THE IMPACT OF FACTORS OF AFFECTING MOBILE COMMERCE USER SATISFACTION TO IMPROVE CUSTOMER ENGAGEMENT

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ABSTRACT

Competition for customer engagement is an important part of the company's long-term competitive advantage. User satisfaction in using mobile commerce is one of the determining factors in increasing customer engagement. Therefore, it is necessary to know other factors that influence user satisfaction by conducting an analysis of the survey of each factor that has a significant influence. The sample will consist of 400 respondents and will be analyzed with a model designed based on these factors. It is very important for companies to increase their customer engagement through user satisfaction in mobile commerce. This research found that trust, innovativeness, mobility, perceived enjoyment, involvement, service quality, perceived usefulness, experience has significantly affected mobile commerce user satisfaction. But for social influences and perceived ease of use not significantly affecting mobile commerce user satisfaction to improve customer engagement in Greater Jakarta area of Indonesia.

Keywords: *Mobile Commerce Applications, Customer Engagement, User Satisfaction, Perceived Usefulness, Perceived Ease of Use, Experience.*

1. INTRODUCTION

The rapid development of mobile technology has become a part of human life, including in Indonesia. Hootsuite, based on the Indonesian Digital Report 2021, it explains that with a total population in Indonesia of 274.9 million, and unique mobile users of 345.3 million, which is 125.6% of the total population in Indonesia. Then internet users are 202.6 million which is 73.7% of the total population in Indonesia [1].
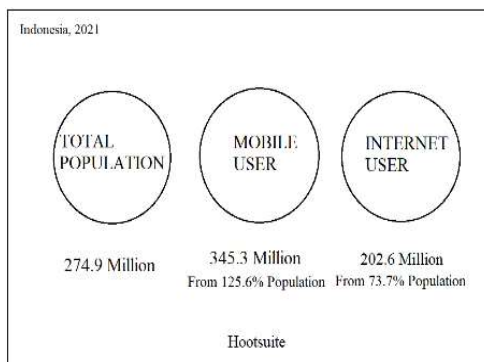

Figure 1. Mobile Users in Indonesia

From these data it was found that some residents in Indonesia have more than one account to use mobile. With the increase in the number of mobile users in Indonesia in 2021, the phenomenon of online shopping is also increasing [2]. Data from CNN Indonesia, Nielsen said that online shopping consumers in Indonesia who use e-commerce will reach 32 million people in 2021. This shows an increase because internet use in Indonesia rose 32 percent from 34 million to 45 million people throughout the year [3]. The presence of mobile technology and the presence of an m-commerce business in it, it makes people like it because it is more personal and can be taken anywhere [4]. Apart from being easy to carry, m-commerce also provides advantages such as cost-effectiveness because there is no need for users to travel to the related store to buy the items needed. The existence of services on mobile commerce is expected to create the desired user satisfaction through the quality of the system and service [5].

The presence of mobile technology and the presence of a mobile commerce business in it makes people like it because it is more personal and can be carried anywhere [4]. During the Covid-19 pandemic, it was seen that there was a significant change in the use of online shopping provided by mobile commerce companies to the public [6]. So that people's behavior changes in shopping, which previously conventionally or offline are now shopping online using e-commerce and mobile commerce applications with the highest demand related to health products, work-at-home support products and additional food products [7]. Apart from being easy to carry, this mobile commerce application also provides advantages such as being cost-effective because there is no need for users to travel to the related store to buy the items needed. The existence of services on this application is expected to create the desired user satisfaction through the quality of the system and services [5].

Mobile commerce itself has applications that can directly make transactions through the features provided for each m-commerce application [8]. The transaction process that occurs on mobile is not only a buying and selling process, but there are online payments that can be used by customers to facilitate payments without having to leave their place of residence. In addition, M-commerce can provide offers such as advertising, mobile payments, reservations and reservations, mobile banking, and other applications. Therefore, the relationship between customers and mobile commerce will increase because customers feel that everything is on their mobile devices. According to Adjust.com [9] the growth of mobile commerce has increased at the global level due to high-speed internet connections, mobile commerce can continue to dominate the market in the e-commerce sector. This is supported by data that mobile device users rather than desktop users so that the future of online or digital commerce looks guaranteed. Therefore, many companies are competing to build mobile device applications.

According to the Minister of National Development Planning (PPN/ Bappenas) Bambang Brodjonegoro, he explained that the current number of e-commerce usage is mostly located in the Greater Jakarta area of Indonesia, which includes Jakarta the Indonesia's massive capital then Bogor, Depok, Tangerang, and Bekasi [10]. Cnbcindonesia.com also shows data that at least 44.1% of the Greater Jakarta area searches for products online. However, out of 66.3% admitted to having problems because they could not ensure the quality of the goods purchased [11]. The following is data from Iprice.co.id [12] which shows the use of e-commerce in Indonesia, which is currently in the first position, namely Tokopedia with Monthly Web Visits of 157,233,300, then Shopee at 132,776,700 and the third being Lazada at 24,686 .700 in Q1 2022. In addition, based on the rankings in the App Store and Google Play Store, Shopee is in the first position and competes with Tokopedia and Lazada.

Observations made on the top three mobile commerce applications in Indonesia based on IPrice [12] data found that there was a response from mobile commerce companies to answer reviews from users on the Google Play Store and the App Store. This shows that there is a relationship between users and owners of mobile commerce applications to give each other suggestions and criticisms and not infrequently it is also a place to express a sense of lack of comfort in using the application. This observation also explains that there is a problem with the use felt by users of the related mobile commerce application so that there is a response to compare it with other mobile commerce. This is a concern because of the competition and selection in which mobile commerce applications are suitable for their needs. The largest total reviews are on Lazada with 18M (18 million times users review) on the Google Play Store and 46.2K on the App Store with a rating of 4.6 out of 5 on the Google Play Store and 4.8 on the App Store. Then followed by Shopee at 11M and 885K at ratings 4.5 and 4.6. Then Tokopedia at 6.24M and 468K at ratings 4.8 and 4.8.

