The Influence Of User Experience And E-Service Quality On Customer Loyalty Through Customer Satisfaction Mediation (Study On Mobile Coffee Shop Applications In Indonesia)

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ABSTRACT
Purpose-This study aims to examine the influence of user experience and e-service quality on customer loyalty with customer satisfaction as a mediator in mobile coffee shop applications in Indonesia.Design/methodology/approach -This research is a quantitative research which uses a survey methodology with SEM-PLS analysis. This study involved 270 respondents who are active users of various mobile coffee shop applications.Findings-The results indicated that user experience significantly affects e-service quality and directly impacts customer satisfaction. Although e-service quality did not show a positive effect on customer loyalty, the study found no significant evidence that e-service quality directly impacts customer satisfaction. However, customer satisfaction significantly mediates the relationship between user experience and customer loyalty. Additionally, age serves as a moderating variable in the relationship between customer satisfaction and customer loyalty. These findings underscore the importance of enhancing user experience and suggest that improving electronic service quality may not be sufficient without directly increasing customer satisfaction to build customer loyalty.Originality/value-This study used age as a moderating variable, and combined it with UX and customer satisfaction model.

INTRODUCTION

The large potential of coffee consumers in Indonesia has an impact on the growth of the coffee shop business in various ways, from coffee-to-go on the MSME scale, to retail coffee shops with big brands such as Starbucks, Kopi Kenangan, and Janji Jiwa.The growth of similar businesses makes competition between coffee shops and business actors increasingly fierce. Customers are faced with many choices in the coffee purchasing process, such as comparing prices, products and services, which has an impact on the ease with which customers move to

other coffee shops. The aspect of customer loyalty is very important in reducing the possibility of customers easily switching to competitors with similar products. Loyal customers tend to buy more frequently and spend more per purchase, compared to first-time customers(Etemad-Sajadi & Bohrer, 2019). In accordance with Principal Pareto, the 80/20 theory states that, in the context of customer loyalty, 80% of a company's revenue is generated from 20% of loyal customers. This principle underscores the importance of maintaining customer loyalty because a small, loyal customer base can generate a large portion of a company's revenue.

Building relationships with loyal customers allows retailers to target them with effective, personalized and affordable offers and promotions, compared to generic marketing campaigns(Al-dweeri, Obeidat, Al-dwiry, Alshurideh, & Alhorani, 2017). Loyalty programs and positive customer experiences create an emotional connection between customers and retailers, reducing the likelihood of them switching to a competitor(Smith, 2020). In the context of increasingly fierce competition, coffee shops need to adopt innovative strategies to attract and retain customers. One effort to maintain customer loyalty is by using mobile applications.

Currently, the coffee shop mobile application is developing as a digital loyalty program that provides benefits for coffee shop customers who regularly make purchases at the coffee shop. Applications that have developed in Indonesia include: Starbucks Indonesia, Kopi Kenangan, Janji Jiwa, Fore Coffee. The popularity of coffee shop mobile applications is changing the way customers interact with their favorite cafes. These apps offer many benefits to businesses and customers, driving convenience, loyalty and deeper connections(Kang & Namkung, 2019). Mobile applications are a practical solution by providing easy access for customers to browse menus, receive exclusive promotions, place pre-orders and pay contactlessly directly from their smartphones, thereby saving time and eliminating the hassle of queuing. The ease of transactions provided by mobile applications is very attractive for customers who are busy or on the go, and crave daily caffeine drinks without sacrificing precious minutes (Maulana, 2023). The target of using the coffeeshop mobile application is Gen Z. Gen Z, who was born between the mid-1990s and the mid-2010s, is the first generation to grow up completely in the digital era.(Sakdiyakorn, Golubovskaya, & Solnet, 2021).

In a competitive industry, application user experience and service quality are no longer just nice-to-haves, but are critical ingredients for achieving success(Wang, Wang, Han, & Cho, 2024). The seamless, easy-to-use app allows customers to browse products, order conveniently, and pay with ease, fostering brand loyalty and repeat business. In addition, services, whether provided directly or through an application, will build trust and create a positive relationship with the brand, thereby making customers repeat orders.(Akkucuk & Esmaeili, 2016).

*User experience*plays an important role in the retail application sector because the positive customer experience that customers get, catalyzed by ease of use, personalization and application interactivity, significantly contributes to customer satisfaction, which leads to brand loyalty and customer retention (Liu & Brown, 2019). Improving service quality (e-service quality) has been proven to result in repeat purchases and purchases(Ataburo, et al., 2017), as well as reducing the possibility of customers being dissatisfied and often causing losses(Lopes, et al., 2019).Mobile Applications provide space for brands to increase customer satisfaction in the consideration process, decision making, and post-purchase, by providing high quality e-service. StudyMamakou et al. (2024)shows the influence of user experience and e-service quality on customer satisfaction, but this research has not discussed customer loyalty. So this research will add to its influence on customer loyalty in accordance with researchMolinillo et al. (2022)and adding the age demographic variable as a moderator according to the reference from Omar et al (2021). By combining these concepts, this thesis will fill this knowledge gap. This research was conducted in the context of a mobile coffee shop application to empirically test whether user experience & e-service quality, mediated by customer satisfaction, has an effect on customer loyalty.

