



How do Technology, Environment, and Sustainability Interests Affect Gen Z's Attitudes Toward Shopping While Using Mobile Commerce?

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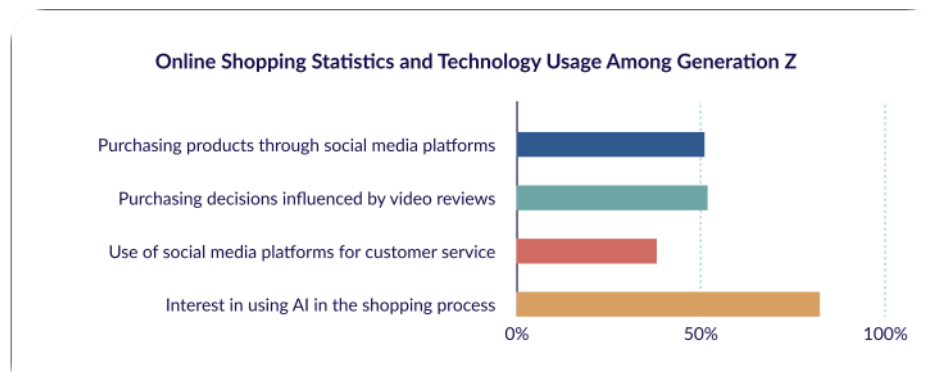


ABSTRACT

The research article analyzes the factors influencing the Z's generation buying habits in mobile commerce and their impact on future utilization. The emphasis is on the influence of perceived usefulness, perceived ease of use, social influence, and sustainability consciousness on the shopping behaviour of Generation Z. Active members of Generation Z who shop online were surveyed online in order to obtain this data. The research employs PLS-SEM utilizing the SmartPLS platform to examine variable interrelations. The findings indicate that buying activity significantly impacts future mobile commerce usage, with social influence and environmental awareness being crucial factors. These findings highlight the necessity of incorporating usability, social considerations, and sustainability into mobile commerce platforms to foster enduring client retention and loyalty within Generation Z.

INTRODUCTION

Mobile commerce has now become an important part of Gen Z shopping life, which is estimated to contribute nearly 20% of global spending by 2030 (Ou, 2025). The current generation (Z Generation) had grown up in today's digital age with constant internet access, making online shopping a daily habit for them. They are very familiar with social media and mobile devices, which make it easy for them to search for products, compare prices, and purchase items directly. In 2024, more than half of Gen Z made purchases through social media platforms, making them the generation with the largest proportion of social media purchases. In addition to purchasing products, they are also active in seeking reviews, following recommendations from friends or influencers, and interacting directly with their chosen brands. It shows that, alongside user-friendliness, the social impact of social networks and digital public opinion significantly affects their choices for buying. Therefore, technological innovation and easy access are key factors in shaping their shopping attitudes toward mobile commerce.

Figure 1. Online Shopping Statistics and Technology Usage Among Gen Z

Source: (Ou, 2025)

Although user friendliness and the benefits of tech have long been considered key factors in technology adoption, there are other aspects that are still rarely discussed in research on Gen Z's shopping attitudes, especially those related to sustainability and environmental awareness. Many mobile commerce platforms still focus on technical aspects and user experience, but often neglect the needs of consumers who are increasingly concerned with social and environmental issues. Despite the increasing environmental awareness and digitalization of consumption among Indonesia's younger generation (Haryanti & Subriadi, 2022), there is still a large gap between their intention to buy these products and the reality when shopping. This gap indicates a discrepancy between what they believe about sustainability and their actual actions when choosing products. The current research seeks to analyze the impact of sustainability considerations on Gen Z's purchase attitudes inside mobile commerce, and how this affects their intention to continue shopping digitally with sustainability in mind (Oetomo & Santoso, 2025). The main challenge is whether promotions and education about environmentally friendly products can encourage loyalty and sustainable use of mobile commerce by Gen Z (Fadhilah et al., 2025).

When shopping online, Gen Z is influenced not only by technology but also by social influences they consider important in every online shopping decision (Shuvo & Ahmed, 2025). Social media significantly influences youngsters' purchasing decisions, according to previous research, especially through the use of conveniently available short films, influencer promotions, and entertaining content (Dima et al., 2025). Additionally, Gen Z tends to seek product reviews from people close to them and online communities they trust, which further strengthens their purchasing decisions (Khobibah et al., 2023). In this context, social influence serves as a major factor in shaping their shopping attitudes, where they place more trust in recommendations from friends or reference groups they consider credible. Therefore, understanding how social influence works on Gen Z is key to influencing their shopping habits, especially on mobile commerce platforms and social media.