The results of observations made on mobile commerce applications in Indonesia can be found matters relating to the decision of users to choose to continue or stop using mobile commerce applications through satisfaction or dissatisfaction with the perceived results and providing a significant experience. Apart from the observation data above according to [13] in influencing user enjoyment and satisfaction in using mobile commerce applications, it can also be through features or services that affect mood and desire to continue using the application for a longer period of time. With a higher level of user satisfaction, users tend to buy the product (Chi, 2018). According to Abror [14] user satisfaction has a significant and positive influence on customer engagement.

Customer engagement is needed because engagement forms a bond between users and mobile commerce companies that can generate a long-term drive for brand loyalty [15]. With the occurrence of ties to each other, the risk of users to move is getting smaller and there is no need to compare again with other mobile commerce applications. In today's

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competition, customer engagement is important and a determinant of the company's long-term competitive advantage [16]. This is also supported by Saretta [17] that customer engagement has a crucial influence on the success of a business, especially in the fast development of mobile technology. By paying attention to customer engagement, it can create a closer match with the community of users of the company's products, namely mobile commerce [18].

In today's competition, customer engagement is important and a determinant of the company's long-term competitive advantage [16]. By paying attention to customer engagement, it can create a closer match with the community of users of the company's products, namely mobile commerce [18]. Increasing customer engagement and measuring according to Saretta [17] can be seen from social media as well as companies posting content related to business products or services and promos and seen from 1000 viewers. From the results of these activities, the company received information about comments, how many times the content was shared, likes, and how many users clicked on the content. Mobile commerce applications are built to get a richer shopping experience with the features provided so that they can interact, and this is what compares to the traditional shopping experience. In addition, customer engagement has recently appeared in academic literature and practitioner discussions as a new perspective in the application of customer relationship management aimed at building brand loyalty [19]. One example if customer engagement is not noticed by m-commerce developers, then customers or users will be reluctant to give their time in making transactions again because they are not satisfactory and do not match the expectations of users [20]. Of course, companies don't want this to happen and make the advantages of their products decrease so that they will lose to competitors.

Therefore, this study is to analyze what factors influence mobile commerce user satisfaction to increase customer engagement based on previous research that pays attention to user satisfaction because of people being active in using mobile commerce and conducting reviews, ratings and comments on satisfaction. or dissatisfaction. According to Kalinić [13], Trust, perceived usefulness, mobility and perceived enjoyment have a significant influence on user satisfaction. This is also the same as the findings [21] which adds that with a focus on aspects of mobility, usability of the application and security so that it meets specific

demands and needs because users can feel the level of familiarity or are already familiar with mobile commerce methods and choose the method of mobile commerce. compared to traditional trading methods.

Based on the findings related to previous research, it is taken from the findings according to Ngubelanga & Duffet [22] to consider the use and acceptance of mobile commerce, behavioral intentions, adoption or usage behavior, and one of them is customer satisfaction as a result of using mobile commerce. Variables that affect satisfaction from this research are trust, social influence, innovativeness on perceived usefulness. mobility, perceived enjoyment, involvement on perceived ease of use. Then from the perceived ease of use which has a direct effect on perceived usefulness, and both things have a direct effect on user satisfaction. Added by research according to Berlianto [23] that there are factors that influence user satisfaction from experience which is influenced by service quality, and perceived risk. However, because the perceived risk does not significantly affect user satisfaction, this study takes service quality. This study focuses on a model consisting of variables based on previous research to increase customer engagement on mobile commerce in the Greater Jakarta area to determine the factors that influence mobile commerce user satisfaction to increase customer engagement and find out how much influence and relationship each factor has. on the satisfaction of mobile commerce users.

2. LITERATURE REVIEW

2.1. Mobile Commerce

Mobile commerce is part of e-commerce that uses mobile devices such as smartphones or similar Personal Digital Assistants (PDAs) and larger tablets to conduct trade [24]. Involves the transfer of ownership or rights to use goods and services, initiated or completed with the help of mobile device access to a computer-mediated network [25]. Mobile commerce can provide offers or value through virtual transactions that are location-specific and time-sensitive and can be personalized according to the needs of existing relationships with users. The ability of mobile commerce is an offer that can be given to users because it is affected by the location and time of the user which is one of the helps features and represents the quality of service in shopping using mobile devices [18]. Mobile commerce is now becoming popular due to its rapid growth and can be accessed via mobile devices besides that mobile commerce has attracted considerable trade traffic

and many companies are aware of this and have invested in building their own mobile commerce applications. This consistent growth of mobile commerce can occur in emerging markets such as Indonesia, where most of the internet access is increasing, especially for groups with low incomes and this is also supported by the increase in the use of smartphones which are always close and can be accessed easily [26]. The thing that supports mobile commerce is the performance of buying and selling transactions using mobile devices [27].

2.2. Trust

Trust is critical to the success and growth of commerce with mobile media. However, trust from users is complex and involves technology and business practices aimed at gaining initial and ongoing trust [28]. Trust plays a role in influencing users, because with this trust users are willing to use the application and carry out transactions in it [29]. The important role of trust can encourage behavior from users such as purchase intention, intention to continue and adopt a habit or get used to a new technology [30]. The existing trust becomes a reference for users for loyalty so that they can continue to use the technology to shop online [31]. According to Everard & Galleta [32] trust itself is a positive feeling about reliability, dependence and trust that is felt by individuals towards a person, object or process.

Trust can be judged from the technology used in the mobile device and who or what vendor built it [28]. In this case, the reputation of an owner or builder of a mobile commerce application also influences the trust of users. This is also in accordance with the belief in the mechanisms built into the features of mobile commerce services [33]. So that trust can also be influenced by the security felt by users in conducting transactions in mobile commerce applications [34]. If there is suspicion in carrying out the transaction process which is one of the keys to the performance of mobile commerce, the user can think twice about continuing to use the application.

2.3 Social Influence

Social Influence can be fully mediated by finding things that make users feel more comfortable than time or effort in using mobile commerce. So that users of mobile commerce applications consider using this application to be useful even though social influences are not in line with their wishes. In the study literature, social influence does have an influence, but lately marketing has focused more on development that provides more joy, pleasure, comfort than caring about the opinions of others in the trading industry using mobile technology [35].

