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Effects of the Components of Mobile Shopping Apps On Shopping Flow and Continuous Usage Intention

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Abstract

Purpose: This study aims to investigate the impact of mobile shopping app components on shopping flow and the continuous usage intention of the shopping apps in the rapidly growing mobile market facilitated by advancements in the mobile environment. **Research Methodology**: A survey was conducted, targeting users aged 20 and older with experience in using mobile shopping apps. The responses of 456 participants were analyzed through frequency analysis, exploratory factor analysis, reliability analysis, confirmatory factor analysis, and structural equation modeling. **Results**: The study found that within the components of mobile shopping apps, enjoyment significantly impacted both shopping flow and the continuous usage intention of shopping apps. The diversity of product assortment had a significant effect only on shopping flow. The usefulness and ease of use influenced on the intention to continue using shopping apps. **Conclusions**: Based on the findings, it is recommended that shopping app operators try to identify essential components for stimulating user interest and engagement when developing or modifying apps. Additionally, a diverse range of products enhances the shopping experience and drives spontaneous purchases. Furthermore, providing an easy interface and minimizing the effort required, this experience can enhance user perception of its value and sustain consumers' continuous usage intention of the shopping app.

Keywords : Mobile shopping apps, Fashion products. Shopping flow, Continuous usage intention

JEL Classification Code :C52, C82, M31

1. Introduction

The mobile commerce environment has developed in conjunction with the development of the wireless Internet environment through the emergence of 4G and 5G and the improvement of the functions of portable handheld mobile devices such as mobile phones and tablets. With the development of wireless Internet environment, real-time transmission of video content has become possible beyond the initial wireless mobile environment centered on text reading and photo viewing. In addition, as security features that can secure Internet commerce have also been strengthened, mobile commerce, which means all transactions including the purchase and sale of services using mobile devices and wireless Internet network technology, has emerged (Lee & Mendlinger, 2011). The rise of mobile commerce can be attributed to several factors.

Firstly, the widespread adoption of smartphones and tablets has created an environment where users can easily engage in shopping anytime, anywhere.

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Additionally, mobile commerce provides users with convenience and benefits through simple payment systems and various discounts and promotions. The portability to find and purchase desired products at any time, coupled with the accessibility to diverse information in real-time, has significantly contributed to the growth of mobile commerce.

The increase in mobile app usage can be attributed to several factors. Firstly, the widespread adoption of mobile devices has made it easier for users to download and use apps on their mobile devices. Additionally, mobile apps offer users a fast and convenient experience, providing personalized services with special features and tailored content. Push notifications and various functionalities aimed at enhancing user experience also contribute to the effectiveness of mobile apps. The combination of these factors has made mobile app usage more convenient and appealing to users.

In other words, the rapid development of the mobile environment has led to a new distribution channel called m-commerce in e-commerce, and this expansion of new e-commerce has led to the rapid rise of m-commerce (Zhang et al., 2012).

Mobile channels form a third market following offline and online channels, and have remarkable growth and market potential. Therefore, there is a growing need to understand mobile shopping and its drivers (Kim, Kim, Choi & Trivedi, 2017).

Consequentially, there is a need for research on the factors influencing the rapidly growing and continuous mobile shopping phenomenon within the realm of online shopping. Investigating this phenomenon through a focus on mobile shopping apps, the primary platforms for mobile shopping, can be identified as a crucial research objective.

Despite the multitude of studies exploring the impact of online shopping, which is expected to differ from mobile shopping app usage, there exists a noticeable gap in research concerning the interplay among components influencing the purchasing process of mobile shopping apps, their impact on shopping flow, and the users' intention to persist in using these apps. Consequently, this study seeks to investigate the influence of mobile shopping apps on shopping flow and the users' intention to continue using these apps within the domain of mobile shopping.

2. Literature Review

2.1. Mobile Shopping Apps

Consumers utilize various smart devices to access mobile shopping channels. The rapid advancement of modern wireless internet communication technologies and the growth of the smart device market have contributed to the expansion of the mobile market (Pascoe et al., 2002).

With the evolution of e-commerce, mobile commerce (m-commerce) is considered a separate commerce channel that offers ubiquitous value through the convenience and accessibility of wireless communication (Balasubramanian et al., 2002). In contrast to conventional e-commerce, many researchers argue that m-commerce possesses unique business models, value chains, technological infrastructure, and distinctive value propositions for consumers (Min et al., 2008).