Examining the role of perceived utility and perceived ease of use in influencing purchasing attitudes and continuation intention to use mobile commerce, this study utilized the Technology Acceptance Model (TAM) as its theoretical foundation. TAM provides the foundation that perceived usefulness and perceived ease of use play a significant role in technology acceptance by users (Davis, 1989). However, by incorporating the variables of environmental awareness and interest in sustainability, this study develops TAM to better suit the shopping habits of Gen Z, who are more influenced by sustainability and social factors, in addition to purely technical aspects. By doing so, we can learn more about the interplay between these variables and how it affects their shopping attitudes and intents to continue.

What sets this research apart is its focus on the interplay of technological, social, and sustainability factors as they relate to consumers' purchasing decisions. Previous studies have mostly focused on technological aspects alone, without considering the simultaneous influence of social and sustainability factors. The importance of understanding the dynamics of consumer behaviour influenced by materialism in the digital context, especially among Gen Z, as well as the social implications that may arise from this phenomenon, is still rarely discussed in the existing literature (Charles & Immanuel, 2025). This study aims to fill this gap by developing a more holistic research framework that not only examines the influence of technology but also takes into account sustainability and social factors that are highly relevant to Gen Z. The results of this study are expected to provide new insights into how mobile commerce platforms can be more adaptive and environmentally friendly, as well as encourage loyalty among young consumers.

In the context of mobile commerce, this study seeks to empirically investigate the elements that impact Gen Z shopping attitudes. Specifically, it will focus on how these attitudes are driven by perceived usefulness, perceived ease of use, social influence, and environmental awareness. This study also examines how these characteristics affect mobile commerce stickiness. Utilizing an integrated quantitative methodology, this study seeks to provide a more thorough comprehension of the tastes and behaviours of Generation Z customers, while also providing recommendations for the formulation of more effective and adaptable sustainable mobile commerce strategies in the future (A. F. D. Rahmawati et al., 2025).

LITERATURE REVIEW

Technology Acceptance Model (TAM)

TAM is one of the most prevalent frameworks for analyzing individuals' responses to new technologies. This concept asserts that perceived usefulness (PU) and perceived ease of use (PEOU) are both primary factors influencing tech adoption. Customers' expectations of how much the technology will help them accomplish their goals are a good indicator of its PU (Risde & Kurniawati, 2023), whereas the PEOU is based on how much work an individual feels connecting to a platform entails (Lisanti & Risqiani, 2025). According to the TAM, an increase in PU and PEOU correlates positively with the probability of technology acceptance and usage by individuals (Namora et al., 2025). This methodology has been utilized across multiple domains, including mobile commerce, to examine user technology adoption.

Social Influence

Social influence is an important variable in technology adoption behaviour research because it directly influences a person's attitude, decisions, and intentions to use a product or service. Social influence can come from family, friends, work groups, and even digital communities that shape norms and ideal images of the use of certain technologies. In this context, the motivation to follow social trends, group expectations, or community member assessments can encourage a person to adjust their behaviour to their social environment. The effects of social influence can also manifest in the form of compliance, identification, and internalization of dominant group values. These characteristics make social influence always considered as a mediating factor in modern technology adoption models. Social influence can also be defined as a combination of group identities that help generate socially validated knowledge, share beliefs, and perform work that is considered objective (Agustin & Kurniawati, 2022).

Interest in Sustainability

Interest in sustainability refers to consumers' concern for environmental and social sustainability in their consumption behavior. In many studies on consumer behavior, this interest is often linked to the desire to choose products or services that benefit the environment. Consumers with higher levels of digital literacy and information tend to be more aware of

sustainability issues and are motivated to seek out environmentally friendly products. Digital media and changes in information access patterns have accelerated the spread of content that highlights the importance of sustainability values in product selection. In addition, narratives about sustainability help shape consumer preferences and loyalty, especially among younger generations who have grown up in a digital ecosystem. Various social media platforms offer access to online media, which shows a shift in information sources from offline to online media (Paramesti et al., 2025).

Environmental Awareness

Environmental awareness is essentially consumers' attitudes and understanding of the environmental impact of their consumption behavior, including the use of digital technology and online services. In the modern era, awareness of environmental consequences encourages individuals and organizations to be more selective in choosing environmentally friendly digital applications and products. Consumer behavior research shows that environmental awareness plays a role in shaping preferences, loyalty, and even product innovations that are more supportive of nature conservation. Increased digital literacy also makes consumers more aware of the long-term effects of their consumption decisions on the ecosystem. Thus, a new trend has emerged in which people prioritize efficiency, resource conservation, and contributions to sustainability in technology. Consumer concerns about sustainability increase environmental protection awareness and enhance the ability to recognize environmental issues (Catană et al., 2025).

