

## FACTORS THAT AFFECT CUSTOMER LOYALTY IN USERS OF TOKOPEDIA APPLICATIONS IN JAKARTA

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### ABSTRACT

*This study aims to examine the effect of mobile interactivity on customer loyalty through customer engagement among Tokopedia application users in Jakarta. The research design used in this research is descriptive research and causality research, where variables are measured using 5 point Likert. Sampling was carried out by incidental sampling technique and used 202 respondents according to the criteria. The research data is processed using Structural Equation Modelling – Partial Least Square. The results of this study show that there is an effect of personalization, ubiquitous connectivity, connectedness, and synchronicity on customer engagement. Whereas for active control and responsiveness there is no effect on customer engagement. Then there is the influence of customer engagement on customer loyalty so that companies can focus on increasing customer engagement with Tokopedia application users in Jakarta.*

**Keywords:** Active Control, Personalization, Ubiquitous Connectivity, Connectedness, Responsiveness, Synchronicity, Customer Engagement, dan Customer Loyalty

### INTRODUCTION

Technology, information, and communication (ICT) are three interrelated fields. The development of Information and Communication Technology (ICT) has experienced rapid progress, especially with the emergence of the internet and the rapid growth in data processing and communication technology. One of the devices in the ICT field that can be used to collect, store, process, and convey information is a smartphone.

Cambridge Dictionary defines, "smartphone is a mobile phone that can be used as a small computer and that connects to the internet:". In the current era, smartphones are not only used to send messages or make calls, but smartphones have broader functions such as media entertainment, shopping, social media, learning, and other activities. By using a smartphone, users can also enjoy various applications that can be downloaded from the application store on the smartphone.

Based on data obtained from the Central Bureau of Statistics (2020) the growth of smartphone users in Indonesia is increasing from year to year. It has been recorded that in the last five years, from 2015 to 2020, there has been an increase in the percentage of the population owning cellular phones by 5.92%, from 56.92% to 62.84%. The increase in the percentage of the population owning cell phones has also occurred in Jakarta. Jakarta experienced the highest increase compared to other provinces with a value of 77.57 %. The growth of the smartphone presents an opportunity for entrepreneurs to expand their business through cyberspace or virtual worlds, especially in online shopping.

Online shopping is an activity of buying goods or services through online media. There are two terms surrounding online shopping activities, namely e-commerce and marketplace. According to the definition of the Central Bureau of Statistics (BPS), a marketplace is a location for buying and selling products where sellers and consumers meet on a platform. Seller will sell their goods in stalls that have been provided by an e-commerce platform using the marketplace concept.

**Table 1: Top Brand Index Ranking of Phase 2 on Online Buying and Selling Sites 2018-2022 (in %)**

Brands	TBI 2019	TBI 2020	TBI 2021	TBI 2022	
Shopee	15,6	20,0	41,8	43,7	TOP
Tokopedia	13,4	15,8	16,7	14,9	TOP
Lazada	31,6	31,9	15,2	14,7	TOP
Bukalapak	12,7	12,9	9,5	10,1	
Blibli.com	6,6	8,4	8,1	8,1	

Based on the data obtained from the Top Brand Award, the growth of Tokopedia as a marketplace has fluctuated. It is known that from 2019 to 2020 there was growth from 13.4% to 15.8%. Growth also occurred in 2020 by 15.8 % to 16.7%. However, Tokopedia experienced a decline from 2021 to 2022, which was originally 16.7% to 14.9%. This is also in line with the decline in the download rate of the Play Store application. Based on data obtained from iprice.co.id (2022), both on the App Store or Play Store platforms, Tokopedia always ranks second in terms of application download rates. The Tokopedia download rate in Play Store has decreased. Previously, in Q4 of 2018 and Q4 of 2019, Tokopedia won third place. But in Q4 of 2020 and Q4 of 2021 it dropped to fourth place.

Tokopedia is one of the marketplaces in Indonesia. Tokopedia was founded by William Tanuwijaya and Leontinus Alpha Edison on August 17, 2009. Currently, Tokopedia has developed into a unicorn startup with a valuation of USD 1 billion or the equivalent of more than IDR 140 trillion. Tokopedia presents an online shopping service that can connect sellers with buyers virtually. It is known that Tokopedia and Gojek have joined forces. With this merger, there should be constant growth from year to year. Therefore, it becomes a phenomenon in this research.

Sales growth from mobile shopping can also be attributed to the high level of interactivity in an application. According to Alalwan et al. (2020) interactivity is multidimensional consisting of six features user control, responsiveness, personalization, connectedness, contextual offer, and ubiquitous connectivity. Synchronicity, active control, and two-way communication formulated by Liu (2003) in Alalwan et al. (2020) as an integral feature of website interactivity. Furthermore, the level of interactivity in a mobile application can affect the engagement or customer engagement. As mentioned by So (2014), cited in Alalwan et al. (2020), customer engagement encompasses physical, cognitive, and emotional involvement. These dimensions serve as the foundation for this research, with the focal point being the utilization of the marketplace as the object of study.

Along with the escalating utilization of smartphones, people are more involved or engaged with the applications that are on their smartphones. This has become a trigger for many business organizations to learn how to use mobile shopping apps to attract their customers and enable them to be more emotionally, cognitively, and behaviorally engaged with brands and businesses. Therefore customer engagement is an important factor for customers to make repeat purchases and if it continues will turn these customers into loyal customers. A high level of engagement can trigger user loyalty to a mobile shopping application. Customer loyalty in terms of mobile shopping apps is how customers keep making purchases using online purchasing channels in the form of an e-commerce application. Based on the explanation above, the researchers proposed this research with the title "Factors That Affect Customer Loyalty in Users of Tokopedia Applications in Jakarta".

## **LITERATURE REVIEW**

### **Grand Theory**

The basic theory used in this research is consumer behavior related to TAM (Technology Acceptance Model) and Theory of Reasoned Action (TRA). According to Schiffman and Wisenblit (2019, 435) "customer behavior is the study of consumer actions during searching for, buying, using, evaluating, and disposing of products and services that they expect will satisfy their needs".

