FACTORS INFLUENCING CONSUMER ADOPTION INTENTION OF LOCATION-BASED MOBILE MARKETING TECHNOLOGIES IN SUPERMARKETS; REFERENCE TO GENERATION Z IN COLOMBO DISTRICT

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Abstract

Despite an exponential growth in the adoption of mobile technologies in the retail sector worldwide, there has only been a marginal growth in the usage of location-based marketing technologies in Sri Lanka, especially in the retail sector. Nevertheless, the usage of location-based marketing technologies enhances the effectiveness of marketing communication channels and helps the firms in opening up new opportunities. Considering the vitality of this form of marketing, the current study aims at investigating the factors affecting consumers' adoption intention of location-based mobile marketing technologies in supermarkets; with special reference to Generation Z in Colombo district. It emphasizes the growing importance of mobile marketing and the necessity of engaging with Generation Z, in increasingly competitive retail sector. This study adopts quantitative method and using Purposive sampling technique, a sample of 384 Generation Z smartphone users who have not adopted location-based mobile marketing technology in supermarkets, in Colombo district identified, and SPSS software is used in analyzing data gathered from a 303 usable responses. Regression analysis is relied upon to assess the strength of the relationship between the variables in the model. The findings reveal that the performance expectancy, effort expectancy, trust, and perceived value have a significant impact on Generation Z customers' intention to adopt location-based mobile marketing technologies. However, the impact of social influence on intention to adopt location-based mobile marketing technologies is found to be insignificant. The findings could be beneficial for Colombo retailers in improving marketing strategies through location-based technology, especially in reaching Generation Z. Further, the findings confirm the consumer adoption theories, and the insights of the study are useful in understanding factors shaping Generation Z's adoption of location-based mobile marketing in supermarkets. The insights could be effectively used by the marketers in tailoring strategies to boost Generation Z engagement through effective location-based mobile marketing technologies, especially in the retail sector.

Keywords: *Generation Z consumers, Intention to adopt, Location-based mobile marketing technology, Supermarkets*

INTRODUCTION

Background of the Study

Internet marketing is a continuous process that uses basic marketing principles through the Internet to persuade, influence, create, and retain relationships with customers (Pollák & Markovič, 2022). Mobile marketing, as defined by the Mobile Marketing Association (MMA), is "a set of practices that allows organizations to communicate and interact with their audience in an interactive and relevant way through any mobile device or network" (The Mobile Marketing Association (MMA), n.d.). The advancement of mobile marketing has enabled firms to maintain engaging and meaningful engagement with customers, particularly among the younger generation. However, Generation Z, defined as people born after 1996 (Seemiller & Grace, 2018), is not a homogeneous mobile marketing audience due to varying usage patterns and attitudes based on socioeconomic background, technology literacy, and urban or rural lifestyles (Shahina & Sachitra, 2021).

Location-based technologies have become a crucial component of many people's and businesses' lives (Priporas et al., 2017), allowing firms to accurately target customers based on their physical location (Abashidze, 2022). The retail industry, in particular, has been significantly impacted by this revolutionary technology (Pangriya, 2023), as it enables retailers to effectively reach out to potential customers and offer various promotions, discounts, and advertising while enhancing the customer experience (Correa et al., 2021).

In Sri Lanka, the supermarket industry has seen a spectacular expansion in recent years, with Cargills Food City, Keels Supermarket, Arpico, and Laugfs Supermarket being the biggest supermarket chains (Ishantha, 2020). The Colombo District has the most distribution outlets among these leading supermarket chains (DMIDP, 2021).

Given the recent accessibility of location-based mobile marketing technologies for enterprises, it is important to investigate the factors influencing their acceptance (Correa et al., 2021). Despite the potential benefits of these technologies, higher practices related to location-based mobile marketing are not being exhibited among leading supermarkets in Sri Lanka. Only a few initiatives, such as Village to Home by Cargills Food City and SMS campaigns based on geolocation, can be seen among giant players. Even though these technologies show around 20% effectiveness, it is lower than the world statistics.

However, the adoption of location-based technology in Sri Lanka is making progress in several industries, such as mobile applications (Hettiarachchi & Kumara, 2017; Ayoobkhan & Athambawa, 2020), banking services (Commercial Bank, 2018), telecommunications (Dialog Enterprise, 2017), e-commerce platforms (Govinnage & Sachitra, 2019), and startups (Tracified, 2020) and many more by increasing the consumer understanding the context.

Despite the widespread use of mobile technologies in business (Kamiya & Branisso, 2021) and the significant changes in the retail industry due to the advancement of smart technologies (Priporas et al., 2017), the adoption of location-based mobile marketing technologies among leading supermarkets in Sri Lanka remains limited. According to the Global Location Trends Report 2020, 95% of global companies are already using location-based services, highlighting the need for businesses to adapt to remain competitive (Handly, 2019).