Shopping Attitudes

Shopping attitudes in consumer behavior research refer to a person's attitudes, beliefs, and tendencies when making decisions in the shopping process. These attitudes are formed from various factors, ranging from past experiences, expectations of transaction results, to social interactions that influence consumer perceptions. Generally, consumers will assess factors such as convenience, clarity of the transaction process, and ease of access when forming attitudes towards shopping activities. External factors such as recommendations, promotions, and service reputation can also reinforce or change established shopping attitudes. Positive attitudes increase the probability of repeat transactions and loyalty to a particular brand or application. Aspects of convenience, ease of interaction, and various promotions are stimuli for the formation of these attitudes (Agustin & Kurniawati, 2022).

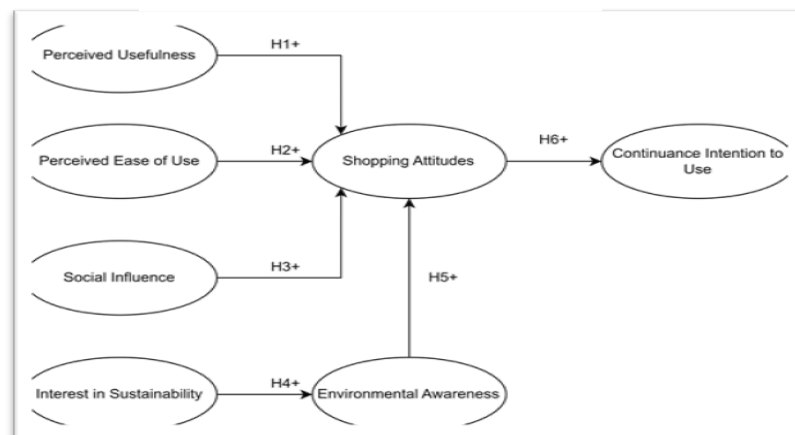
Continuance Intention to Use

Continuance intention to use is an important aspect in technology adoption research because it is related to loyalty, satisfaction, and the possibility of repeat purchases by consumers of a digital application. This intention to continue using is influenced by actual experience using the application, the benefits received, and the perception of service performance consistency. Factors such as satisfaction, trust, convenience, and comfort play a key role in shaping consumers' decisions on whether they will continue to use the service in the future. Consumers with high continuance intention tend to be more active in recommending the application to others and ignore competitors even though there are alternative choices. Therefore, understanding the determinants of continuance intention is very important for digital application managers to develop retention and service improvement strategies. The intention to continue using the platform refers to the customer's desire to continue using the platform in the future and the likelihood of them making repeat purchases (Lisanti & Risqiani, 2025).

Conceptual Framework

This section elucidates the conceptual structure of the investigation, grounded in the preceding discussion.

Figure 2. Research Framework



Source: Author, 2025

Perceived usefulness explains how consumers assess whether shopping apps really help simplify and speed up the shopping process. If the app is considered to provide clear benefits, consumers' attitudes towards using digital platforms are usually more positive. Conversely, when the benefits of the app are considered lacking, consumers' attitudes towards shopping through the app tend to decline. In the use of social mobile apps, the perceived usefulness of the application has been shown to influence users' attitudes and intentions in utilizing digital platforms (Akdim et al., 2022). Other studies also show that perceived usefulness plays a role in shaping users' attitudes towards the use of digital technology (Hasan & Winky, 2024). Thus, it can be proposed: that

H1: Perceived usefulness positively influences shopping attitudes.

Perceived ease of use, one of the key components of the TAM, is thought to affect shopping attitudes, which can be potentially advantageous or detrimental. When consumers perceive that an online shopping platform is easy to learn, access, and operate, they tend to form more favourable attitudes toward shopping on that platform (R. Rahmawati & Adriyanto, 2025). Conversely, if the application is perceived as complicated or confusing, attitudes toward online shopping may become less positive. A study of cross-generational consumers in China shows that dependence on various new media functions is positively related to attitudes toward online shopping, supporting the assumption that an easy and functional user experience will be reflected in more positive shopping attitudes (Feng & Ivanov, 2023). Thus, it can be proposed that:

H2: Perceived ease of use positively influences shopping attitudes.

Social influence refers to encouragement from the surrounding environment, such as family, friends, and digital media, which affects how consumers view shopping activities. The views and experiences shared by trusted individuals can shape consumer attitudes toward online shopping. When the social influence received is positive, consumer attitudes toward shopping activities tend to be more favourable (Liang et al., 2024). Conversely, negative experiences or warnings from the social environment can shape less positive attitudes toward online shopping. Other studies show that social influence plays a role in shaping attitudes toward online shopping and influences consumer behaviour in digital shopping (Mazhar et al., 2023). Thus, it can be proposed that:

H3: Social influence positively influences shopping attitudes

Interest in sustainability can be understood as an individual's drive to pay attention to and support practices related to environmental protection. This interest makes individuals more frequently exposed to information, education, and discussions about environmental issues. Repeated exposure to environmental issues influences individuals' comprehension of the effects of consumer behaviors on the surroundings. Research evidence indicates that interest in sustainability contributes to environmental awareness, especially among young consumers in the context of digital In addition, other studies show that awareness and interest in sustainable practices are interrelated through the process of education and engagement with environmental issues (Situmorang et al., 2025). Thus, it can be proposed that:

H4: Interest in sustainability positively influences environmental awareness.

