

The Evolution of Acceptance Behavior and Using e-Commerce in Indonesia

¹Daduk Merdika Mansur, ²Helin G. Yudawisastra, ³Muhammad Sam'an & ⁴Siti Mardiana

¹Telkom University

^{2,4}Universitas Muhammadiyah Bandung

³Universitas Muhammadiyah Semarang

Email: dadukmansur@telkomuniversity.ac.id, yudawisastra.helin@umbandung.ac.id,
muhammad92sam@unimus.ac.id, siti.mardiana@umbandung.ac.id

Abstract

The number of business entities influences the level of competitiveness of a country. Micro, Small and Medium Enterprises (MSMEs) are under intense pressure in Indonesia's business entities. MSME strategies are encouraged to be able to survive, be sustainable, and have a bright future (OJK-BJG Joint Research, 2020). The current situation would need to formulate various initiatives that can be taken to help MSMEs to get through the crisis with the best response so that MSMEs can survive and develop and continue growth. This study aimed to determine the dominant factors and behavior of receiving and using digital services in Indonesia. Sampling was carried out by conducting an online survey of users of e-commerce services. The data obtained were analyzed by the application of PLS statistics. The total data obtained were 589 respondents with 17 invalid data, so there were 572 valid data. The results of the study show that the digital needs of SMEs in Indonesia that the intention to use digital services, i.e. Convenience (Perceive Convenience, 24.1%), Trust (Trust, 23.6%), Habit (Habit, 19.9%), Availability of Facilities (Facilitating Condition, 17.8%). In contrast, several other factors are not proven, namely Benefit (Performance Expectation 8.7%), Ease (Effort Expectation, 6.8%) and Risk (Risk, 3.5%). Intention to use digital services has an effect of 67.2%. The value of R² in the model is 0.451.

Keywords: digital SMEs, digital consumer behavior, digital behavior intention, acceptance e-commerce

1. Introduction

Economic digitalization has penetrated all aspects of the world due to rapid technological development, which has radically changed the mindset of humans (Verhoef *et al.*, 2021). The millennial generation, or Gen Y, as the largest market, currently has the behavior of using digital technology in everyday life (Ordun, 2015). They always look for simple ways in their digital-based activities, such as online shopping. This shows that there is a shift in market behavior that must be anticipated by service providers so that there are many online service providers such as marketplaces.

Figure 1. The ten most valuable brands of 2020 (Jones, 2020)



Figure 1 shows that the growth of a digital business is far beyond conventional business. So many digital companies have emerged that are global and have penetrated Indonesia. This great prospect is also utilized by local business players such as Lazada, Tokopedia, Bukalapak, Shopee, Gojek, and other Marketplaces.

Figure 2. The number of active users of E-commerce marketplace from Q1-2021 (Ginee.com, 2021).



Figure 2 shows a significant shift from the conventional to the digital market. The majority of business entities in Indonesia are Micro, Small, and Medium Enterprises (SMEs). According to data from the Ministry of Cooperatives and Small and Medium Enterprises as of March 2021, the total number of MSMEs amounted to 64.2 million, making a significant contribution of 61.07% (Rp. 8,573.89 trillion) to the Gross Domestic Product. These MSMEs have the capacity to employ 97% of the total workforce and account for up to 60.42% of the overall investment in Indonesia (Kementerian Keuangan Republik Indonesia, 2021). The data proves that the MSME segment in Indonesia has a significant and strategic role in economic development. Therefore, to increase national economic resilience in the digital era, it is necessary to digitize the MSME business. One way is to implement an E-commerce system in its services.

Based on data from the Ministry of Cooperatives and SMEs in 2018, there were 64.199.606 business units, accounting for approximately 99.99% of the total business actors in Indonesia, classified as Micro, Small, and Medium Enterprises (MSMEs). Furthermore, MSMEs absorbed around 116.978.631 people, which is approximately 97% of the total workforce in the country. The data strongly emphasizes the significant contribution of MSMEs to the Indonesian economy, as they accounted for 57.24% of the total Gross Domestic Product (GDP) at constant prices (Jayani, 2021). This firmly establishes the strategic role of MSMEs in driving economic development in Indonesia.

The role of MSMEs, which is very strategic in defense of the national economy, is threatened by changing behavior consumer. Therefore, a breakthrough must be made so that MSMEs can survive and are expected to grow positively. This is possible with the development of digital technology. The digital era brings convenience and an expansive reach, a significant potential for digital business growth. Digital service platforms can boost the number of MSME actors as pillars of the national economy. However, it is necessary to realize that digital business has the character of the winner takes all, which is a crucial part of developing digital-based SMEs. Digital services have vulnerabilities related to negative issues that quickly go viral, so the development of digital services for businesses must be designed carefully and appropriately (Mansur *et al.*, 2019). Not to mention the capability and behavior aspects of MSME actors who still have GAP in digital technology.

Some MSMEs already use E-commerce. The Ministry of Communication and Information records show that the number of MSMEs digitized until 2021 will reach 16.4 million (KemenKopUKM, 2021). One of the MSME E-commerce in animal husbandry such as Ternak.com. This e-commerce helps make it easier for farmers to sell their livestock products. Ternak.com is expected to increase farmers profits because the market can reach a wide range compared to conventional sales. However, the reality in the field is that the development of the use of this application is still slow. This is because E-commerce's acceptance level is still low in the community. According to Mansur et al. (2019), the level of acceptance of E-commerce is influenced by several factors, including usefulness, convenience, comfort, trust, Risk, facility readiness, habits, and social influence. All of these factors must be validated against E-commerce in the field.