Social Influence plays an important role in the early stages of development and introduction of new technologies which most of the early adopters do not have the experience and related knowledge so that social influence will be the first player in getting public opinion to fill thoughts that were previously unfamiliar with this technology [36]. Social Influence gives influence on individuals through family, friends, influencers, celebrities or by whatever the individual thinks is related to the people who are important to him [37]. Describing a person's feelings about whether their peers and other important and trustworthy people can have an influence on the individual and he feels he must participate in these actions is the effect of social influence according to Samad [38]. Social influence is also referred to as a bridge between purchase intentions in mobile commerce and other online applications as well as social media which aims to develop competitive advantage [39].

Social influence gives influence on users to decide whether to use mobile commerce applications from opinions or input from people around who provide suggestions. New users also often ask people what they have just experienced and consult whether mobile commerce applications meet their expectations to meet their needs [40]. Media such as social media which is a platform for sharing information, TV and radio that have been around for a long time have been part of people's lives taking part in spreading the benefits of mobile commerce applications and encouraging new users to try and start continuously using them to meet their needs. their needs in online shopping [22].

2.4 Innovativeness

Innovativeness that is created and developed can provide the success of the organization and a sustainable competitive advantage [41]. Innovativeness generally describes openness and curiosity about new experiences that can be felt and is a significant predictor of shopping intentions [42]. From this innovation and users get involved, people or society can be innovative if they feel involved in the process of adopting new technologies or using new products for new systems compared to other people from the same social system [43]. Innovativeness is also defined from the ability of users or people to adopt innovation ideas that they

can decide whether to use the new technology or not, whether it is useful to support daily needs and easy to understand and use. Innovativeness plays an important role in creating a more convincing online shopping experience and making users feel comfortable [44].

Innovativeness with the results of providing features or creating new technology in mobile commerce applications is one indicator of the impact that innovation has on users and makes users want to experience the technology. Users can enjoy feature services in the process of adapting to new innovation ideas provided in the form of services or products and being the first to try new technologies so that they provide a more favorable assessment than previously felt [22]. Users who use new technology in mobile commerce applications and feel the benefits are a given unit of measure for innovation [45]. According to Sun and Chi [46], innovativeness has a significant influence on perceived usefulness based on searches from mobile commerce users.

2.5 Mobility

Mobile technology has two advantages, namely better consumer mobility and allows access anytime and anywhere thereby reducing the need to move to buy goods or services [47]. Mobility is a factor that has an important influence on mobile commerce and construction that deserves attention because it is related to the attitude of intention to use and use payments with mobile technology [48]. Following are the significant advantages of mobile technology in several fields such as medicine, especially dermatology which is based on pattern recognition and deep learning that is efficient in the analysis of skin lesions [49]. According to Nikou & Economides [50] mobility has a significant relationship to the perceived ease of use experienced by users of mobile commerce applications. Mobility as an antecedent that gives strong memories to the intentions of each individual or user to use, behave and feel benefits in the context of services such as m-payment [51].

The influence of mobility can be seen whether mobile commerce applications can be accessed anywhere and anytime by users to fulfill their online shopping needs even when traveling to a place to support their activities. This is driving the rise of mobile commerce as people quickly buy goods or products when they need them and make payments easily and efficiently. The use of mobile commerce applications using a smartphone that is always in the user's hand is also an assessment of the functionality of the mobility features provided [22]. Therefore,

mobility has a significant relationship with perceived ease of use in using mobile commerce applications [50].

2.6 Perceived Enjoyment

Perceived enjoyment has an important relationship with the intention to continue user involvement in mobile commerce applications. This is supported by several studies which explain that perceived enjoyment is an important predictor of intentions when using mobile commerce. So that this perceived enjoyment affects the intention to continue using mobile commerce [52]. Perceived enjoyment is defined as "the extent to which activities performed by users in accessing or using applications that are considered enjoyable for themselves, regardless of the performance consequences that must be adapted" [53].

Perceived enjoyment is one of the most important factors because it can determine whether the adoption of the technology provided or features that provide entertainment such as games are used by users and the perceived enjoyment affects the motivation of users to enjoy shopping online on mobile commerce applications on their mobile devices so that the presence of that feeling they will return to using mobile technology [54]. Perceived enjoyment can also be defined as intrinsic motivation that arises from oneself which can be the opposite of perceived usefulness which is extrinsic motivation [55].

Perceived enjoyment can affect the use of the application when the user feels happy in using the application without any worries. The interesting thing is the features provided, and the ease of accessing services in searching for the desired product or service to give its own appeal to the user's intentions [22]. The perceived enjoyment can also be based on the exploration of mobile technology provided to facilitate more specific search activities of the categories, functions, and prices of these products so that they become added value to increase the pleasant taste in using mobile commerce applications. There is a sense of enjoyment when using the application, the user is happy to promote the services used to others based on their experience [56].

2.7 Involvement

Involvement is a condition that guides the user to a relatively complex elaboration process that produces an active cognitive information about the

product or buying situation. Involvement is studied extensively in marketing in the context of influencing and convincing others because it is seen as a necessary condition for increasing user engagement with a product [57]. By involving users in the process of creating new services or new products, it can increase the existing commitment to service providers and improve the relationship between the two parties [58].

Involvement is considered important in understanding the behavior of application users because the features provided have a direct impact on the benefits received so that users can provide feedback on what they feel, and the application can serve and accommodate these responses ([59]). Involvement according to Mou [60] is a motivational construct that depends on the values and needs of a person who wants to be provided by the system by finding the level of involvement that has an impact on the customer's mind on product information.

This involvement is also considered to have an impact if the user is interested in being involved in the process or providing new service offers on mobile commerce applications so that when buying and selling transactions or accessing the offer the user directly feels the benefits and easily understands the process that occurs [22]. User involvement is related to the payment process, receipt of goods and providing advice or input on the services used. The smooth process of receiving goods or products is one of the actions of user involvement to provide specific address information to the application [59].