LITERATURE REVIEW

User Experience

User experience(UX) is a concept that describes the dynamic interaction between users and products (Norman & Nielsen, 1998). More than just usability, UX embraces the full range of user emotions, perceptions, and behaviors while interacting with a product, such as a website, application, or physical device(Maulana, 2023). A deep understanding of these core elements allows developers to create products that are not only efficient but also provide enjoyable and meaningful experiences(Ahram & Falcao, 2017). Successful UX development involves creating an intuitive interface, easy navigation, and a design that is not only aesthetic but also reliable and stimulating.

UX theory focuses not only on individual users but also on the broader impact on society(Hadi, Tirtana, & Zulkarnain, 2022). This approach broadens the scope of technology to include social impact, encouraging the adoption of ethical and responsible design practices that address the well-being of users and the environment(Mamakou et al., 2024). UX should aim not only to satisfy users but also to facilitate constructive feedback, which in turn enriches the evolution of the product. In this way, UX becomes a bridge between subjective user experience and ongoing product development, creating a positive feedback loop that drives innovation and continuous improvement(Ahram & Falcao, 2017).

E-Service Quality

E-service qualityis the difference between what customers expect from a website and what the website actually provides(Mamakou et al., 2024). It can also be defined as the extent to which an online website improves the efficiency and effectiveness of customers' browsing and consumption(Kaya, Behravesh, Abubakar, Kaya, & Orús, 2019). E-service quality is more than just simple functionality. It covers the entire spectrum of a user's experience when interacting with an online service, from the initial visit of a website to the completion of a transaction and beyond(Sundaram, Ramkumar, & Shankar, 2017).

E-service qualityrefers to the extent to which an online website improves the efficiency and effectiveness of customers' browsing and consumption, including service links such as distribution and consultation(Rita, Oliveira, & Farisa, 2019). The dimensions of e-service quality, when intertwined, create a tapestry of user satisfaction. A well-designed website with clear navigation and intuitive functions fosters a sense of control and efficiency. Secure online transactions and strong data protection instill trust and confidence. Timely and accurate order fulfillment delivers on the promise of convenience offered by online services(Mamakou et al., 2024).

Customer Satisfaction

Companies need to understand and assess customer needs, desires and expectations when consuming products or services. Customer satisfaction arises when their needs and expectations are met or not. Consumer satisfaction is very subjective and depends on each individual, who feels and assesses their consumption experience. Marketing activities aim to create satisfaction for customers by communicating and offering company products or services.

According to (Kotler and Keller (2019:289), customer satisfaction is 'the performance of a product received (or results) in relation to one's expectations'. This creates feelings of pleasure or disappointment based on a comparison between the perceived and expected results or products.

(Tjiptono (2019:355) defines consumer satisfaction as a post-purchase evaluation, where perceptions of the performance of the selected product or service are evaluated against expectations. If perceptions of performance do not meet expectations, then dissatisfaction arises. One of the key factors in determining customer satisfaction is customer perception. Ali

Hasan (2018: 150) explains that consumer satisfaction is the feeling of happiness or disappointment that arises after comparing the results of the product in mind with the desired expectations.

Customer Loyalty

Customer loyaltyis an important element that defines the quality of the relationship between customers and companies, as explained (Alam et al. 2021). Customer loyalty is defined as the confidence that customers have that a service provider can meet their needs consistently. This concept acts as a foundation for building long-term commitment and strengthening relationships between customers and business organizations. Customer trust, as a crucial aspect of customer loyalty, is vital in facilitating ongoing interactions and exchanges, especially in a business-to-business context.

Customer loyaltyincludes confidence in a partner's knowledge, reliability, and good intentions (Tabrani et al., 2018), this is considered a deliberate action that reflects trust in a partner, which involves elements of uncertainty and vulnerability. In this view, customer loyalty reflects a customer's desire to remain dependent on a brand despite certain risks, in the hope that the brand will produce positive results.

Customer Loyalty In The Digital Era

In the ever-growing digital era, customer loyalty has become a critical factor that determines business success. The biggest challenge in maintaining long-term customer commitment now relates to their ease of access to alternatives(Belhadi, Kamble, Benkhati, Gupta, & Mangla, 2023). This condition forces businesses to better understand the factors that influence customer loyalty, one of which is the changing power dynamics between businesses and consumers. Today's consumers are more proactive; they not only receive marketing information passively, but also actively research, compare, and voice their opinions through online platforms, which influences their perceptions and purchasing decisions (Omar et al., 2021).

