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Exploring Motivational Factors in Mobile Grocery Apps: User Attachment and Intentions

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ABSTRACT

As online grocery transactions become more common, many consumers are turning to mobile applications for buying groceries. While numerous studies have explored online grocery shopping, few have focused on the motivational factors and user satisfaction specifically related to grocery apps in the mobile sector. This study addresses this gap by examining how engagement and experiential factors influence consumers' intentions to continuously use grocery apps, form attachments to them, and have genuine experiences. We employed structural equation modeling to analyze data from users familiar with mobile grocery shopping apps. The findings revealed that innovation diffusion attributes significantly impacted user attachment to the apps. However, these attributes did not predict authentic user experiences. Uses and gratifications, on the other hand, significantly influenced both user attachment and authentic experiences. Additionally, the results of a MANOVA analysis indicated that users reported higher levels of response compared to non-users in terms of simplicity, benefit, compatibility, informativeness, playfulness, attachment, and intention to use. This study offers several new insights into research on mobile grocery transactions.

Keywords: Grocery Shopping Application, Motivational Factors, User Satisfaction, Innovation Diffusion, Uses and Gratifications, Attachment, Authentic experiences

1. INTRODUCTION

In the online shopping era, customers demand more convenience when buying groceries, and various technological opportunities can provide this convenience [1]. Accordingly, the landscape of online grocery shopping, equipped with convenient technology, is expanding rapidly [2]. The online grocery market is expected to become a major retail segment of the e-commerce industry [3]. According to some analysts, by 2025, approximately 20% of grocery purchases worldwide will be made online [4]. These predictions suggest that both market and academic attention are required to understand why people are moving toward online grocery shopping instead of traditional stores [5].

Despite their importance, many studies on mobile grocery apps have not kept pace with the rapid advancements in their functionality and expansion. As online shopping becomes increasingly prominent, the use of mobile grocery apps is growing rapidly. Therefore, it is essential to study this area from a fresh perspective in response to these changes. Currently, there is a shortage of studies that integrate both diffusion and motivational factors in the use of mobile grocery apps. Moreover, few have explored the motivational factors and satisfaction of grocery app users, as well as the critical roles of engagement and experiential factors in understanding mobile grocery app usage processes.

This study addresses these gaps by integrating the diffusion of innovation theory with the uses and gratifications theory to introduce participation and experience as features of mobile app use [6, 7]. We investigated how these concepts explain user gratifications and attempted to predict intended and continued use of the apps. User factors, such as simplicity, benefit, and compatibility, were identified and used to create and validate a model. Informativeness, social interactivity, and playfulness were used as motivational factors. Our research considered these factors as observed items, forming latent variables representing user and motivational factors, which in turn predicted participation and experience in the use of mobile grocery apps.

This study aimed to examine the process by which individuals reach participation, experience, satisfaction, and intention to use grocery apps, focusing on adoption and motivational factors. To do this, we combined the diffusion of innovation theory with the uses and gratifications theory to develop and test a new model. While this model is theoretically grounded, it had yet to be tested. To validate the model and derive results, we conducted a survey among consumers in South Korea, a leading country in online grocery shopping [8]. Additionally, this study compared users with non-users to identify factors that are conducive to the adoption and use of mobile grocery apps.

2. LITERATURE REVIEW

2.1 Diffusion of Innovation Theory

The practical adoption and use of information systems are considered determinants in investigating the diffusion of innovation. Rogers defines diffusion as the process of promoting new technologies (or innovations) among users over time within a particular social system [6], which includes an adaptive process where choices change over time. Innovation refers to an idea or something considered new that is subsequently adopted by users. Rogers identified several determinants of adoption behavior for innovations, including comparative advantage, compatibility, complexity, observability, and trialability [6]. This theory has been the basis for various studies examining the level of innovation adoption in society [9]. Personal innovativeness has been found to significantly influence the intention to use technology based on these research studies.