According to Davis (1989) in Talantis et al. (2020) explained that TAM uses two determinants to measure user attitudes and behavior regarding the application of technology. The first factor is perceived ease of use (PEOU) which describes the extent to which a person believes that using a particular system will be free of effort. The second factor is perceived usefulness. According to Mehra et al. (2020) perceived usefulness can be interpreted when someone believes that using a mobile application will increase their work-related productivity and cause them to be more willing to use it.

According to Schiffman and Wisenblit (2019, 155) the Theory of Reasoned Action (TRA) incorporates the cognitive, affective, and conative components. Additionally, it holds that researchers must measure the subjective norms that influence a person's intention to act before gauging the level of intention.

The literature review will explain some of the definitions of the variables that are the problem in this research. The following are some definitions that will be explained in this study, as follows:

### **Customer Loyalty**

According to Alalwan et al. (2020) loyalty is a person's loyalty to a certain object. According to Dharmayanti (2020) customer loyalty is a process of involving customers where there is a possibility of potential for future consumption, reducing the possibility of brand changes, and positive public suggestions. According to Francis and Soediono (2020) customer loyalty is a feeling of closeness between customers for a product or service that is positively embedded in the minds of customers, and will be used continuously by customers. Based on the definition above, customer loyalty can be interpreted as the behavior and perception of customers who are loyal to a particular brand or brand.

### **Active Control**

According to Alalwan et al. (2020) active control is defined as the user's ability to participate voluntarily and instrumentally influence communication. According to Wang and Yao (2020) positive experiences can be generated from telepresence and active control to bring interactive effects. According to Davis (1989) cited in Putri and Iriani (2021) perceived ease of use is defined as a measure of a person's belief that a technology system can be easily understood and used. This is in line with what was explained by Lin (2007) cited in Japariato and Anggono (2020) that perceived ease of use describes a level that indicates the extent to which a site or website is easy to understand, learn and easy to operate. Based on the definition above, active control can be said as an activity carried out by mobile shopping application users who are able to operate the features of a mobile shopping application.

### **Personalization**

According to Alalwan et al. (2020) personalization is an aspect that makes mobile shopping applications more attractive by means of the system's ability to customize and personalize platform features (design, information, interface, services, products, recommendations, etc.) according to customer preferences and styles. According to Chandra and Triandewo (2020) perceived personalization refers to individual perceptions of the extent to which mobile application users can adapt their personal characteristics in determining needs.

According to Kotler et al. (2022, 189) customized products and marketing allow companies to be highly relevant and differentiating by finding out exactly what a person wants and doesn't want and making it happen. According to Clow and Baack (2022, 233) customized is a software system that recognizes patterns in customer buying behavior and makes offers that match previous purchase behavior or search patterns. Based on the definition above, personalization in a mobile shopping application can be interpreted as a feature that can be used by users of mobile shopping apps to customize a product to their needs or desires.

### **Ubiquitous Connectivity**

According to Alalwan et al. (2020) ubiquitous connectivity is defined as a constant internet connection, which is increasingly in demand by consumers. In today's world, connected consumers always need real-time access to information and content when they need it. Ubiquitous connectivity allows consumers to be "always connected" or "always on" and gives consumers more freedom and access to information and services. According to Mallat et al. (2009) cited in Briliana and Prasetyo (2019) "ubiquity" allows buyers to make transactions anytime and anywhere, thus providing opportunities for consumers to enjoy the services offered without time or place restrictions. According to Kotler et al. (2022, 72) "ubiquitous spread of mobile communication, e-commerce, and social media, have disrupted existing value-creation processes, making it necessary for companies to redefine their business models" Based on the definition above, ubiquitous connectivity can be interpreted as convenience users to obtain all services, content, products available on mobile shopping apps when connected to the internet.

### **Connectedness**

According to Alalwan et al. (2020) connectedness as the ability of an interactive platform to empower its users to be socially involved and connected to one another. According to Pritchard (2020) connectedness has been described as the degree to which individuals feel emotionally connected to the natural world. According to Kotler and Keller (2016, 166) the more "connected" a community member is, the more likely he or she will spend more. According to Schiffman and Wisenblit (2019, 190) "people can also buy digital products on their phones or tablets any time when they are wirelessly connected". Based on the definition above, connectedness can be interpreted as the ability of mobile shopping apps to facilitate users to engage in connectedness with other users.

### **Responsiveness**

According to Alalwan et al. (2020) responsiveness is related to the user's perception of how often other users and marketers respond to their messages and questions. Wu (2005) cited in Park and Yoo (2020) states that responsiveness also refers to how quickly users can navigate to access information. According to Kotler et al. (2022, 228) "responsiveness: the willingness to help customers and provide prompt service". Based on the definition above, responsiveness can be interpreted as how often the interaction activities of users and parties from mobile shopping apps respond to each other's messages and questions.

### **Synchronicity**

According to Alalwan et al. (2020) synchronicity is a response to communication events that can be felt immediately, or without delay. According to Pamuji et al. (2020) synchronicity is the process of establishing consistency between data from sources to targets of data storage and vice versa, and continuous harmonization of data from time to time. According to Petrocchi et al. (2020) the perception of social presence is highly dependent on the synchronicity of interactions, because long pauses in the communication process can reduce the perception of "being there" as well as the awareness and imagination of others. Based on the definition above, synchronicity can be said as how quickly and precisely a mobile shopping application responds to responses or messages submitted by users without any delay or delay.

### **Customer Engagement**

According to Alalwan et al. (2020) the concept of customer engagement has been operationalized to clarify and address how customers can actively interact with organizations, brands, and media tools. According to Rasool et al. (2020) stated "customer engagement, which reflects the customers' investment in their brand-related interactions, is of significant importance". Schiffman and Wisenblit (2019, 14) "engagement: attractive site design; enjoyable shopping on the site; feels that the site is inviting; feels comfortable shopping at the site". As defined above, customer engagement can be interpreted as involvement in user interaction with the application being operated or being used.