However, despite the significant increase in transactions and revenue in mobile commerce, there is scarce research investigating the differences in consumer behavior between online commerce and mobile commerce (Lee, 2017). Therefore, this study defines mobile shopping as shopping conducted through various mobile devices, such as smartphones and tablets, using shopping apps.

Despite the growth of the mobile commerce (m-commerce) market, companies have yet to provide a separate shopping environment on online and mobile channels (Prashar et al., 2015). In other words, differences in the environment between PC and mobile devices, such as display size, data processing capabilities, and speed, can lead to variations in consumer behavior between online and mobile commerce (Lee, 2017). Additionally, in mobile commerce environments, unlike online shopping using internet browsers on PCs, purchasing activities mainly occur through shopping apps within the ecosystem provided by the operating system. Therefore, it is essential to conduct research on the attributes of shopping apps and their impact on the overall product purchase process (Lee, 2017).

Examining the distinctions between mobile shopping and online shopping provides insight into the essence of mobile shopping. A concise summary of these differences is outlined below.

1. Device Platform:

Online Shopping: Primarily conducted through desktop or laptop computers utilizing web browsers.

Mobile Shopping: Involves shopping through smartphones or tablets via dedicated mobile applications (apps) or mobile-optimized websites.

2. Accessibility and Portability:

Online Shopping: Tethered to the user's fixed location, typically at home or in the office.

Mobile Shopping: Provides flexibility for shopping from any location, enabling users to make purchases while on the move.

3. User Experience:

Online Shopping: Often designed for larger screens, featuring detailed product displays and extensive navigation options.

Mobile Shopping: Optimized for smaller screens, emphasizing simplicity, easy navigation, and quick access to essential information.

4. Payment Options:

Online Shopping: Offers a range of payment methods, including credit/debit cards, digital wallets, and online banking.

Mobile Shopping: May leverage additional mobile-specific payment options, such as mobile wallets, in-app purchases, and mobile carrier billing.

5. Technological Integration:

Online Shopping: Relies on web-based technologies and may have less integration with device-specific features.

Mobile Shopping: Utilizes mobile device features like GPS, camera (for scanning barcodes or QR codes), and push notifications for a more personalized experience.

6. Usage Context:

Online Shopping: Often associated with planned or leisurely browsing and purchasing.

Mobile Shopping: Tends to be more spontaneous and associated with immediate needs or opportunities.

7. App Usage:

Online Shopping: Can be conducted through web browsers without the necessity for dedicated applications.

Mobile Shopping: Frequently involves the use of dedicated mobile apps for a streamlined and tailored experience.

In summary, while both online shopping and mobile shopping involve internet-based purchases, the key disparities lie in the devices utilized, the level of portability and accessibility, the user experience, and the integration of mobile-specific features. Mobile shopping caters to the dynamic, on-the-go lifestyle of users, offering a more convenient and personalized shopping encounter through mobile devices.

Due to these distinctions, the foundational architecture of mobile shopping apps exhibits a distinctive design and functionality in comparison to online shopping platforms. Consequently, the structural and functional aspects of the product composition in mobile shopping apps deviate from those observed in online shopping malls. These unique attributes are anticipated to manifest variances in the perspectives of mobile shopping app users, particularly among those who concentrate on fashion products accentuating overall silhouettes and intricate details, in contrast to users of conventional online shopping platforms.

Hence, by proactively investigating the determinants contributing to these distinctions, this study seeks to establish a groundwork for diverse inquiries influencing the future trajectory of the shopping process facilitated by mobile applications.

2.2. Shopping Flow

Flow, as defined by Csikszentmihalyi (1975), refers to the state of being completely absorbed and engaged in tasks, work, or activities, performing at optimal levels or being so immersed that one loses awareness of their own existence. When a person is in a state of flow, it means that the current task at hand has removed irrelevant perceptions (Mirvis, 1991).

Shopping flow refers to a state where consumers become deeply absorbed and engrossed in their shopping activities, experiencing emotional or experiential pleasure. This typically involves a focused experience where consumers concentrate on selecting and exploring products, accompanied by positive emotions towards the products or shopping environment. Shopping flow can occur when consumers spend a significant amount of time or express interest in specific products, leading to a rich and fulfilling shopping experience."