2.2 Uses and Gratification Theory

The Uses and Gratifications (U&G) theory is a frequently used theoretical framework for elucidating the multitude of motivations and rationales for utilizing a particular medium [10]. U&G theory helps researchers understand why and how users actively seek out specific media to fulfill their requirements [11]. It has been extensively used by researchers in diverse contexts, including e-retail, and has been employed to analyze the online purchasing behavior of consumers [11]. According to U&G theory, individuals use mobile shopping applications for specific purposes and play a proactive role in selecting the app's functional elements according to their motives [12].

2.3 Innovation Diffusion and Attachment

The theory of diffusion of innovation explains the uptake of innovative ideas among users. This theory can encompass not only the initial adoption of said innovation but also the continuing attachment to it [13]. The theory identifies several innovation properties, including simplicity, benefit, and compatibility, that increase the likelihood of diffusion and adoption [8].

However, the adoption attributes of the diffusion of innovation theory have not given adequate consideration to emotional elements. Attachment has been introduced to complement these factors. Individuals display a range of explicit behaviors, including frequent site visits and heightened engagement [14], when they form attachments to online communities. In this study, attachment refers to users' emotional connection to mobile apps for grocery shopping, which is a significant affective factor in online platforms [15]. We propose that users' perceptions of attachment to mobile grocery apps are explained by the attributes of innovation diffusion.

H1: The attributes of innovation diffusion (simplicity, benefit, and compatibility) will positively influence users’ attachment to mobile grocery apps.

2.4 Innovation Diffusion and Authentic Experience

The attributes of the diffusion of innovation theory, specifically simplicity, benefit, and compatibility, play a crucial role in explaining why users express intent to continue using online sites [16]. In the mobile shopping environment, experience also emerges as a critical factor given the interactive and engaged nature of shopping behavior. Previous studies have used the concept of authentic experiences to clarify behavior. Authentic experiences refer to a sense of novelty, genuineness, originality, exceptionality, or high quality that users experience. Therefore, they play a pivotal role in the use of online sites [17]. The ease of use in innovation characteristics has a constructive influence on the elderly's attitude towards using e-commerce sites [18], demonstrating that simplicity is associated with an authentic experience [12]. There is evidence to support that benefit and compatibility have a positive impact on a user's intention to continue using an online platform [15], indicating a correlation with a genuine user experience [12]. Therefore, we propose the following hypothesis:

H2: The attributes of innovation diffusion (simplicity, benefit, and compatibility) will positively influence authentic experiences when using mobile grocery apps.

2.5 Uses & Gratification and Attachment

The U&G theory utilizes the attributes of informativeness, social interactivity, and playfulness to explain the satisfaction of particular gratifications [13]. Informativeness denotes a user's capacity to handle information or convey meaning through online network sites [16]. Social interactivity aims to provide individuals with opportunities to connect, acquaint themselves with each other, and foster a sense of trust [16]. Playfulness relates to the extent to which present or prospective users regard online networking sites as a source of entertainment and enjoyment [19].

Attachment is a crucial factor that explains why users continue to use online networking sites [15]. Informativeness has a favorable impact on users' likelihood of accessing online networking sites, implying that informativeness is intertwined with attachment [16]. Social interaction positively impacts the development of shared bonds and identities within online communities, suggesting a correlation between social interactivity and attachment [14]. A positive association has been observed between playfulness and the level of site attachment among mobile shoppers [20], indicating that gratifying entertaining elements significantly influence attachment [13]. Therefore, we propose the following hypothesis:

H3: The attributes of the U&G (informativeness, social interactivity, and playfulness) will positively influence users' attachment to mobile grocery apps.

2.6 Uses & Gratification and Authentic Experience

The U&G theory The U&G theory elucidates the process by which individuals construct genuine experiences on digital communication platforms [21]. According to this theory, information-rich interfaces create favorable impressions of online network sites among their users, thereby promoting authentic experiences [16]. Additionally, social interactivity facilitates the cognitive, hedonic, and integrative aspects of gratification on such sites, boosting the overall quality of authentic experiences [22]. The positive impact of utilizing online social networking platforms on the uninterrupted experience of authenticity illustrates the relationship between playfulness and genuine experiences [23]. Therefore, we propose the following hypothesis:

H4: The attributes of the U&G (informativeness, social interactivity, and playfulness) will positively influence authentic experiences among users of mobile grocery apps.