2.8 Service Quality

Service quality is an important variable because it facilitates online shopping on platforms such as websites that can facilitate transactions and delivery of products or services provided more efficiently and effectively [19]. Service quality which is the result of the overall evaluation of user ratings so as to provide superiority to the quality of electronic services provided through virtual marketplaces [23]. Measuring service quality requires a difficult time process because the evaluation of service quality is not only based on the results of existing services but also an assessment during the service delivery process [61]. Improvement of service quality can also be done by providing companion services that can support customer engagement so that they can continue to maintain relationships in terms of service quality [62].

Indicators of service quality can be seen from the facilities provided to support online shopping using mobile commerce applications [19]. The results of the service quality in the application can have an influence on the user's perceived experience, if the results of these factors decrease and differ from what is desired, it will have a negative impact or response from users [63]. Comparing the service quality of each mobile commerce application is also a determinant of success. However, service quality that can provide appropriate convenience benefits in using mobile commerce applications that are in hand can affect the quality of service [64].

2.9 Perceived Usefulness

Perceived usefulness is one of the models used in the UTAUT model which is defined as the extent to which a technology user in the form of an application can trust the system used to help and achieve benefits in the work being done [65], [66] User perceived usefulness can also be defined according to Tyas & Darma [67] as a degree to which a person trusts technology in supporting work performance. This is often recognized as an influence that can provide the basic construction of users to adapt to new technologies [68]. Therefore, perceived usefulness can also be an external motivation for users and encourage them to continue testing, evaluating, and analyzing the advantages of certain technologies that can provide assistance or support their performance [69].

The effect of perceived usefulness can be felt by users if when using mobile commerce applications, they feel an increase in efficiency from shopping online, without having to spend more effort and productivity can also be overcome quickly with features or services provided according to needs. Productivity from online shopping can also be done quickly by simply using an application in the user's hand. Shopping performance has also improved and there are categories or filters that can help users explore products that might suit their needs. Therefore, daily activities that were previously carried out traditionally such as paying bills or obligations must come to a place with greater effort, but by using a mobile commerce application users can save energy and the benefits can be felt immediately [22].

2.10 Perceived Ease of Use

Perceived ease of use can refer to the extent to which a person can believe that using the system in a particular application can feel free from the effort that must be made to get something which is the

definition of ease of access, use without great effort [66]. A technology has a special place because if the technology is preferred over other technologies and finds it easy to use it is likely that users will recommend it to others and this is certainly important [70]. Perceived ease of use is perceived to represent a measure of cognitive effort made based on learning from the use of new technologies [71]. Perceived ease of use can represent the decision of the user or the person responsible for purchasing at the company to make purchases on the spot or which mobile commerce application is chosen to meet the needs of the product [72].

Perceived ease of use can be felt if the user feels the ease of using the mobile commerce application. Users can easily understand and interact with systems created to meet the needs of searching for the desired product or service. It does not require a lot of effort to be able to interact directly with the application so that it is easy to recognize how the system performance and the benefits of the service are in accordance with user expectations in using the service to support their needs. The convenience felt by users also depends on the process of installing applications on mobile devices and quickly starting the buying and selling process without any obstacles that make it difficult for users to continue shopping online [22].

2.11 Experience

Experience is a response that is experienced or felt by users internally and subjectively to the company directly or indirectly and through various aspects of the offer provided by the company to give the impression of a positive experience such as customer care, advertising, product packaging, product and service features, user convenience and constraints [23]. However, during the period of their use of the application where they feel and experience the quality of the product more, satisfaction with the product usually does not talk about their experience [73].

Experience in using applications can be divided into two, namely positive experiences from an object such as a brand, the application itself, products, services, and others with their respective values that provide an interesting experience. However, there are also negative experiences with an object that encourage refusal from users to continue using the application [74]. Experience can be based on the concept that the user experience is a combination of all the gestures and touch points that the user has with the organization that will create the overall experience of using the application [75]. The more positive the experience of a product used or service can be through interactions that become experiences, the more positive the decision to make purchases or use applications continuously from customers or users [76].

Experience can have an impact by looking at the ease that has been felt by users when using mobile commerce applications to search for products, purchase products, pay for products, track products to receive products for buyers [23]. The perceived benefits of using this application for online shopping are also a determinant of a positive experience or not [73]. Confidence when using applications is one of the assessments in having a positive experience with an event experienced by the user [76]. This can be seen in the reviews feature carried out by users to leave suggestions or criticisms of the services used in related mobile commerce

2.12 User Satisfaction

User satisfaction is one of the most important issues in marketing thinking and practice of a project or system that you want to develop or maintain because this is the most significant determinant of repeat sales that occur, positive word of mouth so that it can spread the word directly and of course. influence the loyalty of users [77]. User satisfaction is a strategic goal for companies to grow and develop and to exist in the face of change in the face of intense competition as it is now [78]. Every user who gives trust to service providers, they generally assume that the level of satisfaction from users will increase and can also result in increased loyalty [79].

Retaining existing users or customers must be done by mobile commerce providers with great emphasis on ensuring they are satisfied, because increasing satisfaction has a positive impact on consumer loyalty and getting involved in promoting mobile commerce applications as well as word of mouth to get prospective new users [21]. User satisfaction is defined as a summary of affective responses of various intensities that follow from any mobile trading activity and is developed from several focused aspects such as the quality of information, system quality and service quality provided by the application [80]. Today, many companies are increasingly understanding the importance of customer satisfaction and implementing strategies to provide satisfaction for their customers.

Customer satisfaction is a very important factor for the existence, sustainability, and development of

the company. User satisfaction can be influenced by the services provided through features on the mobile commerce application and in accordance with expectations, benefits and can be accessed to carry out the buying and selling process or just looking for product information needed to be their reference at a later time [22]. Online shopping satisfaction on applications is one of the assessments that can affect the desire to shop again [77]. This user satisfaction creates a sense of willingness to recommend mobile commerce applications to others [81].

2.13 Customer Engagement

Mobile devices or smartphones are the first layer for users or customers that are used to carry out interactive communication on anything and provide speed to get information so that it is suitable for building customer engagement [82]. Better customer engagement has the characteristics of customers who are increasingly demanding and active from requests that are in accordance with their wishes, from services, products, and benefits both academically and practically [83]. Customer engagement refers to the psychological state of a person or user in using a mobile commerce application due to an interactive experience with a focus on the object at hand, namely the system or feature used [84]. So that customer engagement requires an active role from users to make commitments that proactively interact with brands or mobile commerce companies [85]. Customer engagement is directly related to the emergence of new media which is a place for users to interact with companies and companies can also find out suggestions and requests made by users both from purchasing and non-purchase experiences [84], [86].

