

ANALYSIS OF FACTORS AFFECTING THE INTENTION TO USE AUGMENTED REALITY TECHNOLOGY IN INDONESIA'S ONLINE RETAIL CUSTOMER

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ABSTRACT

The goals of the thesis were to determine the main factors that affect the intention to use Augmented Reality technology in Indonesia's Online Retail Customers and to find out which factors have the most influence on the intention to use this technology. Data were compiled by distributing questionnaires to 400 respondents who had used Augmented Reality technology at Online Retail Indonesia. Analysis data using SmartPLS 3.0 Software to test the validity and reliability of the System Quality, Information Quality, Service Quality, Usefulness, and Satisfaction factors. Results of Analysis were System Quality, Information Quality, Service Quality, Satisfaction and Usefulness have a positive effect on Intention to Use Augmented Reality technology. It can be concluded that all the factors tested in this study were significant or had an effect on Intention to Use Augmented Reality with the most influencing factor was Information Quality and the most influencing for mediation factor was Usefulness.

Keywords: *Information System, Augmented Reality, Human Computer Interaction, Intention To Use, Usefulness*

1. INTRODUCTION

Technological developments have a very positive impact and bring changes in various fields, such as social, economic, political, and cultural. Especially in the current pandemic era with the implementation of a new normal life, people have become very dependent on information and communication technology to help carry out their daily activities. The new normal lifestyle changes activities that are usually done offline into online, such as working and studying from home (Work From Home). Therefore, information technology plays a very important role in changing lifestyles, including consumption patterns and how to sell and shop Indonesian people. This new normal lifestyle demands all changes that are practical, fast and efficient, so that is what Online Retail businessmen in Indonesia must make so that people can compete and be in demand by the public. With the presence of Online Retail, people's needs can be met more efficiently in terms of time and cost. According to (Nazsir, 2016) the online retail trend is currently

growing, where business people in Indonesia are now acting faster in fulfilling consumer desires.

Based on data obtained from We Are Social & Hootsuite (2019) regarding the order of the number of internet users who make the most online transactions in the world, the first place is Indonesia, namely (86%), China (82%), Germany (81%), UK (81%), Thailand (80%).

Based on data obtained from databoks.co.id (2019), the number of Online Retail users in Indonesia in 2017 reached 139 million users, then increased by 10.8% to 154.1 million users in 2018, and as many as 168.3 million users in 2019 It can be illustrated that the trend of Online Retail users in Indonesia has grown quite rapidly in recent years and it is predicted that growth will continue to occur in the next few years.

Based on data obtained from Teknologi.id (2018) from research conducted by (Goldman Sachs Global Investment Research) shows

estimates for the global market size of virtual reality and augmented reality technology for 2016, 2017, 2018, 2020 and 2021. By 2021, the virtual reality and augmented reality market is expected to reach a market size of 215 billion.

According to a survey conducted by Tractica (2019), active users of augmented reality technology have increased to 2.2 billion and are dominated by the Online Retail and retail industries.

Based on data obtained by SmartInsight (2019) regarding the benefits of implementing augmented reality technology in the Online Retail retail industry, it shows that as many as 72% of respondents will decide to buy products without prior planning because of augmented reality technology.

A survey was also conducted by Dailysocial.id (2017) on 1013 respondents from all over Indonesia trying to find out the understanding of the use of Augmented Reality technology in Online Retail Indonesia. In this survey it was found that 46.59% of respondents know that VR and AR are two different things, 55.38% of respondents have never tried any VR glasses (including Oculus Rift, Samsung Gear VR, and others), and 70.48% of respondents agree that VR /AR is good to use for promotion & advertising purposes.

Based on these data, it is concluded that the application of Augmented Reality technology in Online Retail can have a positive impact to the business. However, only some of Indonesia's Online Retail has been implemented this technology as a tools for increasing customers shopping experience. as evidenced by a survey conducted by (dailysocial.id, 2017) the result is that the number of respondents who have never tried Augmented Reality technology is 55.38%, meaning that only about 44.62% of respondents have tried Augmented Reality.

Moreover in the current COV-19 pandemic era, Augmented Reality can be very helpful to customer for trying products online so that shopping will be more fun and safe because they shop by online. Augmented Reality has many benefits in the future, therefore the aims of this research is to find out what factors that influence the intention to use Augmented Reality technology and which factors are affecting the most on the intention to use Augmented Reality. Refers to the IS Success Model

to determine the success of an information system implemented, and the Revised TAM Model is used to test the acceptance of the application of Augmented Reality technology in Online Retail. The objective of this research are :

- To determine the main factors that influence the intention to use Augmented Reality technology by Online Retail customers in Indonesia
- To find out which factors have the most influence on the intention to use Augmented Reality technology applied in Online Retail Indonesia
- To find out the relationship of these factors that influence the customer's intention to use Augmented Reality technology

Augmented reality (AR) means add a virtual object (generated using a computer) to the real world so that it will appear alive and in the real world [1].