Based on the explanation above, in this study several hypotheses were proposed as follows:

- Ha1: There is an effect of Active Control on Customer Engagement among Tokopedia application users in Jakarta.
- Ha2: There is an effect of Personalization on Customer Engagement among Tokopedia application users in Jakarta.
- Ha3: There is an influence of Ubiquitous Connectivity on Customer Engagement among Tokopedia application users in Jakarta.
- Ha4: There is an influence of Connectedness on Customer Engagement among Tokopedia application users in Jakarta.
- Ha5: There is an effect of Responsiveness on Customer Engagement among Tokopedia application users in Jakarta.
- Ha6: Synchronicity influences Customer Engagement among Tokopedia application users in Jakarta.
- Ha7: There is an effect of Customer Engagement on Customer Loyalty in Tokopedia application users in Jakarta.

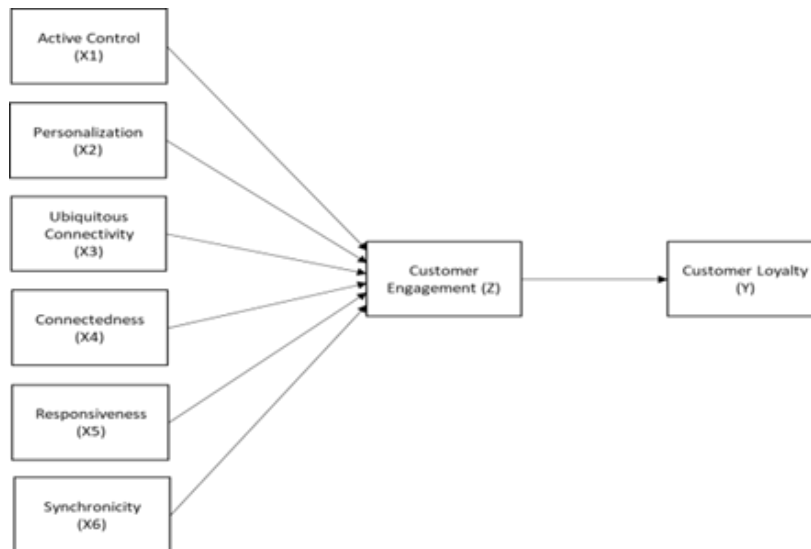


Figure 1: Research Framework

## RESEARCH METHODS

This research uses descriptive and causal methods. According to Sekaran and Bougie (2020, 57), the term for casual research is “casual studies test whether or not one variable causes another variable to change”. Causal studies assess whether a variable induces changes in another variable. On the other hand, according to Sekaran and Bougie (2020, 56), descriptive research is defined as “descriptive studies are often designed to collect data that describe the characteristic of persons, events, or situations”. Therefore, it can be concluded that casual research is employed to determine whether an influence exists between one variable that can affect another variable.

Variables are measured using a 5- point Likert scale. According to Sugiyono (2021, 146), the Likert Scale is a scale used to measure the attitudes, opinions, and perceptions of an individual or group of people regarding social phenomena. The Likert Scale divides the scale provisions into five points, which consist of 1-5; strongly disagree, disagree, neutral, agree, strongly agree. Respondent criteria used are as follows: 1) Respondents are at least 17 years old. 2) Respondents who live and have KTP (ID cards) in Jakarta. 3) Respondents have income. 4) Respondents have a Tokopedia application account in their personal name on their smartphone. 5) Respondents are the decision makers in purchasing. 6) Respondents have made transactions using the Tokopedia application at least once in the last 2 months. The questionnaire was distributed using the Google form, there were 230 respondents who filled out the questionnaire and 202 respondents who met the required criteria.

According to Hair et al. (2021, 5) “a PLS path model consists of two elements. First, there is a structural model (also called the inner model in the context of PLS-SEM) that links together the constructs (circles or ovals). The structural model also displays the relationships (paths) between the constructs. Second, there are the measurement models (also referred to as the outer models in PLS-SEM) of the constructs that display the relationships between the constructs and the indicator variables (rectangles)”. PLS-SEM analysis consists of two parts of the model, structural (inner model) and measurement (outer model). The measurement model displays the relationship between constructs and indicators. Meanwhile, the structural model displays paths between constructs.

This study uses a two-stage disjoint approach. According to Sarstedt et al. (2019) “in particular, when implementing a high-level construct, the researcher must decide on (1) the specification of the measurement model for the low-level components, and (2) the relationship between the high-level components and their low-level components”. Furthermore Sarstedt et al. (2019) mentioned that thirteen of the sixteen studies used a two-stage approach and the other three used a repeated indicator approach.

According to Sarstedt et al. (2019) when using a two-stage disjoint approach, the first model assessment focuses on reflective measurements of low-level components and meets the relevant criteria (convergent validity and discriminant validity). For the second stage evaluation Sarstedt et al. (2019) explained that they could use the latent variable scores from the lower order components obtained from stage one to create and imagine a stage two model. Furthermore, the evaluation of stage two focuses on obtaining validity and reliability values. In the end the two-stage outcome assessment discusses the structural model that must meet the value of significance, relevance for the path coefficient, and Q2.

### Population and Sample

Population is defined as a generalized area consisting of: objects/subjects that have certain qualities and characteristics determined by researchers to study and then draw conclusions (Sugiyono 2021, 126). The population in this study were all Tokopedia application users in Jakarta. The sample is defined as part of the number and characteristics possessed by the population (Sugiyono 2021, 127). The sample in this study were individual users of the Tokopedia application in Jakarta who were selected according to the criteria.