Environmental awareness reflects the extent to which individuals understand ecological issues and are aware of the environmental consequences of their daily consumption activities, so that this knowledge becomes the basis for shopping decisions. When consumers have a higher level of environmental awareness, they tend to evaluate products and shopping channels from an ecological impact perspective, for example, choosing more environmentally friendly options, avoiding waste, and being more critical of business practices that harm the environment (Catană et al., 2025). These findings indicate that environmental awareness plays a role in shaping consumers' views on digital shopping activities, especially among generations familiar with online platforms. On the other hand, studies on strengthening environmental awareness through digital marketing approaches show that as ecological understanding grows stronger, consumption patterns also shift toward greater awareness and responsibility (Daoud et al., 2024). Thus, it can be proposed that:

H5: Environmental awareness positively influences shopping attitudes.

Shopping attitudes show how consumers evaluate shopping activities through mobile commerce based on their experiences and assessments of the benefits and convenience they feel. These attitudes are formed from consumers' understanding and experiences while using mobile-based shopping applications. Consumers exhibiting more favourable buying attitudes generally possess a heightened inclination to persist in utilizing mobile commerce for their daily necessities. Research indicates that the buying attitudes of Gen Z users positively influence their intention to continue using mobile commerce apps, both during and post-pandemic (Shetu, 2025). Research results on Shopee users in Indonesia also show that positive shopping attitudes and experiences increase the intention to use *mobile commerce* continuously (Putri et al., 2025). Thus, it can be proposed that:

H6: Shopping attitudes positively influences continuance intention to use mobile commerce.

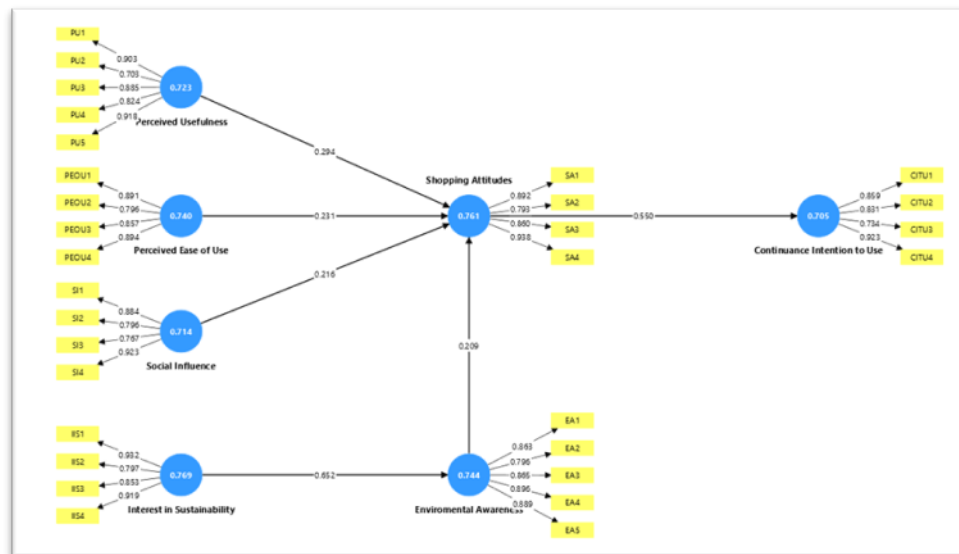
METHODS

In this quantitative investigation, the researchers employed an online poll to gather data from Generation Z members who often buy using mobile devices. The variables analyzed were perceived usefulness, perceived ease of use, social impact, interest in sustainability, environmental awareness, purchasing behaviors, and intention to utilize. Measurements were conducted utilizing standardized indicators on a five-point Likert scale. The scale was selected due to its systematic ability to capture respondents' perceptions, attitudes, and behavioral intentions, aligning with the characteristics of Generation Z, who generally assess digital experiences based on approval ratings. Prior research indicates that employing a Likert scale to assess digital behavioral factors yields valid and reliable measures for the younger demographic (Agustin & Kurniawati, 2022). The gathered data were further analyzed employing the PLS-SEM methodology and SmartPLS to assess the instrument quality and examine the interrelations among the variables via measurement model and structural model evaluations utilizing bootstrapping techniques.