IS Success Model is a model used to measure the success rate and effectiveness of information systems by providing a comprehensive framework to measure the performance of information systems and improve understanding of the effectiveness of the application of an information system [2]. According to TAM Model, the interest in behavioral intention is determined by the perception of ease of use and perceived usefulness of the technology [3].

The revised TAM Model [4] used in this study is derived from a combination of IS Success Model [5], and [6] and the expanded TAM theory, which consists of system quality, information quality, and service quality as independent variables; usefulness as the main mediator; and intention to reuse Augmented Reality as dependent variables.

Smartphone based on Augmented Reality (AR). learn this propose model determine the usefulness of telepresence and whether usability in the revised technology acceptance model and telepresence in the telepresence mediation hypothesis model can mediate the relationship between the three types of AR quality and intention to reuse AR [4].

System quality and information quality indirectly affect the intention to use Augmented Reality, while the service quality either indirectly or directly affects the intention to use AR. [7].

Research conducted by [4] to purposed two models determine whether telepresence replaces usefulness and whether usefulness in the revised technology acceptance model and telepresence in the telepresence-mediated hypothesis model can mediate the relationship between the three types of AR quality and intention to reuse AR what predicts the use of smartphone-based Augmented Reality (AR). [8] developed a theoretical model that explains users' continuance intention based on Augmented Reality, and empirically tested the factors that influence Augmented Reality's continuance intention. The results of the study indicate that the quality of information is the factor that most influences the continuous intention of Augmented Reality among other factors. [9] conducted an analysis of the factors that influence satisfaction and purchase intention on augmented reality e-commerce mobile applications in Indonesia. This study reveals that purchase intention is influenced by satisfaction, price and value trade off, perceived augmentation and perceived enjoyment. While satisfaction is influenced by the price and value of the trade off, perceived augmentation, perceived benefits, perceived enjoyment and system quality. [10] investigated how the quality of a seller's website affects the economic and social satisfaction of buyers, which in turn affects buyers' repurchase intentions in the context of customer-to-customer (C2C) e-commerce. The results show that information quality has a stronger impact on economic satisfaction than service quality. Service quality has a stronger impact on social satisfaction than information quality. System quality has no effect on economic or social satisfaction. Economic satisfaction can contribute to buyers' repurchase intentions, but the impact of social satisfaction on repurchase intentions is not significant. Another research is that conducted by [11]. This study aims to identify the factors that influence the intention of students and visitors to use iMAP-CampUS mobile apps. The results showed that the user's perceived enjoyment and satisfaction were important determinants for the use of iMap-CampUS.

The research related to Augmented Reality technology lies in the research objective which intends to find out the cause-and-effect relationship of the existence of Augmented Reality technology on a business activity or online buying and selling transaction. The research conducted by the author tries to see the impact on the intention to use Augmented Reality technology that is felt by Online Retail users to transact, taking into account a number of factors; namely (1) Information

Quality, (2) System Quality, (3) Service Quality, (4) Usability and (5) Satisfaction.

2. MATERIALS AND METHOD

2.1 E-Commerce

Electronic commerce (E-Commerce) "the use of the internet and the web for business transactions", can be interpreted that e-commerce is the activity of conducting trade or business transactions online using the internet and other online devices [12].

E-Commerce channels are online that can be reached by someone through a computer, which is used by business people to carry out their business activities and is used to obtain information that helps customers, which in the process begins by providing information services to consumers in making choices [13].

2.2 Characteristic of E-Commerce

According to [14] something can be said as e-Commerce if it has characteristics, namely: (1) it is an exchange of information with digitization; (2) made possible by technology; (3) mediated by technology; (4) it includes technology-based intra-organizational and inter-organizational activities that support the exchange. According to [15] E-Commerce has two characteristics, namely: related to business and commercial activities and the system is run on an internet platform and uses the World Wide Web.

2.3 Online Retail

Online Retail is an activity to sell goods and/or services that are carried out directly by Online Retail organizers to buyers on the Online Retail site [16]. According to [17] Online Retail is one way of ordering products online which includes all activities that involve selling goods directly to end consumers for personal use.

2.4 Augmented Reality

According to [18] Augmented Reality is: "We define Augmented Reality (AR) as a real-time direct or indirect view of a physical real-world environment that has been enhanced/augmented by adding virtual computer-generated information to it." Augmented means that the size or value has

been added, while Reality is something that can actually be seen or felt for real. Augmented reality (AR) will add virtual objects (generated using a computer) in the real world so that the object will appear alive and in the real world [19].