### Analysis and Discussion

In this study the characteristics used were gender, age, last education, occupation, income or monthly income, KTP (ID Card) and domicile, frequency of purchases in the last two months. The following is the result of processing the characteristics of the respondents:

**Table 2: Characteristics of Respondents Based on Gender**

		Frequency	Percent	Valid (%)	Cumulative (%)
Valid	Man	110	54,4	54,4	54,4
	Woman	66	32,7	32,7	87,1
	Total	202	100,0	100,0	

**Table 3: Characteristics of Respondents Based on Age (Years)**

		Frequency	Percent	Valid (%)	Cumulative (%)
Valid	17-24	110	54,4	54,4	54,4
	25-32	66	32,7	32,7	87,1
	33-40	20	9,9	9,9	97,0
	41-48	4	2,0	2,0	99,0
	49-56	2	1,0	1,0	100,0
	Total	202	100,0	100,0	

**Table 4: Characteristics of Respondents Based on Last Education**

		Frequency	Percent	Valid (%)	Cumulative (%)
Valid	Diploma/ Bachelor	100	49,5	49,5	49,5
	Master	11	5,4	5,4	55,0
	Senior High School/ SMK	91	45,0	45,0	100,0
	Total	202	100,0	100,0	

**Table 5: Characteristics of Respondents Based on KTP (ID Card) and Domicile**

		Frequency	Percent	Valid (%)	Cumulative (%)
Valid	West Jakarta	40	19,8	19,8	19,8
	Central Jakarta	23	11,4	11,4	31,2
	South Jakarta	44	21,8	21,8	53,0
	East Jakarta	79	39,1	39,1	92,1
	North Jakarta	16	7,9	7,9	100,0
	Total	202	100,0	100,0	

**Table 6: Characteristics of Respondents Based on Income**

		Frequency	Percent	Valid (%)	Cumulative (%)
Valid	1,000,000 – 2,999,999	94	46,3	46,3	55,2
	3,000,000 – 5,999,999	73	36,0	36,0	91,1
	6,000,000 – 8,999,999	18	8,9	8,9	100,0
	>9,000,000	18	8,9	8,9	8,9
	Total	202	100,0	100,0	

**Table 7: Characteristics of Respondents Based on Occupation**

		Frequency	Percent	Valid (%)	Cumulative (%)
Valid	Businessman	13	6,4	6,4	100,0
	Employee Country	32	15,8	15,8	23,3
	Private Employees	56	27,7	27,7	51,0
	Studeny/ Student	86	42,6	42,6	93,6
	Etc	15	7,4	7,4	7,4
	Total	202	100,0	100,0	

**Table 8: Characteristics of Respondents Based on Tokopedia Account Ownership in Personal Names on Their Smartphones**

		Frequency	Percent	Valid (%)	Cumulative (%)
Valid	Yes	202	100,0	100,0	100,0

**Table 9: Characteristics of Respondents Based on Purchasing Decisions and Using Their Products**

		Frequency	Percent	Valid (%)	Cumulative (%)
Valid	Yes	202	100,0	100,0	100,0

**Table 10: Characteristics of Respondents Based on Purchases At Least 1 Time in the Last 2 Months**

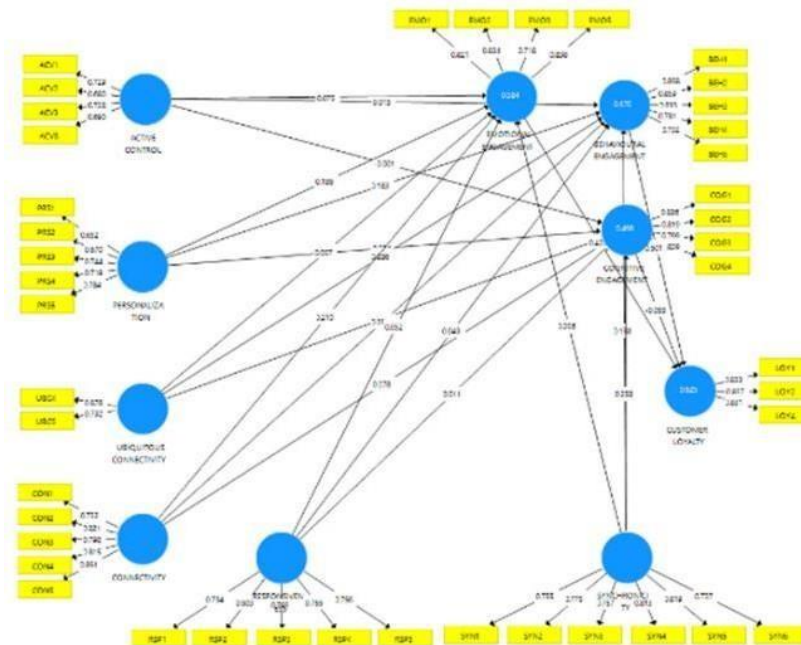
		Frequency	Percent	Valid (%)	Cumulative (%)
Valid	Yes	202	100,0	100,0	100,0

**Table 11: Characteristics of Respondents Based on Purchase Frequency in the Last 2 Months**

		Frequency	Percent	Valid (%)	Cumulative (%)
Valid	1-2	108	53,5	53,5	60,4
	3-4	62	30,7	30,7	91,1
	5-6	18	8,9	8,9	100,0
	≥7	14	6,9	6,9	6,9
	Total	202	100,0	100,0	

**DESIGNING A MEASUREMENT MODEL (OUTER MODEL)**

**First Order Confirmatory Factor Analysis**



**Figure 2: Result of the first order confirmatory measurement model**

**Convergent Validity**

Hair et al. (2021, 183) explains convergent validity is "the degree to which a reflectively specified construct explains the variance of its indicators". Ghozali (2021, 93) states that loading factors >0.70 are very valid, loading factors 0.5 and 0.6 are moderate and loading factors <0.50 are invalid and must be discarded. According to Hair et al. (2021, 78) The minimum acceptable AVE is 0.50, an AVE of 0.50 or higher indicates that the construct explains 50 percent or more of the variance of the indicators that make up the construct.