2.7 Attachment and Intention to Use

Attachment enhances user loyalty to online networking sites, thereby increasing their intention to use these sites [20]. The sale/purchase of products and services on online platforms, as well as attachment to a group purchasing site, significantly influence loyalty to the said purchasing site [24]. In the context of mobile shopping, attachment

to a mobile site positively influences users' intention to use the site [13]. Therefore, we propose the following hypothesis:

H5: Attachment will positively influence users' intention to use mobile grocery apps.

2.8 Authentic Experience and Intention to Use

Behavioral intentions can represent actual behaviors [15]. Warshaw and Davis [25] described behavioral intention as the extent to which individuals have a conscious plan to execute or abstain from a specific action in the future. An authentic experience resulting from using a particular technology can enhance users' behavioral intentions towards the technology [26]. The extent to which customers are satisfied with the usefulness of online banking services has a positive impact on their intent to use these services continuously [27]. In a mobile environment, an authentic experience is considered an intrinsic factor that impacts users' intention to continue using the application [28]. Therefore, we propose the following hypothesis:

H6: Authentic experiences will positively influence users' intention to use mobile grocery apps.

2.9 Comparison of User with Non-user

Motivational and cognitive differences account for the contrasting buying behaviors of two consumer types: users and non-users [28]. Previous research has shown varying purchase intentions for electronic products among these groups [29]. The non-user cohort exhibits significantly higher perceived risk when using the Internet to conduct transactions. Furthermore, they experience lower utility in using digital mediums for similar transactions, find it difficult to navigate such platforms, and have fewer requirements [29]. This study posits that consumer behaviors differ between users and non-users of grocery shopping apps.

The diffusion of innovation theory suggests that customers who utilize a website are more likely to purchase due to the innovative attributes previously offered, including comparative advantage, compatibility, and ease of use [30]. Engaged consumers tend to use other products from the same brand and are more likely to recommend them to others [31]. These findings suggest that the uses and gratifications (U&G) theory is broadly applicable for comparing adoption and motivation factors between individuals who use the product and those who do not. Consequently, this study proposes that users and non-users likely exhibit different behaviors in terms of adoption, motivation, and usage of grocery shopping applications.

H7: There will be significant differences between user and non-user groups in innovation diffusion factors (simplicity, benefit, and compatibility) for mobile grocery apps.

H8: There will be significant differences between user and non-user groups in motive factors (informativeness, social interactivity, and playfulness) for mobile grocery apps.

H9: There will be significant differences between user and non-user groups in attachment to mobile grocery apps.

H10: There will be significant differences between user and non-user groups in authentic experiences with mobile grocery apps.

H11: There will be significant differences between user and non-user groups in the intention to use mobile grocery apps.