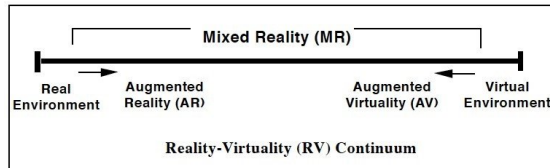


Figure 1: Augmented Reality

It can be concluded that Augmented Reality (AR) can be interpreted as direct or indirect vision of the real world that has added size or value with virtual information in real-time.

2.5 System Quality

System Quality represents the processing quality of the information system itself, which includes software and data components, and it is a measure of the extent to which the system is technically sound. System quality relates to whether there are any disturbances in the system, user consistency, ease of use, documentation quality, and also the quality and maintainability of program code [6]. System quality is measured by attributes such as ease of use, functionality, reliability, data quality, flexibility, and integration [2]. A comprehensive instrument for system quality was developed and validated by [20] which yields nine attributes - ease of use, ease of learning, user requirements, system features, system accuracy, flexibility, sophistication, integration, integration, and customization.

System quality also reflects usability, availability, reliability, adaptability, and response time [2], which are confirmed to have a positive impact on system quality on user satisfaction [21], [2], [22]. Measurement of System Quality according to [21] is as follows :

a. Search Facility

The search facility reflects how a tool or structure helps site users to find the information they want [23]. One of the problems in a website is when a website user loses track of the flow on the site and is not sure how to proceed, the problem is referred to as a navigation problem [24]. It is helpful if a site has a sitemap that website users can use to view the layout of the site (Hudson et al, 2000). But some sites are too large in scale and it is

difficult to find any specific information within the site. To reduce this problem it is necessary to add a site search feature.

b. Responsiveness

Responsiveness is defined as a willingness to help site users. This can be measured by the time it takes for a site to answer a user's question. Responsiveness problems can be viewed in at least two ways: load time (time it takes to load) and search time (time it takes to search). Search time largely depends on the size of the database [25]. Many of the pages were designed with load time in mind and added illustrations while waiting. If the load time exceeds the time desired by the site user, the user will redirect their web browser to another website or stop using the web. Thus concludes, in terms of waiting time on the internet, it is best if a web page can be loaded quickly and efforts for this will be rewarded.

c. Multimedia Capability

Multimedia capabilities refer to non-verbal content about products or services to enhance the user's feeling of preference for websites such as images, videos, audio, and animations [21]. According to [10], these features can meet the information needs of users, generate trust, and improve the user experience of the site. In addition, the more multimedia features, the longer it will take to download and load the site. So site developers are required to find a balance between attractive multimedia content and information provision [23].

2.6 Information Quality

Information quality refers to the quality of the output produced by the system which can be in the form of reports or online screens [2]. Researchers have used various concerns for information quality.

[21] Conducted a study to identify the factors that make a site more effective. The measurements used by [21] are as follows:

a. Information Accuracy

The most basic capability of a website is the presentation of information about products, services, people, or ideas [21]. An information presented can also affect the image of a company or brand. Therefore, it is very important for a company to expand their attention to the possible factors to improve the quality of information.

b. Information Relevance

Information relevance refers to the extent to which the information on the website relates to the information needs of customers [21]. Each section of the website should be differentiated based on the needs of a group of users.

2.7 Service Quality

Service Quality will discuss the quality of service received by users from the system used, examples of responsiveness, accuracy, and reliability of services [26].

Service Quality is the fulfillment of customer needs and desires as well as the accuracy of delivery to balance customer expectations [27]. According to [27] defines service quality as a measure of how good the level of service provided by a service provider business entity is able to meet customer expectations.

According to [28] revealed that there are ten determinants of service quality, namely as follows:

1. Reliability

Ability to deliver the promised service reliably and accurately. In general reliability means that the company delivers on its promises of supply, problem solving.

2. Responsiveness

Ability to assist customers and provide prompt service. This dimension emphasizes attention and accuracy when dealing with customer requests, questions and complaints.

3. Assurance

The ability of knowledge, courtesy, towards customers to generate confidence and trust. This dimension can be said to be important because it relates to customer trust in the company.

4. Tangibles

Stating physical evidence that can be felt from a service, which can be in the form of physical equipment, equipment used, employee appearance, and the surrounding environment.

5. Security

Stating related to security issues and risks, dangers or doubts that may occur after using the service, whether physically, financially, or data confidentiality.

6. Access

Stating related to the ease of being contacted and found, this relates to the location and communication media that are opened to deal directly with the company

2.8 Usefulness

Usefulness is a measure by which the use of a technology is believed to bring benefits to the people who use it [2]. According to [25] the perception of usefulness is a definition where someone believes that by using a certain system, they will be able to improve their performance. Usefulness can be measured through several indicators such as improving performance, facilitating work, and feeling the overall benefits of technology [3].