The influence of customer engagement can be seen from the user's desire to continuously use mobile commerce applications to achieve their goals, namely meeting their appropriate needs such as bill payments by expecting the application to provide features for billing product features used by related users [87]. Provide information or advice to mobile commerce owners to help and become a reference for a sustainable development process that is in accordance with user needs so that users are proactively allowed to actively participate in communicating with applications [18]. Therefore, building customer engagement with customers or users is an important thing for the company.

2.14 Related Research

This Ngubelanga & Duffet research [22] aims to show that trust, social influence, innovation have a positive effect on perceived benefits. Perceived enjoyment, mobility, and engagement positively affect perceived ease of use. Then perceived usefulness and perceived ease of use are positive antecedents of user satisfaction. By using the antecedent conceptual model derived from the Extended Technology Acceptance Model (TAM) to test these factors for mobile commerce application users. This [23] previous study aims to determine the factors that influence urban customer experience and satisfaction in purchasing through Mobile Commerce. Using measurement (Outer Model Evaluation) by checking indicators of reliability, internal consistency reliability, convergent validity, and discriminant validity. This study found that the experience of the customer has a positive effect on satisfaction and perceived risk has no effect on experience but has a negative effect on satisfaction.

This research [88] about the impact of mobile interactions on customer engagement in shopping on mobile devices. The method used is to develop shopping activities carried out by mobile channels, while other channels such as online channels, traditional channels, and social media shopping channels are not considered. Thus, the results of this study enrich the current understanding of the impact of mobile interactions on mobile shopping, as well as how mobile interactions can increase customer engagement levels. This [89] study was about to determine the effect of the "Shopee Tanam" version of gamification on customer engagement on the Shopee mobile application in Indonesia by surveying users of the Shopee in App Games feature in Bandung. The research method used is descriptive verification analysis by design and survey. The results of this study explain that gamification has a significant positive effect on customer engagement on the Shopee Indonesia mobile application

This [18] previous study was about the role of interactivity in customer engagement in mobile commerce applications. Using quantitative methods with 717 mobile commerce users in Indonesia. So, it was found that the role of interactivity has a positive influence on all customer engagement and service quality which moderates the relationship between addition and mobilization with a more detailed understanding of the role of service quality for each dimension of customer engagement. Examines the factors of engagement for waste sorting based on the mediating effect of satisfaction. Using a quantitative

method with a questionnaire data of 672 respondents from 31 provinces in China. The result of this research is to provide information about the value obtained from good sorting can increase satisfaction. This satisfaction can also increase enthusiasm, social interaction, and active participation in carrying out these activities [90].

Based on Al-Dmour research [91], relationship between Customer Engagement, satisfaction and loyalty is a concern in this previous study. Using a structural equation model with 406 respondent data on mobile banking service users in Jordan. The aim of this study is to assist in the future in finding and understanding the relationship inherent in constructing questions for managers to improve online banking user satisfaction. Based on [92] research which provides knowledge about the role of perceived experience by examining the role that has an impact on customer engagement which is seen based on customer satisfaction and loyalty in a digital business environment. By covering the conceptualization and validation of several studies, namely exploratory qualitative studies carried out in identifying relevant engagement experiences.

According to Panjaitan research [93], the impact of satisfaction and customer engagement becomes an intervening variable on customer loyalty in Surabaya Indonesia. Using the SEM calculation method with the Maximum Likelihood Estimation (MLE) model, sampling method with non-probability in judgment sampling and software assistance Asmos 22. This study shows that customer satisfaction, and customer engagement are intervening variables or a positive link. The next research on mobile users is based on engagement motivations, perceived value, satisfaction, and continued engagement intention. Investigating, proposing, and testing a model for mobile user engagement to explain the intentions of mobile users through motivation, perceived value, and satisfaction [87]. So, it is produced that the presence of motivation from mobile users can affect perceived value, satisfaction, and mobile engagement intention.

2.15 Hypotheses Development

Based on previous research on the use of mobile commerce applications according to Ngubelanga & Duffet [22] obtained a research model that can be used as factors that affect mobile commerce user satisfaction for the purposes of this study. These factors are trust, social influence, innovativeness, mobility, perceived enjoyment, and involvement.

The following variables have a significant influence on mobile commerce satisfaction. Therefore, the following hypothesis is proposed:

H1: Trust has a positive and significant effect on perceived usefulness in mobile commerce.
H2: Social Influence has a positive and significant influence on Perceived Usefulness on mobile commerce.
H3: Innovation (Innovativeness) has a positive and significant influence on perceived usefulness in mobile commerce.
H4: Mobility has a positive and significant effect on the perceived ease of use in mobile commerce.
H5: Perceived enjoyment has a positive and significant effect on perceived ease of use in mobile commerce.
H6: Involvement has a positive and significant effect on the perceived ease of use in mobile commerce

Previous research according to Berlianto [23] also discusses service quality which has a significant influence on experience and experience also has a significant influence on user satisfaction. Therefore, the following hypotheses from this study:

H7: Service quality has a positive and significant influence on user experience (customer experience) on mobile commerce.

The influence of factors from Ngubelanga & Duffet [22] also has an influence on perceived usefulness and perceived ease of use to give effect to the user satisfaction variable. By being satisfied in using a mobile application, it will encourage continued involvement so that there is a mutually influential relationship

H8: Perceived Ease of use has a positive and significant influence on Perceived Usefulness in mobile commerce.
H9: Perceived Usefulness has a positive and significant effect on User Satisfaction on mobile commerce.
H10: Perceived Ease of use has a positive and significant effect on User Satisfaction (User Satisfaction) in mobile commerce.
H11: Experience (User Experience) has a positive and significant influence on User Satisfaction (User Satisfaction) on mobile commerce.