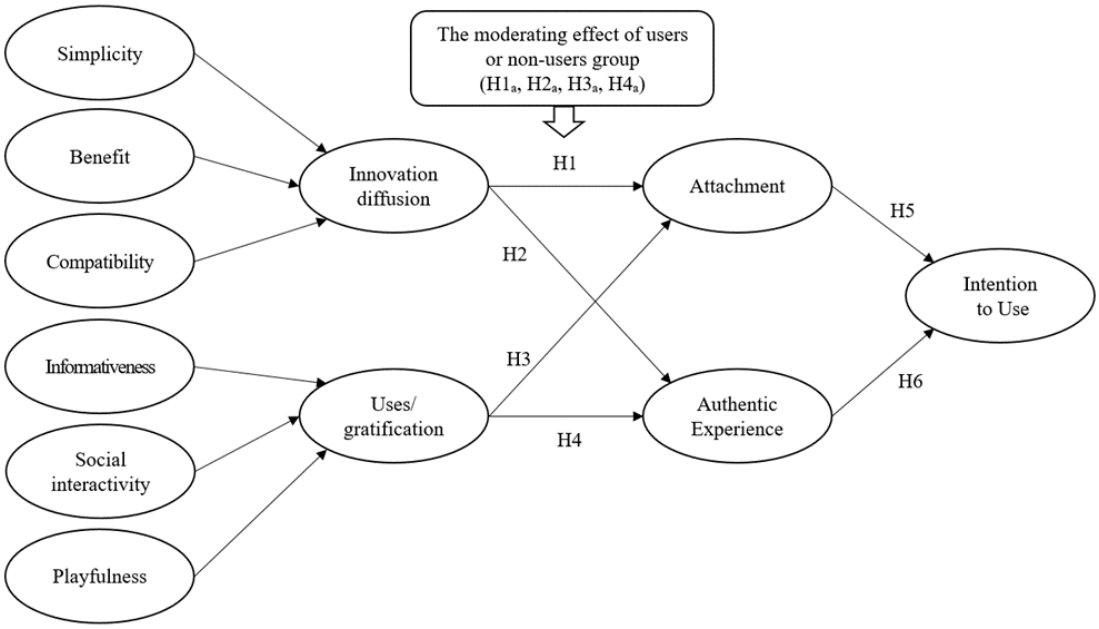

Figure 1. Hypothesized model

3. METHODOLOGY

3.1 Data Collection

We conducted an online survey to investigate the factors driving the adoption and intention to use mobile grocery apps, drawing on the diffusion of innovation and uses and gratifications (U&G) theories. To achieve this, we collaborated with a Korean research firm with a national database to conduct a cross-sectional survey. The firm gathered responses from 646 individuals, comprising 332 grocery app users and 314 non-users.

3.2 Measurement

Adoption factors were assessed based on the principles of simplicity, benefit, and compatibility as outlined in the diffusion of innovation theory. Motive factors were evaluated using the criteria of informativeness, social interactivity, and playfulness from the uses and gratifications (U&G) theory. Additionally, constructs such as attachment, authentic experiences, and intention to continue using mobile grocery apps were examined. These elements are derived from prior research and have been tailored to address the specific needs of consumers' grocery shopping via mobile devices.

Adoption Factors: Four items evaluating the simplicity and ease of using mobile grocery apps were derived from the work of Kim et al. [13, 20]. Modifications made by Chopdar et al. were utilized to assess the benefits of using mobile grocery apps through four items [32]. To measure compatibility with the user's lifestyle, Sujatha and Sekkizhar adapted four items for evaluating mobile grocery app usage [33].

Motive Factors: Informativeness, which measures the extent to which mobile grocery app use provides diverse information, was assessed by U&G through four items adapted from Saprikis et al. and Kim et al. [27, 34]. Social interactivity, or the extent to which mobile grocery app use enhances users' social relationships with others, was measured also using four items adapted from Saprikis et al. and Kim et al. [13, 34]. Four items, adapted from studies by Natarajan et al. and Saprikis et al. [34, 35], were utilized to appraise playfulness. The evaluation pertains to the users' satisfaction during their use the mobile grocery applications [34, 35].

Attachment, Authentic Experiences, and Intention to Use: Li et al. and Hsu & Tang's previous study measured attachment to mobile grocery apps using five items [36, 37]. Kim et al.'s previous study was the source of the five items used to evaluate authentic experiences associated with mobile grocery app use [27]. Kim et al. also employed five items to assess intention for continued use [13].

All items were measured using a seven-point Likert scale, with responses ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (7). Additionally, seven questions about grocery app usage were developed based on Kim et al.'s methodology [20], in addition to six items related to social demographics. These demographics included gender, age, educational level, occupation, income, and marital status.

3.3 Data Analysis

Structural Equation Modelling (SEM) was employed to evaluate the latent variables in the study. Initially, exploratory factor analysis was conducted to identify factor structures. Subsequently, confirmatory factor analysis was performed using AMOS 26.0 to validate the constructs of the observed variable items. The model then underwent reliability and validity tests prior to SEM analysis. Cronbach's alpha was used to assess the reliability of the instrument items. After validating the measurement model, we proceeded with the model test. Additionally, this study explored comparisons between users and non-users through multivariate analysis of variance (MANOVA).

4. RESULTS

4.1 Sample Characteristics

A total of 642 participants completed the survey, comprising 224 males and 418 females (Table 1). The age of respondents ranged from 20 to 59 years. A significant portion of the sample (82.2%) reported having a college-level education or higher.