According to [29] and [30] usefulness can be measured by indicators of increasing productivity, making work more effective, and speeding up a job. It is the degree to which an individual believes that using a particular application can improve his or her job performance in an organizational context. This perception is measured through indicators such as productivity, effectiveness, importance for work (importance to job), and overall usefulness.

2.9 Satisfaction

According to [2] "User Satisfaction" is not a component of the success of the system, but a consequence of the success of the system. Satisfaction is a feeling that results from the benefits that users expect when interacting with the Online Retail system. In the context of Online Retail, consumer satisfaction in online purchases consists of satisfaction in the buying process and user satisfaction in using information technology.

It is very important to assess customer satisfaction, especially for high-tech products and services. This is because customer satisfaction can have an important impact, both positive and negative, in getting new customers. Consumer satisfaction affects the consumer's decision to continue the purchase or not. Product characteristics, such as quality, ease of use, attractiveness, aesthetics and value for money must

exceed consumer expectations for the products offered.

2.10 Intention to Use

According to [31] a person's intention (desire) to perform certain behaviors. Meanwhile behavioral intention to use is a behavioral tendency to continue using a technology.

According to [28] in a study conducted by [32], behavioral intention is divided into three dimensions, namely:

1. Recommendation

A behavioral intention that encourages friends or relatives to use the company's goods or services or recommend the company to others, so that they indirectly do marketing for the company and bring consumers to the company.

2. Reuse or Repurchase Intention

An intention to behave using a product twice or more. They are those who use the same product twice, or buy two different products on two occasions.

3. Pay more

An intention to behave that arises as a result of consumer satisfaction with a business entity, although there is a change in the price to a higher level, consumers still want to pay a higher price

2.11 Research Model

Descriptive research can be used to describe and explain the factors that can affecting Intention to use and its influence on System Quality, Information Quality, Service Quality and Usefulness. In this study, two types of variables were used, independent variables and dependent variables. Independent variables are System Quality (X1), Information Quality (X2), Service Quality (X3), Usefulness (X4), and Satisfaction (X5) and Intention to Use (Y) as the dependent variable. This research models is shown in the figure below.

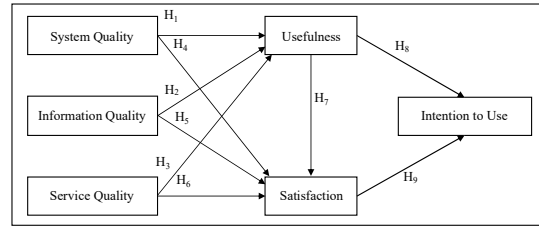


Figure 2: Research Model

Therefore the research uses statistical data and to be tested, so the hypotheses must be quantified. The aims of this study is to find out customers intention to use Augmented Reality technology in Online Retail, therefore the hypothesis of this research is as follows :

- H1: System Quality has a positive effect on Usefulness.
- H2: Information Quality has a positive effect on Usefulness.
- H3: Service Quality has a positive effect on Usefulness.
- H4 : System Quality has a positive effect on Satisfaction.
- H5: Information Quality has a positive effect on Satisfaction.
- H6: Service Quality has a positive effect on Satisfaction.
- H7: Usefulness has a positive effect on Satisfaction.
- H8: Usefulness has a positive effect on Intention to Use AR.
- H9: Satisfaction has a positive effect on Intention to Use AR

2.12 Population and Sample

The population is an area consisting of an object or subject that has the characteristics and qualities set by the researcher to be analyzed and conclusions can be drawn [33] . The minimum sample size for SEM is 100 cases [34] 150 cases [35] or 200 cases [36]. The population of Online Retail users with Augmented Reality in Indonesia is not specifically known, so to determine the number of samples needed in the study using the formula [37].

For this study, we set a standard deviation of 0.5, a confidence level of 95% and a margin of error of ± 5%. With a 95% confidence level, the existing Z-score is 1.96. Then the calculations are as follows:

$$n = Z^2 * \sigma(1-\sigma) / e^2 \tag{1}$$

$$n = (1.96)^2 * 0.5(1-0.5) / (0.05)^2 \quad (2)$$

$$n = 3.8416 * 0.25 / 0.0025 \quad (3)$$

$$n = 384.16 \quad (4)$$

Sample were collected by questioners from minimum 385 respondents and questionnaire dissemination is conducted online using Google Forms. The Likert scale used is a 5-point scale (one to five), where each number can represent a situation, see table below.

Table 1: The Likert Scale

Answer	Score
Strongly Disagree	1
Disagree	2
Quite Agree	3
Agree	4
Strongly Agree	5

The operational definition is a description of the definitions and indicators of the variables used in research, operational definition of this research can be seen in the table below.

