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The Influence of Augmented Reality on Purchase Intention through Spatial Presence and Perceived Personalization

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Abstract

With the addition of 40 million new internet users in Southeast Asia during 2020 (400 million users in 2020 vs 360 million in 2019), referring to the e-Conomy Sea report data, 2020, has driven e-commerce GMV from 38 Billion USD in in 2019 to 62 Billion USD in 2020, or grew by 63%. In Indonesia alone, e-commerce growth in this period was 54% (21 billion USD to 32 billion USD), and is estimated to reach USD 82 billion by 2025.
The education, daily necessities, and online lending sectors received the highest growth in terms of early digital users, both through online media and e-commerce. Beauty products are one of the four main categories for e-commerce, this shows great potential for cosmetic products to penetrate e-commerce. According to data from the 2020 ZAP Beauty Index, purchasing beauty products through physical outlets is still the main choice. The main problems in buying beauty products are perception problems, including invalid or confusing information, color and size differences between online and real products, not being able to try the product in person, and not being able to find the desired color when shopping online.

This study examines the use of AR in the beauty industry, supported by mobile technology, which is able to stimulate and provide benefits to the user experience.

Keywords *: Augmented reality, perceived personalization, purchase intention, spatial presence*

1. Introduction

1.1. Background

The rise of online marketplaces has also shaped the pattern of consumer-seller relationships, along with the increase in online spending which grew by 54% YoY from USD 21 billion in 2019 to USD 34 billion in 2020, and is estimated to reach USD 82 billion in 2025 (e-Conomy Sea, 2020). The value of e-commerce transactions completed via mobile devices reached USD 7.1 billion, with USD 5.3 billion generated from sales through applications. The shift in purchasing patterns of retail products towards online is increasingly accelerated by the current situation of adapting to new habits. Over time, internet users in Southeast Asia are also increasing as can be seen in the following figur

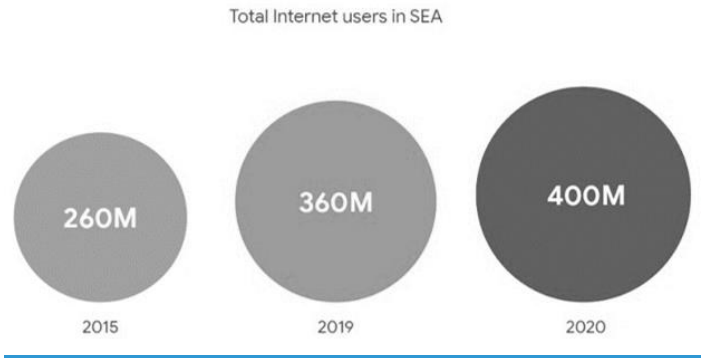


Figure 1. Total Internet Users in SEA

With the addition of 40 million new internet users in Southeast Asia during 2020 (400 million users in 2020 vs 360 million in 2019), referring to the data in Figure 1, has pushed e-commerce GMV from 38 Billion USD in 2019 to 62 Billion USD in 2020, or growing by 63%. In Indonesia alone, e-commerce growth in this period was 54% (21 billion USD to 32 billion USD). The challenge for marketers is to cultivate an online environment that can evoke real feelings in consumers, thereby influencing their emotional and behavioral responses (Da Silva and Mazzon, 2016) AR combined with virtual reality represents an essential innovative media format (Rauschnabel, Felix and Hinsch, 2019) which allows consumers to visually inspect virtual objects. This makes AR a distinct advantage over other online products as it reduces purchase risk and improves the customer experience when using the product. Compared to online stores that only have images and videos on their websites, stores that provide AR services make it easier for customers to make purchasing decisions based on their interactive experiences in the "reality environment" built by AR services (Fan et al., 2020).