Many researchers have studied the acceptance of technology. Rahayu & Day (2015) focused on research with their unit of analysis, Small Medium Enterprise (SME), as the unit of analysis. There are very few studies related to personal user behavior., i.e., Gefen et al. (2000) and Kurnia & Chien (2003). They only examined the Perceive Easy to Use (PEU) and Perceive of Useful (PU) factors. So there is still a gap theory that has not been able to explain in full and in detail what and how the problem is with the low use of e-commerce in Indonesia.

The field of technology adoption theory has been continuously expanding, encompassing various models exploring user acceptance. Among these models are the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), and the Technology Acceptance Model (TAM). The TRA acceptance model, developed by Hill et al. (1977), is based on psychological theory and focuses on studying attitudes and behavior. Similarly, the TPB acceptance model, developed by Ajzen (1991), also examines the relationship between psychological attitudes and behavior. TPB finds broad application in analyzing the connections between beliefs, attitudes, willingness to act, and actions in domains such as advertising, public relations, promotion, and health.

TAM was developed by Güngören et al. (2014), a theory of acceptance of new technology, especially in information technology, due to an adaptation of TRA. TAM states that perceived usefulness and ease of use will determine a person's willingness to use the system. The latest research related to technology adoption, developed by Venkatesh et al. (2003) with Unified Theory Acceptance and Use Technology (UTAUT), amalgamates several previous research constructs and adds several new constructs. Based on previous research, it can be concluded that the acceptance of technology has not been discussed in depth regarding online transactions, even though E-commerce is very closely related to online transactions.

The demand for E-commerce has surged significantly due to movement restrictions. According to the latest SEA 2021 report by Temasek, Google, and Bain & Company, it is estimated that E-commerce trade in Indonesia will reach approximately US\$ 53 billion in 2021, marking an impressive 52% year-on-year (YoY) increase from the US\$ 35 billion recorded in 2020. Additionally, BI Governor Perry Warjiyo predicts that the total value of E-commerce transactions this year will be around IDR 395 trillion, with a potential YoY growth of 48.4%, driven by the rapid acceleration of the digital economy and national finance. This article examines the acceptance and adoption of E-commerce in Indonesia during the pandemic, analyzing the data indicating this remarkable growth.

2. Literature Review

Digital application-based services are related to the market-driven concept, which refers to Strategic Marketing Management (Cravens, D. Percy, 2017). In the development of digital technology, all businesses are very dependent on the market will. This is called the concept of Market Driven Strategy, namely the Marketing Management process that regulates the process of creating, communicating, and delivering value to customers. Companies must provide Superior Value to customers who can meet customer wants and needs.

User behavior digitally undergoes a very radical change. The aspect of convenience and comfort dominates user demands. Comparison of products and prices is a new fact in the culture of consumer products based on digital services. Diversity of backgrounds, social media communities, and consumer characteristics are important in determining buying behavior (Amed *et al.*, 2020). This research explores consumer behavior, and studies, concluding profile of survey results

Figure 3. Buying behavior factors (Khaniwale, 2015)

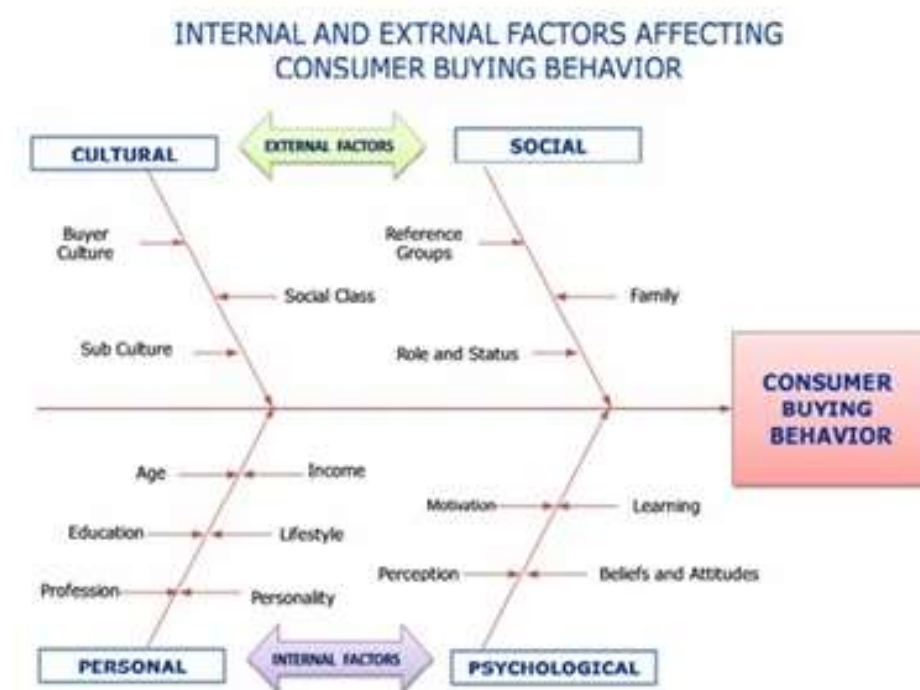


Figure 3 provides information that four things influence buying behavior, i.e. (1) cultural, (2) social, (3) personal, and (4) psychological. A process is needed to understand consumers make purchasing decisions by marketers. The use of e-commerce services is a digital technology-based service with a vital process, namely online transactions. This is one of the key factors that this online shopping service will be loyal to by users or suddenly switch to another operator. Regarding the acceptance of technology, this is investigated in depth in the concept of Unified Theory Acceptance and Use of Technology (UTAUT) (Venkatesh, Thong and Xu, 2012)

Mansur *et al.* (2019) conducted research on the acceptance of technology, particularly in online transactions like e-commerce, considering variables such as Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Condition (FC), Habit (H),

Perceived Risk (PR), Perceived Convenience (PC), and Trust (T). Technology acceptance plays a crucial role in the digital business landscape due to the dynamic and ever-changing user behavior. The Covid-19 pandemic has notably influenced digital service usage patterns, driven by the isolation experienced by many individuals. Erjavec & Manfreda (2022) investigated the behavioral intention of digital service users during the Covid-19 pandemic and found that performance expectations significantly influence behavioral intention, while social influence yielded different results. These findings indicate that traditional acceptance theories like the Unified Theory of Acceptance and Use of Technology (UTAUT) may not fully apply to the evolving situation brought about by the Covid-19 pandemic.