Table 2: The Operational Definition

Variable	Indicators	Code
System Quality (X1)	1) Ease of System Operation	STQ1
	2) System response	STQ2
	3) Reliable	STQ3
Information Quality (X2)	1) Accuracy of information	IFQ1
	2) Clarity of information	IFQ2
	3) Actual information	IFQ3
Service Quality (X3)	1) Fast Respond	SVQ1
	2) Quick Service	SVQ2
	3) Personalization	SVQ3
Usefulness (X4)	1) Save Time	USE1
	2) Increase Effectiveness	USE2
	3) Useful	USE3
Satisfaction (X5)	1) Satisfied	SAT1
	2) Meet the needs	SAT2
	3) Satisfied with the function	SAT3
Intention to Use (Y)	1) Intention to Use	ITU1
	2) Predictive	ITU2
	Intention	ITU3

Variable	Indicators	Code
	3) Intention to Recommend	

Convergent Validity aims to see the correlation between the indicators used in a construct. A variable is valid if it has a loading factor value greater than or equal to 0.7 and has an AVE value greater than or equal to 0.5 [10], specific composite reliability values that can be accepted in exploratory research are in the range of 0.6 to 0.7 [10]. The level of reliability of Cronbach's Alpha [10] can be seen in the table below.

3. RESULTS AND DISCUSSION

3.1 Method of Data Collection

Data was collected from 400 respondents and the results is there's 53.5% are female and 46.5% are male, 36% of Online Retail transactions were contributed by consumers aged 18-25 years, 49% were contributed by consumers aged 26-35 years, and 13% by 36-45 years old, 2% by 46-55 years old, and 0.2% by age above 55 years. Profession categories are categorized into students (167 respondents or 41.8%), private employees (151 respondents or 37.7%), civil servants (41 respondents or 10.3%), entrepreneurs (37 respondents or 9.3 %), do not work (4 respondents or 1%). Based on location category respondents who filled out the e-questionnaire outside of JaBoDeTaBek area were 267 respondents or 67.3% and 130 respondents or 32.7% are inside of JaBoDeTaBek area. Based on the results of the e-questionnaire related to the experience of transacting at Online Retail with AR technology, as many as 56.3% or 225 respondents chose Online Retail Shopee, 3.5% or 14 respondents chose Wardah, 19% or 76 respondents chose Sephora, 4.3% or 17 respondents chose Oriflame, 12% or 48 respondents chose Optik Melawai, 11% or 44 respondents chose Dulux, 7% or 28 respondents chose Nippon Paint, 31.5% or 126 respondents chose IKEA, and as many as 8.3% or 33 respondents choose to shop using Augmented Reality at Online Retail JD.ID. Based on the results of e-questionnaires related to the experience of trying Augmented Reality (AR) technology on Online Retail, there were 37.8% or 151 respondents who had tried Shopee's AR technology, namely Shopee Beauty Cam, 4.5% or 18 respondents had tried Wardah's AR technology, namely Wardah Beauty Apps, 16% or 64 respondents have tried

Sephora's AR technology, namely Sephora Virtual Artist, 2.3% or 9 respondents have tried Oriflame AR technology, namely Oriflame Beauty Apps, 9.8% or 39 respondents have tried Optical Melawai AR technology, namely Optics Melawai Virtual Try On, 9% or 35 respondents have tried Dulux AR technology, namely Dulux Visualizer, 6% or 25 respondents have tried Nippon Paint AR technology, namely Nippont Paint Visualizer, 33.4% or 134 respondents have tried IKEA AR technology, namely IKEA Place , and only 3% or 12 respondents have ever tried AR JD.ID technology namely JD.ID Make Up Try On. Based on the research, the most frequently used Augmented Reality by respondents in the last 6 months was 33.5% or 133 respondents chose Shopee Beauty Cam, 2% or 8 respondents chose Wardah Beauty Apps, 11.3% or 45 respondents chose Sephora Virtual Artist, 1% or 4 respondents chose to use Oriflame Beauty Apps, as many as 8.3% or 33 respondents chose to use Optik Melawai Virtual Try On, as many as 7.1% or 28 respondents used Dulux Visualizer, 4.8% or 19 respondents used Nippon Paint Visualizer , as many as 29.5% or 117 respondents often use IKEA Place and only 2.5% or 10 respondents who choose JD.ID AR Make Up Try On. It can be concluded from the results of the e-questionnaire that the majority of the Augmented Reality applications most frequently used by respondents in the last 6 months are Shopee Beauty Cam, which is 33.5% or 133 respondents then IKEA Place with a percentage of 29.5% or 117 respondents. The structural model using SmartPLS 3 can be seen in the figure below.