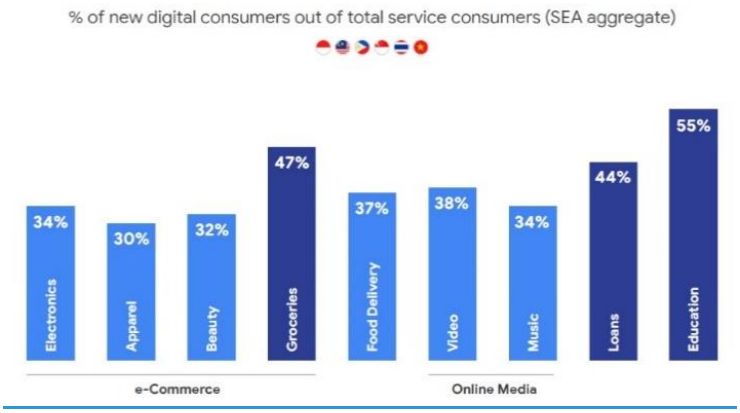


Figure 2. % of New Digital Consumers Out of Total Service Consumers

Above figure shown that there are four main categories of e-commerce products used by consumers, namely daily necessities (groceries), electronic products, beauty products, and apparel products (e-Conomy Sea, 2020). Total spending in the fashion & beauty category reached USD 2.3 billion, an increase of 18% from the previous year. The four best-selling makeup categories in

Indonesia are eye makeup, facial moisturizer, face powder, and lipstick. Despite current technological advances, the majority of Indonesian women or 52.9% prefer official outlets as a place to buy beauty products, while 27.5% through e-commerce, and 20.4% through social media

The main problems in buying beauty products are perception problems, including invalid or confusing information, color and size differences between online and real products, not being able to try the product in person, and not being able to find the desired color when shopping online. This study examines the use of AR in the beauty industry, supported by mobile technology, which is able to stimulate and provide benefits to the user experience. AR is a collection of technologies that integrate real-world environments and computer-generated virtual objects (Fan et al., 2020) so as to produce realistic simulations as a combination of the two in real time. MAR combines the physical environment with virtual objects served via mobile devices. A further application of AR is through the use of applications on mobile devices or called Mobile Augmented Reality

Through this application, consumers can get a very real visualization of the product being marketed, for example for furniture products, consumers will get a visualization of the product being marketed against the suitability of the room or room where the product will be placed virtually, using cameras and applications on consumer smartphones. . With this scenario, the customer experience will be better which also increases their purchase intention, as experienced by Amazon App when implementing AR View in marketing furniture products. AR technology helps shape customer decisions by increasing convenience in shopping online and reducing uncertainty in choosing products (Hoyer et al., 2020). According to Loureiro et al (2019) With the rapid emergence of AR applications in various industries, technology experts suggest first understanding theoretically and practically how AR applications can influence and change the customer experience (Qin, Peak and Prybutok, 2021). By definition, AR marketing is a strategic concept that integrates digital information or objects into one's perception of the physical world, often in combination with other media, to expose, articulate, or demonstrate consumer benefits to achieve organizational goals (Rauschnabel, Felix and Hinsch, 2019) . AR technology can also be used for market research and as an empirical data collection tool for practitioners. For example, to determine the level of satisfaction, development of customer-brand relationships, increase in brand value, and motivation of customer behavioral intentions (Chylinski et al., 2020).

With the increasing number of companies using AR as part of their marketing plans, marketing strategies using AR have been considered as a separate form of digital marketing and become part of the development of long-term capabilities that are considered strategic (Rauschnabel, Felix and Hinsch, 2019). AR marketing is a solution for companies by providing in-depth understanding of the customer purchasing decision process, through providing contextual and virtual information at the pre-purchase stage, enhancing the customer experience at the time of purchase, and improving post-purchase services. By providing services that are able to integrate digital information and the physical environment, AR marketing benefits customers through experiences and demonstrations that feel very real (Chylinski et al., 2020).

AR technology allows customers to try real products using virtual media. With AR technology, customers can determine which products to buy based on personal preferences so that it can increase perceived personalization. Perceived personalization is the customer's perception of the message conveyed regarding a product based on the preferences of each individual customer. In this study, perceived personalization is the perception that a person feels when using MAR (Mobile Augmented Reality) which can be adjusted to the personal characteristics of consumers in meeting their needs. With the increase in perceived personalization in Augmented Reality Advertising, customer purchase intention in a product will also increase (Khan and M, 2019).