RESULTS

The following presents the structure equation model that explains the relationship between variable in this study.

Figure 3. PLS-SEM Model



Source: Processed Data, 2025

Validity Test

The convergence accuracy of the measurement model was assessed by the external load values of each indicator. The research indicated that all indicators exhibited external load levels over 0.70, thus fulfilling the criteria for convergent validity. The quantity of indicators demonstrates that each indicator is intricately associated with the construct it assesses. A threshold value for external loading of ≥ 0.70 was employed to evaluate the appropriateness of the indicators in reflecting latent variables (Akbar et al., 2025).

Table 1. Outer Loading Values Table

	Continu ance Intention to Use	Environ mental Awareness	Interest in Sustainabili ty	Perceive d Ease of Use	Perceive d Usefulness	Shoppin g Attitude s	Social Influenc e
CITU1	0.859						
CITU2	0.831						
CITU3	0.734						
CITU4	0.923						
EA1		0.863					
EA2		0.796					
EA3		0.865					
EA4		0.896					
EA5		0.889					
IIS1			0.932				
IIS2			0.797				
IIS3			0.853				
IIS4			0.919				
PEOU1				0.891			

PEOU2				0.796			
PEOU3				0.857			
PEOU4				0.894			
PU1					0.903		
PU2					0.703		
PU3					0.885		
PU4					0.824		
PU5					0.918		
SA1						0.892	
SA2						0.793	
SA3						0.860	
SA4						0.938	
SI1							0.884
SI2							0.796
SI3							0.767
SI4							0.923

Source: Data Processed, 2025

The table above indicates that each indicator has load factors over 0.70. The results demonstrate that each indicator exhibits a robust connection with the assessed latent variables. Consequently, these indicators are appropriate for effectively reflecting the concept and may be further analyzed in the subsequent step of the measurement model assessment.

Convergent validity was evaluated by the Average Variance Extracted (AVE) measure, alongside the loading factor test. AVE denotes the proportion of the indicator's variance ascribed to the idea relative to the variance arising from measurement errors. A notion demonstrates robust convergent validity when the AVE value surpasses 0.50, indicating it explains over fifty percent of the variation of its indicators (Altino et al., 2025). The outcomes of the AVE computations for each variable are displayed in the subsequent table.

Table 2. AVE Values Table

	Average Variance Extracted (AVE)
Continuance Intention to Use	0.705
Environmental Awareness	0.744
Interest in Sustainability	0.769
Perceived Ease of Use	0.740
Perceived Usefulness	0.723
Shopping Attitudes	0.761
Social Influence	0.714

Source: Processed Data, 2025

The table indicates that all variables possess an Average Variance Extracted (AVE) value over 0.50. The findings indicate that each construct accounts for the bulk of the variance in the employed indicators. Thus, it is verified that all indicators within each variable satisfy the condition for convergent validity. Subsequent to validating convergent validity, further evaluations were performed to investigate discriminant validity employing the Heterotrait-Monotrait ratio (HTMT) approach. This method was employed to ascertain the distinctiveness of each construct from the others. A construct demonstrates robust discriminant validity when the HTMT value under 0.90, as utilized in the evaluation of discriminatory validity in the PLS-SEM model (Saputra & Bahari, 2024). The outcomes of the discriminant validity evaluation utilizing HTMT values are displayed in the subsequent table.

Table 3. HTMT Table

	Continuance Intention to Use	Environmental Awareness	Interest in Sustainability	Perceived Ease of Use	Perceived Usefulness	Shopping Attitudes	Social Influence
Continuance Intention to Use							
Environmental Awareness	0.634						
Interest in Sustainability	0.732	0.716					
Perceived Ease of Use	0.582	0.845	0.800				
Perceived Usefulness	0.566	0.841	0.720	0.787			
Shopping Attitudes	0.616	0.831	0.768	0.805	0.839		
Social Influence	0.713	0.750	0.644	0.659	0.739	0.765	

Source: Processed Data, 2025

The measurement instrument is deemed valid if the HTMT is under 0.90. The findings of the discriminant validity assessment indicate that nearly all variables exhibit an HTMT value below 0.90. This signifies that each construct in the study exhibits distinct differences and the instruments employed satisfy the criteria for discriminant validity.

In addition to using the HTMT approach, discriminant validity was also evaluated using the Fornell-Larcker criteria. This test was conducted by comparing the square root of the Average Variance Extracted (AVE) value of each construct with the correlation value between constructs in the model. A concept has strong discriminant validity when the square root of the Average Variance Extracted (AVE) exceeds the correlation between that construct and other constructs, hence demonstrating that each construct can be empirically differentiated (Utama et al., 2025). The findings of this comparison indicate that the constructs within the study model possess sufficient discriminant validity.