Kawasaki et al. (2022) validated that the intensity of using digital services has increased after the Covid-19 pandemic. This is because the research object is to avoid the Risk of transmission of the Covid-19 virus. All activities are physically distancing, and digital or e-commerce services are used for learning. The consumer shopping experience has increased by using e-channel touchpoints or e-commerce, so this incident also increases the use behavior of e-commerce (Wagner, Schramm-Klein and Steinmann, 2020). The impact of hedonic and utilitarian browsing on the inclination to make purchases through e-commerce resulted in two noteworthy findings. Firstly, three situational factors (portability, visual appeal, and interpersonal influence) have distinct effects on hedonic and utilitarian browsing. Secondly, hedonic searches directly and positively influence consumers' impulsive buying tendencies, whereas utilitarian searches indirectly influence consumers through their pursuit of hedonic experiences (Zheng *et al.*, 2019).

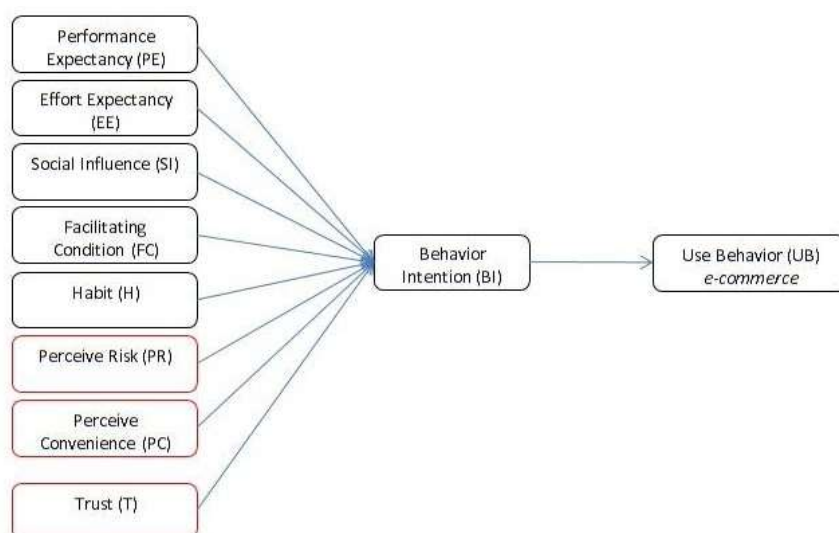
Xiang et al. (2016) investigated the Parasocial Interaction (PSI) factor that impacts impulse buying tendencies. Perceived usefulness and PSI have an impact on perceived enjoyment. Consumers' perceived enjoyment and impulse buying tendencies significantly impact impulse buying. Lestari (2019) found that personal innovativeness, self-efficacy, Perceived usefulness, Perceived Risk, and attitude affect the adoption of e-commerce. Hewei & Youngsook (2022) show that social media interactions affect the perception of the value of a service or product. They also show that immersive experience, continuous purchase, and perceived value significantly influence immersive experience and ongoing purchase intention. Guthrie et al. (2021) support the increasing use of e-commerce with various kinds of multi-perceptions, reactions, and adaptations in e-commerce services. Yang et al. (2021) found that environmental stimuli significantly affect perceived value, and perceived hedonic values significantly affect impulse buying behavior. The interaction of hedonic and interpersonal values affects buying behavior.

Recent studies focusing on the adoption and utilization of digital services, particularly in the context of e-commerce, have identified several factors that influence the acceptance of such services. These factors include Performance Expectancy (PE), Effort Expectancy (EE), Facilitating Condition (FC), Habit (H), Perceived Risk (PR), Perceived Convenience (PC), and Trust (T). It has been demonstrated that these seven factors play a crucial role in influencing users' intention (Behavior Intention or BI) to adopt and use digital services, ultimately leading to the actual usage of these services. The research hypothesis has been formulated as follows:

1. PE positively affects BI (Farzin and Dahlan, 2016; Mansur *et al.*, 2019)
2. EE positively affects BI (Alazzam *et al.*, 2016; Mansur *et al.*, 2019)

3. SI positively affects BI (Arenas-Gaitán, Peral-Peral and Ramón-Jerónimo, 2015; Putu Ramayasa, 2015)
4. FC positively affects BI (Alazzam *et al.*, 2016; Mansur *et al.*, 2019)
5. H positively affects BI (Mansur *et al.*, 2019; Masa'deh *et al.*, 2016)
6. PR positively affects BI (Fadare, Ibrahim and Edogbanya, 2016; Mansur *et al.*, 2019)
7. PC positively affects BI (Nabhani *et al.*, 2016; Mansur *et al.*, 2019)
8. T positively affects BI (Jham, 2016; Mansur *et al.*, 2019)
9. BI positively affects BI (Putu Ramayasa, 2015; Mansur *et al.*, 2019)

Figure 4. Proposed Model



3. Research Method

This research will capture the perceptions and opinions of e-commerce users to find out what factors strongly influence intentions to use digital services. Knowing these main motivations and factors, references, and considerations in designing the digitization of SMEs will be relevant and valid. Therefore, this study analysis and observation unit are e-commerce users.