Flow has been recognized as a crucial factor for maintaining long-term relationships and has been extensively studied in the field of marketing, particularly as a key variable explaining customer behavior in online environments (Byun, 2019). It has been suggested that immersive experiences not only attract consumers initially but also significantly influence their attitudes and behaviors thereafter (Novak et al., 2000). Additionally, consumers who have experienced flow tend to repeatedly seek such experiences (Celsi et al., 1993). Customers who undergo a flow state while engaging in online shopping are also more likely to consider future revisits to online malls or contemplate purchasing products (Cyr et al., 2005).

2.3. Continuous Usage Intention

Continuous usage intention refers to the extent to which individuals, who have previously experienced a structural system, intend to continue using it even after the utilization has ceased. Recognized as a crucial variable leading to the ultimate purchasing behavior of services or products, it is particularly considered a factor that encourages prolonged use of a specific system. Given its close association with a company's ongoing and long-term profitability, businesses are urged to exert their best efforts in preventing the

departure of existing system users and simultaneously ensuring the seamless continuation of use (Zhou, 2013).

In a study on factors determining the intention to continue using online shopping, perceived utility, attitude, and satisfaction were found to have a significant impact on the intention to continue use (Bighrissen, 2021).

The continuous usage intention of an app reflects a consumer's intent to consistently utilize a specific application. Examining the relationship between this continuous usage intention and the specific intention to purchase products, the results reveal a close association between positive experiences with products offered within the app and the sustained intention to use the app. This implies that consumer satisfaction and preference for products provided by a particular app form motivations to continue using the app. Consequently, it is predicted that a higher continuous use intention of the app will correlate with an increased intent among consumers to purchase the products offered by the app.

Such outcomes suggest that by providing positive experiences to app users and encouraging sustained app usage, businesses can potentially exert a positive influence on consumers' intent to purchase the product ultimately. Furthermore, understanding how consumers' app usage experiences interact with the overall product purchase process is expected to offer valuable insights for formulating effective marketing strategies.

2.4. Hypotheses Development

According to a study on the flow of online community users (Lee, 2005), the results indicated that enjoyment and usability have an impact on flow.

In a study on the immersion of smartphone users (Park, 2013), enjoyment was identified as a significant factor influencing flow. Similarly, research on the flow of brand SNS (Song et al., 2016) and studies on the flow of digital games (Oh & Kim, 2009) also revealed that ease of use has an impact on immersion.

In a study on store loyalty, it was suggested that a wide product assortment, i.e., product diversity, is required to enhance customer immersion in the shopping environment (Odekerken-Schröder et al., 2001). Additionally, research on mobile shopping behavior indicated that perceived usefulness and perceived ease of use have a significant impact on shopping flow (Chen et al., 2018). Based on these previous research findings, the following research hypotheses were formulated.

H1: The enjoyment of mobile shopping apps will influence shopping flow.

H2: The ease of use of mobile shopping apps will influence shopping flow.

H3: The diversity of product assortment in mobile shopping apps will influence shopping flow.

H4: The usefulness of mobile shopping apps will influence shopping flow.

The study examining the intention to continue using e-wallet, a key convenience factor in mobile shopping apps, revealed that the usefulness and ease of use of e-wallet significantly influence the intention to continue use (Tay et al., 2022). Furthermore, in research on the intention to continue using online shopping, usefulness was found to have a significant impact on the intention to continue using online shopping malls (Al-Hattami, 2021). Empirical research on factors influencing the intention to continue using e-commerce demonstrated that both enjoyment and usefulness aspects have a significant impact on the intention to continue use (Mouakket, 2015).

With the findings from the literature review, the following research hypotheses were formulated.

H5: The enjoyment of mobile shopping apps will influence continuous usage intention of the shopping app.

H6: The ease of use of mobile shopping apps will influence continuous usage intention of the shopping app.

H7: The diversity of product assortment in mobile shopping apps will influence continuous usage intention of the shopping app.

H8: The usefulness of mobile shopping apps will influence continuous usage intention of the shopping app.

H9: Shopping flow will influence continuous usage intention of the shopping app.

