their findings from other studies (Charag et al., 2020; Erwanti, 2022; Majid, 2021; Natakusumah et al., 2023; Obeid & Kaabachi, 2016).

The results of the mediation analysis conducted were able to show that a relationship between technology, organizational factors and ICT adoption was significantly mediated by PU and PEU, so that the findings of this study can provide support for the TAM theory which emphasizes the role of PU and PEU which are the main factors as a link in the adoption process (Puspitaningtias et al., 2022; Tripopsakul, 2018).

Some valuable information related to the adoption of ICT in an organization, especially SMEs in Jambi Province has been provided in this study, so that this study emphasizes the importance of technology, organizational factors, PU, PEU, religion, and the environment. In addition, the findings of this study also underline the need for various contextual approaches and a higher level of accuracy in implementing technology, so as to be able to provide consideration of these factors in the ICT adoption process. Therefore, SMEs also

have the potential to increase the level of efficiency in terms of operations and are able to strengthen their competitive position in the digital market.

5.2 Managerial Implications

There are several practical implications found in this study, especially for SMEs in Jambi Province or may also be considered relevant to similar contexts around the world. Therefore, based on the utilization of more optimal results, Education Training and Development is recommended that: SME managers must be able to design and participate in implementing various training programs that can increase the level of knowledge related to the benefits of technology that can be used to improve PU, especially for employees. In addition, in terms of optimizing the organizational structure, it is necessary to evaluate and adjust the structure they have in order to provide support for ICT integration that leads to more effective PEU. The user interface design must also be developed to be more intuitive and user-friendly; this is important in increasing PEU and facilitating the adoption of technology. The integration of religious values is also needed, considering the high influence of religious values in the adoption of ICT, so that it can be done by combining various spiritual values in a policy and practice in the organization in order to be able to provide harmony in the use of technology with various norms and cultures and ethics owned by each employee. Further monitoring and adaptation to the environment, make SMEs have to monitor various environmental changes that can affect the adoption of ICT and be able to adjust the various strategies they have if necessary. Policy Development, which is a form of formulating policies that can encourage and provide support for the implementation of ICT, so as to increase the integration of the sustainability of technology. So, in overcoming these various aspects, it can be done by involving SMEs with technology, so as to increase the level of operational efficiency and strengthen their competitive position in terms of the digital economy.

6. Conclusion

This study has succeeded in identifying various factors that can influence the desire of SMEs in Jambi Province, Indonesia, to implement Information and Communication Technology (ICT). Integrating the TAM framework, TOE and dimensions of religiosity, this research has built a solid theoretical foundation for assessing ICT adoption in SMEs. Using a quantitative field survey, which involved administering a self-administered questionnaire to 399 SMEs, enabled in-depth data collection and analysis.

The resulting hypothesis test has shown that there are several variables that have a positive and significant impact on ICT adoption. Technological factors, including relative advantage, compatibility and complexity; organizational elements such as top management support, organizational readiness, costs, culture and size; and personal and cultural influences through PU and PEU significantly predict ICT adoption behavior. More specifically, religiosity, which includes involvement, practice, beliefs and the role of religion in everyday life - was also found to be an essential determinant, highlighting the role of cultural and ethical considerations in technology adoption. In addition, various

environmental factors such as pressure from consumers, perceptions of market trends, and support from business partners are also considered important elements that can influence the adoption of Information and Communication Technology (ICT).

These results highlight the complex interactions between technology, organizational support, personal attitudes and environmental factors in determining ICT adoption among MSEs. The research conducted is also in line with the objectives and hypotheses that have been put forward. It makes an essential contribution to existing knowledge by highlighting the importance of religion in ICT adoption – an area that remains relatively unexplored. Apart from that, researchers see the importance of the government in the success of MSEs in adopting ICT technology. The role of the government is to create a better ecosystem for MSEs to embrace and utilize ICT effectively so that it can increase the desire and competitiveness of MSEs themselves.

This research highlights key factors influencing ICT adoption and deepens theoretical and practical understanding of the dynamics involved. This research provides a basis for future research. It offers actionable knowledge for MSE managers who wish to create an environment that supports ICT adoption in line with technological developments and cultural values.

Research Funding

The authors received no research grant or funds for this research study.

REFERENCES

Abdekhoda, M., Dehnad, A., & Zarei, J. (2019). Determinant factors in applying electronic medical records in healthcare. *Eastern Mediterranean Health Journal*, *25*(1), 24–33.

Abdillah, W., & Hartono, J. (2015). *Partial least square (PLS) : alternatif structural equation modeling (SEM) dalam penelitian bisnis*. (Dwi Prabantini, Ed.) (Ed 1.). Andi Publisher, Yogyakarta.

Afolayan, A., Plant, E., White, G. R. T., Jones, P., & Beynon-Davies, P. (2015). Information Technology Usage in SMEs in a Developing Economy. *Strategic Change*, *24*(5), 483–498.

Ahmad, N. A., Drus, S. M., & Kasim, H. (2020). Factors That Influence the Adoption of Enterprise Architecture by Public Sector Organizations: An Empirical Study. *IEEE Access*, *8*, 98847–98873.