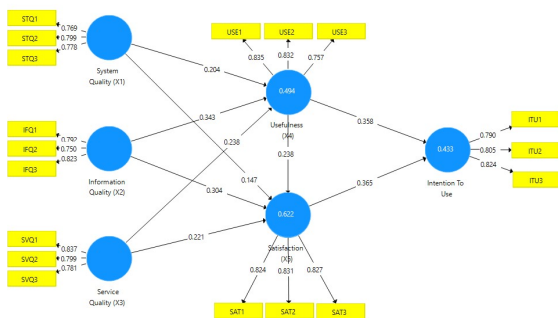


Figure 3: The Structural Model

3.2 The Convergent Validity Result

Based on calculations using the SmartPLS 3, the result of loading factor and AVE value for each indicator can be seen in the table below.

Table 3: The Convergent Validity Result

Variable	Indicator	Loading Factor	AVE	Status
System Quality	STQ1	0,769	0,611	Valid
	STQ2	0,799		Valid
	STQ3	0,778		Valid
Information Quality	IFQ1	0,792	0,622	Valid
	IFQ2	0,750		Valid
	IFQ3	0,823		Valid
Service Quality	SVQ1	0,837	0,650	Valid
	SVQ2	0,799		Valid
	SVQ3	0,781		Valid
Usefulness	USE1	0,835	0,654	Valid
	USE2	0,832		Valid
	USE3	0,757		Valid
Satisfaction	SAT1	0,824	0,684	Valid
	SAT2	0,831		Valid
	SAT3	0,827		Valid
Intention to Use	SAT3	0,827	0,650	Valid
	ITU1	0,790		Valid
	ITU2	0,805		Valid

3.3 The Discriminant Validity Result

The Discriminant Validity Test is a stage carried out to see whether the variables or indicators in the research we are doing have unique values and are related to their own variables or indicators and not from variables or indicators outside those expected or represented. To see whether the research model has good Discriminant Validity, then there are 2 (two) steps that must be taken, namely the Cross Loading results and the Fornell Larcker Criterias. The first method is to measure Cross Loading, where the Cross Loading results must show that the indicators of each construct must have a higher value than the indicators on other constructs. The results of the Cross Loading test in this study are as follows:

Table 4: The Discriminant Validity Result

	Information Quality (X2)	Intention To Use	Satisfaction (X5)	Service Quality (X3)	System Quality (X1)	Usefulness (X4)
IFQ1	0,792	0,465	0,550	0,485	0,527	0,474
IFQ2	0,750	0,488	0,556	0,573	0,589	0,549
IFQ3	0,823	0,502	0,575	0,544	0,543	0,506
ITU1	0,468	0,790	0,438	0,427	0,443	0,510
ITU2	0,525	0,805	0,532	0,446	0,458	0,468
ITU3	0,495	0,824	0,482	0,402	0,477	0,471
SAT1	0,579	0,436	0,824	0,550	0,521	0,465
SAT2	0,630	0,526	0,831	0,577	0,596	0,573
SAT3	0,555	0,522	0,827	0,559	0,530	0,596
STQ1	0,518	0,460	0,463	0,504	0,769	0,490
STQ2	0,565	0,449	0,511	0,604	0,799	0,445
STQ3	0,562	0,430	0,578	0,571	0,778	0,505
SVQ1	0,545	0,446	0,548	0,837	0,601	0,527
SVQ2	0,558	0,417	0,527	0,799	0,599	0,474
SVQ3	0,539	0,413	0,568	0,781	0,535	0,488
USE1	0,591	0,489	0,581	0,562	0,548	0,835
USE2	0,527	0,528	0,544	0,516	0,507	0,832
USE3	0,443	0,432	0,475	0,406	0,430	0,757

From the result shows that the cross loading value of each indicator to its construct is greater than the loading value of the other

constructs. From these results it can be concluded that there is no problem with discriminant validity. All indicators have a greater correlation coefficient with each construct than the indicator correlation coefficient value in the construct block in the other columns. The second method for the next test is the Fornell Larcker criterion, to get a good discriminant validity of a research model, the root of the AVE in the construct must be higher than the correlation of the construct with other latent variables. The Fornell Larcker Criterion results obtained in this study are as follows:

Table 5: The Fornell Larcker Criterion Result

	Information Quality (X2)	Intention To Use	Satisfaction (X5)	Service Quality (X3)	System Quality (X1)	Usefulness (X4)
Information Quality (X2)	0,789					
Intention To Use	0,616	0,806				
Satisfaction (X5)	0,712	0,601	0,827			
Service Quality (X3)	0,679	0,528	0,680	0,806		
System Quality (X1)	0,703	0,570	0,666	0,717	0,782	
Usefulness (X4)	0,648	0,599	0,662	0,617	0,615	0,809

Based on cross loading and Fornell Larcker Criterion, it can be concluded that the data model tested in this study has met the requirements or criteria which show evidence that the construct in the model has discriminant validity as well as the initial stage before testing after passing various series of tests.