Marketing a product using AR technology can also increase the customer's spatial presence. Spatial presence is a subjective experience of application users when they feel physically present in a certain virtual place (Hartmann et al., 2013). With AR technology, users can try the features of beauty products so that they can build a strong sense of spatial presence in the shopping environment. The feeling of being present in a shopping environment by trying the features of these beauty products triggers a new shopping experience for application users because users can try various things as when they are in an offline store.

In the JD.ID application there is a feature called AR Make-Up Try-On which can be seen in figure 3. This feature was officially launched on October 27, 2020. This AR Make-Up Try-On feature uses AR technology so that application users can try virtual beauty or make-up products. The overall concept of this feature is like using a make-up filter on the face.

The launch of the Try-On AR Make-Up filter provides new hope to increase consumer purchase intention in certain beauty products. The AR Make-Up Try-On feature is a solution for consumers who want to use tester products, as is usually done when shopping in person, but considering the aspects of the COVID-19 pandemic and cleanliness. The increased sensation of a new shopping experience can also be felt by users by trying beauty products virtually. In the AR feature, users can choose various beauty products according to their personal preferences and needs. Based on the description described previously, further analysis was carried out on the effect of Augmented Reality on the purchase intention of retail products by considering the spatial presence and perceived personalization variables as intervening variables.

1.2. Objective

This study is to prove the hypothesis that the application of augmented reality will increase consumer purchase intention in certain retail products that require personalization and spatial presence by examining the relationship between variables in the framework.

In general, this study aims to explain how consumers take advantage of the features and facilities available in augmented reality applications and their impact on product purchase intention

2. Literature Review

In marketing a product or service, every company must place its goods or services in market competition. This aims to introduce competitors that the company's position is recognized by competitors and customers. The position of the company can affect the amount of capital and how to survive the company itself (Yuliantari, 2019)

2.1. Purchase Intention

According to Kotler and Keller (2016: 181) purchase intention is how likely consumers are to buy a product or how likely consumers are to switch from one product to another. If the benefits are greater than the sacrifice to get it, the impulse to buy is higher.

It is an incentive for buyers to make choices about a product. Purchase intention also means an attitude related to purchases based on the calculation of the possibility of the buyer to make a transaction. The buyer's desire to buy a product is studied further by marketing and economics to determine the forecast of future customer behavior. Things that can affect customer purchase intention in the future is the customer experience in buying a product which includes price, brand, advertising or promotion, product packaging, and others. Purchase intention in the product becomes a stimulation for each individual customer before finally taking action on the product.

These actions are in the form of proposing, considering, choosing, and buying the product (Hasan, 2014).

2.2. Augmented Reality

Augmented Reality is a technique where there is a merger between virtual objects in the form of two or three dimensions into a real three-dimensional sphere directly or in real time. Augmented reality was first used by Norton Heilig, a cinematographer, in 1957-1962 under the name Sensorama. Sensorama is a simulator that can visually describe, vibrate, and smell (Mustaqim, 2017).

In augmented reality, virtual objects look like real and blend with the place where the user is. Augmented Reality can be implemented with devices that have cameras, monitors or screens to view visual displays, and tracking devices to provide markers for virtual objects which will be projected interactively and real. There are 3 types of processes when detecting objects in an Augmented Reality system, including markers, positioning, and markless augmented reality services. To project a two- or three-dimensional image as if it were real, Augmented Reality first performs vision or vision of the surrounding environment as a place where 3-dimensional objects are projected virtually. The next stage is the tracking process or tracking on a specific object that determines where the virtual object is projected. After that the object will be further analyzed. After the object is recognized and analyzed for its position and orientation, the device will perform a virtual object projection process in the real environment which will be seen on the display or monitor screen (Kusuma, Tanzil and Cenderawan, 2019).