Ahmad, S. Z., Abu Bakar, A. R., & Ahmad, N. (2019). Social media adoption and its impact on firm performance: the case of the UAE. *International Journal of Entrepreneurial Behaviour and Research*, *25*(1), 84–111.

Aulawi, H., Mulyani, A., Kurniadi, D., & Septiana, Y. (2020). Technology Acceptance Model for Online Transportation. *International Journal of Advanced Trends in Computer Science and Engineering*, *9*(1), 31–35.

BPS. (2023). *Profil Industri Mikro dan Kecil*. Badan Pusat Statistik, Jakarta.

Bryan, J. D., & Zuva, T. (2021). A Review on TAM and TOE Framework Progression and How These Models Integrate. *Advances in Science, Technology and Engineering Systems Journal*, *6*(3), 137–145.

Bhatti, O. K., Aslam, U. S., Hassan, A., & Sulaiman, M. (2016). Employee motivation an Islamic perspective. Humanomics, 32(1), 33–47.

Cepeda, G., Nitzl, C., & Roldán, J. L. (2017). Mediation analyses in partial least squares structural equation modeling: Guidelines and empirical examples. *Partial Least Squares Path Modeling: Basic Concepts, Methodological Issues and Applications*, (September), 173–195.

Charag, A. H., Fazili, A. I., & Bashir, I. (2020). Determinants of consumer's readiness to adopt Islamic banking in Kashmir. *Journal of Islamic Marketing*, *11*(5), 1125–1154.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, *13*(3), 319–340.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, *35*(8), 982–1003.

Erwanti, N. (2022). Adapting TAM to Understand Video Conferencing Apps Adoption for Learning Islamic Knowledge. *Matics*, *14*(1), 6–12.

Eze, N. U., Obichukwu, P. U., Kesharwani, S., & Obichukwu, P. U. (2021). Perceived Usefulness , Perceived Ease of Use in ICT Support and Use for Teachers Perceived Usefulness , Perceived Ease of Use in ICT Support and Use for Teachers. *IETE Journal of Education*, *62*(1), 1–9.

Gholami, Z., Abdekhoda, M., & Gavgani, V. Z. (2018). Determinant factors in adopting mobile technology-based services by academic librarians. *DESIDOC Journal of Library and Information Technology*, *38*(4), 271–277.

Ghozali, I. (2011). *Structural Equation Modeling Metode Alternatif dengan Partial Least Square*. Universitas Diponogoro, Semarang.

Ghozali, I., & Latan, H. (2015). *Partial Least Squares Konsep Teknik dan Aplikasi dengan Program Smart PLS 3.0*. Universitas Diponegoro, Semarang.

Gutierrez, A., Boukrami, E., & Lumsden, R. (2015). Technological, organisational and environmental factors influencing managers' decision to adopt cloud computing in the UK. *Journal of Enterprise Information Management*, *28*(6), 788–807.

Hameed, M. A., & Gamagedara Arachchilage, N. A. (2016). A model for the adoption

process of information system security innovations in organisations: A theoretical perspective. *Proceedings of the 27th Australasian Conference on Information Systems, ACIS 2016*, 1–12.

Handra, T. (2022). The Effect Of Technology Acceptance Model On Online Shopping Behavior On Generation Z. *Journal of Economics, Finance And Management Studies*, *05*(04), 916–924.

Hannoon, A. (2019). Assessing the role of factors affecting the adoption of vat-compliant accounting systems. *Management Science Letters*, *9*(9), 1439–1450.

Harun, N. B., Jalil, H. A., & Zolkepli, M. (2022). Technological, organizational and environmental factors influencing on user intention towards big data technology adoption in Malaysian educational organization. *Accounting*, *8*(4), 403–408.

Hikmet, N., Bhattacherjee, A., Menachemi, N., Kayhan, V. O., & Brooks, R. G. (2008). The role of organizational factors in the adoption of healthcare information technology in Florida hospitals. *Health Care Management Science*, *11*, 1–9.

Hootsuite. (2022). *Digital 2022 Indonesia*. *Global Digital Insights*. Singapore.

InternetWorldStats. (2022). Asia Internet Use, Population Statistics Data And Facebook Data - Mid-Year 2021. [Online] Available: https://www.internetworldstats.com/stats3.htm (October 25, 2021).

Kumar, S., Goel, U., Joshi, P., & Johri, A. (2024). Factors affecting Information & Communication Technology (ICT) adoption among MSMEs. *Journal of Open Innovation: Technology, Market, and Complexity*, *10*(1), 100205.

Lubis, T. A., & Junaidi. (2016). Pemanfaatan Teknologi Informasi pada Usaha Mikro Kecil dan Menengah di Kota Jambi. *Jurnal Perspektif Pembiayaan Dan Pembangunan Daerah*, *3*(3), 163–174.

Majid, R. (2021). The Role of Religiosity in Explaining the Intention to use Islamic FinTech Among MSME Actors. *International Journal of Islamic Economics and Finance (IJIEF)*, *4*(2), 207–232.