In line with this, personalization is an important differentiator in strengthening loyalty.(Balci, 2021)explains that modern consumers want experiences tailored to their individual needs and preferences, which can be achieved through personalized product recommendations and targeted marketing campaigns. Effective use of data analytics allows businesses to gain deep insights into consumer preferences, facilitating the creation of truly personalized and relevant experiences(Omar, Mohsen, Tsimonis, Oozeerally, & Hsu, 2021).

Research Hypothesis And Framework

User experience is an important factor in determining the quality of electronic services (e-service quality). This experience not only includes the technical aspects of an application, but also includes the emotions, perceptions, and interactions that users experience while they interact with a digital platform. Factors such as ease of use, clarity of information, and responsiveness to user questions contribute significantly to the perception of e-service quality(Akkucuk & Esmaeili, 2016). Positive experiences obtained by users can provide recommendations and increase loyalty, while negative experiences obtained by users can reduce satisfaction and damage brand reputation(Mathew, Jose, G, & Chacko, 2020).

- H1: user experience has a positive effect on e-service quality in mobile coffee shop applications

In today's digital era, coffee shop mobile applications play a crucial role in providing convenience and efficiency. Good user experience, through an intuitive interface and simple ordering process, increases customer satisfaction by enabling them to complete tasks quickly and easily(Mamakou et al., 2024). This optimal user experience not only reduces effort but also

increases perceived value and user empowerment. On the other hand, poor design can lead to frustration and negative reviews that hurt customer retention(Akbar, Suryanto, & Safitri, 2020). Moreover, elements such as personalized recommendations and loyalty programs strengthen user engagement and loyalty, making the app more than just a transaction tool(Ahram & Falcao, 2017).

- H2: user experience has a positive effect on customer satisfaction in the mobile coffee shop application

In the current digital era, electronic service quality (e-service quality) has become very important in determining customer satisfaction. Aspects such as efficiency, reliability, security and responsiveness of digital services have a significant influence on customer perception of a brand(Abbasi, Kumaravelu, Goh, & Dara Singh, 2021). An efficient and easy-to-use platform is essential to increasing customer satisfaction. For example, a complicated and slow website can reduce customer satisfaction, while a fast and intuitive platform tends to increase customer satisfaction and trust(Rita et al., 2019). Prioritizing effective user experience, seamless processes, and high responsiveness can lead to sustained customer satisfaction(Tahir, 2020).

- H3: e-service quality has a positive effect on customer satisfaction in mobile coffee shop applications.

In the highly competitive coffee industry, mobile applications are the key to winning customer loyalty. While features like convenience and attractive promotions can attract initial attention, customer satisfaction is what matters most for building long-term loyalty(Zhang & Prasongsukarn, 2017). Well-designed apps support easy and enjoyable interactions, creating a positive relationship between customers and brands. This experience includes seamless ordering, real-time status updates, and an engaging loyalty program(Molinillo et al., 2022). The satisfaction resulting from these positive experiences encourages customers to return to using the app, while negative experiences can lead to bad reviews and lost customers(Mamakou et al., 2024).

- H4: customer satisfaction has a positive effect on customer loyalty in the mobile coffee shop application.

By focusing on high e-service quality and satisfying UX, coffee shop mobile applications can create the ideal formula for winning and maintaining customer loyalty. Safe experiences and effective personalization foster strong relationships with customers, which in turn drives loyalty and repeat business(Molinillo, Mercadé-Melé, & De Noronha, 2020). The research results of Molinilo et al (2022) show that customer satisfaction mediates some of the influence of user experience on customer loyalty, apart from that the research results of Omar et al (2021) show that customer satisfaction mediates the influence of e-service quality on customer loyalty so the researchers propose the following hypothesis :

- H5: customer satisfaction mediates the influence of user experience on customer loyalty in mobile coffee shop applications
- H6: customer satisfaction mediates the influence of e-service quality on customer loyalty in the coffee shop mobile application

Age plays a crucial role in influencing how individuals use and respond to coffee shop mobile applications, which influences user experience and their loyalty(Dobrowolski, Drozdowski, & Panait, 2022). Millennials and Gen Z, who are familiar with technology, tend to be quick to adopt new apps and appreciate features such as mobile ordering and payments, as well as innovative loyalty programs, which can increase their engagement and loyalty.(Sakdiyakorn et al., 2021). On the other hand, older generations may need a simpler interface and additional

help, but with the right design and relevant incentives, they too can enjoy the convenience of the app and stay loyal to the brand(Hawkins, Versace, & Abssy, 2022).

- H7: age moderates the influence of user experience on customer satisfaction in mobile coffee shop applications.
- H8: age moderates the influence of e-service quality on customer satisfaction in mobile coffee shop applications.
- H9: age moderates the influence of customer satisfaction on customer loyalty in mobile coffee shop applications

METHODS

Data Collection, Research Instruments

In this research, the data collection stage was carried out using field research methods. The tool used in data collection is a questionnaire.The questionnaire that will be used in this research is an electronic questionnaire. This research uses primary data by distributing questionnaires using Google Form. Distribution of the questionnaire will be carried out via social media Instagram and WhatsApp using a snowball sampling approach. Researchers will distribute questionnaires to colleagues who use the mobile coffee shop application, then respondents are asked to identify their relatives or friends who use the application so they can participate in this research.In the framework of this research, the group referred to is all individuals who use mobile coffee shop applications in Indonesia.