3.4 The Reliability Test Result

The specific composite reliability values that can be accepted in exploratory research are in the range of 0.6 to 0.7 and the Cronbach's alpha value is greater than 0.6. The result can be seen in the table below :

Table 6: The Reliability Test Result

Variabel	Cronbach 's Alpha	Composite Reliability
Information Quality (X2)	0,696	0,831
Intention To Use	0,731	0,848
Satisfaction (X5)	0,769	0,867
Service Quality (X3)	0,730	0,848
System Quality (X1)	0,683	0,825
Usefulness (X4)	0,736	0,850

It can be concluded that the indicators used in each variable have good reliability.

3.5 The Hypothesis Test Result

The relationship between variables can be said to be significant and it can be concluded that the hypothesis is accepted. Besides that, it can also be seen through the t-statistic, if the t-statistic value is ≥ 1.96 , the relationship between variables can be said to be significant.

Table 7: The Hypothesis Test Result

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O-STDEV)/M)	P Values	Result
H1. Information Quality (X2) -> Satisfaction (X5)	0,304	0,305	0,059	5,189	0,000	Significant
H2. Information Quality (X2) -> Usefulness (X4)	0,343	0,338	0,060	5,710	0,000	Significant
H3. Satisfaction (X5) -> Intention To Use	0,365	0,364	0,051	7,188	0,000	Significant
H4. Service Quality (X3) -> Satisfaction (X5)	0,221	0,221	0,065	3,391	0,001	Significant
H5. Service Quality (X3) -> Usefulness (X4)	0,238	0,243	0,063	3,792	0,000	Significant
H6. System Quality (X1) -> Satisfaction (X5)	0,147	0,149	0,057	2,594	0,010	Significant
H7. System Quality (X1) -> Usefulness (X4)	0,204	0,206	0,056	3,645	0,000	Significant
H8. Usefulness (X4) -> Intention To Use	0,358	0,358	0,051	6,986	0,000	Significant
H9. Usefulness (X4) -> Satisfaction (X5)	0,238	0,238	0,052	4,565	0,000	Significant

The test results between the relationship between variables and show the value of T-statistics on each variable relationship on the path coefficient. All relationships between variables show significant results.

3.6 Analysis of Direct Effects

In the research method that uses explanatory research, where to see the relationship between constructs outside the model can be done by experimental methods. In the PLS calculation, to find the relationship between constructs outside the model, the Direct - Indirect Effects method is used and the results are as in the table below:

Table 8: Analysis of Direct Effects

	Original Sample (O)	T Statistics ((O/STDEV)	P Values
System Quality (X1) -> Intention To Use	0,144	4,423	0,000
Information Quality (X2) -> Intention To Use	0,263	6,949	0,000
Service Quality (X3) -> Intention To Use	0,186	5,102	0,000
Usefulness (X4) -> Intention To Use	0,087	4,001	0,000
Satisfaction (X5) -> Intention To Use	0,365	6,188	0,000

3.7 Analysis of Indirect Effects

3.7.1 System Quality -> Intention to Use

Table 9: Indirect Effects System Quality -> Intention to Use

	Original Sample (O)	T Statistics (O/STDEV)	P Values
System Quality (X1) -> Usefulness (X4) -> Intention To Use	0,073	3,091	0,002
System Quality (X1) -> Satisfaction (X5) -> Intention To Use	0,054	2,502	0,013
System Quality (X1) -> Usefulness (X4) -> Satisfaction (X5) -> Intention To Use	0,018	2,763	0,006

Hypothesis testing proves that the System Quality variable has a direct or direct influence on the intention to use Augmented Reality technology at Online Retail in Indonesia, it is evident from the T-Statistic value obtained which is 4.423 greater than the T-Statistic value using the mediating variable. Indicators of System Quality based on the output results of the bootstrapping diagram show that the biggest influence on the intention to use Augmented Reality technology is STQ2 (0.799), namely Augmented Reality technology can carry out its functions quickly and efficiently.

3.7.2 Information Quality -> Intention to Use

Table 10: Indirect Effects Information Quality -> Intention to Use

	Original Sample (O)	T Statistics (O/STDEV)	P Values
Information Quality (X2) -> Usefulness (X4) -> Intention To Use	0,123	4,108	0,000
Information Quality (X2) -> Satisfaction (X5) -> Intention To Use	0,111	3,776	0,000
Information Quality (X2) -> Usefulness (X4) -> Satisfaction (X5) -> Intention To Use	0,030	3,217	0,001

Hypothesis testing proves that the Information Quality variable has a direct or direct influence on the intention to use Augmented Reality technology at Online Retail in Indonesia, it is evident from the T-Statistic value obtained which is 6.949 greater than the T-Statistic value using the mediating variable. Indicators of Information Quality based on the results of the output bootstrapping diagram show that the biggest influence on the intention to use Augmented Reality technology is IFQ3 (0.823), namely Augmented Reality technology can provide the latest information relevant to customers.