Participants represented various professions, with the largest group being employed (50.6%), followed by unemployed individuals (24.3%). In terms of income, 113 respondents (17.6%) reported earning between 10 million and 20 million Korean Won, 163 respondents (25.4%) earned between 20 million and 30 million Korean Won, and 178 respondents (27.7%) earned between 30 million and 100 million Korean Won (with 1 US dollar approximately equivalent to 1,100 Korean Won). The survey highlighted a diversity in monthly salaries among participants. Regarding marital status, 317 participants were single, while 325 were married. Among all respondents, 330 had experience with mobile grocery apps, whereas 312 had never used them.

Table 1. Demographic characteristics of respondents

Characteristics	Categories	Frequency	Percentage
Gender	Male	224	34.9%
	Female	418	65.1%
Age	20-29	180	28.0%
	30-39	212	33.0%
	40-49	167	26.0%
	50-59	83	13.0%
Education	High school graduate	114	17.8%
	College student	65	10.1%
	Undergraduate degree	408	63.6%
	Postgraduate degree	55	8.5%
Occupation	Student	60	9.3%
	Employee	325	50.6%
	Self-employed	60	9.4%
	Unemployed	156	24.3%
	Other	41	6.4%
Monthly Income	₩300,000 or under	83	12.9%
	₩300,000~₩1,000,000	96	15.0%
	₩1,000,000~₩2,000,000	113	17.6%
	₩2,000,000~₩3,000,000	163	25.4%
	₩3,000,000~₩10,000,000	178	27.7%
	₩10,000,000 or above	9	1.4%
Marital Status	Single	317	49.4%
	Married	325	50.6%
User / Non-user	User	330	51.4%
	Non-user	312	48.6%

4.2 Measurement Model

We developed an initial measurement model with 332 participants who had prior experience using grocery apps. To evaluate the model's validity and reliability, we conducted principal component factor analysis to assess convergent validity. Bartlett's test of sphericity verified the completeness of the data, with a KMO coefficient of 0.888.

All Cronbach's alpha values were above the recommended threshold of 0.7, ranging from 0.776 to 0.959 [38]. Additionally, all composite reliability scores exceeded the cut-off value of 0.7 [39]. The average variance extracted (AVE) for all constructs was 0.525 or higher, demonstrating satisfactory reliability of the measured items, as detailed in Table 2.

To assess discriminant validity, we compared correlations between constructs with the square roots of the AVE values. The square roots of the AVE were greater than their correlations with other constructs, indicating that the measures met the criteria for discriminant validity.

Table 2. Reliabilities and Validity Statistics (N = 330)

Construct	Indicator	Std. Estimate	Cronbach's α	AVE	C.R
Simplicity	Sim1	0.809	0.895	0.661	0.885
	Sim2	0.638			
	Sim3	0.834			
	Sim4	0.822			
Benefit	Bene1	0.638	0.776	0.525	0.767
	Bene2	0.774			
	Bene3	0.633			
Compatibility	Com1	0.749	0.868	0.579	0.846
	Com2	0.675			
	Com3	0.697			
	Com4	0.699			
Informativeness	Info1	0.774	0.840	0.686	0.897
	Info2	0.723			
	Info3	0.815			
	Info4	0.849			
Social interactivity	Soc1	0.922	0.959	0.828	0.951
	Soc2	0.918			
	Soc3	0.931			
	Soc4	0.892			
Playfulness	Play1	0.913	0.934	0.805	0.943
	Play2	0.912			
	Play3	0.879			
	Play4	0.819			
Attachment	Att1	0.802	0.881	0. 590	0.852
	Att2	0.798			
	Att3	0.736			
	Att4	0.725			
Authentic experience	Auth1	0.840	0.937	0. 724	0.929
	Auth2	0.875			
	Auth3	0.889			
	Auth4	0.832			
	Auth5	0.797			
Intention to use	Int1	0.874	0.910	0.767	0.930
	Int2	0.871			
	Int3	0.828			
	Int4	0.855			
KMO (Kaiser-Meyer-Olkin)					0.888
Bartlett's test of sphericity				Chi-Square df(p)	1996.033 36(.000)

Table 3. Correlation matrix (N = 330)