Table 1. Digital service acceptance model construct

Definition	Dimension	Indicator
<i>Performance Expectancy:</i> Static expectations help increase productivity and effectiveness	Effective Help	The level of effectiveness of buying goods Levels help find items
<i>Effort Expectancy:</i> Expect ease of use.	Operation Interaction	Level of ease of operation The level of clarity when interacting
<i>Social Influence:</i> Individual perceptions are influenced by the perceptions of others in deciding to use statics.	Social factors Image	Colleague support Enhance Image
<i>Facilitating Condition:</i> Individual believes that the organization and infrastructure already exists and supports its	Resource Knowledge	Resource readiness level Knowledge readiness level

use.		
<i>Habit:</i>	Action behavior	Level of habit
Actions are performed automatically.	Repetition	Repeat Rate
<i>Perceive Risk:</i>	Performance	Tactical failure rate not working as advertised
Perception of the loss of money, goods, quality, goods specs, and stolen personal data.	risk	Possible money loss
<i>Perceive Convenience:</i>	Time	Time rate in transaction
Perceptions of convenience and convenience in online shopping.	Place	The level of flexibility of the place of access
<i>Trust:</i>	Expertise	Good work
Belief in one skills, abilities, and integrity.	Integrity	According to the specifications, there is no fraud
<i>Behavior Intention :</i>	Willingness to	Desire to use when shopping
Intention to use e-commerce	Use	
<i>Use Behavior :</i>	Priority Use	Always prioritize using e-commerce
Use of e-commerce		

This study conducts a quantitative deepening of the factors that influence the acceptance of digital services. Qualitative exploration was carried out on the factors in a study of acceptance and use of digital services by referring to the study results with question items as shown in Table 2.

Table 2. Survey question items

Variable	Open Question
Performance Expectancy (PE)	Using online shopping Tatis (Sophee, Bukalapak, etc.) helps me in shopping
Effort Expectancy (EE)	Shopping online is very easy
Social Influence (SI)	I shop online (Sophee, Bukalapak, etc.) because I follow friends/others
Facilitating Condition (FC)	I shop online (Sophee, Bukalapak, etc.) because I have adequate facilities
Habit (H)	I am used to shopping online (Sophee, Bukalapak, etc.)
Perceive Risk (PR)	Shopping online (Sophee, Bukalapak, etc.) has a low risk
Perceive Convenience (PC)	I feel comfortable shopping online (Sophee, Bukalapak, etc.)
Trust (T)	Online shopping (Sophee, Bukalapak, etc.) there is no fraud
Behavior Intention (BI)	I will use online shopping Tatis (Sophee, Bukalapak, etc.) to buy necessities
Use Behavior (UB)	I shop online whenever I need to buy something (Sophee, Bukalapak, etc.)

The analysis technique uses PLS (Partial Least Square) application. This process starts by checking the validity of the indicator variables and testing the research hypotheses. The results of all these analysis processes to understand the needs and want of users. Because in this digital era, success in achieving customer satisfaction is if the service can meet the needs and desires of users.

4. Findings and Discussions

Developing digital services that penetrate the retail segment is an important factor in developing MSMEs as an important priority in government policy. Communities that use e-commerce

services have behavior and tastes to enjoy convenience in shopping. These unique things characterized by usefulness, comfort, and trust are important keys to developing MSME digital services. Data retrieval is carried out on active e-commerce users who are already accustomed to using digital services. The results of the data recap is shown Table 3.

This study conducted a quantitative deepening of the data by processing survey data using the PLS statistical application. The process carried out is entering the respondent's data file in the statistical application. The results are then interpreted to identify the perceptions and associations of each user's answer.

TABLE 3. Survey data recapitulation

RESPONDENT			AGE		
TOTAL	589	100%	< 20 TH	524	92%
INVALID	17	3%	> 20 TH	48	8%
VALID	572	97%			
EDUCATION			GENDER		
SHS	524	92%	MALE	372	65%
BECHELOR	31	5%	FEMALE	200	35%
MASTER	17	3%			
E-COMMERCE					
SHOPEE	344	60%			
TOKOPEDIA	103	18%			
LAZADA	56	10%			
GOFOOD	47	8%			
LAIN2	22	4%			

Note :

Data collection was carried out from March to July 2024.

Respondents are active users of e-commerce.

Test Data Validity. The survey results were processed using the PLS application from the eight independent variables (PE, EE, SI, FC, H, PC, PR, T). Based on Table 4 shows that One variable (Social Influence (SI)) did not meet the requirements to be included in valid status because the value was below 0.6. Based on the validity test results in Table 4, all factor loading values for all indicators are $0 > 7$. Only the S14 indicator has a loading factor value of 0.518, which means that this indicator is not valid for representing social influence variables. Because the indicators used in the SI latent variable are two pieces, where one of the indicators is invalid, SI cannot be used in the model, so modifications are made. The next step is to retest the validity of each indicator after the SI variable is dropped. Initially, 9 latent variables were used, where each dimension has two indicators. The cross-loading value test results show that each indicator has the highest correlation value with the latent variable.