AR technology can be used in many fields including entertainment, design, education, medicine, beauty, and others. AR technology can have a positive effect on customer purchase intention (Khan and M, 2019). In this study, the thing that will be carried out further is the use of AR technology in the beauty industry. With AR technology, customers can feel the real experience of using a particular product before finally deciding to buy the product. There are many aspects that are seen from the use of AR, including:

a. Interactivity

In an offline environment, the interaction between salespeople and customers is a major determinant of purchasing decisions (Edmondson et al., 2019). Interativity is a feeling that is felt by consumers when they feel that they are using a product so that there is two-way communication and information (Chang Yaping, Dong and Sun, 2014). Another definition of interactivity is the high degree of user involvement in modifying the form or environment through a medium (Shen and Khalifa, 2012).

Interactivity is becoming a feature of mobileAR technology. Interactivity has many definitions considering that all types of human behavior can be counted as one type of interaction (Heeter, 2000; Kiousis, 2002), but the most popular is Steuer's (1992) definition as “the degree to which users can participate in modifying the form and content of the environment they are exposed to. mediated in real time.” However, Hoffman and Novak (1996) focus on the importance of technical features that enable users to interact with content comfortably. Sundar et al. (2015) focuses on the power of interactive attributes to immerse consumers into a psychological state that will eventually elicit a behavioral response. The definition applies to our study of mobile AR services that allow users to move and modify virtual content and to participate in augmented reality.

b. Vividness

Vividness refers to the ability of technology "to produce a sensory-rich mediated environment" (Steuer, 1992) that allows consumers to have a realistic sensory Augmented reality (AR) application experience with virtual objects. The level of clarity depends on the number of senses that are activated simultaneously (Witmer and Singer, 1998). For example, users can use mobile AR services to view virtual images almost as clearly as they see real products. Managing virtual avatars, they can immerse themselves in a virtual shopping environment that includes interactive social and spatial sensory experiences and sensory experiences (Shin, 2019). In this study, we show that consumers can use mobile AR services to virtually apply cosmetics and observe how products appear on their faces, up close or from a distance, which provides an enhanced experience and clear cognition.

c. Augmentation

AR technology enhances or superimposes virtual content including text and visual content onto the physical environment (Billinghurst and Kato, 2002) on smartphones, computers and other devices (Rese et al., 2017). Interactivity is often cited as a core characteristic, but deep augmentation characteristics are very important (Javornik, 2016b). Human-computer interaction research has fully addressed augmented reality (Billinghurst and Kato, 2002), but more understanding is needed on the use of AR technology to allow users to try virtual makeup (Javornik, 2016b).

2.3. Perceived Personalization

Personalization is defined as a process where customer information will be used to deliver solutions to the target customer and the solution that will be delivered to the customer is in the form of product information. Another definition of personalization according to Roberts (2013) is the ability of a company to obtain information and serve its customers individually by conveying personal messages. In addition, the concept of personalization is as a preparation process in communicating to each individual consumer based on the preferences of each individual consumer (Dewanto, 2017).

Purchase intention is a situation where consumers have a desire to buy certain products according to their conditions or needs. Perceived personalization of consumers in an advertisement can have an effect on increasing consumer purchase intention. A study shows that perceived personalization is positively and significantly related to consumer interest in shopping online. The study also found that almost 10% of consumer purchase intention depends on the personalization of an AR application (Khan and M, 2019).

Personalized product marketing techniques to increase purchase intention in a product in this study are using AR technology. So, in this case perceived personalization is about the perception of each individual consumer on the use of MAR which can be adjusted to the consumer's personal characteristics in meeting their needs. AR is a collection of technologies that integrate real-world environments and computer-generated virtual objects so as to produce a real simulation as a combination of the two in real time (Purnomo and Haryanto, 2012). By using MAR, consumers can get a very real visualization of the products being marketed based on their personal preferences so that it can increase consumer purchase intention in a product.