The research model depicted in Figure 1 illustrates the proposed relationships based on the formulated hypotheses:

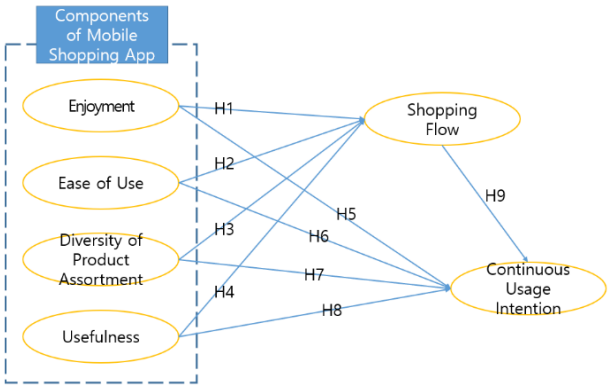

Figure 1: Research Model

3. Research Methodology

3.1. Data Collection and Research Settings

In this study, a survey was conducted targeting 475 users aged 20 and above who have experienced using shopping applications on mobile devices such as smartphones or tablets. The purpose of the research was to investigate the factors constituting the components of shopping applications used on mobile devices and examine their impact on shopping flow within the app and the intention to continue using the shopping app.

The survey questionnaire was constructed by modifying and supplementing items validated based on previous studies to align with the purpose and research methodology of the current study. The survey was commissioned to an online research specialist company from October 4th to October 11th, 2023. The analysis was conducted on a final sample of 456 respondents, excluding dishonest responses.

3.2. Methods of Data Analysis

In this study, data collected for empirical analysis and verification of hypotheses were analyzed using the SPSS and AMOS statistical programs. Frequency analysis was conducted to examine the demographic characteristics of the sample and the usage behavior of mobile shopping apps. Exploratory Factor Analysis (EFA) and reliability analysis were performed to assess the validity and internal consistency of measurement items. Additionally, Confirmatory Factor Analysis (CFA), along with tests for convergent and discriminant validity, was employed to test the reliability and validity of the measurement model. Structural Equation Modeling (SEM) was utilized to validate the causal relationships among the conceptual components proposed in the research model and to verify the indirect effects of the specified mediating factors.

4. Results

4.1. Characteristics of the Samples

The demographic characteristics of the survey participants are presented in <Table. 1>. The gender ratio was evenly distributed, with 50.0% male (228 participants) and 50.0% female (228 participants). Regarding age distribution, the highest percentage was in the 30s at 31.4% (143 participants), followed by the 40s at 28.1% (128 participants), and the 20s at 23.0% (105 participants). In terms of monthly income, 22.6% (103 participants) had an income of over 2 million won but less than 3 million won, and 21.1% (96 participants) had an income of over 3 million won but less than 4 million won. Additionally, 15.4% (70 participants) reported a monthly income of less than 1 million won. Examining marital status, married individuals constituted a slight majority at 51.1% (233 participants).

Table 1: Demographic Characteristics of Respondents

Demographic Properties		Frequency	Percent(%)
Gender	Male	228	50.0
	Female	228	50.0
Age	20 – 29	105	23.0
	30 – 39	143	31.4
	40 – 49	128	28.1
	50 –	80	17.5
Income (₩)	under 1mil	70	15.4
	1 mil – under 2 mil	40	8.8
	2 mil – under 3 mil	103	22.6
	3 mil – under 4 mil	96	21.1
	4 mil – under 5 mil	68	14.9
	5 mil – under 6 mil	38	8.3
	6 mil or more	41	9.0
Marital Status	single	223	48.9
	married	233	51.1
Total		456	100

4.2. Reliability and Validity Test of the Constituent Concept

For the validation of the measurement instrument, an exploratory factor analysis was conducted on the attributes of the mobile shopping app using maximum likelihood and direct oblimin rotation method. The analysis revealed four factors: enjoyment, ease of use, diversity of product assortment, and usefulness, as presented in <Table. 2>.

The factor loading values for all four factors were above .487. Typically, factor loadings exceeding 0.3 are considered statistically significant, and those exceeding 0.5 are deemed highly significant according to the direct oblimin rotation method. The results were deemed appropriate for this method. All factors had eigenvalues exceeding 1.0, and the cumulative value was 69.298%, confirming the validity of the survey items. Reliability analysis using Cronbach's α coefficient for internal consistency revealed that the factors constituting the mobile shopping app, namely, enjoyment (.869), ease of use (.889), variety of product assortment (.854), and usefulness (.816), demonstrated internal consistency, ensuring reliability.