Table 4. Fornell-Lacker Criterion Values Table

	Continuance Intention to Use	Environmental Awareness	Interest in Sustainability	Perceived Ease of Use	Perceived Usefulness	Shopping Attitudes	Social Influence
Continuance Intention to Use	0.840						
Environmental Awareness	0.566	0.863					
Interest in Sustainability	0.644	0.652	0.877				
Perceived Ease of Use	0.508	0.760	0.713	0.860			
Perceived Usefulness	0.499	0.764	0.645	0.703	0.850		

Shopping Attitudes	0.550	0.754	0.690	0.720	0.756	0.872	
Social Influence	0.614	0.669	0.566	0.571	0.648	0.679	0.845

Source: Processed Data, 2025

In comparison to the correlation values between other constructs, the Fornell-Larcker values for each construct are higher in the given output. The results reveal that each construct is unequivocally separate from the others. Consequently, it may be inferred that the study model satisfies the criteria for robust discriminant validity according to the Fornell-Larcker method.

After the Fornell-Larcker test, discriminant validity was also evaluated through *cross-loading* analysis on reflective indicators. This test was conducted by comparing the *factor loading* values of each indicator for the construct being measured with the *factor loading* values for other constructs. An indicator is considered valid if it has the highest *factor loading* value for the target construct compared to other constructs, indicating that the indicator empirically represents the construct more accurately (Setiabudhi et al., 2024).

Table 5. Cross-Loading Table

	Continuance Intention to Use	Environmental Awareness	Interest in Sustainability	Perceived Ease of Use	Perceived Usefulness	Shopping Attitudes	Social Influence
CITU1	0.859	0.450	0.518	0.380	0.369	0.405	0.427
CITU2	0.831	0.499	0.577	0.462	0.412	0.475	0.552
CITU3	0.734	0.394	0.465	0.405	0.391	0.417	0.522
CITU4	0.923	0.541	0.589	0.451	0.489	0.533	0.549
EA1	0.398	0.863	0.514	0.641	0.649	0.602	0.481
EA2	0.546	0.796	0.536	0.626	0.640	0.608	0.603
EA3	0.540	0.865	0.608	0.704	0.683	0.692	0.668
EA4	0.500	0.896	0.580	0.662	0.706	0.711	0.600
EA5	0.449	0.889	0.563	0.640	0.612	0.627	0.519
IIS1	0.601	0.630	0.932	0.678	0.574	0.621	0.585
IIS2	0.533	0.499	0.797	0.607	0.553	0.540	0.420
IIS3	0.556	0.553	0.853	0.569	0.571	0.626	0.511
IIS4	0.566	0.594	0.919	0.643	0.568	0.632	0.459
PEOU1	0.459	0.698	0.613	0.891	0.631	0.655	0.560
PEOU2	0.412	0.605	0.643	0.796	0.574	0.631	0.432
PEOU3	0.438	0.633	0.585	0.857	0.611	0.579	0.469
PEOU4	0.436	0.675	0.606	0.894	0.600	0.606	0.498
PU1	0.393	0.660	0.535	0.593	0.903	0.639	0.563
PU2	0.405	0.567	0.558	0.512	0.703	0.599	0.461
PU3	0.441	0.694	0.564	0.669	0.885	0.707	0.543
PU4	0.444	0.623	0.514	0.564	0.824	0.584	0.562
PU5	0.439	0.692	0.566	0.634	0.918	0.670	0.620
SA1	0.473	0.673	0.602	0.616	0.653	0.892	0.641
SA2	0.359	0.597	0.526	0.508	0.578	0.793	0.480
SA3	0.487	0.648	0.591	0.697	0.663	0.860	0.552
SA4	0.576	0.708	0.678	0.677	0.734	0.938	0.675
SI1	0.503	0.529	0.386	0.417	0.533	0.578	0.884
SI2	0.480	0.584	0.497	0.453	0.492	0.598	0.796
SI3	0.512	0.532	0.528	0.576	0.582	0.506	0.767
SI4	0.578	0.609	0.507	0.497	0.589	0.602	0.923

Source: Processed Data, 2025

Based on the output obtained, all indicators have the highest *loading factor* value on the construct being measured compared to other constructs. These results indicate that each indicator has the strongest relationship with the target construct. Thus, all indicators are declared to meet the criteria for discriminant validity.

Reliability Test

To ensure sufficient reliability, tests were carried out by comparing Cronbach's Alpha and Composite Reliability values, which must both be more than or equal to 0.70. Composite Reliability is a way to check how well the indicators work together by looking at how much each one adds to the overall. Cronbach's Alpha, on the other hand, checks how well the indications work together in a single construct. These criteria are frequently employed in PLS-SEM analysis to ascertain if the measurement instrument possesses an adequate degree of reliability (Chinnaraju, 2025).