The sampling method applied is purposive sampling, where the researcher deliberately selects members of the population who are considered to have the potential to provide relevant information. The respondents selected for this sample met the criteria that had been set in accordance with the research objectives, namely mobile application coffee shop consumers with the age range Gen Y and Gen Z who had made coffee shop purchases using*mobile applications*coffee shop in the last 6 months. Based onHair, Black, Babin, & Andreson (2014), the minimum number of respondents in a study is 5n times the number of research questions. In this study there were 53 questions so the minimum number of respondents was 265 respondents. The total number of respondents in this study was 270 people.

Figures 1 Conceptual framework
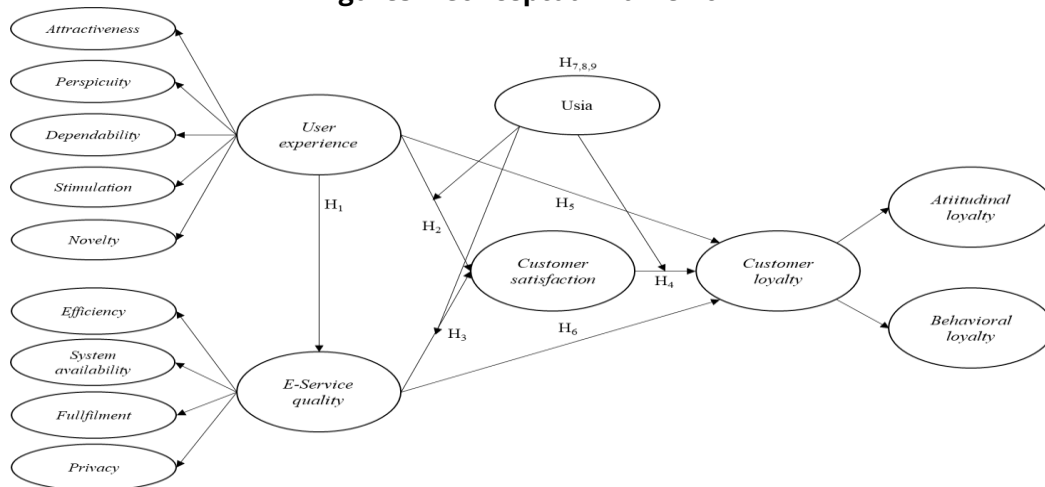
Source: Mamakou et al. (2024) & Omar et al. (2021)

The research model used in this research is a modification of the researchMamakou et al. (2024) by adding e-service quality variables and dimensions from research by Omar et al (2021). The variables used are from Mamakao et al.'s research. (2024) is user experience with the dimensions of attractiveness, perspicuity, dependability, stimulation and novelty as well as the e-

service quality variable with the dimensions of efficiency, fulfillment, system availability and privacy. There are three hypotheses used from Mamakao et al.'s research. (2024), namely the direct influence of user experience on e-service quality and customer satisfaction, and the influence of e-service quality on customer satisfaction.

Meanwhile, Omar et al's (2021) research is used to continue the influence from customer satisfaction to customer loyalty. In this case what is used is service quality, customer satisfaction and customer loyalty. However, this research does not use the demographic moderating variable gender, income as used by Omar et al (2021). Apart from that, age was taken as a moderating variable adopted from researchManyanga, Makanyeza, & Muranda (2022)which also uses the age variable, which in this case is the generational gap, as a variable that can moderate the influence of variables on consumer loyalty. Age moderation is considered relevant because the population of Indonesia with generation Z is the largest, namely 27.94%, followed by gen Y, which is 25.87%.(Statista, 2024), so that the use of age as a moderator for the research object of mobile applications for coffee shops is relevant. This is because Gen Z and Millennials (Gen Y) are both digital native generations(Sharma & Srivastav, 2023).

RESULTS

Research Sample Description

The majority of respondents were male with 137 people (50.7%). The consumers who bought the most were Gen Z respondents with birth years between 1997-2012 totaling 172 people (63.7%). For the highest level of education of respondents, the majority of respondents stated that they had this level of educationStrata 1 (S-1)/ Diploma IV (D-IV) as many as 154 people (57%). For the type of work, the respondents were private employees with a total of 98 respondents (36.3%0. Most of the respondents in this study were domiciled in Jabodetabek, namely 202 people (74.8%). For expenses and savings in a month, the majority of respondents (33 .3%0 stated that they had expenses between IDR 5,000,000-8,000,000The coffee shop mobile application that was most recently used to order drinks in the last 6 months was the Kopi Kenangan mobile application which was used the most.eaten by 60 respondents (22.2%). Meanwhile, the frequency of purchasing coffee is1-2 times a week, which was answered by 122 people (45.2%).