Table 4. Chronological reduction of latent variables

	PE	EE	SI	FC	H	PR	PC	T	BI	UB
PE3	0,930									
PE5	0,936									
EE1		0,917								
EE4		0,718								
S14			0,518							
S16			0,990							
FC2				0,895						
FC3				0,906						
H2					0,905					
H3					0,840					
PR1						0,804				
PR7						0,904				
PC2							0,883			
PC4							0,925			
T4								0,926		
T6								0,768		
B12									0,928	
B16									0,920	
UB1										0,854
UB6										0,896

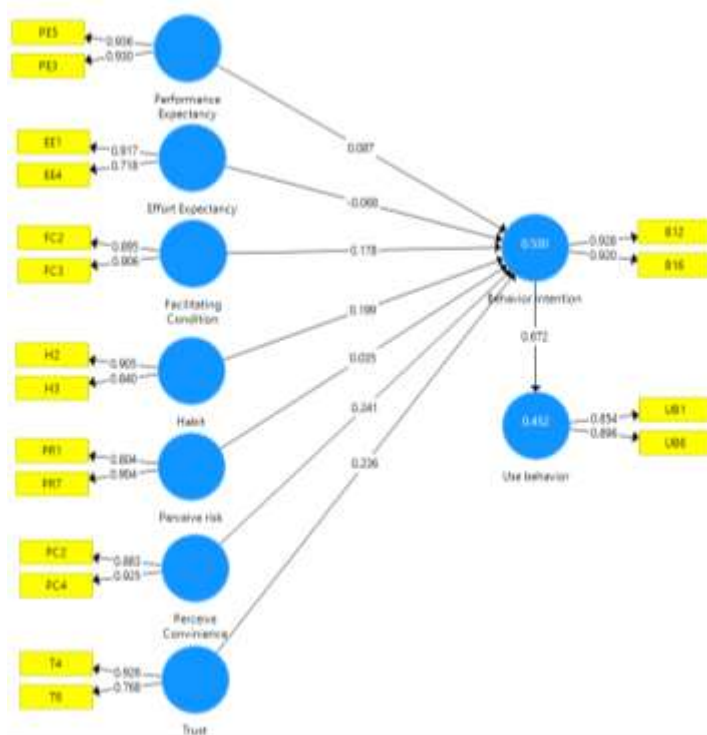
TABLE 5. The results of the re-validity test of latent variables

	BI	EE	FC	H	PC	PE	PR	T	UB
B12	0,928	0,371	0,566	0,518	0,589	0,485	0,478	0,587	0,612
B16	0,920	0,369	0,477	0,486	0,570	0,450	0,426	0,472	0,631
EE1	0,400	0,917	0,476	0,423	0,538	0,639	0,320	0,390	0,398
EE4	0,229	0,718	0,358	0,331	0,320	0,307	0,218	0,188	0,235
FC2	0,496	0,405	0,895	0,436	0,491	0,479	0,392	0,439	0,434
FC3	0,522	0,515	0,906	0,497	0,525	0,535	0,410	0,461	0,487
H2	0,526	0,482	0,524	0,905	0,593	0,482	0,354	0,377	0,590
H3	0,413	0,305	0,367	0,840	0,391	0,316	0,326	0,283	0,511
PC2	0,502	0,532	0,517	0,484	0,883	0,554	0,391	0,433	0,465
PC4	0,622	0,461	0,508	0,551	0,925	0,569	0,587	0,583	0,533
PE3	0,463	0,570	0,539	0,425	0,549	0,930	0,364	0,417	0,426
PE5	0,481	0,576	0,514	0,445	0,608	0,936	0,360	0,409	0,469
PR1	0,344	0,264	0,327	0,346	0,394	0,301	0,804	0,463	0,357
PR7	0,479	0,307	0,425	0,330	0,534	0,359	0,904	0,636	0,336

T4	0,588	0,394	0,538	0,388	0,603	0,479	0,585	0,926	0,429
T6	0,346	0,210	0,257	0,237	0,309	0,222	0,536	0,768	0,258
UB1	0,540	0,332	0,398	0,589	0,460	0,411	0,302	0,293	0,854
UB6	0,632	0,368	0,493	0,527	0,509	0,430	0,392	0,434	0,896

Process Data Using PLS. After knowing that all research indicators are valid, subsequent testing the model using the PLS application to find out the loading results of each path according to the research hypothesis. The test's final result is shown in Figure 5.

Figure 5. Final test results pathway diagram



The results of the retest validity. All indicators have a loading factor of more than 0.70, which means that all indicators used are valid. All indicators have a loading factor of more than 0.70, which means that all indicators used are valid. This shows that the variables in this research model have high validity so that they can be used as references in making decisions regarding important aspects in the development of digital services today.

Table 6. Indicator validity test

Variable	Dimension	Loading factor	Result
Performance Expectancy	1 PE3 The online shopping system (Sophee, Bukalapak, etc.) is very useful	0,936	valid
	2 PE5 Using online shopping systems (Sophee, Bukalapak, etc.) helps me in shopping	0,930	valid
Effort Expectancy	3 EE1 Shopping online is very easy	0,917	valid
	4 EE4 I don't need to learn to shop online (Sophee, Bukalapak, etc.)	0,718	valid

Facilitating Condition	5	FC2	I shop online (Sophee, Bukalapak, etc.) because I have adequate facilities	0,895	valid
	6	FC3	I shop online (Sophee, Bukalapak, etc.) because I have sufficient knowledge	0,906	valid
Habit	7	H2	I am used to shopping online (Sophee, Bukalapak, etc.)	0,905	valid
	8	H3	I have routinely shopped online (Sophee, Bukalapak, etc.)	0,840	valid
Perceive Risk	9	PR1	Shopping online (Sophee, Bukalapak, etc.) has a low risk	0,804	valid
	10	PR7	Shopping online (Sophee, Bukalapak, etc.) never hurts	0,904	valid
Trust	11	T4	Items purchased on online shopping systems (Sophee, Bukalapak, etc.) are following specifications and quality	0,926	valid
	12	T6	Online shopping (Sophee, Bukalapak, etc.) there is no fraud	0,768	valid
Perceive Convinience	13	PC2	I feel comfortable shopping online (Sophee, Bukalapak, etc.)	0,883	valid
	14	PC4	I can shop online (Sophee, Bukalapak, etc.) anytime and anywhere	0,925	valid
Behavior Intention	15	B12	I need to shop online (Sophee, Bukalapak, etc.)	0,928	valid
	16	B16	I will use the online shopping system (Sophee, Bukalapak, etc.) to buy necessities	0,920	valid
Use Behavior e-commerce	17	UB1	I often shop online (Sophee, Bukalapak, etc.) to find what I need	0,854	valid
	18	UB6	Whenever I need to buy something, I shop online (Sophee, Bukalapak, etc.)	0,896	valid