2.4. Spatial Presence

Spatial Presence is the subjective experience of an application user to be physically placed in a mediated space, even if it is just a virtual space. AR services trigger beauty product users through features that establish a strong spatial presence in the shopping environment. This presence stimulates the beauty product user experience as a customer in a cosmetic shop; they can behave as if they were in a real store: searching, trying things, and enjoying the shopping experience. The beginning of the presence of the concept of spatial presence occurred in the last 20 years, where there has been extraordinary progress in terms of audiovisual appearance. Not only that, graphics and sound are also available better so that they can create meaningful interactivity (Hartmann et al., 2013).

In the opinion of Minski (1980) the meaningful interactivity of spatial presence can be felt effectively if humans as users feel that they are directly in the place of operation so that the virtual simulation can be felt like real (Hartmann et al., 2013). Most researchers argue that spatial presence is the experience, belief and awareness of a user about what is felt by his body when placed in a room specially designed for simulation, the spatial state or spatial presence varies, so it is necessary to provide a more detailed description of the work in the area. past to be used as evaluation material in the future (Khenak et al., 2020).

The experience felt by application users in purchase intention is the same as promotional media in social media carried out by companies to attract purchase intention in target marketing. The good experience felt by users will increase purchasing power, because without the need to spend a lot of energy on shopping, buyers can enjoy products only at home by using AR features that are easy to use. Just like advertisements on social media that are beautifully published to attract people's purchasing power, the more it attracts people's attention, the higher the people's purchasing power for the goods or services advertised (Marwani and Maulana, 2021). Experience or consumer satisfaction related to goods or services can be felt by conducting direct searches to stores or service providers, so that consumers can experience the services or goods offered directly. However, in the current era this can be felt without having to directly visit a store or service provider, this can be felt and implemented using the internet with AR features. Consumer satisfaction with AR features can be seen from the number of access to these features and can be matched with the number of consumers' purchase intention (Rengganis, Kusdibyo and Senalasari, 2020).

3. Methodology

The participants of this study were young female customers who were asked to use AR applications, especially in beauty products. The number of samples in the study was calculated based on the Lemeshow formula because the number of the study population was unknown. With this formula, the minimum number of samples is 96 respondents. By rounding the calculation results, the minimum number of samples from this study is 100 respondents. A minimum of 100 respondents were participants who joined the survey to experience AR applications, especially in beauty products. The AR application that will be used is the JD.ID application, especially the AR Make-up Try-On feature.

The e-form is distributed to participants who will answer the questionnaire for use in the analysis. Research data were collected by distributing online questionnaires using a snowball sampling procedure. Respondents were contacted through messenger applications and social media. Respondents were first asked if they had ever used an augmented reality mobile e-

commerce app to purchase makeup, and if they answered yes, they were asked to participate in a survey