Construct	1)	2)	3)	4)	5)	6)	7)	8)	9)
1) Simplicity	1								
2) Benefit	0.614	1							
3) Compatibility	0.622	0.749	1						
4) Informativeness	0.573	0.710	0.769	1					
5) Social interactivity	0.028	0.197	0.203	0.232	1				
6) Playfulness	0.555	0.678	0.786	0.649	0.293	1			
7) Attachment	0.458	0.586	0.810	0.581	0.293	0.798	1		
8) Authentic experience	0.313	0.522	0.586	0.481	0.524	0.630	0.526	1	
9) Intention to use	0.637	0.611	0.755	0.649	0.180	0.786	0.820	0.574	1
Mean	3.922	3.705	3.350	3.587	2.667	3.157	3.304	3.090	3.564
SD	0.721	0.737	0.679	0.713	0.812	0.748	0.814	0.909	0.813
Cronbach's alpha	0.858	0.776	0.868	0.840	0.959	0.934	0.881	0.937	0.910

All of the correlations are significant at, $p<0.05$.

4.3 Structure Model

We evaluated the structural model using maximum likelihood estimation. The findings revealed satisfactory model fit indices: Chi-square (χ^2) = 1275.878, p = 0.000; RMSEA = 0.057; IFI = 0.928; TLI = 0.927; CFI = 0.927. These indices suggest that the predicted model aligns with the empirical data.

The analysis of the structural model provided support for five out of six structural hypotheses (Table 4). Specifically, the study confirms H1, H3, H4, H5, and H6, indicating positive correlations between innovation diffusion and attachment, the U&G and attachment, the U&G and authentic experiences, attachment and intention to use, and authentic experiences and intention to use. However, H2 was not supported, as there was no significant relationship between innovation diffusion and authentic experiences.

Table 4. Summary of Results of Structural Relationships (N = 330)

		Estimate	S.E.	C.R.	p-value	Result
H1	Inno Diff -> Atta	.933	.249	5.930	***	Supported
H2	Inno Diff -> Auth Exp	-.214	.251	-.853	.394	Rejected
H3	U/G -> Atta	.441	.083	5.329	***	Supported
H4	U/G -> Auth Exp	.859	.119	7.222	***	Supported
H5	Atta -> Int to Use	.849	.072	11.728	***	Supported
H6	Auth Exp -> Int to Use	.130	.042	3.071	.002	Supported

(*** $p < 0.01$)

4.4 Comparison between Users and Non-users

We analyzed distinctions between users and non-users in terms of adoption, motive, attachment, authentic experiences, and intention to use by testing H7, H8, H9, H10, and H11. To evaluate the differences in these characteristics between the two groups, we employed multivariate analysis of variance (MANOVA) for several dependent variables. The test coefficients (Wilks' Lambda (λ) = .935, Hotelling's Trace = .050, F = 3.971, df = 36, p = .060) indicated a significant effect between user and non-user groups for certain variables. The MANOVA results demonstrated that users showed higher levels of response than non-users in simplicity, benefit, compatibility, informativeness, playfulness, attachment, authentic experiences, and intention to use (Table 5).

Table 5. MANOVA for Adoption, Motive, and Intention Factors by Users/Nonusers

	Groups	*Mean*	*SD*	*F*	*p*	R^2
Simplicity	Users	3.9215	.72186	56.392***	.000	.081
	Non-users	3.4698	.80596			
Benefit	Users	3.7029	.88297	20.088***	.000	.030
	Non-users	3.4349	.78213			
Compatibility	Users	3.6624	.72108	75.165***	.000	.105
	Non-users	3.1151	87906			
Informativeness	Users	3.6186	.73140	27.859***	.000	.041
	Non-users	3.3071	.76829			
Social interaction	Users	2.2545	.92801	9.587**	.002	.015
	Non-users	2.4921	.91516			
Playfulness	Users	3.4222	.83631	27.954***	.000	.042
	Non-users	3.0675	.86902			
Attachment	Users	3.2674	.85429	24.954***	.000	.037
	Non-users	2.9317	.85568			
Authentic experience	Users	3.0888	.90986	2.340	.127	.004
	Non-users	2.9829	.84768			
Intention	Users	3.5650	.81390	48.345***	.000	.070
	Non-users	3.0913	.91661			