Based on the previous studied Kim [87] user satisfaction has a significant influence on

engagement. There is a strong relationship between the satisfaction involved with organizational profits

H12: User satisfaction has a positive and significant influence on user engagement (Customer Engagement) in mobile commerce.

3. RESEARCH METHODOLOGY

3.1. Research Model

The type of research model used is hypothesis testing which aims to test and explain certain relationships of two or more factors in one condition. This research model is to analyze the factors that influence the user satisfaction of mobile commerce users on customer engagement.
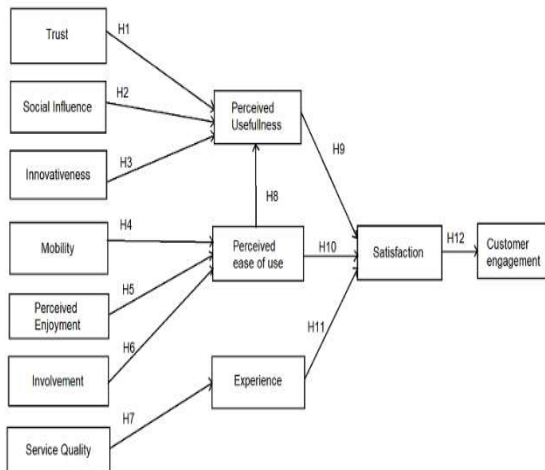

Figure 2. Proposed Model

3.2. Data Gathering

This research was conducted by surveying respondents from the media such as online questionnaires via Google Forms to users of mobile commerce applications in the Greater Jakarta area of Indonesia. This questionnaire is distributed through social media such as WhatsApp and Instagram. This questionnaire has 28 representative questions per factor to be tested using a Likert Scale. The number of respondents from this study as many as 400 people who became the sample to achieve the objectives of this study.

3.3. Respondents

The gender distribution between men and women. The result shows female users (59.7%) and male users (40.3%). Most are in the age distribution 20–30 years (Generation Z and millennials) – is the

productive age. Meanwhile the most extensive area distribution is in Jakarta (75%) then Tangerang (11.6%). Mobile commerce application most often use is Tokopedia (51.4%), Shopee (41%) and then Lazada (2.8%).

4. RESULT AND DISCUSSION

4.1 Validity and Reliability

The results of data collection show that all indicators have an outer loading value of more than 0.7 and an AVE of more than 0.6. With these results, the indicators are valid.

Table 3. AVE and Outer Loading Analysis Result

Variable	AVE	Indicator	Outer Loading
Trust	0.782	TR1	0.873
		TR2	0.906
		TR3	0.897
		TR4	0.860
Social Influence	0.673	SI1	0.824
		SI2	0.777
		SI3	0.858
Innovativeness	0.709	IN1	0.825
		IN2	0.844
		IN3	0.809
		IN4	0.887
Mobility	0.764	MB1	0.905
		MB2	0.909
		MB3	0.876
		MB4	0.801
Perceived Enjoyment	0.757	PE1	0.920
		PE2	0.914
		PE3	0.842
		PE4	0.799
Involvement	0.752	IV1	0.807
		IV2	0.862
		IV3	0.887

|		IV4	0.833
Service Quality	0.719	SQ1	0.829
		SQ2	0.873
		SQ3	0.903
Perceived Usefulness	0.750	PU1	0.896
		PU2	0.919
		PU3	0.925
		PU4	0.706
Perceived Ease of Use	0.828	PS1	0.914
		PS2	0.943
		PS3	0.912
		PS4	0.868
Experience	0.776	EX1	0.882
		EX2	0.883
		EX3	0.895
		EX4	0.863
User Satisfaction	0.835	ST1	0.932
		ST2	0.911
		ST3	0.919
		ST4	0.892
Customer Engagement	0.749	CE1	0.855
		CE2	0.892
		CE3	0.883
		CE4	0.831

Source: Authors' analysis

Reliability testing in this study uses Cronbach's Alpha with a value that must be greater than 0.7 and Composite Reliability with a value greater than 0.7. The results show that Cronbach's Alpha and Composite Reliability value for each variable is more significant than 0.7 so that all variables used in this study are reliable.

Table 3. *Reliability Statistics*

Variable	Cronbach's Alpha	Composite Reliability
Trust	0.907	0.935
Social Influence	0.756	0.861
Innovativeness	0.864	0.907
Mobility	0.896	0.928
Perceived Enjoyment	0.894	0.926
Involvement	0.869	0.911
Service Quality	0.837	0.902
Perceived Usefulness	0.885	0.922
Perceived Ease of Use	0.930	0.950
Experience	0.904	0.933
User Satisfaction	0.934	0.953
Customer Engagement	0.889	0.923

Source: Authors' analysis

4.2 Hypothesis Analysis
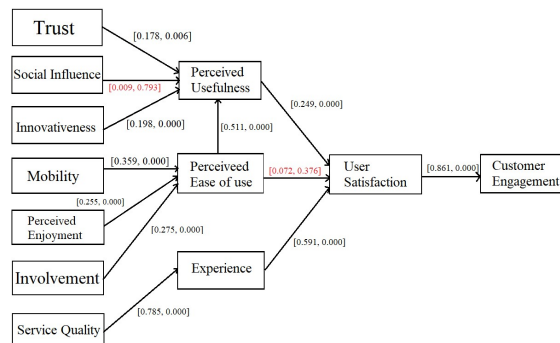
Notes: [Original sample, p-values]

Black (Accepted), *Red (Rejected)*

Source: Authors' analysis

Figure 3. Structural Model Hypothesis

Table 4. Hypothesis Result

Variable Relationship	Original Samples	P-Values	Result
Trust → Perceived Usefulness	0.178	0.006	Accepted
Social Influence → Perceived Usefulness	0.009	0.793	Rejected

Innovativeness → Perceived Usefulness	0.198	0.000	Accepted
Mobility → Perceived Ease of Use	0.359	0.000	Accepted
Perceived Enjoyment → Perceived Ease of Use	0.255	0.000	Accepted
Involvement → Perceived Ease of Use	0.275	0.000	Accepted
Service Quality → Experience	0.785	0.000	Accepted
Perceived Ease of Use → Perceived Usefulness	0.511	0.000	Accepted
Perceived Usefulness → User Satisfaction	0.249	0.000	Accepted
Perceived Ease of Use → User Satisfaction	0.072	0.376	Rejected
Experience → User Satisfaction	0.591	0.000	Accepted
User Satisfaction → Customer Engagement	0.861	0.000	Accepted