**Table 12: Loading Factor and AVE values**

Variable	Items	Loadings	AVE	Supported
Active Control	ACV1	0.729	0.500	YES
	ACV2	0.680		
	ACV3	0.728		
	ACV6	0.690		
Personalization	PRS1	0.652	0.512	YES
	PRS2	0.670		
	PRS3	0.744		
	PRS4	0.719		
	PRS5	0.784		
UbiquitousConnectivity	UBC4	0.878	0.700	YES
	UBC5	0.792		
Connectedness	CON1	0.732	0.647	YES
	CON2	0.821		
	CON3	0.798		
	CON4	0.815		
	CON5	0.851		
Responsiveness	RSP1	0.794	0.550	YES
	RSP2	0.603		
	RSP3	0.783		
	RSP4	0.755		
	RSP5	0.756		
Synchronicity	SYN1	0.755	0.603	YES
	SYN2	0.775		
	SYN3	0.757		
	SYN4	0.813		
	SYN5	0.819		
	SYN6	0.737		
Behavioral Engagement	BEH1	0.858	0.663	YES
	BEH2	0.859		
	BEH3	0.833		
	BEH4	0.781		
	BEH5	0.732		
Cognitive Engagement	COG1	0.826	0.670	YES
	COG2	0.819		
	COG3	0.799		
	COG4	0.829		
Emotional Engagement	EMO1	0.821	0.647	YES
	EMO2	0.834		
	EMO3	0.718		
	EMO5	0.838		
Customer Loyalty	LOY1	0.833	0.695	YES

Based on table 12 the results of outer loading of all items from variables are worth more than 0.5, with a UBC4 value of 0.878 being the highest. And the RSP2 value of 0.603 is the lowest. For the AVE value, all variables have a value of more than 0.5. The highest AVE value is found in the Ubiquitous Connectivity variable of 0.700. The lowest value is found in the Active Control variable of 0.500.

**Discriminant Validity**

In table 13 below, the results of the correlation between each indicator and its construct are greater than the correlation between indicators and other constructs. This aligns with Hair et al.'s statement (2021, 78) that “this metric (discriminant validity) measures the extent to which a construct is empirically distinct from other constructs in the structural model”.

Fornell and Larcker (1981), as cited by Hair et al. (2021, 78), stated that "the conventional metric suggests that the squared variance within each construct, known as AVE (average variance extracted), should be compared to the squared inter-construct correlation. This comparison serves as an indicator of the shared variance between a given construct and all other constructs that are measured reflectively within the structural model. It is expected that the shared variance among all constructs in the model should not exceed their respective AVEs". In Table 14 below it can be seen that the value of the square root of AVE is numbered in bold. The data below shows the value of the AVE square root construct active control, behavioral engagement, cognitive engagement, connectedness, customer loyalty, emotional engagement, personalization, responsiveness, synchronicity, and ubiquitous connectivity more than the correlation value.

Based on the results of cross loading and the Fornell Larcker criterion, it can be concluded that each indicator has met discriminant validity.

**Table 13: Cross Loading Value**

	AVC	PRS	UBC	CON	RSP	SYN	BEH	COG	EMO	CSLOY
ACV1	0.729	0.290	0.336	0.285	0.316	0.279	0.264	0.233	0.298	0.368
ACV2	0.680	0.363	0.298	0.302	0.371	0.212	0.294	0.280	0.294	0.311
ACV3	0.728	0.398	0.252	0.326	0.327	0.323	0.251	0.256	0.273	0.209
ACV6	0.690	0.358	0.325	0.309	0.360	0.292	0.233	0.265	0.390	0.267
PRS1	0.279	0.652	0.258	0.443	0.319	0.366	0.337	0.329	0.425	0.351
PRS2	0.344	0.670	0.445	0.533	0.399	0.427	0.449	0.387	0.439	0.469
PRS3	0.405	0.744	0.424	0.452	0.460	0.452	0.445	0.499	0.450	0.392
PRS4	0.410	0.719	0.318	0.478	0.439	0.460	0.374	0.459	0.463	0.351
PRS5	0.340	0.784	0.389	0.513	0.492	0.444	0.404	0.484	0.510	0.376
UBC4	0.333	0.504	0.878	0.518	0.462	0.507	0.549	0.478	0.453	0.510
UBC5	0.398	0.346	0.792	0.377	0.508	0.437	0.399	0.322	0.438	0.463
CON1	0.363	0.524	0.413	0.732	0.456	0.403	0.343	0.380	0.440	0.458
CON2	0.319	0.561	0.368	0.821	0.453	0.388	0.449	0.488	0.450	0.460
CON3	0.354	0.543	0.418	0.798	0.444	0.418	0.484	0.491	0.496	0.423
CON4	0.357	0.568	0.466	0.815	0.468	0.472	0.545	0.521	0.536	0.511

**Table 14: Fornell Larcker Criterion**

	ACV	BEH	COG	CON	CSLOY	EMO	PRS	RSP	SYN	UBC
ACV	<b>0.707</b>									
BEH	0.369	<b>0.814</b>								
COG	0.367	0.668	<b>0.818</b>							
CON	0.433	0.585	0.609	<b>0.805</b>						
CSLOY	0.409	0.741	0.596	0.585	<b>0.833</b>					
EMO	0.448	0.680	0.778	0.618	0.705	<b>0.804</b>				
PRS	0.500	0.563	0.609	0.675	0.541	0.640	<b>0.716</b>			
RSP	0.488	0.466	0.512	0.567	0.536	0.587	0.595	<b>0.741</b>		
SYN	0.391	0.518	0.586	0.532	0.559	0.676	0.602	0.663	<b>0.777</b>	
UBC	0.430	0.574	0.487	0.542	0.582	0.531	0.517	0.574	0.567	<b>0.836</b>

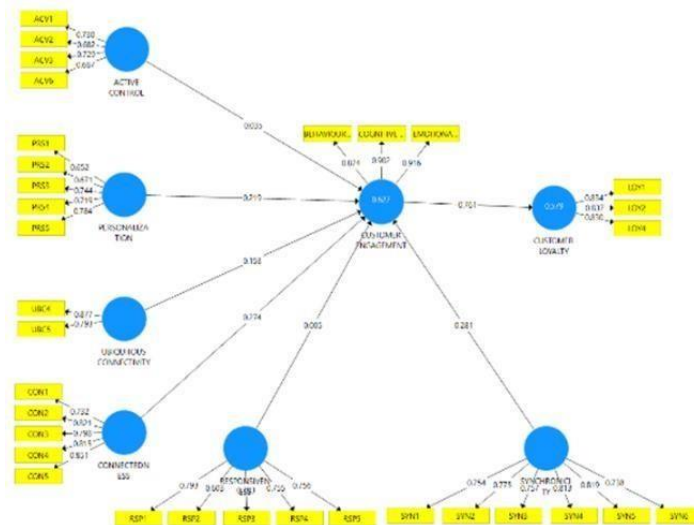
**Reliability Test**

According to Ghozali (2021, 69) using Cronbach alpha to test construct reliability will provide a lower value (under estimate), so it is more advisable to use composite reliability in testing the reliability of a construct. Based on table 14 below, the Composite Reliability value for all variables is more than 0.7, which means that each variable meets reliability.