The results of the exploratory factor analysis for shopping flow and app continuous usage intention are presented in <Table. 3>. Similar to the independent variables, the factor loadings, analyzed using maximum likelihood and direct oblimin rotation method, were all above .573, indicating a highly significant factor. The cumulative value of the two factors was 66.095%, securing the validity of the survey items. The Cronbach's α values for internal consistency analysis were .880 for shopping flow and .856 for app continuous usage intention, indicating a reliable internal consistency for these factors.

Table 2: Results of Exploratory Factor Analysis and Reliability Test for the Components of Mobile Shopping Apps

Factor	Items	Factor Loading	Eigen Value	% of Variance	Cronbach's α
Enjoyment	Shopping for fashion products using the mobile shopping app that I usually use is fun	0.579	1.243	7.313	0.869
	It is fun to receive information or services of fashion products provided by the mobile shopping app I usually use	0.652			
	Shopping for fashion products using a mobile shopping app that I usually use makes me feel good	0.703			
	Shopping for fashion products using a mobile shopping app that I usually use makes me interested	0.785			
	I enjoy using the mobile shopping app that I usually use	0.813			
Ease of Use	It is not difficult to buy fashion products from the mobile shopping app that I usually use	-0.757	1.888	11.106	0.889
	It is not difficult to use the mobile shopping app that I usually use	-0.863			
	It is not difficult to search for fashion items on the mobile shopping app that I usually use	-0.702			
	It is easy to purchase fashion items from the mobile shopping app that I usually use	-0.846			
Diversity of Products Assortment	The mobile shopping app I usually use has various kinds of fashion products	0.663	1.023	6.021	0.854
	The mobile shopping app I usually use is differentiated from other shopping apps	0.487			
	In the mobile shopping app I usually use, I can compare various products	0.660			
	The mobile shopping app I usually use has a wide range of products	0.806			
	The mobile shopping app I usually use has a variety of products compared to other shopping apps	0.837			
Usefulness	The information on fashion products provided by the mobile shopping app I usually use is useful	-0.786	7.626	44.858	0.816
	The mobile shopping app I usually use is effective in obtaining information about fashion products that I am interested in	-0.862			
	The mobile shopping app I usually use is useful for purchasing fashion products that I need	-0.547			

Table 3: Results of Factor Analysis and Reliability Test for Shopping Flow and Continuous Usage Intention

Factor	Items	Factor Loading	Eigen Value	% of Variance	Cronbach's α
Shopping Flow	I concentrate on shopping when I use mobile shopping app that I use often	.860	5.589	55.886	.907
	When I use mobile shopping app that I use often, I focus on shopping	.858			
	I concentrate on shopping when I use mobile shopping app that I use often	.836			
	When I use mobile shopping app that I use often, I focus on shopping	.747			
	When I use mobile shopping app that I use often, I get into shopping	.745			
Continuous Usage Intention	I am thinking of buying fashion products from mobile shopping app that I use often	.827	1.401	14.010	.867
	I think positively about buying fashion products from mobile shopping app that I use often	.799			
	I am willing to buy fashion products when I use mobile shopping app that I use often	.796			
	I often use mobile shopping app to influence my purchase of fashion products	.735			
	When I use mobile shopping app that I use often, I feel a desire to buy fashion products	.664			

4.3. Test of Research Model Fitness

To test the unidimensionality and construct validity of each conceptual construct, a confirmatory factor analysis (CFA) was conducted.

The results of the confirmatory factor analysis for the validity testing of mobile shopping app components, shopping flow, and shopping app continuous usage intention are presented in <Table. 4>. With a $\chi 2/df$ value of 2.054, RMR = 0.034, RMSEA = 0.048, GFI = 0.901, AGFI = 0.879, PGFI = 0.736, TLI = .947, NFI = 0.914, RFI = 0.902, IFI = 0.954, and CFI = 0.954, the measurement model was deemed fit within acceptable criteria for social research.

The standardized λ values of all paths from latent variables to observed variables were above .596, the composite reliability (C.R.) values for all constructs were above .865, and the average variance extracted (AVE) values were all above .605. This indicates that convergent validity was established, and internal consistency was secured. Therefore, it can be concluded that the measurement variables used in this study have satisfactory convergent validity. Additionally, the extracted AVE values are consistently higher than the squared correlation coefficients, indicating no issues with discriminant validity, as shown in <Table. 5>.