Source: Authors' analysis

Hypothesis analysis was carried out through the bootstrapping method. The significance level used is 5%, meaning that the relationship between variables is said to be significant if p-values < 0.05. The result shows that, hypothesis 1 (H1 **Accepted**) about the trust factor has a significant influence on perceived usefulness on mobile commerce user satisfaction, the p-value <0.05 is 0.006 and the original sample = 0.178. The trust factor that affects perceived usefulness makes users believe in the services provided because the perceived usefulness is appropriate. Hypothesis 2 (H2 **Rejected**) social influence variable on perceived usefulness, obtained a p-value of 0.793 so that social influence does not have a significant effect on perceived usefulness. Users are now increasingly confident in using mobile commerce applications without worrying about the influence of others because they are already getting used to using and feeling the services provided in Greater Jakarta. Innovativeness (H3 **Accepted**) was found to have a significant effect on perceived usefulness with p-values of 0.000 and original sample 0.198. People are increasingly interested and feel the use of the features provided so that they feel new and are interested in continuing to follow and use mobile commerce applications.

Mobility (H4 **Accepted**) was found to have a significant effect on perceived ease of use with p-values of 0.000 and original sample 0.359. This factor of mobility makes it easier for mobile commerce users to access anywhere and anytime so that they can reduce expenses such as transport to

stores, besides that it also makes it easier to make online payments that make buying and selling transactions faster. If the needs desired by the user can be accessed and met quickly, the mobility factor has a very significant influence. Perceived enjoyment (H5 **Accepted**) was found to have a significant influence on the perceived ease of use variable with p-values of 0.000 and original sample 0.255. These results indicate that perceived enjoyment has an influence in attracting users to continue using the services provided because of the sense of ease of use without having to worry and fear that something unwanted will happen. Involvement (H6 **Accepted**) also has a significant effect on perceived ease of use with p-values of 0.000 and original sample 0.275. Involvement that has an impact on perceived ease of use to encourage users to continue to provide input and suggestions for mobile commerce application owners to continue to improve and create new features that can improve relations between users and applications.

Service quality (H7 **Accepted**) was also found to have a significant effect on the experience variable with p-values of 0.000 and original sample 0.785. Service quality is indeed a factor that determines user satisfaction and interest in continuing to use the application. Facilities that are supported by efficient and effective transactions and services such as delivery of goods to the buyer's place make it a reference in assessing quality and become a positive experience to continue using mobile commerce applications. Then perceived ease of use (H8 **Accepted**) has a significant effect on the perceived usefulness variable with p-values of 0.000 and original sample 0.511. The ease of using mobile commerce applications will have a positive influence on the usability of the application. Users will feel the freedom to access, choose and make transactions as well as payments in shopping

Perceived usefulness (H9 **Accepted**) was found to have a significant effect on the user satisfaction variable with p-values of 0.000 and original sample 0.249. When users use the application and feel its usefulness and in accordance with their expectations, the user will feel satisfied with the service. When using mobile commerce applications, users hope to be able to help their needs in shopping online without having to do extra activities and simply relying on all the freedoms offered in the application. Perceived ease of use (H10 **Rejected**) on user satisfaction does not have a significant effect with p-values of 0.376 and original sample 0.072. The ease of using the application is not immediately found by the user, when the user is

not satisfied with the existing services and feels foreign, they will choose to use other technologies that they think are reliable and useful in their activities. Experience (H11 **Accepted**) has a significant effect on the user satisfaction variable with p-values of 0.000 and original sample 0.591. Experience is the best information for users to remember in using mobile commerce applications. The experience will be influenced by offers, new features, quality, delivery of goods, speed in processing payments and products as desired. This factor will significantly affect user satisfaction which is the reference for the decision to return to using the service. The last hypothesis H12 (**Accepted**) is that the user satisfaction variable has a significant influence on the customer engagement variable with p-values of 0.000 and original sample 0.861. Customer engagement is an attraction and reason for the user to continue using it because it is influenced by the user satisfaction he has experienced. With user involvement, the reputation of this mobile commerce application will increase and invite new users to join and shop online. Of course, this will be an advantage for the company and can maintain its existence and be able to compete with competitors who are trying to carry out activities that can threaten reputation and lose customers.

4.3 Discussion

The results of this study the factors that influence the satisfaction of mobile commerce users to increase customer engagement are trust, innovativeness to perceived usefulness, mobility, perceived enjoyment, and involvement which affects user satisfaction [22]. From prior Ngubelanga & Duffet [22] research it was found that the following factors are only to lead to user satisfaction. Therefore, this research is to continue its influence to increase customer engagement. Service quality factor that has an influence on the experience felt by mobile commerce users so that it becomes a support for the influence of experience to affect user satisfaction [23]. Based on Kim [55] analysis, user satisfaction has a very significant influence on customer engagement so that research is made to find out what factors can have a positive influence on user satisfaction to increase customer engagement when the online shopping phenomenon is currently a trend in the Greater Jakarta area to fulfill their life needs based on a survey of mobile commerce users, which is dominated by generation Z and millennials with more female users than male users in Jakarta city. So that mobile commerce

application owners know what to pay attention to, develop and be able to compete through the customer engagement.

The results of this study found three hypothetical pathways that will affect user satisfaction. The findings are the path of the service quality variable which has a positive and significant influence on experience in the original sample 0.785 so that the experience variable gives the most significant influence on the user satisfaction variable in the original sample 0.591. However, it can be seen in the extended model hypothesis that only the service quality variable itself will not have a significant effect on user satisfaction.

The perceived usefulness variable also has a significant influence on user satisfaction with an original sample of 0.249. Perceived usefulness is significantly supported by the variables of trust, innovativeness, and perceived ease of use. Meanwhile, the social influence variable was found to have no significant effect on the perceived usefulness variable. This is also supported by the results of the total indirect effect which shows that either user satisfaction or directly to customer engagement, social influence does not have a significant effect on these two variables.