3.1. Research Model

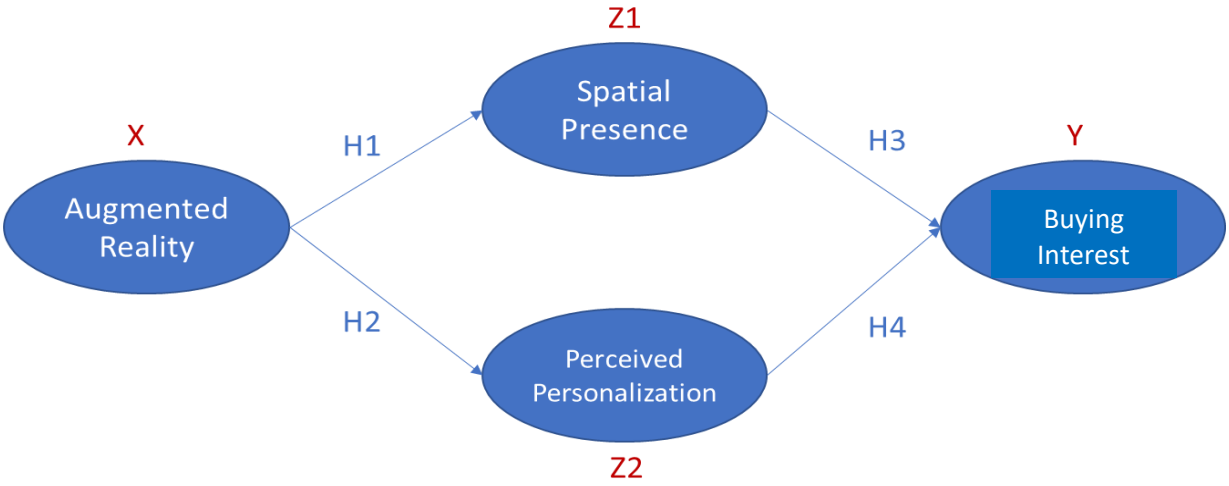


Figure 3. Research Model

H1: the use of augmented reality affects spatial presence
H2: the use of augmented reality affects the perceived personality
H3: the emergence of online spatial presence affects purchase intention
H4: Increased perceived personalization will increase purchase intention

3.2. Measurement Model

A Likert scale, ranging from 1 (strongly disagree) to 4 (strongly agree) was adopted to measure the concept. In line with the previous conceptualization, the measures of interactivity were taken from Wu (2005), vividness (clarity) from Babin and Burns (1998), and augmentation from Javornik (2016b) from Mathwick et al (2001).

Data cleaning and deletion of incomplete questionnaires or missing scores followed by profiling the characteristics of respondents then tested for validity and reliability on the SmartPLS 3.0 software

3.3. Data Analysis Method

Manipulation checking is done by asking respondents to name the MAR e-commerce used to buy beauty products. After cleaning the data and deleting questionnaires that were not completely completed or missing scores, it was continued by profiling the characteristics of the respondents.

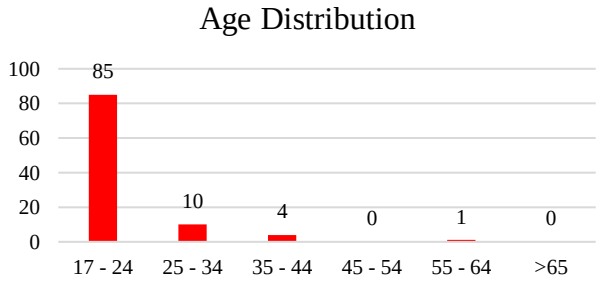
The data obtained from the distribution of the questionnaire will then be tested for validity and reliability on the SmartPLS 3.0 software. There are three parameters tested and their reference values, namely the Average Variance Extracted (AVE) > 0.5, Cronbach's Alpha > 0.7, Composite Reliability > 0.7. To test the correlation between variables, regression analysis was performed by measuring the Path Coefficient, T Statistics, and P Values.

4. Result and Discussion

This article is presenting description of data to provide an overview or general description of the respondents in the study based on the data obtained on the distribution of data in the field. The data presented in the description analysis is based on data collected from each variable in the study obtained from respondents in the distribution of data in the field.

All the respondents are female aged between 18 to 45 years who are users of the JD.ID application, the Make Up Try-On feature. Researchers took 100 respondents who fit the criteria in the study. The characteristics of the respondents in this study are age and the value of shopping for cosmetic products per month as follows:

Table 1. Age Distribution



Data in the form of loading factor values obtained from the output of Smart PLS 3.2.9 software based on respondents' answers to the items in the questionnaire from each indicator on the variables of augmented reality, spatial presence, perceived personalization, and purchase intention.

Table 2. Loading Factor

	AR	MB	SP	PP
AR1	**0.758**	0.557	0.604	0.565
AR2	**0.788**	0.574	0.679	0.620
AR4	**0.812**	0.652	0.714	0.693
AR5	**0.828**	0.650	0.740	0.705
AR6	**0.847**	0.631	0.768	0.730
AR7	**0.852**	0.670	0.738	0.683
AR8	**0.853**	0.714	0.757	0.739
AR9	**0.878**	0.655	0.800	0.729
AR10	**0.807**	0.627	0.727	0.677
AR11	**0.852**	0.701	0.706	0.661
AR12	**0.859**	0.684	0.784	0.798
AR13	**0.806**	0.632	0.743	0.682
AR14	**0.814**	0.618	0.724	0.672
AR16	**0.789**	0.617	0.666	0.639
AR17	**0.841**	0.687	0.771	0.691
AR18	**0.828**	0.660	0.729	0.649
MB1	0.633	**0.829**	0.650	0.646
MB2	0.714	**0.915**	0.712	0.720