Measurement Model Test Results (Outer Model)

The following are the outer loading and AVE values for each indicator for all variables in this research.

Table 1 Convergent Validity

Variable	Indicator Code	*Outer Loading*	AVE	Information
User Experience	ATT1	0.791	0.608	Valid
	ATT2	0.774		Valid
	ATT3	0.800		Valid
	ATT4	0.798		Valid
	ATT5	0.770		Valid
	PER1	0.792		Valid
	PER2	0.789		Valid
	PER3	0.825		Valid
	PER4	0.787		Valid
	DEP1	0.788		Valid
	DEP2	0.748		Valid
	DEP3	0.746		Valid

Variable	Indicator Code	*Outer Loading*	AVE	Information
	DEP4	0.778		Valid
	STI1	0.742		Valid
	STI2	0.800		Valid
	STI3	0.795		Valid
	STI4	0.804		Valid
	NOV1	0.794		Valid
	NOV2	0.732		Valid
	NOV3	0.744		Valid
	NOV4	0.776		Valid
e-Service Quality	EFF1	0.777	0.588	Valid
	EFF2	0.779		Valid
	EFF3	0.821		Valid
	EFF4	0.812		Valid
	EFF5	0.768		Valid
	EFF6	0.787		Valid
	EFF7	0.809		Valid
	EFF8	0.801		Valid
	SYS1	0.749		Valid
	SYS2	0.776		Valid
	SYS3	0.720		Valid
	SYS4	0.749		Valid
	FUL1	0.697		Valid
	FUL2	0.760		Valid
	FUL3	0.774		Valid
	FUL4	0.755		Valid
	FUL5	0.758		Valid
	PRI1	0.715		Valid
	PRI2	0.735		Valid
	PRI3	0.788		Valid
Customer Satisfaction	SAT1	0.937	0.848	Valid
	SAT2	0.913		Valid
	SAT3	0.926		Valid
	SAT4	0.903		Valid
	SAT5	0.925		Valid
Customer loyalty	LO1	0.899	0.789	Valid
	LO2	0.898		Valid
	LO3	0.905		Valid
	LO4	0.924		Valid
	LO5	0.787		Valid
	LO6	0.897		Valid
	LO7	0.903		Valid

Source: SmartPLS 4.0 Data Processing (2024)

Based on the table above, it can be seen that not all indicators for each variable have a value > 0.70, but this can be maintained with further evaluation by looking at the AVE value which is greater than 0.5. Looking at the results of the data processing above, all variables in this study have an AVE value > 0.5 and it can be concluded that the indicators used in this study can

be considered validand can be relied upon to measure their respective constructs or latent variables.

This research uses HTMT (Heterotrait-Monotrait Ratio) to test discriminant validity. Each variable shows an HTMT <0.90 and this shows that there is a discriminant and all indicators in this study have a good distribution. Based on the results of the Fornell Lacker Criterion test, it can be seen that the correlation value within variables is greater when compared with the results of the correlation value between variables so that it can be stated that discriminant validity is met.

The reliability results are shown by the value of Composite Reliability and Cronbach Alpha of the variables in the study.

Table 2 Composite Reliability

Variable	Cronbach Alpha	Composite Reliability (Rho c)	Information
Attractiveness	0.957	0.966	Reliable
Perspicuity	0.952	0.965	Reliable
Dependability	0.928	0.948	Reliable
Stimulation	0.942	0.959	Reliable
Novelty	0.931	0.951	Reliable
User experience	0.968	0.970	Reliable
efficiency	0.975	0.979	Reliable
System availability	0.927	0.948	Reliable
Fulfillment	0.951	0.963	Reliable
Privacy	0.910	0.943	Reliable
e-Service quality	0.963	0.966	Reliable
Customer satisfaction	0.955	0.965	Reliable
Loyalty	0.955	0.963	Reliable

Source: SmartPLS 4.0 Data Processing (2024)

From table 2 it can be seen that the value of composite reliability for all variables has a value of > 0.70, so it can be concluded that all indicators in this study are considered reliable or reliable for calculating the variable construct. Furthermore, in Cronbach Alpha, the value for each variable is > 0.60, so all variables in this research can be relied upon or are considered reliable.

4.3 Analysis of Fit of the Entire Measurement Model (SRMR)
This research obtained model testing results according to table 3.

Table 3 Whole Measurement Model Fit Analysis (SRMR)

Information	SRMR
Saturated models	0.086
Estimated model	0.095

Source: Processed SmartPLS 4 data (2024)

From table 3 above, it can be seen that the SRMR value in the estimated model and saturated model is acceptable because each has a value between 0.08-0.10, so this result shows that the measurement model can be used to make predictions for this model.