Table 7. Average variance extracted

Variabel	Average Variance Extracted (AVE)
Performance Expectancy	0,863
Effort Expectancy	0,673
Facilitating Condition	0,812
Habit	0,763
Perceive Risk	0,728
Trust	0,718
Behavior Intention	0,856
Use Behavior e-commerce	0,763

Cross Loading. The cross-loading value test results show that each indicator has the highest correlation value with the latent variable.

Table 7. Cross Loading

Indicator	Variable latency							
	PE	EE	FC	H	PR	T	BI	UB
1 PE3 Effective	0,927	0,558	0,546	0,428	0,371	0,421	0,471	0,433
2 PE5 Help	0,931	0,567	0,513	0,442	0,364	0,407	0,482	0,469

3	EE1	Operation	0,633	0,916	0,463	0,418	0,318	0,383	0,394	0,397
4	EE4	Interaction	0,295	0,712	0,346	0,325	0,216	0,191	0,225	0,232
5	FC2	Resources	0,488	0,400	0,897	0,440	0,399	0,447	0,505	0,438
6	FC3	Resources	0,538	0,499	0,905	0,504	0,412	0,468	0,525	0,485
7	H2	Behavioral implementation	0,480	0,475	0,529	0,902	0,353	0,384	0,520	0,585
8	H3	Repetition	0,323	0,307	0,373	0,844	0,332	0,296	0,418	0,513
9	PR1	Performance risk	0,304	0,265	0,321	0,343	0,800	0,464	0,348	0,360
10	PR7	Financial risk	0,367	0,303	0,435	0,333	0,903	0,631	0,487	0,342
11	T4	Ability	0,481	0,386	0,550	0,402	0,582	0,926	0,591	0,428
12	T6	Integrity	0,223	0,213	0,248	0,236	0,534	0,761	0,344	0,261
13	B12	Emphasis to do	0,491	0,366	0,574	0,518	0,486	0,592	0,930	0,613
14	B16	Hope to use	0,457	0,364	0,482	0,483	0,435	0,474	0,920	0,634
15	UB1	Frequency of doing activities	0,420	0,329	0,398	0,582	0,312	0,295	0,543	0,853
16	UB6	Must receive and use again	0,429	0,368	0,492	0,526	0,393	0,437	0,629	0,893

Reliability Test. Reliability Test All variables are in the high category with a construction value of > 0.6 . This shows that all indicators have consistency in measuring latent variables. The model that has been produced shows some of the main aspects that need to be paid attention to in the development of digital services. Of course, the same goes for MSMEs' digital services because the principles and characteristics of MSME digital service users are the same as e-commerce services.

Table 8. Composite reliability

Variable	Composite Reliability	Conclusion
Performance Expectancy	0,931	Reliable
Effort Expectancy	0,806	Reliable
Facilitating Condition	0,895	Reliable
Habit	0,865	Reliable
Perceive Risk	0,845	Reliable
Peceive convinienve	0,900	Reliable
Trust	0,839	Reliable
Behavior Intention	0,921	Reliable
Use Behavior e-commerce	0,868	Reliable

Testing of R^2 . The results of R^2 test show that R^2 value in the model is 0.451. This means that the variability of the construct of use behavior e-commerce can be explained by the variability of performance expectancy, effort expectancy, facilitating conditions, habit, Perceive Risk, and trust through behavior intention of 45.1% and the rest other variables not examined.

Table 9. R² and R² Adjusted

	R Square	R ² Adjusted
Behavior Intention	0,530	0,524
Use behavior	0,452	0,451

Hypothesis Testing. *Simultaneous hypothesis test.* The F statistic value is simultaneously calculated using the following statistical formula:

$$F \rightarrow \frac{\frac{R^2}{k-1}}{\frac{(1-R^2)}{(n-1)}} \quad (1)$$

Based on Eq. (1), the calculation result is 63.88. All construct variables in the simultaneous hypothesis testing for the model used are supported.

Partial hypothesis test. The results of the partial hypothesis test obtained in Table 10 can describe as follows:

1. All latent variables affect use behavior through behavior intention except for effort expectancy
2. EP does not affect user behavior through behavior intention. It is necessary to retest whether when the effort expectancy variable is removed, it will still make all the construct variables remain significant or whether the effort expectancy will be significant if not through the intervening variable.

Managerial Implication. The findings of this study provide several important points regarding the acceptance and use of e-commerce in Indonesia. This change in acceptance behavior becomes important information for the management of e-commerce operators in making policies. Several factors that support the acceptance of e-commerce must be developed and strengthened in the management of e-commerce. At the same time, factors that do not help the level of acceptance do not need to make a considerable effort in the operation of e-commerce. Changing strategy shall conducted related with this research finding. Marketing and product development shall adjust strategy to sustain in business competition.