5. DISCUSSION

This study developed a novel model by merging the diffusion of innovation theory with the uses and gratifications (U&G) theory to provide insight into why consumers maintain continued engagement with mobile grocery apps, exhibit user attachment, and report authentic experiences. The findings indicate that the innovation diffusion factors (simplicity, benefit, and compatibility) significantly impact user attachment. The U&G factors (informativeness, social interactivity, and playfulness) substantially influenced both attachment and authentic experiences. Furthermore, this study assessed the

differences in adoption factors between users and non-users, revealing that users exhibited statistically significant responses compare to non-users across seven aspects: simplicity, benefit, compatibility, informativeness, playfulness, attachment, and intention to use. However, differences in authentic experiences and social interaction were not statistically significant.

Attachment was identified as a significant factor in users' adoption and motive factors, supporting H1 and H3. The findings suggest that emotional engagement is highly valued by mobile grocery app users throughout the usage process. In contrast, innovation diffusion factors did not predict authentic experiences, indicating that simplicity, benefit, and compatibility do not significantly contribute to authentic experiences when using mobile grocery apps, as posited in H2. These results differ from several previous studies that concluded the attributes of innovation diffusion impact authentic experiences [13, 15]. Future studies should further investigate how each attribute of innovation diffusion influences authentic experiences.

The traits of the U&G theory were shown to impact the experience of using grocery apps, supporting H4. The findings suggest that users experience authenticity when accessing sufficient information through grocery apps, leading to integrative gratification and enjoyment. Users perceive these transactions as enjoyable experiences, akin to playing online games. Furthermore, the findings support Hypothesis 5, indicating that users' attachment significantly influences their intention to use mobile apps for grocery shopping. The more frequently users utilize grocery apps, the more attached they become, implying that these motivators increase the intention to use mobile grocery apps. Supporting Hypothesis 6, the findings suggest that authentic experiences enhance users' willingness to use mobile grocery apps for shopping.

Comparison results between users and non-users demonstrated that users exhibited higher levels of innovation diffusion factors, including simplicity, benefit, and compatibility, as well as higher levels of informativeness and playfulness as motive factors for using mobile grocery applications, supporting H7 and H8. When comparing the two groups, the impact of innovation diffusion and usage and loyalty attributes on attachment and authentic experiences was found to be stronger in the user group compared to the non-user group, supporting H9 and H10. Additionally, the comparison indicated that users were more likely to continue using mobile grocery apps compared to non-users, supporting H11.

The findings suggest that individuals actively participate in mobile grocery applications to their advantage. As the adoption rate increases, the application has the potential for broader adoption by future users. The evidence indicates that users derive significant enjoyment from their current engagement with grocery applications, which furthers their intention to continue using these technologies. As more users engage, this could potentially lead to even wider adoption as the dissemination rate reaches a certain threshold.

5.1 Theoretical Implications

This study, grounded in the diffusion of innovation and uses and gratifications (U&G) theories, makes a significant contribution to the research on mobile grocery transitions. It identifies user attachment and authentic experiences among mobile grocery app users and demonstrates their substantial influence through a new integrated model. By merging the diffusion of innovation theory with the U&G theory, this study elucidates how both models explain users' attachment and authentic experiences in mobile grocery shopping via apps.

The findings offer a comprehensive framework illustrating how the diffusion of innovation and U&G theories, through gradual phases, influence users' intent to utilize these apps. Moreover, this study extends grocery shopping research by investigating how user attachment and authentic experiences impact the intention to use mobile grocery apps. Additionally, identifying the significant differences between user and non-user groups enables a re-examination of the factors that encourage continued use of mobile grocery applications in theoretical models with diverse cohorts.

This study provides new insights into prior research on the diffusion of innovation perspective by exploring users' attachment to apps and their authentic experiences. The findings confirm earlier research on the diffusion of innovation theory and attachment relationships while also expanding the previous literature on shopping app usage from the perspective of the uses and gratifications (U&G) theory. The results demonstrate that attachment positively correlates with the intention to use, which aligns with previous research findings on this topic.