Hypothesis Testing

Hypothesis testing in this research was carried out by looking at the P-value and t statistics as well as the path coefficient. The P-value <0.05 and the t statistic >1.96 indicate that there is an influence of the independent variable on the mediating and dependent variables. The e-service quality variable is influenced by user experience by 74.3%, the customer satisfaction variable is influenced by user experience and e-service quality by 73%, while customer loyalty can be explained by the model by 71.6%, explained by the customer satisfaction and age (generation) variables.).

Table 4 Hypothesis Test Results

Hypothesis	Variable Relationships	Path coefficients	t-statistics	P-value	Conclusion
H1	*user experience*has a positive effect on e-service quality in the coffee shop mobile application	0.862	36,901	0,000	Accepted
H2	*user experience*has a positive effect on customer satisfaction in the coffee shop mobile application	0.552	3,267	0.001	Accepted
H3	*e-service quality*has a positive effect on customer satisfaction in the coffee shop mobile application	0.299	1,620	0.105	Rejected
H4	*customer satisfaction*has a positive effect on customer loyalty in the coffee shop mobile application	0.719	9,290	0,000	Accepted
H5	*customer satisfaction*mediating the influence of user experience on customer loyalty in mobile coffee shop applications	0.397	2,947	0.003	Accepted
H6	*customer satisfaction*mediating the influence of e-service quality on customer loyalty in mobile coffee shop applications	0.215	1,572	0.116	Rejected
H7	Age moderates the influence of user experience on customer satisfaction in mobile coffee shop applications.	0.136	0.760	0.447	Rejected
H8	Age moderates the influence of e-service quality on customer satisfaction in coffee shop mobile applications.	-0.114	0.577	0.564	Rejected
H9	Age moderates the influence of customer satisfaction on customer loyalty in mobile coffee shop applications	0.223	2,283	0.022	Accepted

Source: SmartPLS 4.0 Data Processing (2024)

DISCUSSION

Implications And Research Limitations

Hypothesis 1 states that user experience has a positive effect on e-service quality in mobile coffee shop applications. Hypothesis 1 has a critical value of 39.901 and a p-value of 0.000. Thus it can be concluded that hypothesis 1 is accepted. These results are in accordance with the research results of Mamakou et al (2022) which stated that user experience has a positive effect on e-service quality. Attractiveness, or the visual and aesthetic appeal of an application can increase perceived e-service quality because users tend to feel more satisfied and appreciate visually pleasing experiences, in line (Zhao et al., 2020). Perspicuity, which relates to the ease of understanding and navigation of an application, ensures that users can use the application without difficulty, thereby increasing their efficiency and perceived service quality (Lee et al., 2019). Dependability, or application reliability, fosters user trust and satisfaction by reducing potential frustration from technical glitches or failures (Kim et al., 2018). Stimulation, which concerns the ability of an application to offer mental stimulation through interactive features or interesting content, encouraging user engagement and increasing their satisfaction, illustrates the positive impact on e-service quality according to research by Nguyen et al. (2021). Finally, novelty, or offering new and innovative features, makes an app stand out from its competitors, increasing the perception that the app is constantly evolving and adapting to market trends, as pointed out by Patel et al. (2020). Overall these findings illustrate that design and functionality that pays attention to important details of the user experience can significantly influence electronic e-service quality in digital coffee shop mobile applications.

Hypothesis 2 states that user experience has a positive effect on customer satisfaction in the mobile coffee shop application. Hypothesis 2 has a critical value of 3.267 and a p-value of 0.001. Thus it can be concluded that hypothesis 2 is accepted. These findings strengthen Maulana's (2023) research study which states that user experience has a positive effect on customer satisfaction. Mobile coffee shop applications are designed by considering user needs, which include an easy-to-use interface, clear navigation, and an efficient ordering process, making it easier for users to complete their transactions quickly and without much difficulty. More than that, user experience is not only about effective transactions. Features such as personal recommendations, loyalty programs, and special offers(Ahram & Falcao, 2017), plays an important role in increasing user engagement and strengthening their bond with the brand, for example through a points award system. These aspects add added value and a feeling of appreciation, which differentiates the app from others and increases overall customer satisfaction.

By prioritizing user experience, the coffee shop mobile application shows its potential to significantly increase customer satisfaction. A user-oriented approach, which emphasizes intuitive design, effective functionality and customized experiences, not only makes things easier for users but also supports building customer loyalty. In the end, coffee shop mobile applications play a crucial role in determining the success of coffee shops in a very competitive market

Hypothesis 3 states that e-service quality has a positive effect on customer satisfaction in the coffee shop mobile application. Hypothesis 3 has a critical value of 1.620 and a p-value of 0.105. Thus it can be concluded that hypothesis 3 is rejected. The results of this research state that e-service quality does not have a significant effect on customer satisfaction in the coffee shop mobile application. This finding contradicts research by Omar et al. (2021) who found that e-service quality positively influences customer satisfaction. This research shows that e-service quality between one coffee shop application and another application is considered standard and does not differentiate between these applications. This shows that customer satisfaction of mobile coffee shop application users may be more influenced by other factors, such as user experience. (Park et al., 2019) In industries with a high level of service homogeneity, such as

coffee shop mobile applications, e-service quality is often not enough to differentiate one provider's services from another. This is because ordering, payment processing, and loyalty programs often have similar operational standards between different applications, reducing their impact on customer satisfaction. Instead, factors such as intuitive design, smooth order flow, fast loading times, and in-app personalization, which are all part of the user experience, are becoming more important.