Table 6. Reliability Test Values Table

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
Continuance Intention to Use	0.858	0.872	0.905
Environmental Awareness	0.913	0.917	0.935
Interest in Sustainability	0.899	0.908	0.930
Perceived Ease of Use	0.882	0.883	0.919
Perceived Usefulness	0.901	0.907	0.928
Shopping Attitudes	0.894	0.908	0.927
Social Influence	0.864	0.869	0.908

Source: Processed Data, 2025

The table indicates that all variables have Composite Reliability and Cronbach's Alpha values surpassing 0.70. The findings indicate that the indicators for each variable consistently assess their corresponding components. Thus, it can be concluded that all variables in this study meet the dependability standards and are suitable for further examination.

Subsequent to assessing reliability, the next phase involves evaluating the model's capacity to elucidate the dependent variable via the R^2 value. The R^2 number spans from 0 to 1 and indicates the extent to which the independent variable accounts for the variability in the dependent variable. A moderate category is indicated by a R^2 value between 0.33 and 0.67, a strong category by a R^2 value above 0.67, and a weak category by a R^2 value over 0.19 but below 0.33. A higher R^2 value indicates a superior capacity of the model to elucidate the relationship between variables (Nguyen et al., 2024).

Table 7. R-Square Test Values Table

	R-Square	R-Square Adjusted
Continuance Intention to Use	0.303	0.300
Environmental Awareness	0.425	0.423
Shopping Attitudes	0.693	0.689

Source: Processed Data, 2025

The R-Square score indicates that the model's capacity to elucidate the researched variables exhibits varied degrees of effectiveness. The Shopping Attitudes variable exhibits robust explanatory power, Environmental Awareness is moderate, and Continuance Intention to Use is adequate. These results indicate that the model effectively elucidates the link between variables.

Further study utilizing Effect Size (f^2) was conducted to finalize the evaluation of the structural model. Effect size quantifies the extent of each independent variable's impact on the dependent variable by examining the variation in R-Square values upon the exclusion of a single independent variable from the model. An f^2 value beyond 0.35 signifies a significant influence, a value ranging from 0.15 to 0.35 denotes a moderate effect, and a value between 0.02 and 0.15 reflects a modest effect (Yalçın, 2025)

Table 8. F-Square Test Results Table

	Continuance Intention to Use	Environmental Awareness	Interest in Sustainability	Perceived Ease of Use	Perceived Usefulness	Shopping Attitudes	Social Influence
Continuance Intention to Use							
Environmental Awareness						0.041	
Interest in Sustainability		0.738					
Perceived Ease of Use						0.067	
Perceived Usefulness						0.100	
Shopping Attitudes	0.434						
Social Influence						0.077	

Source: Processed Data, 2025

Based on the results of the Effect Size (f^2) test, it can be seen that the strength of influence between variables in the model is not the same. Interest in Sustainability and Shopping Attitudes show a strong influence on the variables they affect, while other variables have a smaller influence. These findings provide an initial picture of which variables play a more dominant role in the research model.

To ensure that these effects are statistically significant, further testing was conducted through hypothesis testing using path coefficients. This testing was performed using the bootstrapping method in SmartPLS after the measurement model and structural model met the evaluation criteria. The decision to accept the hypothesis was determined based on the P-Value and the direction of the effect as seen from the path coefficient value.

Figure 4. Results of PLS-SEM Model Evaluation on the Inner Model and Outer Model



Source: Processed Data, 2025

Table 9. Bootstrapping Results for Direct Effect Hypothesis

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Keterangan
Enviromental Awareness → Shopping Attitudes	0.209	0.205	0.084	2.485	0.013	H5 Didukung
Interest in Sustainability → Enviromental Awareness	0.652	0.638	0.079	8.278	0.000	H4 Didukung
Perceived Ease of Use → Shopping Attitudes	0.231	0.234	0.066	3.504	0.000	H2 Didukung
Perceived Usefulness → Shopping Attitudes	0.294	0.297	0.070	4.190	0.000	H1 Didukung
Shopping Attitudes → Continuance Intention to Use	0.550	0.539	0.084	6.535	0.000	H6 Didukung
Social Influence → Shopping Attitudes	0.216	0.216	0.054	4.012	0.000	H3 Didukung
Enviromental Awareness → Shopping Attitudes	0.209	0.205	0.084	2.485	0.013	H5 Didukung

Source: Processed Data, 2025

The bootstrapping test results show that all direct effect hypotheses have a P-Value of less than 0.05. This indicates that the direct effect between variables in the model is proven to be significant. Thus, all hypotheses proposed in this study are supported.