Table10. Partial test using t-statistic

Hypothesis	T Statistics (O/STDEV)	P Values	Conclusion
Behavior intention -> Use behavior	23,519	0,000	Supported
Effort Expectancy -> Behavior intention	1,584	0,114	Not supported
Facilitating Condition -> Behavior intention	3,758	0,000	Supported
Habit -> Behavior intention	5,219	0,000	Supported
Perceive Convinience -> Behavior intention	5,197	0,000	Supported
Perceive risk -> Behavior intention	0,869	0,385	Not supported
Performance Expectancy -> Behavior intention	1,824	0,069	Not supported
Trust -> Behavior intention	4,885	0,000	Supported

5. Conclusion

This research which explores changes in the behavior of acceptance and use of e-commerce, gives the following results:

1. There has been a change in acceptance behavior after the Covid-19 pandemic.
2. The acceptance and use of digital services in this Pandemic Era have been formed with Independent variables PE, EE, FC, SI, H, PR, PC, T, BI intervening variables, and UB determinant variables.
3. Independent variables (PC, T, H, FC) positively affected the intervening variables (BI) except for the PE, EE, and PR variables.
4. The intervening variable (BI) affects the determinant variable (UB) positively.
5. An exciting finding from receiving digital services during this pandemic is that the Social Influence (SI) variable has no effect because it is very natural that when the level of need is high, the influence of others is not needed.
6. The value of R² in the model is 0.451. This means that the variability of the constructs can explain the variability of the user behavior construct of e-commerce. Perceive expectancy, effort expectancy, facilitating conditions, habit, perceived risk, and trust through behavior intention of 45.1% and the rest by other variables not examined.
7. Changes that occur, namely the Effort Expectancy, Perceive Risk, and Performance Expectancy factors, have no effect on e-commerce acceptance.
8. The level of need and necessity to use e-commerce has changed the behavior of e-commerce acceptance.

The development of MSME digital services must consider the factors in this research. The key to the success of digital service development is to meet the requirements of digital consumer buying behavior, which is an essential factor in the Market Driven concept in the industrial 4.0 era. It is necessary to conduct validation trials on existing digital tourism services to measure the level of acceptance and carry out an improvement program.

References

- Ajzen, I. (1991) 'The theory of planned behavior', *Organizational Behavior and Human Decision Processes*, 50(2), pp. 179–211. Available at: [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T).
- Alazzam, M.B. *et al.* (2016) 'Pilot study of EHRs acceptance in Jordan hospitals by UTAUT2', *Journal of Theoretical and Applied Information Technology*, 85(3), pp. 378–393.
- Amed, I. *et al.* (2020) *The State of Fashion 2020, Business of Fashion*. Available at: <https://www.businessoffashion.com/articles/luxury/the-state-of-fashion-2019>.
- Arenas-Gaitán, J., Peral-Peral, B. and Ramón-Jerónimo, M.A. (2015) 'Elderly and internet banking: An application of UTAUT2', *Journal of Internet Banking and Commerce*, 20(1).
- BBC Indonesia (2020) *Covid-19 'terus menyebar', hampir 39 juta kasus terkonfirmasi di 189 negara - bagaimana upaya negara-negara yang masih alami kenaikan kasus?*, *Bbc News Indonesia*. Available at: <https://www.bbc.com/indonesia/dunia-54407978>.

-
- Cravens, D. Percy, N.S.B.S. (Custom C.E. (2017) 'STRATEGIC MARKETING 10th Edition', in. Available at: <https://bookshelf.vitalsource.com/#/books/9781307173659>.
- Erjavec, J. and Manfreda, A. (2022) 'Online shopping adoption during COVID-19 and social isolation: Extending the UTAUT model with herd behavior', *Journal of Retailing and Consumer Services*, 65. Available at: <https://doi.org/10.1016/j.jretconser.2021.102867>.
- Fadare, O.A., Ibrahim, M.B. and Edogbanya, A. (2016) 'A survey on perceived risk and intention of adopting internet banking', *Journal of Internet Banking and Commerce*, 21(1).
- Farzin, S. and Dahlan, H.M. (2016) 'Proposing a model to predict students' perception towards adopting an e-assessment system', *Journal of Theoretical and Applied Information Technology*, 90(1), pp. 144–153.
- Gefen, D., Straub, D. and Boudreau, M.-C. (2000) 'Structural Equation Modeling and Regression: Guidelines for Research Practice', *Communications of the Association for Information Systems*, 4. Available at: <https://doi.org/10.17705/1cais.00407>.
- Ginee.com (2021) *Jumlah Pengunjung Aktif Marketplace Indonesia dari Android*, Ginee.com. Available at: <https://ginee.com/id/insight/jumlah-pengguna-marketplace-android/>.
- Güngören, Ö.C. *et al.* (2014) 'Acceptance of TPC scale - Validity and reliability study', *Egitim ve Bilim*, 39(176), pp. 69–79. Available at: <https://doi.org/10.15390/EB.2014.3497>.
- Guthrie, C., Fosso-Wamba, S. and Arnaud, J.B. (2021) 'Online consumer resilience during a pandemic: An exploratory study of e-commerce behavior before, during and after a COVID-19 lockdown', *Journal of Retailing and Consumer Services*, 61. Available at: <https://doi.org/10.1016/j.jretconser.2021.102570>.
- Hewei, T. and Youngsook, L. (2022) 'Factors affecting continuous purchase intention of fashion products on social E-commerce: SOR model and the mediating effect', *Entertainment Computing*, 41. Available at: <https://doi.org/10.1016/j.entcom.2021.100474>.
- Hill, R.J., Fishbein, M. and Ajzen, I. (1977) *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research.*, *Contemporary Sociology*. Available at: <https://doi.org/10.2307/2065853>.
- Jayani, H.D. (2021) *Kontribusi UMKM terhadap Ekonomi Terus Meningkat*, Katadata. Available at: <https://databoks.katadata.co.id/datapublish/2021/08/13/kontribusi-umkm-terhadap-ekonomi-terus-meningkat>.
- Jham, V. (2016) 'Customer Satisfaction with Internet Banking: Exploring the Mediating Role of Trust', *J. Emerg. Trends Econ. Manag. Sci.*, 7(2), pp. 75–87.
- Jones, K. (2020) *Ranked: The Most Valuable Brands in the World*. Available at: <https://www.visualcapitalist.com/ranked-the-most-valuable-brands-in-the-world/>.
- Kawasaki, T., Wakashima, H. and Shibasaki, R. (2022) 'The use of e-commerce and the COVID-19 outbreak: A panel data analysis in Japan', *Transport Policy*, 115, pp. 88–100. Available at: <https://doi.org/10.1016/j.tranpol.2021.10.023>.
- KemenKopUKM (2021) *16,4 Juta UMKM Go Digital*, smesco. Available at: <https://smesco.go.id/berita/16-koma-4-juta-umkm-go-digital>.