Hypothesis 4 states that customer satisfaction has a positive effect on customer loyalty in the mobile coffee shop application. Hypothesis 4 has a critical value of 9.290 and a p-value of 0.000. Thus it can be concluded that hypothesis 4 is accepted. These results are in accordance with the research results of Molinillo et al (2022) and Mamakou et al (2024) which state that customer satisfaction has a positive effect on customer loyalty. In the context of mobile coffee shop applications, application designs that prioritize ease of use, real-time status updates, and attractive loyalty programs have proven effective in building and strengthening emotional connections between customers and brands Molinillo et al. (2022). Facilities such as ease of placing orders and receiving quick feedback from the application increase customer satisfaction which, indirectly, increases their loyalty. This positive user experience not only creates added value but also inspires customers to continue interacting with the app, which deepens their engagement with the brand.

Hypothesis 5 states that customer satisfaction mediates the influence of user experience on customer loyalty in mobile coffee shop applications. Hypothesis 5 has a critical value of 2.947 and a p-value of 0.003. Thus it can be concluded that hypothesis 5 is accepted. The research results of Molinilo et al (2022) show that customer satisfaction partially mediates the influence of user experience on customer loyalty. The innovative features in the app not only increase user satisfaction but also instill a strong sense of value, which in turn fosters a deeper emotional connection between customers and the brand. This emotional connection is key in building customer satisfaction which has a direct impact on increasing their loyalty(Mamakou et al., 2024). An easy-to-use, fun platform—combined with a highly personalized experience and engaging features—not only strengthens app usage but also fosters a substantial emotional connection.(Misra, Sadikin, & Achmad, 2021). This approach ultimately drives customer loyalty, ensuring that the coffee shop app not only retains but also expands its loyal customer base in a highly competitive market.

Hypothesis 6 states that customer satisfaction mediates the influence of e-service quality on customer loyalty in mobile coffee shop applications. Hypothesis 6 has a critical value of 1.572 and a p-value of 0.116. Thus it can be concluded that hypothesis 6 is rejected. These results support Omar et al (2021) who show that customer satisfaction does not mediate the influence of e-service quality on customer loyalty. This research found that many coffee shop applications provide similar functions, such as ordering and payment, which creates homogeneity in e-service quality. Because most applications meet these basic expectations, the effect of e-service quality on customer satisfaction is minimal, weakening its potential influence on loyalty. Apps with intuitive interface designs and efficient ordering processes can immediately increase loyalty by saving customers time and effort, as explained in a study by (Nguyen et al. 2022). Zhou et al. (2020) user experience (UX) has a more significant role in directing customer satisfaction and loyalty. A well-designed UX can directly influence customer loyalty without relying on high levels of customer satisfaction.

Hypothesis 7 states that age moderates the influence of user experience on customer satisfaction in mobile coffee shop applications. Hypothesis 7 has a critical value of 0.760 and a p-value of 0.447. Thus it can be concluded that hypothesis 7 is rejected. These results support research by Omar et al (2021) which shows that age does not moderate the influence of user experience on consumer satisfaction. Although generational differences are often considered important in user behavior analysis, these findings show that, especially for Gen Z and Gen Y who are considered digital natives, age does not moderate the effectiveness of UX in increasing

customer satisfaction on mobile coffee shop applications. While age may not be a significant moderator, personalization in the user experience can be a critical aspect, especially for Gen Z and Gen Y. Features such as tailored recommendations, loyalty programs that adapt to individual preferences, and integration with other lifestyle apps can enhance the experience users and overall satisfaction (Singh & Kautish, 2020).

Hypothesis 8 states that age moderates the influence of e-service quality on customer satisfaction in mobile coffee shop applications. Hypothesis 8 has a critical value of 0.577 and a p-value of 0.564. Thus it can be concluded that hypothesis 8 is rejected. For generations such as Gen Z and Gen Y, known as digital natives, a smooth and enjoyable user experience (UX) may be more important than the fundamental aspects of e-service quality (Jensen & Aanensen, 2021). Elements like intuitive design, smooth ordering processes, and fast loading times tend to be more appreciated. An effective and seamless user experience is more influential in shaping satisfaction than technical factors that may not be immediately visible to the user.