DISCUSSION

The perceived usefulness positively influences shopping attitudes (H1).

The results reveal that perceived usefulness demonstrates a robust positive connection with shopping attitudes, as evidenced by a path coefficient of 0.294 and a P-value below 0.05 (H1 accepted). This indicates that an increased awareness of the benefits of mobile commerce platforms among Gen Z is associated with more positive attitudes towards mobile commerce. The Technology Acceptance Model (TAM) posits that the perception of concrete advantages from

mobile commerce platforms is positively associated with the desire to utilize these platforms over the long term. Research confirms that perceived utility significantly influences consumer attitudes towards online buying (Wijayakusuma & Nurlinda, 2025).

The Perceived Ease of Use positively influences Shopping Attitudes (H2).

Perceived ease of use also has a significant positive influence on shopping attitudes, with a path coefficient of 0.231 and a P-value < 0.05 (H2 accepted). This indicates that ease of use of mobile commerce platforms is an important factor influencing Gen Z's shopping attitudes. Gen Z is more likely to have a positive attitude towards platforms that are easy to use, as found in studies showing that user attitudes are largely determined by perceived ease of use (Migueli et al., 2024).

The Social Influence positively influences Shopping Attitudes (H3)

Social impact significantly affects shopping attitudes, evidenced by a path coefficient of 0.216 and a P-value less than 0.05 (H3 accepted). Generation Z is significantly swayed by their friends and social media in their purchasing choices. Additional research indicates that social influence markedly affects consumer attitudes via pressure from peers, family, and social media, thereby fostering a propensity for purchase behaviour (Agatha & Kenang, 2024).

The Interest in Sustainability positively influences Environmental Awareness (H4).

Interest in sustainability has a very strong relationship with environmental awareness, with a path coefficient of 0.652 and a P-value < 0.05 (H4 accepted). The higher Gen Z's interest in sustainability, the higher their awareness of environmental issues, which in turn influences their shopping attitudes. These results underscore the importance of a sustainability-focused approach in mobile commerce marketing strategies to attract young consumers who care about environmental impact, as research shows that sustainability awareness significantly influences consumer attitudes toward environmentally friendly consumption and pro-environmental purchasing behavior (Gohil et al., 2025).

The Environmental Awareness positively influences Shopping Attitudes (H5)

Environmental awareness exhibits a substantial positive correlation with shopping attitudes, evidenced by a path coefficient of 0.209 and a P-value of 0.013 (H5 accepted). The results reveal that increased environmental awareness among Gen Z correlates with more favorable opinions toward mobile commerce that provides eco-friendly products. This aligns with prior research indicating that awareness of environmental issues is highly and significantly correlated with consumer views (Alhamad et al., 2023).

The Shopping Attitudes positively influences Continuance Intention to Use Mobile Commerce (H6)

Shopping attitudes exert a substantial positive effect on the desire to continue utilizing mobile commerce, evidenced by a path coefficient of 0.550 and a P-value < 0.05 (H6 accepted). The findings suggest that Generation Z's favorable perceptions of mobile commerce—attributable to usability, perceived advantages, or sustainability awareness—enhance their intention to persist in digital shopping. This aligns with the Technology Acceptance Model (TAM), which identifies attitude as a primary determinant influencing behavioral intention in technology usage (Nguyen Thi et al., 2022).

CONCLUSION

This study demonstrates that Generation Z's purchasing behaviours are significantly affected by perceived utility, perceived simplicity of use, social influence, and interest in sustainability. The analysis results indicate that favourable shopping attitudes towards mobile

commerce significantly enhance the intention to continue utilizing mobile commerce, demonstrating a propensity for sustained use of digital platforms over time. Social influence and environmental knowledge have been demonstrated to be significant factors in cultivating more environmentally and socially responsible shopping behaviours. Consequently, mobile commerce that incorporates ease, advantages, and sustainability principles might enhance Gen Z's loyalty and intention to persist in its usage. These findings underscore the significance of comprehending shopping mindsets as essential for enhancing sustainable practices in mobile commerce moving forward.

RESEARCH TRANSPARENCY AND ETHICS STATEMENTS

1. Author Contributions:

MFE: Conceptualization, Methodology, Data Collection, Data Analysis,

K: Writing – Original Draft, Visualization, Review and Editing

RR: Writing – Original Draft, Visualization, Review and Editing

2. Funding:

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3. Conflict of Interest:

No conflict of interest: The authors declare that they have no conflict of interest related to the research and publication of this article.

4. Research Ethics:

The study did not involve any intervention, biological specimens, vulnerable groups, or sensitive personal data. Participation was voluntary, and the confidentiality of the respondents was maintained.

5. Use of Artificial Intelligence (AI):

No use of ai. The authors declare that generative ai was not used in the preparation of this article.

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