Kementerian Keuangan Republik Indonesia (2021) *Pemerintah terus perkuat umkm melalui berbagai bentuk bantuan, Kementrian Keuangan Republik Indonesia*. Available at: <https://www.kemenkeu.go.id/publikasi/berita/pemerintah-terus-perkuat-umkm-melalui-berbagai-bentuk-bantuan/>.

Khaniwale, M. (2015) 'Consumer buying behavior', *International journal of innovation and scientific research*, 14(2), pp. 278–286. Available at: <https://doi.org/10.1016/b978-0-7506-7897-1.00013-3>.

Kurnia, S. and Chien, A.J. (2003) 'The acceptance of online grocery shopping', in *BLED 2003 Proceedings*, p. 15. Available at: <https://aisel.aisnet.org/bled2003/52>.

Lestari, D. (2019) 'Measuring e-commerce adoption behaviour among gen-Z in Jakarta, Indonesia', *Economic Analysis and Policy*, 64, pp. 103–115. Available at: <https://doi.org/10.1016/j.eap.2019.08.004>.

Mansur, D.M. *et al.* (2019) 'Moderating of the role of technology theory to the existence of consumer behavior on e-commerce', *Journal of Distribution Science*, 17(7), pp. 15–25. Available at: <https://doi.org/10.15722/jds.17.07.201907.15>.

Masa'deh, R. (Moh'd T. *et al.* (2016) 'Modeling Factors Affecting Student's Usage Behaviour of E-Learning Systems in Lebanon', *International Journal of Business and Management*, 11(2), p. 299. Available at: <https://doi.org/10.5539/ijbm.v11n2p299>.

Nabhani, I. *et al.* (2016) 'Mobile broadband for the farmers: A case study of technology adoption by cocoa farmers in southern east java, indonesia', *Agris On-line Papers in Economics and Informatics*, 8(2), pp. 111–120. Available at: <https://doi.org/10.7160/aol.2016.080209>.

Ordun, G. (2015) 'Millennial (Gen Y) Consumer Behavior, Their Shopping Preferences and Perceptual Maps Associated With Brand Loyalty', *Canadian Social Science*, 11(4), pp. 40–55.

Putu Ramayasa, I. (2015) 'Evaluation model of success and acceptance of e-learning', *Journal of Theoretical and Applied Information Technology*, 82(3), pp. 462–469.

Rahayu, R. and Day, J. (2015) 'Determinant Factors of E-commerce Adoption by SMEs in Developing Country: Evidence from Indonesia', in *Procedia - Social and Behavioral Sciences*, pp. 142–150. Available at: <https://doi.org/10.1016/j.sbspro.2015.06.423>.

Venkatesh, V. *et al.* (2003) 'User acceptance of information technology: Toward a unified view', *MIS Quarterly: Management Information Systems*, 27(3), pp. 425–478. Available at: <https://doi.org/10.2307/30036540>.

Venkatesh, V., Thong, J.Y.L. and Xu, X. (2012) 'Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology', *MIS Quarter*, 36(1), pp. 157–178.

Verhoef, P.C. *et al.* (2021) 'Digital transformation: A multidisciplinary reflection and research agenda', *Journal of Business Research*, 122, pp. 889–901. Available at: <https://doi.org/10.1016/j.jbusres.2019.09.022>.

Wagner, G., Schramm-Klein, H. and Steinmann, S. (2020) 'Online retailing across e-channels and e-channel touchpoints: Empirical studies of consumer behavior in the multichannel e-commerce environment', *Journal of Business Research*, 107, pp. 256–270. Available at:

<https://doi.org/10.1016/j.jbusres.2018.10.048>.

Xiang, L. *et al.* (2016) 'Exploring consumers' impulse buying behavior on social commerce platform: The role of parasocial interaction', *International Journal of Information Management*, 36(3), pp. 333–347. Available at: <https://doi.org/10.1016/j.ijinfomgt.2015.11.002>.

Yang, F. *et al.* (2021) 'Consumer perceived value and impulse buying behavior on mobile commerce: The moderating effect of social influence', *Journal of Retailing and Consumer Services*, 63. Available at: <https://doi.org/10.1016/j.jretconser.2021.102683>.

Zheng, X. *et al.* (2019) 'Understanding impulse buying in mobile commerce: An investigation into hedonic and utilitarian browsing', *International Journal of Information Management*, 48, pp. 151–160. Available at: <https://doi.org/10.1016/j.ijinfomgt.2019.02.010>.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>)