Based on the findings and analyses of this study, potential avenues for future research include applying theoretical frameworks such as the Theory of Planned Behavior (TPB), the Technology Acceptance Model (TAM), or the Unified Theory of Acceptance and Use of Technology (UTAUT). Additionally, exploring consumer behavior theories related to the intention and behavior of grocery shopping app users could be valuable. Future studies are encouraged to re-evaluate this study's model and explore other variables to further academic expansion.

The study identified significant differences between users and non-users of the grocery shopping apps, offering relevant theoretical implications. Among consumers who made purchases, the attachment factor from the uses and gratifications (U&G) theory was more pronounced than in the non-purchasing cohort. This suggests that gratification related to specific demands, such as informativeness, social interactivity, and playfulness, encourages grocery app users to shop more. Conversely, there was no differentiation between users and non-users concerning authentic experiences that could impact their intent to use. Additionally, both groups showed no differentiation regarding innovation diffusion attributes and authentic experiences through U&G attributes.

The study provides empirical insights into the motivators for using a grocery shopping app and the predictors of app intention in the context of grocery shopping, contributing to the theoretical understanding in this area. To enhance the explanatory power of the model, future studies could consider including the user-nonuser variable as a moderator.

5.2 Practical Implications

This study offers valuable insights into the industry by examining the increasing use of apps in online commerce and mobile grocery shopping. It provides practical guidance to service providers of grocery apps regarding the significant linkage between the diffusion of innovation and attachment. For instance, mobile grocery apps' convenience, relative benefits, and compatibility enhance user attachment to them. Grocery app providers must integrate these features into their apps. Moreover, these providers should consider users' gratifications influenced by the attachment based on the results of this study. For instance, a grocery app provider may enhance users' attachment to the app by considering the informative, socially interactive, and playful aspects of its functions.

Mobile grocery app providers can enhance decision-making regarding their app service delivery strategy by considering the significant correlation found in this study between attachment and the intention of continued usage. Specifically, to improve users' sustained engagement with the app, providers must focus on the development of emotional connection within the design. Furthermore, the grocery application providers ought to devise a practice guide that is effective based on the results of this study regarding the influence of genuine experience on intention to use. One approach that could be implemented by grocery application providers is to introduce a superior application service to strengthen the clients' intent to use a grocery application and provide incentives for subsequent and repeat users.

This study presents discriminatory factors influencing decision-making by providers of mobile grocery shopping app services due to the disparities observed between users and non-users in their usage of grocery shopping apps. These findings enable grocery app service providers and marketers to segment the market according to the differences between users and non-users and establish strategies customized to them. Grocery app providers should strengthen the factors of diffusion of innovation theory and U&G theory to boost users' attachment and intention to use. Implementing strategies to attract non-users and turn them into user groups can result in positive outcomes for users. Additionally, establishing promotional and incentive provision strategies is necessary to promote the use of mobile grocery apps.

5.3 Limitations and Future Research

This study has several limitations. Firstly, it is an experimental analysis of user intention to use grocery apps, comparing users and non-users by integrating the diffusion of innovation theory and uses and gratifications (U&G) theory. Further research is needed to confirm the validity of this new model in other populations. Secondly, while factors

from the two theories were integrated and investigated, a limited range of measurement variables might have influenced the results. Additionally, the study's sample was based solely in South Korea, which may limit the generalizability of the findings globally. Therefore, further research need to develop and verify new hypotheses by expanding the variables and testing in diverse populations.

Future studies need to explore grocery app usage among general populations in various countries. It is recommended to conduct separate analyses based on age, gender, occupation, and income differences when studying mobile grocery app use. Using behavioral reasoning theory in future research could provide a deeper understanding of actual user behavior, based on the intentions examined in this study.

Investigating factors such as demographic characteristics, personal innovativeness, perceived risk, risk-taking behavior, and technological experience could be crucial in determining mobile grocery shopping app adoption and usage. Additionally, exploring cross-cultural disparities in mobile shopping adoption rates would be insightful, as the advantages and disadvantages of such technologies may vary across different cultures, making this an essential topic for further research.

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7. REFERENCES

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