	AR	MB	SP	PP
MB3	0.692	**0.894**	0.702	0.767
MB4	0.690	**0.845**	0.618	0.639
PP1	0.708	0.658	**0.776**	0.850
PP2	0.684	0.681	**0.693**	0.809
PP3	0.776	0.766	**0.795**	0.907
PP4	0.705	0.606	**0.743**	0.866
PP5	0.741	0.754	**0.800**	0.924
SP1	0.772	0.685	0.827	**0.682**
SP2	0.769	0.632	0.817	**0.698**
SP3	0.808	0.692	0.878	**0.772**
SP4	0.829	0.694	0.898	**0.738**
SP5	0.759	0.680	0.890	**0.781**
SP6	0.775	0.666	0.889	**0.779**
SP7	0.751	0.701	0.883	**0.771**
SP8	0.743	0.677	0.856	**0.811**
SP9	0.777	0.642	0.879	**0.763**
SP10	0.726	0.608	0.844	**0.711**
SP11	0.733	0.681	0.866	**0.803**
SP12	0.732	0.646	0.859	**0.775**

The Augmented Reality variable with the highest value is AR9 with a loading factor value of 0.878 which means that the Augmented Reality Make Up Try On feature provides navigation control or interaction desired by consumers. Meanwhile, the lowest value is AR15 with a loading factor value of 0.058 which means that consumers do not think that the quality of the presence of the Augmented Reality Make Up Try On feature is not clear. Overall, most of the values of each indicator are above 0.7 which can be said to be very good in building the variable itself.

On variable spatial presence, highest value is SP4 with a loading factor value of 0.898, which states that when consumers use the Augmented Reality Make Up Try On feature they feel like they are really participating in the action. Furthermore, the lowest value is in SP1 with a loading factor value of 0.827, which states that the Augmented Reality Make Up Try On feature produces a feeling like being in an AR feature display atmosphere. And other indicators that have a value above 0.7 where each indicator means that it has been able to build a variable spatial presence.

Next descriptive analysis is for perceived personalization which returns the output of the highest value is PP5 with a loading factor value of 0.924, which states that the AR Make Up Try On feature in the application is delivered at the right time, while the lowest value is in PP2 with a loading factor value of 0.809, which states that the AR Make Up Try On feature in the application feels like a personal experience. And other indicators that have a value above 0.7 where each indicator means that it has been able to build a perceived personalization variable.

Last variable output results for the loading factor value of the purchase intention resulting that the overall value of the indicator statement is very good at building the purchase intention variable (Y). The highest value is found in MB2 with a loading factor value of 0.915, which states that after using the application consumers will buy the product. Furthermore, the lowest value is on MB1 with a loading factor value of 0.829, which states that after using the application, consumers will definitely buy the product. And other indicators that have a value above 0.7 where each indicator means that it has been able to build a purchase intention variable.

A Results section, which should clearly and concisely present data using figures and tables where appropriate.

Next is to validate the reliability of variables used as below cronbach's alpha value:

Table 2. Reliability Testing

Variabel	Cronbach's Alpha
Augmented Reality	0,969
Purchase Intention	0.894
Spatial Presence	0.970
Perceived Personalization	0.921

The structural model can be identified by performing the R-Square test, T-Statistic Test, Q-Square Test and F-Test from the SmartPLS output.