3.7.3 Service Quality -> Intention to Use

Table 11: Indirect Effects Service Quality -> Intention to Use

	Original Sample (O)	T Statistics (O/STDEV)	P Values
Service Quality (X3) -> Usefulness (X4) -> Intention To Use	0,085	3,559	0,000
Service Quality (X3) -> Satisfaction (X5) -> Intention To Use	0,081	3,153	0,002
Service Quality (X3) -> Usefulness (X4) -> Satisfaction (X5) -> Intention To Use	0,021	2,691	0,007

Hypothesis testing proves that the Service Quality variable has a direct or direct influence on the intention to use Augmented Reality technology at Online Retail in Indonesia, it is evident from the T-Statistic value obtained which is 5.102 greater than the T-Statistic value using the mediating variable. Indicators of Service Quality based on the results of the output bootstrapping diagram show that the biggest influence on the intention to use Augmented Reality technology is SVQ1 (0.837), namely Augmented Reality technology is very responsive to customer requests.

3.7.3 Usefulness -> Intention to Use

Table 12: Indirect Effects Usefulness -> Intention to Use

	Original Sample (O)	T Statistics (O/STDEV)	P Values
Usefulness (X4) -> Satisfaction (X5) -> Intention To Use	0,087	4,001	0,000

Hypothesis testing proves that the Usefulness variable has an indirect or indirect effect on Intention to Use or the intention to use Augmented Reality technology is greater than the mediation variable, namely satisfaction / Satisfaction in using Augmented Reality in Online Retail in Indonesia, it is evident from the T-Statistic value obtained that is equal to 4,001. The indicator value of the greatest Usefulness is USE1 (0.835), namely customers feel that using Augmented Reality technology can save time because they get information about a product faster.

4. CONCLUSION

Therefore, all factors (System Quality, Information Quality, Service Quality, Satisfaction and Usefulness) are positively affects on Intention to Use Augmented Reality technology in Online Retail. The factor with the greatest value in both direct and indirect effect on the Intention to Use Augmented Reality is Information Quality, with the mediation factors is Usefulness..

Based on the results, several things can be obtained as follows:

1. Factors that influence customer intention to use Augmented Reality technology to shop online are System Quality, Information Quality, Service Quality, Satisfaction and Usefulness.
2. The influence of factors (System Quality, Information Quality, Service Quality, Satisfaction and Usability) on customer intentions to use Augmented Reality technology are as follows:
 - a) The factor that has the greatest direct (direct) effect on the intention to use Augmented Reality technology is Information Quality compared to the Service Quality, System Quality, Usefulness and Satisfaction factors.
 - b) The factor that most indirectly influences the intention to use Augmented Reality technology is the Information Quality factor compared to the Service Quality, System Quality, and Usefulness factors.
 - c) All factors (Information Quality, Service Quality, System Quality, and Usability) have a greater influence on the intention to use (Intention to Use) Augmented Reality technology if through the usability mediating factor compared to the Satisfaction mediating factor. This means that customers feel the benefits or usefulness of Augmented Reality

technology, it will increase customer intentions in using the technology compared to the satisfaction felt by customers when using Augmented Reality technology.

4. RECOMMENDATIONS

Based on the results of these conclusions, the authors suggest several things, namely:

- Online Retail Companies that implement Augmented Reality applications are important to improve the main factor, namely the quality of information (Information Quality) from Augmented Reality, in order to create intentions to use Augmented Reality in online shopping by customers. Online retailers need to include information about the stock quantity of the product displayed on the application so that the information provided is more complete. Augmented Reality technology can also be integrated with other technologies to make it more optimal, such as Artificial Intelligence and Big Data technology. So that it can display personalized information. Personalization means obtaining sufficient information, data that is accurate or appropriate or relevant to the needs of each customer.
- Online Retail is important to bring out the usefulness or benefits of using Augmented Reality to customers such as the ease of trying or feeling the product before buying using Augmented Reality technology. In addition, the use of Augmented Reality technology can be a business solution in the midst of the COVID-19 pandemic, customers do not need to come directly to the store to reduce gathering activities so that the COVID-19 virus does not spread. In online e-mail, it is better to add an online purchase feature after trying products using Augmented Reality technology, so that customers don't need to go to the store again to buy products that have been tried so that the benefits of using Augmented Reality technology are more optimally felt by customers. Other activities that can be carried out by Online Retail are to increase customer intention to use Augmented Reality technology such as campaigns or promotions for the use of

- Augmented Reality technology to attract customers to use the technology.
- Online retail with beauty and fashion product categories should adopt future Augmented Reality technology which is currently being developed by researchers, namely E-Skin (Electronic Skins) technology. This technology allows users to interact with virtual objects, in the future E-Skin technology is intended to provide better results on Augmented Reality technology
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