**Table 15: Composite Reliability and Cronbach Alpha (First Order)**

	Cronbach's Alpha	Composite Reliability
Active Control	0.667	0.800
Personalization	0.760	0.839
Ubiquitous Connectivity	0.576	0.823
Connectedness	0.864	0.902
Responsiveness	0.793	0.858
Synchronicity	0.869	0.901
Behavioral Engagement	0.872	0.907
Cognitive Engagement	0.836	0.890
Emotional Engagement	0.816	0.879
Customer Loyalty	0.781	0.872

**SECOND ORDER CONSTRUCTS**



**Figure 3 Second order construct measurement model test result**

**Convergent Validity**

**Table 16: Loading Factor and AVE values**

Variable	Items	Loadings	AVE	Supported
Active Control	ACV1	0.730	0.500	YES
	ACV2	0.682		
	ACV3	0.729		
	ACV6	0.687		
Personalization	PRS1	0.652	0.512	YES
	PRS2	0.671		
	PRS3	0.744		
	PRS4	0.719		

UbiquitousConnectivity	PRS5	0.784	0.700	YES
	UBC4	0.877		
	UBC5	0.793		
Connectedness	CON1	0.732	0.647	YES
	CON2	0.821		
	CON3	0.798		
	CON4	0.815		
	CON5	0.851		
Responsiveness	RSP1	0.793	0.550	YES
	RSP2	0.603		
	RSP3	0.783		
	RSP4	0.755		
	RSP5	0.756		
Synchronicity	SYN1	0.754	0.603	YES
	SYN2	0.775		
	SYN3	0.757		
	SYN4	0.813		
	SYN5	0.819		
	SYN6	0.738		
Customer Engagement	BEH	0.874	0.806	YES
	COG	0.902		
	EMO	0.916		
Customer Loyalty	LOY1	0.834	0.695	YES
	LOY2	0.837		
	LOY4	0.830		

Based on table 16 above, the customer engagement variable has the highest loading value of 0.916 and the lowest value of 0.874, along with an AVE value of 0.806. With these results, it can be concluded that the second order variable meets the convergent validity criteria.

#### Discriminant Validity

In table 17 below it can be seen that each indicator of customer engagement (behavioural engagement, cognitive engagement, emotional engagement) has the highest correlation to customer engagement compared to other variables. In table 18 below you can see the root value of the squared AVE in bold numbers. From the table above it can be concluded that the root value of the squared AVE of each construct is greater than its correlation with other variables. Based on these data it can be concluded that the customer engagement indicators meet the criteria of discriminant validity.

**Table 17: Cross Loading**

	AVC	CON	CE	CSLOY	PRS	RSP	SYN	UBC
ACV1	0.730	0.285	0.297	0.368	0.290	0.316	0.279	0.336
ACV2	0.682	0.302	0.323	0.311	0.363	0.371	0.212	0.298
ACV3	0.729	0.326	0.290	0.209	0.398	0.327	0.323	0.253
ACV6	0.687	0.310	0.332	0.267	0.358	0.360	0.292	0.326
CON1	0.363	0.732	0.433	0.458	0.524	0.456	0.403	0.413
CON2	0.318	0.821	0.514	0.460	0.561	0.453	0.388	0.368
CON3	0.354	0.798	0.546	0.423	0.543	0.444	0.418	0.418
CON4	0.357	0.815	0.595	0.511	0.568	0.468	0.472	0.465
CON5	0.356	0.851	0.594	0.500	0.527	0.467	0.451	0.507
BEHAVIOURAL	0.369	0.585	0.874	0.740	0.564	0.466	0.518	0.574

ENGAGEMENT								
COGNITIVE								
ENGAGEMENT	0.367	0.609	0.902	0.596	0.609	0.511	0.586	0.487
EMOTIONAL								
ENGAGEMENT	0.448	0.618	0.916	0.705	0.640	0.587	0.676	0.531
LOY1	0.338	0.512	0.577	0.834	0.402	0.380	0.407	0.460
LOY2	0.395	0.430	0.624	0.837	0.449	0.493	0.425	0.463
LOY4	0.295	0.518	0.691	0.830	0.494	0.461	0.553	0.526
PRS1	0.279	0.443	0.407	0.351	0.652	0.319	0.366	0.258
PRS2	0.344	0.533	0.475	0.469	0.671	0.399	0.427	0.445
PRS3	0.405	0.452	0.517	0.392	0.744	0.460	0.452	0.424
PRS4	0.410	0.478	0.481	0.350	0.719	0.439	0.460	0.318
PRS5	0.340	0.513	0.519	0.376	0.784	0.492	0.444	0.389
RSP1	0.393	0.466	0.489	0.441	0.497	0.793	0.547	0.459
RSP2	0.361	0.308	0.329	0.282	0.326	0.603	0.371	0.262
RSP3	0.357	0.431	0.402	0.444	0.484	0.783	0.578	0.442
RSP4	0.269	0.436	0.429	0.402	0.430	0.755	0.449	0.436
RSP5	0.428	0.440	0.483	0.399	0.448	0.756	0.496	0.492
SYN1	0.189	0.382	0.451	0.342	0.486	0.485	0.754	0.451
SYN2	0.316	0.373	0.423	0.343	0.437	0.493	0.775	0.428
SYN3	0.334	0.404	0.514	0.420	0.447	0.551	0.757	0.415
SYN4	0.352	0.441	0.560	0.473	0.481	0.521	0.813	0.480
SYN5	0.243	0.437	0.519	0.461	0.466	0.490	0.819	0.420
SYN6	0.362	0.424	0.582	0.524	0.483	0.536	0.738	0.441
UBC4	0.333	0.518	0.549	0.510	0.504	0.462	0.507	0.877
UBC5	0.398	0.377	0.433	0.463	0.347	0.508	0.437	0.793