Table 4: Results of Confirmatory Factor Analysis (CFA) of Structural Model

	χ^2/df	GFI	AGFI	PGFI	RMR	RMSEA	TLI	NFI	CFI
SEM	2.054	0.901	0.879	0.736	0.034	0.048	0.947	0.914	0.954

Table 5: Results of Convergent Validity and Discriminant Validity Test

	Enjoyment	Diversity of Product Assortment	Shopping Flow	Usefulness	Ease of Use	Continuous Usage Intention
Enjoyment	0.640					
Ease of Use	0.500	0.605				
Diversity of Products Assortment	0.601	0.370	0.611			
Usefulness	0.506	0.458	0.268	0.681		
Shopping Flow	0.293	0.246	0.138	0.281	0.746	
Continuous Usage Intention	0.503	0.383	0.316	0.484	0.358	0.647
C.R.	0.899	0.883	0.887	0.865	0.921	0.901

4.4. Research Model Test

The structural model testing results indicate that with a $\chi 2/df$ value of 2.054, RMR = 0.034, RMSEA = 0.048, GFI = 0.901, AGFI = 0.879, PGFI = 0.736, TLI = .947, NFI = 0.914, RFI = 0.902, IFI = 0.954, and CFI = 0.954, the measurement model is considered fit within acceptable criteria for social research, as shown in <Table. 6>.

The examination of the impact of mobile shopping app factors on shopping flow and app continuous usage intention revealed that the enjoyment and diversity of product assortment in the mobile shopping app have a direct and significant impact on shopping flow. Additionally, enjoyment and ease of use have a direct and significant impact on the app continuous usage intention. However, shopping flow was found to have no direct significant impact on app continuous usage intention, as indicated in <Table. 7>.

In examining the mediating effects of shopping flow, it was found that shopping flow does not exhibit significant indirect effects for the enjoyment, ease of use, diversity of products assortment, and ease of use factors in the mobile shopping app, as shown in <Table. 8>.

5. Discussion and Conclusion

In the rapidly growing mobile shopping market, driven by the advancement of wireless internet and the widespread use of smart devices, this study aims to examine the impact of mobile shopping apps on consumer shopping flow and app continuous usage intention.

The study classified the constitutive factors of a mobile shopping app into four categories: enjoyment, ease of use, diversity of product assortment, and usefulness. It then examined the influence of these factors on shopping flow and the continuous usage intention of the shopping app, as well as the mediating effects of shopping flow on the continuous usage intention of the app.

Table 6: Goodness of Fit Index of Measurement Model

	χ^2/df	GFI	AGFI	PGFI	RMR	RMSEA	TLI	NFI	CFI
SEM	2.054	0.901	0.879	0.736	0.034	0.048	0.947	0.914	0.954

Table 7: Direct Effect of the Components of the Mobile Shopping Apps on Shopping Flow and Continuous Usage Intention

				Unstandardized Estimates	Standardized Estimates	S.E.	C.R.	*P*
Mobile Shopping Apps	Enjoyment	--->	Shopping Flow	.995	-.106	.109	9.161	**.000*** **
	Ease of Use	--->	Shopping Flow	-.087	-.074	.058	-1.490	.136
	Diversity of Product Assortment	--->	Shopping Flow	.200	.175	.077	2.585	**.010** **
	Usefulness	--->	Shopping Flow	-.138	.766	.094	-1.466	.143
	Enjoyment	--->	Continuous Usage Intention	.229	.261	.287	2.624	**.009** **
	Ease of Use	--->	Continuous Usage Intention	.186	.300	..040	4.620	**.000*** **
	Diversity of Product Assortment	--->	Continuous Usage Intention	.054	.070	.052	1.043	.297
	Usefulness	--->	Continuous Usage Intention	.263	.300.	.065	4.032	**.000*** **
Shopping Flow ---> Continuous Usage Intention				.050	.074	.049	1.021	.307

*p<0.05, **p<0.01, ***p<0.001

Table 8: Mediating Effect of Shopping Flow on Continuous Usage Intention

	Path					Direct Effect	Indirect Effect	Total Effect
Mobile Shopping Apps	Enjoyment	→	Flow	→	Continuous Usage Intention	.261	.057	.318
	Ease of Use	→	Flow	→	Continuous Usage Intention	.236	-.006	.231
	Diversity	→	Flow	→	Continuous Usage Intention	.070	.013	.083
	Usefulness	→	Flow	→	Continuous Usage Intention	.300	-.008	.292

*p<0.05, **p<0.01

5. Discussion and Conclusion

In the rapidly growing mobile shopping market, driven by the advancement of wireless internet and the widespread use of smart devices, this study aims to examine the impact of mobile shopping apps on consumer shopping flow and app continuous usage intention.