Table 3. R Square

	R Square	R Square Adj.
Minat Beli	0,660	0,653
Spatial Presence	0,781	0,779
Perceived Personalization	0,689	0,686

R Square for the purchase intention variable (Y) is 0.660, which means that the purchases intention variable can be explained by other variables by 66%. The value of R Square for the Spatial Presence variable is 0.781, which means that the purchase intention variable can be explained by other variables of 78.1%. Then the value of R Square for the Perceived Personalization variable is 0.689. Which means that the purchase intention variable can be explained by other variables by 68.9%. The Q-Square value in this study is 0.976 where the value is greater than 0 and smaller than 1. So it means that the observation value in this study is said to be good.

Table 4. T. Statistic

Variabel	Original Sampel (O)	T Statistics (O/STDEV)	P Values
X – Z1	0.884	31.380	0.000
X – Z2	0.830	23.443	0.000
Z1 – Y	0.311	2.545	0.011
Z2 - Y	0.526	4.213	0.000

It can be seen that the Augmented Reality value of Spatial Presence is positive, which is 0.884 which means that the use of the Augmented Reality feature in the JD.ID try-on makeup application will increase if the Spatial Presence users increase as well. The Augmented Reality value for Perceived Personalization is positive, which is 0.830 which means that the use of the Augmented Reality feature in the JD.ID try-on makeup application will increase if the Perceived Personalization users increase as well. The value of Spatial Presence on purchase intention is positive, which is 0.311, which means that the Spatial Presence of users on the JD.ID try-on makeup application will increase if the purchase intention of users increases as well. Then the value of Perceived Personalization on Purchase Intention is positive, which is 0.526 which means that the Perceived Personalization of users on the JD.ID try-on makeup application will increase if the purchase intention of users increases as well.

For the results of testing the Augmented Reality variable on Spatial Presence, it shows a value of tcount 31.380 > ttable 1.660 and has a significance value of 0.000 <0.05 which indicates that Spatial Presence in users of the JD.ID try-on makeup application is significantly affected by the Augmented Reality feature itself. For the results of testing the Augmented Reality variable on Perceived Personalization, it shows a tcount value of 23,443 > ttable 1,660 and has a significance value of 0.000 <0.05, which indicates that Perceived Personalization for users of the JD.ID try-on makeup application is significantly affected by the Augmented Reality feature itself. For the results of testing the Spatial Presence variable on purchase intention, it shows a tcount value of 2.545 > ttable 1.660 and has a significance value of 0.011 <0.05 which indicates that purchase intention is significantly influenced by Spatial Presence on users of the JD.ID try-on makeup application. Then for the test results of the Perceived Personalization variable on purchase intention, it shows a tcount value of 4.213 > ttable 1.660 and has a significance value of 0.000 <0.05 which indicates that purchase intention is significantly influenced by Perceived Personalization on users of the JD.ID try-on makeup application.

$$F = \frac{R^2\,(n - k - 1)}{k\,(1 - R^2)}$$

$F = 93{,}17$

P =	0,05
DF1 = number of variables – 1	3
DF2= total sampls –number of variables – 1.	95
F Tabel	2.7004091

Above table shows the Fcount of 93.17 and the value of Ftable of 2.7004091. So with the following F test results state that Fcount 93.17 > Ftable 2.7004091, with the interpretation that this value shows Augmented Reality has an effect on purchase intention in beauty products in the JD.ID try-on makeup application. Judging from the f test value of 93.17 with a degree of error of 5% and producing a value greater than 4, it means that the Spatial Presence and Perceived Personalization variables have a significant influence on purchase intention

5. Conclusion

Based on the research and analysis about the relationship between Augmented Reality, Spatial Percentage, Perceived Personalization, and Purchase intention on cosmetic products in the JD.ID application, the following conclusions can be drawn:

1. The Augmented Reality feature can influence consumer purchase intention in beauty products with the experience when using the JD.ID try-on makeup feature. This means that the use of the Augmented Reality feature in the JD.ID try-on makeup application will further increase purchase intention if the Spatial Presence of users also increases.
2. Based on the results of calculations and analysis of hypothesis testing that have been carried out by researchers, the results show that Augmented Reality through Perceived Personalization has a significant influence on Purchase Interest of beauty products in JD.ID's makeup try-on.

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