The path of the perceived ease of use variable was found not to have a significant effect on user satisfaction so that the variable will be a supporter of the perceived usefulness variable with the influence of the mobility, perceived enjoyment, and involvement variables which of the three variables have a significant influence with the original sample above. 0.250.

4.3.1 Theoretical Implication

Based on the results of the factor analysis made with the indicators, it was found that the social influence factor had no significant effect on the perceived usefulness of using mobile commerce applications in the Greater Jakarta area. This is different from the results of previous research on social influence which has a positive influence on perceived usefulness based on the use of mobile technology, devices, or services [94]–[97]. It was also found that perceived ease of use did not have a direct effect on user satisfaction. This is different from the findings from previous studies [98]. However, perceived benefits have a positive effect on user satisfaction. Therefore, the ease of use of the application must be considered along with the perceived benefits so that it can have a positive influence on user satisfaction. So, in this study it was

found that the social influence and perceived ease of use factors from previous studies did not have a significant influence on the satisfaction of mobile commerce users.

Next is the service quality factor which has a significant influence on the experience felt by mobile commerce users so that it becomes a supporter of the influence of experience on influencing user satisfaction [22]. Of course, the quality provided by mobile commerce applications will encourage positive experiences and make people continue to use mobile commerce applications because they are satisfied with the results obtained from online shopping activities on their handheld devices. Based on the analysis Kim [87], the satisfaction factor has a very significant influence on customer engagement so that research is carried out to determine what factors can have a positive influence on user satisfaction to increase customer engagement so that mobile commerce application owners know what concerns, develops and is able to compete with other mobile commerce applications in the Greater Jakarta area of Indonesia.

The results of the obtained hypothesis indicate that the trust factor in perceived usefulness has a weak hypothesis value assessment compared to other factors because some users feel less secure in processing online transactions from mobile commerce applications both from the seller's and buyer's side. While the other hypotheses have a strong influence on each variable with p-values is zero.

4.3.2 Practical Implication

These findings can assist companies in knowing the factors that influence mobile commerce user satisfaction to increase customer engagement so that they can re-evaluate the ways they do to attract the attention of mobile commerce users to continue to engage and persist using their mobile commerce applications. By increasing customer engagement, it is important to note that the factors found can be used as a reference for more specific development. Based on the trust factor on perceived usefulness, it was found that at least mobile commerce users still have attention to security in mobile commerce applications ranging from services, transactions to receiving goods, who often feel that the product does not meet expectations. This is indicated by the results of a weak but still acceptable hypothesis.

However, it was found that mobile commerce users in the Greater Jakarta area felt that social influence did not have a significant effect on

perceived usefulness. Nowadays, people are always glued to their respective gadgets. They feel that everything they need can be met from their mobile device that can be carried, used anywhere so the reason someone uses the application is not because of the influence of others but because they know the usefulness of the application. This can be seen from the mobility factor indicator which gives a significant response and perceived usefulness which has a positive and significant influence on user satisfaction. Rapidly developing technology also has an impact on someone to continue to see gadgets even those closest to him, tv, radio, social media do not influence their decisions and continue to use mobile commerce applications.

Service quality is the most powerful factor to influence the user's perceived experience and has a significant influence on user satisfaction to increase customer engagement. With the quality in the application and in accordance with expectations, needs and benefits, it will leave a good experience so that it is satisfied and memorable to return to using and participating in every promo, event, program provided by mobile commerce. In addition, the next strong factor is perceived usefulness which is also a concern for users because this perceived usefulness must be followed by trust, innovation, ease of use, mobility, perceived comfort, and involvement. However, of all the factors that support perceived usefulness, the mobility factor, perceived comfort and still involving the user is the most helpful for the influence of perceived usefulness to influence user satisfaction.

The current online shopping phenomenon provides an opportunity for mobile commerce application owners to increase customer engagement by knowing the factors that affect user satisfaction. Judging from the data, mobile commerce applications are not only for buying and selling transactions but can also be used as a medium to meet needs such as bill payments, travel, entertainment, and even the latest feature, namely user tracking. the feature to stop the spread of the virus during a pandemic can also increase user satisfaction because it supports activities such as user tracking that is entered into the mobile commerce system so that users continue to use mobile commerce applications.

4.3.3 Limitations and Future Research Recommendations

Research is limited to respondents from the Greater Jakarta area in Indonesia in 2022. By

examining user satisfaction to increase customer engagement, it is only beneficial for mobile commerce application owners who are engaged in the mobile trading industry. By knowing what factors influence user satisfaction to increase customer engagement, research must be carried out by distributing questions to users in the Greater Jakarta area to get responses to their use of mobile commerce applications.

Future research must also be in accordance with the basic theory of dynamic capabilities by considering what factors can appear or have just been encountered with the circumstances or phenomena that occur to achieve the specific findings needed to face competition in the mobile trading industry by knowing what can provide positive and significant influence on user satisfaction to increase customer engagement so that they can continue to maintain quality with these factors. It is also recommended to test the findings of this study on the factors that affect the satisfaction of mobile commerce users with the addition of new features to the mobile commerce application such as the user tracking feature which detects and provides location data when they travel to public places that have a QR scan care protect for browsing. history of contact with Covid-19 sufferers which aims to stop the spread of the virus during a pandemic based on the care and protection service features

5. CONCLUSIONS

The factors that most influence the satisfaction of mobile commerce users to increase customer engagement from this research are service quality on experience and perceived usefulness which is supported by trust, innovativeness, and perceived ease of use factors. Trust, Mobility, Innovativeness, Perceived Enjoyment, Involvement, Service Quality, Perceived Usefulness and Experience have a significant influence on user satisfaction. But Social Influence and Perceived ease of use did not have a significant effect on user satisfaction mobile commerce to improve customer engagement in Greater Jakarta area of Indonesia.

Mobile commerce companies can increase customer engagement through user satisfaction by paying attention to and improving service quality factors that provide a positive experience for users and still maintain perceived usefulness factors based on supporting factors to support mobile commerce user satisfaction.

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