The study classified the constitutive factors of a mobile shopping app into four categories: enjoyment, ease of use, diversity of product assortment, and usefulness. It then examined the influence of these factors on shopping flow and the continuous usage intention of the shopping app, as well as the mediating effects of shopping flow on the continuous usage intention of the app.

The results indicated that the factors of enjoyment and diversity of product assortment in mobile shopping apps demonstrated a significant direct effect on shopping flow. Additionally, the factors of usefulness, enjoyment, and ease of use showed significant direct effects on the app's continuous usage intention. However, shopping flow did not exhibit a significant direct effect on the continuous usage intention of the shopping app.

The study reveals that enjoyment in shopping apps, which induces users' enjoyment and interest when using the app, shows a significant direct effect on both shopping flow and app continuous usage intention. This suggests that elements in the app that evoke pleasure and interest contribute to users' immersion in shopping, leading them to explore products for an extended period within the app. Furthermore, it encourages users to continue using the app even after the initial shopping experience.

According to the research findings, the enjoyment value of shopping apps directly and significantly influences both shopping flow and the intention to continue using the shopping app. This indicates that users engaging with shopping apps experience enjoyment and interest, leading to immersion in the shopping process. The app's ability to captivate users through interesting features, design, and a diverse range of products positively affects both shopping flow and the intention to persistently use the app. If users obtain enjoyable experiences through the shopping app, they are more likely to maintain a high level of interest in shopping, contributing to their continued app usage and the intention to make purchases.

Based on these findings, it is recommended that shopping app operators and developers conduct consumer surveys to identify essential components for stimulating user interest and engagement when developing, improving, or modifying apps. This aspect is considered crucial and warrants careful consideration in the decision-making process.

The diversity of products assortment factor was found to have an impact only on shopping flow. This suggests that offering a diverse range of products not only ensures consumers the right to choose products that meet their desired criteria but also increases the probability of triggering impulse purchases by creating a desire to purchase products that were not initially planned or anticipated. This underscores the importance of providing a variety of product options to enhance the overall shopping experience and potentially drive spontaneous purchases.

Shopping flow did not exert an influence on the continuous usage intention of the shopping app. However, in line with findings from existing research, it suggests that shopping flow does impact the ultimate goal of app operators or businesses—the increase in app users' desire to purchase products. Therefore, further research is deemed necessary to explore the direct effects of shopping flow on purchase intention and the indirect effects of app constitutive factors through flow.

The significant direct effects of usefulness and ease of use of the shopping app on app continuous usage intention indicate that providing an easy-to-use interface and enabling users to perform quick and accurate product searches can reduce the fatigue caused by excessive time and effort spent by users in finding the desired products. The results suggest that by minimizing the effort required, the app can enhance

user perception of its value, leading to the intention of continued usage. This highlights the importance of offering user-friendly features that contribute to a positive and efficient shopping experience, ultimately influencing users to sustain their usage of the shopping app.

In conclusion, this study is anticipated to furnish fundamental data for ongoing research on shopping facilitated by mobile shopping apps in the future. Specifically, by presenting research findings on factors influencing the purchasing process of fashion product shopping through mobile shopping apps, this study enables the examination of subsequent changes through follow-up studies once the use of mobile shopping apps for fashion product shopping becomes more established in the future.

Additionally, it is posited that conducting research on product purchases in other categories using mobile shopping apps will allow for the identification of differences among product categories and the consideration of factors contributing to these differences.

The above results and analysis are derived from a survey targeting consumers who have experienced purchasing fashion products through a specific means, namely, mobile shopping apps. Therefore, it may be considered challenging to generalize these findings as representative of overall results for the entire industry, given the specific focus on consumers with purchasing experiences in the fashion product category through a particular channel.

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