Table 18 Fornell Larcker Criterion Correlation Between Constructs and AVE Square Root Values

	AVC	CON	CE	CSLOY	PRS	RSP	SYN	UBC
AVC	0.707							
CON	0.433	0.805						
CE	0.441	0.673	0.898					
CSLOY	0.409	0.585	0.761	0.833				
PRS	0.500	0.676	0.673	0.541	0.716			
RSP	0.488	0.567	0.582	0.536	0.595	0.741		
SYN	0.391	0.532	0.663	0.559	0.602	0.663	0.777	
UBC	0.430	0.542	0.592	0.582	0.517	0.574	0.567	0.836

Reliability Test

Table 19: Composite Reliability and Cronbach Alpha

	Cronbach'sAlpha	CompositeReliability
Active Control	0.6542	0.8114
Connectedness	0.8682	0.9045

Customer Engagement	0.8803	0.9262
Customer Loyalty	0.7441	0.8536
Personalization	0.7678	0.8433
Responsiveness	0.7978	0.8612
Synchronicity	0.8731	0.9043
Ubiquitous Connectivity	0.6179	0.8378

Regarding the values of composite reliability, each variable has a value above 0.70. The composite reliability values for the active control variable are 0.800, for personalization 0.839, for ubiquitous connectivity 0.823, for connectedness 0.902, for responsiveness 0.858, for synchronicity 0.901, for customer engagement 0.926, and for customer loyalty 0.872. Consequently, it can be concluded that each variable in this study exhibits good reliability values.

**DESIGNING THE STRUCTURAL MODEL (INNER MODEL)**

**Table 20: R-Square value**

	R-Square	R-Square Adjusted	Model
Customer Engagement	0.627	0.616	Moderate
Customer Loyalty	0.579	0.577	Moderate

Hair et al. (2021, 118) state, "the R2 ranges from 0 to 1, with higher values indicating a greater explanatory power. As a general guideline, R2 values of 0.75, 0.50, and 0.25 can be considered substantial, moderate, and weak, respectively, in many social science disciplines." This is consistent with what Ghozali (2021, 73) mentions, that R-Square values of 0.75, 0.50, and 0.25 can be interpreted as strong, moderate, and weak models, respectively. Based on table 20 above, it can be seen the value of the R-square which is a test of the goodness of fit model to see the effect of exogenous latent variables on endogenous latent variables related to whether there is a substantive effect. R-square values 0.75, 0.50, 0.25 mean whether the model is good, moderate or weak.

**Table 21: Q<sup>2</sup> Value**

	Q2 (=1-SSE/SSO)
Customer Engagement	0.490
Customer Loyalty	0.392

According to Ghozali (2021, 75) Q2 value predictive relevance 0.02, 0.15 and 0.35 indicates that the model is weak, moderate, and strong. So, it can be concluded that the predictive value of Q2 for the variable customer engagement and customer loyalty is strong and it can be interpreted that all indicators have good relevance to endogenous variables.

**Table 22: Summary of The Structural Model**

Hypothesis	Path	Original Sample (O)	Sample Means (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values
H1	AVC -> CE	0.035	0.040	0.063	0.552	0.581
H2	PRS -> CE	0.219	0.207	0.101	2,179	0.030
H3	UBC -> CE	0.153	0.152	0.067	2,276	0.023
H4	CON -> CE	0.274	0.300	0.115	2,386	0.017
H5	RSP -> CE	0.005	-0.004	0.085	0.062	0.950
H6	SYN -> CE	0.281	0.273	0.084	3,357	0.001
H7	CE -> CSLOY	0.761	0.764	0.030	25,333	0.000

(Ha1) It is shown that the relationship between active control and customer engagement has a positive original sample estimate of 0.035. The t- statistic value is greater than the t-table value of 0.552 < 1.96. It can also be seen that the p-value is 0.581 > 0.05. That is, there is no effect of active control on customer engagement in Tokopedia application users in Jakarta.

(Ha2) It is intended that the relationship between personalization and customer engagement has a positive original sample estimate of 0.219 and the t-statistic value is greater than the t-table value of  $2.179 > 1.96$ . It can also be seen that the p-value is  $0.030 < 0.05$ . That is, there is an influence of personalization on customer engagement in Tokopedia application users in Jakarta.

(Ha3) It is intended that the relationship between ubiquitous connectivity to customer engagement has a positive original sample estimate of 0.153 and the t-statistic value is greater than the t table value of  $2.276 > 1.96$ . It can also be seen that the p-value is  $0.023 < 0.05$ . That is, there is an influence of ubiquitous connectivity on customer engagement in Tokopedia application users in Jakarta.

(Ha4) It is intended that the relationship between connectedness and customer engagement has a positive original sample estimate of 0.274 and the t-statistic value is greater than the t-table value of  $2.386 > 1.96$ . It can also be seen that the p-value is  $0.017 < 0.05$ . That is, there is an influence of connectedness on customer engagement in Tokopedia application users in Jakarta.

(Ha5) It is intended that the relationship between responsiveness to customer engagement has a positive original sample estimate of 0.005. The t- statistic value is not greater than the t-table value of  $0.062 < 1.96$ . It can also be seen that the p- value is  $0.950 > 0.05$ . That is, there is no effect of responsiveness on customer engagement in Tokopedia application users in Jakarta.

(Ha6) It is intended that the relationship between synchronicity and customer engagement has a positive original sample estimate of 0.281 and the t-statistic value is greater than the t-table value of  $3.357 > 1.96$ . It can be seen also that the value p-value of  $0.001 < 0.05$ . That is, there is an effect of synchronicity on customer engagement in Tokopedia application users in Jakarta.