Hypothesis 9 states that age moderates the influence of customer satisfaction on customer loyalty in mobile coffee shop applications. Hypothesis 9 has a critical value of 2.283 and a p-value of 0.022. Thus it can be concluded that hypothesis 9 is accepted. (Pebrianti & Miranda, 2023)shows that age can moderate the influence of other variables such as consumer satisfaction on consumer loyalty.(Dobrowolski et al., 2022)Younger generations, such as Millennials and Gen Z, who grew up surrounded by advanced technology, tend to have a higher level of comfort with mobile apps and are more open to adopting new technology. This includes their acceptance of innovations such as mobile ordering and payments, which they see as adding significant convenience and efficiency. Adaptation and comfort in using technology among Gen Z can increase satisfaction and simultaneously strengthen their loyalty to the application (Jones, et al., 2021). Intuitive and responsive technology, which meets their needs quickly and efficiently, is often considered essential by this generation. Furthermore, research by Smith and Chang (2020) in the context of e-commerce found that young people who experience high levels of satisfaction from their digital interactions tend to show greater loyalty, as measured by frequency of use and recommendation to others. Businesses need to focus not only on the quality of the product or service offered but also on a customized user experience based on the user's age, to maintain relevance and competitive advantage in an increasingly digital marketplace.

Theoretical Implications

This research provides a theoretical contribution, namely, providing empirical evidence that a good user experience improves e-service quality and customer satisfaction. In addition, it underscores the importance of easy-to-use and intuitive design elements in mobile applications for customer satisfaction. The influence of demographics in this case shows that age does not significantly moderate the relationship between user experience, e-service quality and customer satisfaction, which challenges previous assumptions about the role of age in technology adoption. In addition, the influence of customer satisfaction explains how customer satisfaction acts as an important mediator between user experience and customer loyalty and provides an in-depth understanding of the mechanisms behind building customer loyalty in a digital context.

Managerial Implications

The managerial implication that can be given from this research is that the biggest loading factor in user experience is that navigation on the coffee shop mobile application can help achieve consumer goals. The presence of easy navigation such as the "Menu" button, then instructions for "Payment" will make it easier for users to select the menu and checkout when making payments via the mobile coffee shop application. In the attractiveness dimension, the largest loading factor value is that the coffee shop mobile application is user friendly. The form of implementation that can be applied is that application developers need to focus on intuitive interface design, which can be easily used by users of all ages and technological backgrounds.

This includes the use of clear icons, easy-to-read text, and easy-to-reach layouts. Furthermore, in the dependability dimension, the highest loading factor value is that the navigation of this coffee shop mobile application is easy to learn. Applications should be designed with a cohesive menu structure that makes it easy for users to navigate from one function to another without confusion. This can be achieved through grouping similar features and ensuring that transitions between menus are smooth and logical.

The highest loading factor value in the stimulation dimension is that the coffee shop mobile application attracts the user's attention. Investing in high-quality graphic design is essential, using attractive visuals and a modern aesthetic to attract users' attention and make them want to return to the application Periodically updating the appearance of the application for example at certain events to refresh the user experience and introduce new visual elements that can attract attract new users and retain old users. Finally, the highest loading factor value in the novelty dimension is that the design of the mobile coffee shop application is creative. Integrate creative elements such as gamification that add value through in-app achievements, rewarding users for actions such as order frequency or sharing the app with friends. The biggest loading factor in e-service quality is that the mobile coffee shop application always provides transaction services. The coffee shop mobile application which provides more transaction options, such as being able to be linked to e-wallets such as GoPay, Dana, Ovo, will make it easier for consumers to make payments more flexibly. The biggest loading factor on customer satisfaction is that overall consumers are satisfied with the shopping experience through this coffee shop mobile application. Customers feel more satisfied when using the mobile coffee shop application because customers feel it is easier to order and make payments more quickly and get notifications when there are special promotions. The biggest loading factor in customer loyalty is that consumers will use this coffee shop mobile application in the future. Consumers want to continue using the mobile coffee shop application in the future because of special promotions that can only be obtained from the application and are expected to recommend it to other people.

CONCLUSION AND SUGGESTION

First, the demographic sample is limited. This research only involved respondents from generations Y and Z in Indonesia, which may not reflect the perceptions or behavior of users from other age groups. This could affect the generalizability of the study findings. The data collection method uses an online survey which may have limitations related to the accuracy of self-reported responses, which can be influenced by social bias or inaccurate recall. Limited variables only focus on user experience and e-service quality variables without including other factors such as price which can also influence customer satisfaction and loyalty

Future research should consider involving diverse user demographics from various age groups and other backgrounds such as education or income to strengthen the validity and reliability of the findings and allow wider generalization. Adopting a mixed-methods approach that combines quantitative and qualitative can help deepen understanding of how and why user experience and e-service quality influence satisfaction and loyalty. In-depth interviews or case studies can reveal nuances that quantitative surveys cannot reach. Exploring the influence of additional factors such as pricing strategy on customer satisfaction and loyalty can provide a more holistic understanding of the customer experience.

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