Natakusumah, K., Maulina, E., Muftiadi, A., & Purnomo, M. (2023). Integrating religiosity into a technology acceptance model for the adoption of mobile payment technology. *International Journal of Data and Network Science*, *7*(1), 305–312.

Nazir, M. A., & Khan, M. R. (2024). Identification of roles and factors influencing the adoption of ICTs in the SMEs of Pakistan by using an extended Technology Acceptance Model (TAM). *Innovation and Development*, *14*(1), 189–215.

Novita, D., & Helena, F. (2021). Analisis Kepuasan Pengguna Aplikasi Traveloka Menggunakan Metode Technology Acceptance Model (TAM) Dan End-User Computing Satisfaction (EUCS). *Jurnal Teknologi Sistem Informasi*, *2*(1), 22–37.

Obeid, H., & Kaabachi, S. (2016). Empirical investigation into customer adoption of Islamic banking services in Tunisia. *Journal of Applied Business Research*, *32*(4), 1243–1256.

Octavia, A., Indrawijaya, S., Sriayudha, Y., Heriberta, Hasbullah, H., & Asrini. (2020). Impact on e-commerce adoption on entrepreneurial orientation and market orientation in business performance of smes. *Asian Economic and Financial Review*, *10*(5), 516–525.

Pudjianto, B., & Hangjung, Z. (2010). Factors Affecting E-Government Assimilation in Developing Countries. In *4th Communication Policy Research, South Conference, Negombo, Sri Lanka* (pp. 1–14).

Puspitaningtias, R., Adi, P. H., & Setyanto, R. P. (2022). Technological Context Toward Social Media Adoption: Perceived Ease of Use as Mediating Variable. In *International Conference on Sustainable Competitive Advantage* (pp. 99–109).

Qalati, S. A., Li, W., Vela, E. G., Bux, A., Barbosa, B., & Herzallah, A. M. (2020). Effects of Technological, Organizational, and Environmental Factors on Social Media Adoption. *Journal of Asian Finance, Economics and Business*, *7*(10), 989–998.

Qin, X., Shi, Y., Lyu, K., & Mo, Y. (2020). Using a tam-toe model to explore factors of building information modelling (Bim) adoption in the construction industry. *Journal of Civil Engineering and Management*, *26*(3), 259–277.

Ritz, W., Wolf, M., & McQuitty, S. (2019). Digital marketing adoption and success for small businesses: The application of the do-it-yourself and technology acceptance models. *Journal of Research in Interactive Marketing*, *13*(2), 179–203.

Rogers, E. M. (2003). *Diffusion of Innovations* (5th Editio). The Free Press , New York.

Sallehudin, H., Razak, R. C. H. E., Ismail, M., & Baker, R. (2019). Cloud Computing Implementation in The Public Sector: Factors and Impact. *Asia-Pacific Journal of Information Technology and Multimedia*, *7*(2–2), 27–42.

Shailer, G. E. P., Stevens, K. J., & Utomo, H. (2000). EFTPOS impacts on branch banking: An extraorganisational analysis. *AJIS*, *7*(2), 70–77.

Sholihah, E., Antari, I. S. W., Rochimawati, R. F., & Ulwiyyah. (2023). Determinants of BSI mobile banking adoption intentions: DeLone & McLean and UTAUT Model integration with religiosity. *Asian Journal of Islamic Management (AJIM)*, *5*(1), 1–17.

Shukla, A., & Sharma, S. K. (2018). Evaluating Consumers ' Adoption of Mobile Technology for Grocery Shopping : Evaluating Consumers ' Adoption of Mobile Technology for Grocery Shopping : An Application of Technology Acceptance Model. *Vision The Journal of Business Perspective*, *22*(2), 184–198.

Solimun, Nurjannah, Amaliana, L., Rinaldo, A. A., & Fernandes. (2019). *Metode Statistika Multivariat Generalized Structured Component Analysis (GSCA) Pemodelan Persamaan Struktural (SEM)*. Universitas Brawijaya Press, Jawa, Malang.

Sudarsono, H., Kholid, M. N., Trisanty, A., & Maisaroh, M. (2022). The intention of Muslim customers to adopt mobile banking: The case of Islamic banks in Indonesia. *Cogent Business and Management*, *9*(1), 1–17.

Tarutė, A., & Gatautis, R. (2014). ICT Impact on SMEs Performance. *Procedia - Social and Behavioral Sciences*, *110*(2014), 1218–1225.

Tornatzky, L. G., & Fleischer, M. (1990). *The Processes of Technological Innovation*. Lexington Books, New York.

Tripopsakul, S. (2018). Social media adoption as a business platform: An integrated tam-toe framework. *Polish Journal of Management Studies*, *18*(2), 350–362.

Usman, B., Sentosa, I., & Nurrahmi, F. (2021). Structural equation modeling of internet of things (IoT) adoption for Indonesian Village-Owned Enterprises (BUMDes). *Informasi*, *51*(1), 169–194.

Venkatesh, V., & Davis, F. D. (2000). Theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science*, *46*(2), 186–204.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, *27*(3), 425–478.