(Ha7) It is intended that the relationship between customer management and customer loyalty has a positive original sample estimate of 0.761 and the t-statistic value is greater than the t table value of  $25.333 > 1.96$ . It can also be seen that the p-value is  $0.0000 < 0.05$ . That is, there is an influence of customer engagement on customer loyalty in Tokopedia application users in Jakarta.

**Table 23: Mediation**

Path	Original Sample (O)	Sample Means (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values	VAF
ACV -> ENG -> CSLOY	0.021	0.023	0.041	0.529	0.597	0.310
PRS -> ENG -> CSLOY	0.128	0.125	0.058	2,186	0.029	1,729
UBC -> ENG -> CSLOY	0.089	0.087	0.041	2,169	0.031	0.363
CON -> ENG -> CSLOY	0.158	0.182	0.084	1,880	0.061	0.650
RSP -> ENG -> CSLOY	0.000	- 0.010	0.053	0.000	1,000	0.000
SYN -> ENG -> CSLOY	0.166	0.165	0.057	2,942	0.003	0.917

According to Hair et al. (2021, 140) “mediation occurs when a construct, referred to as a mediator construct, intervenes between two other related constructs”. According to Ghozali (2021, 183) the mediating effect is the relationship between exogenous and endogenous constructs through connecting or intermediate variables. According to Ghozali (2021, 191) if the Variance Account For (VAF) value is  $> 0.80$  full mediation,  $0.20 \leq \text{VAF} \leq 0.80$  partial mediation, and  $\text{VAF} < 0.20$  no mediation.

Table 23 above shows that there is no active control effect on customer loyalty through customer engagement with Tokopedia application users in Jakarta. The relationship of the variables in this study is positive, which means that the higher the active control variable, the higher the customer loyalty and the higher the customer engagement variable. Customer engagement acts as a partial mediation based on the VAF value obtained because it is between  $0.20 \leq 0.310 \leq 0.80$ .

Table 23 above shows that there is a personalization effect on customer loyalty through customer engagement with Tokopedia application users in Jakarta. The relationship of the variables in this study is positive, which means that the higher the personalization variable, the higher the customer loyalty and the higher the customer engagement variable. Based on the VAF value, customer engagement acts as a full mediation because the VAF value is  $1.729 > 0.80$ .

Table 23 above shows that there is an ubiquitous connectivity effect on customer loyalty through customer engagement with Tokopedia application users in Jakarta. The relationship of the variables in this study is positive, which means that the higher the ubiquitous connectivity variable, the higher the customer loyalty and the higher the customer engagement variable. Based on the VAF value, customer engagement acts as a partial mediation based on the VAF value obtained because it is between  $0.20 \leq 0.363 \leq 0.80$ .

Table 23 above shows that there is no effect of connectedness on customer loyalty through customer engagement with Tokopedia application users in Jakarta. The relationship of the variables in this study is positive, which means that the higher the connectedness

variable, the higher the customer loyalty and the higher the customer engagement variable. Based on the VAF value, customer engagement acts as a partial mediation based on the VAF value obtained because it is between  $0.20 \leq 0.650 \leq 0.80$ .

Table 23 above shows that there is no effect of responsiveness on customer loyalty through customer engagement with Tokopedia application users in Jakarta. The relationship of the variables in this study is positive, which means that the higher the responsiveness variable, the higher the customer loyalty and the higher the customer engagement variable. Based on the VAF value, customer engagement does not play a mediation role because based on the VAF value obtained it is  $0.000 < 0.20$ .

Table 23 above shows that there is a synchronicity effect on customer loyalty through customer engagement with Tokopedia application users in Jakarta. The relationship of the variables in this study is positive, which means that the higher the synchronicity variable, the higher the customer loyalty and the higher the customer engagement variable. Based on the VAF value, customer engagement acts as a full mediation because the VAF value is  $0.917 > 0.80$ .

## CONCLUSION

Based on the results of the analysis, it can be concluded that: 1) There is no effect of active control on customer engagement in Tokopedia application users in Jakarta. This is inconsistent with research conducted by Alalwan et al. (2020) which states that active control has a significant effect on customer engagement. 2) There is an influence of connectedness on customer engagement among Tokopedia application users in Jakarta. This is inconsistent with research conducted by Alalwan et al. (2020) which states that connectedness has no effect on customer engagement. 3) There is an effect of personalization on customer engagement in Tokopedia application users in Jakarta. This is consistent with research conducted by Alalwan et al. (2020) which states that personalization has a significant effect on customer engagement. 4) There is an influence of ubiquitous connectivity on customer engagement in Tokopedia application users in Jakarta. This is consistent with research conducted by Alalwan et al. (2020) which states that ubiquitous connectivity has a significant effect on customer engagement. 5) There is no effect of responsiveness on customer engagement for Tokopedia application users in Jakarta. This is inconsistent with research conducted by Alalwan et al. (2020) which states that responsiveness has a significant effect on customer engagement. 6) There is an effect of synchronicity on customer engagement in Tokopedia application users in Jakarta. This is inconsistent with research conducted by Alalwan et al. (2020) which states that responsiveness has a significant effect on customer engagement. 7) There is an influence of customer engagement on customer loyalty in Tokopedia application users in Jakarta. This is consistent with research conducted by Alalwan et al. (2020) which states that customer engagement has a significant effect on customer loyalty.

The limitations in this study are as follows: 1) There are limited respondents because the object of research is only Tokopedia application users who can fill out this questionnaire. 2) The variables studied are Active Control, Personalization, Ubiquitous Connectivity, Connectedness, Responsiveness, Synchronicity, Customer Engagement to Customer Loyalty. 3) Data limitations are not able to make the Cronbach Alpha value ideal. 4) Limitations on the scope of the area that is carried out is only limited to the area. Recommendations that can be given are as follows: 1) It is recommended for further research to use different e-commerce objects. 2) Adding other variables that can affect Customer Loyalty, for example, Customer Satisfaction, Brand Awareness, Social Media Marketing. 3) Obtain data capable of making the ideal Cronbach's Alpha value. 4) Research was carried out in different geographical areas besides Jakarta.

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