Although Sri Lanka has a high penetration of cellular mobile connections and internet users (Kemp, 2023), the effectiveness of location-based mobile marketing technologies implemented by leading supermarkets is lower than world statistics. This emphasizes the importance of investigating the factors influencing the intention to adopt these technologies among consumers (Correa et al., 2021), particularly Generation Z consumers in the Colombo district.

As only a few papers have attempted to address the implementation aspect of location-based marketing technologies (Pangriya, 2023), this study aims to fill the research gaps by investigating the factors influencing consumers' adoption intention of location-based mobile marketing technologies in supermarkets; with special reference to generation Z in Colombo district.

LITERATURE REVIEW

Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT), proposed by Venkatesh et al. (2003), is a well-known and flexible IT model that integrates eight theoretical frameworks

for individual technology acceptance. The UTAUT model posits those four constructs - performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC) which impact both user adoption and usage of IT. The UTAUT model has been widely adopted and has demonstrated a higher explanatory power and consequently, the UTAUT model has been extended in later research by incorporating additional variables, such as perceived enjoyment, perceived value, and trust (Cheah et al., 2013; Haron et al., 2021; De Blanes Sebastián et al., 2022; Eneizan et al., 2019).

Performance Expectancy

Performance expectancy, defined as the degree to which an individual believes that using the system will help them attain gains in job performance (Venkatesh et al., 2003), is the strongest predictor of usage intention (Venkatesh, Thong, & Xu, 2012; Zhou, Lu, & Wang, 2010). Numerous studies have demonstrated that performance expectancy significantly influences the behavioral intention to adopt specific technologies, such as academic information systems (Almetere et al., 2020), mobile commerce technologies (Asastani et al., 2018), mobile learning (Chao, 2019), geolocation and proximity marketing technologies (Correa et al., 2021), and mobile payment technologies (Alkhowaiter, 2022).

Effort Expectancy

Effort expectancy, defined as the degree of ease associated with the use of the system (Venkatesh et al., 2003), has been found to influence behavioral intention in both voluntary and compulsory use environments (Ayaz & Yanartaş, 2020). Several studies have demonstrated that an individual's intention to adopt a particular technology is greatly influenced by their effort expectations, such as mobile payment (Fan et al., 2018), geolocation and proximity marketing technologies (Correa et al., 2021), and learning technologies (Twum et al., 2021; Onaolapo & Oyewole, 2018).

Social Influence

Social influence, defined as the degree to which an individual perceives that important others believe they should use the new system (Venkatesh et al., 2003), has been found to be a crucial variable in technology adoption research, particularly in developing cultures (El-Aziz et al., 2020). Social influence is especially important for consumers who lack knowledge about recently marketed goods, services, and technologies (Farahmand et al., 2021). Numerous studies have demonstrated that an individual's desire to adopt a particular technology is greatly influenced by their effort expectation (Utomo et al., 2021).

Facilitating Conditions

Facilitating conditions, defined as the extent to which an individual believes that an organization and technical infrastructure exist to support the use of the system (Venkatesh et al., 2003), have been found to directly and positively influence usage behavior (Venkatesh et al., 2003). The presence of a supporting infrastructure has been shown to increase people's intention to adopt new technology (Oliveira et al., 2016).

Trust

Trust is essential in the mobile world due to the numerous unknowns and risks (Lin & Lu, 2010). Prior research has demonstrated that trust can improve behavioral intentions about technology (Sarkar et al., 2020). One of the most crucial issues in m-commerce acceptance and

retention, a lack of trust, can seriously impede m-commerce adoption (Sarkar et al., 2020). Previous research has indicated that there is an association between trust and behavioral intention or use (Alalwan et al., 2018).

Perceived Value

Perceived value, defined as a consumer's trade-off between the perceived benefits of the applications and the monetary cost of using them (Venkatesh et al., 2012), is one of the key indicators of behavioral intention (Putra et al., 2022). Perceived value is a key factor in mobile marketing since it influences consumers' decisions to adopt and use mobile services and content (Eneizan et al., 2019). Research indicates a strong correlation between perceived value and behavioral intention, which in turn enhances intentional behavior and adoption by creating a fresh experience of increased satisfaction (Palau-Saumell et al., 2019).

METHODOLOGY

The study employs a deductive research methodology and utilizes a quantitative technique and the source of data is primary, collected through a structured questionnaire. The target population for this study is smartphone users who have not adopted mobile location-based marketing technologies in the Colombo District. The research sample is Generation Z smartphone users who have not adopted location-based mobile marketing technology in supermarkets in the Colombo district. A non-probability, purposive sampling technique is employed, and the sample size is 384. The questionnaire consists of four parts: filtering questions, demographic variables, independent factors (performance expectancy, effort expectancy, social influence, facilitating conditions, trust, and perceived value), and the dependent variable (intention to adopt). A five-point Likert scale is used to measure the data. The conceptual framework for this study is an extension of the UTAUT model with Trust and Perceived Value (Cheah et al., 2013). The study includes six independent variables (performance expectancy, effort expectancy, social influence, facilitating condition, trust, and perceived value) and one dependent variable (intention to adopt location-based mobile marketing technologies).
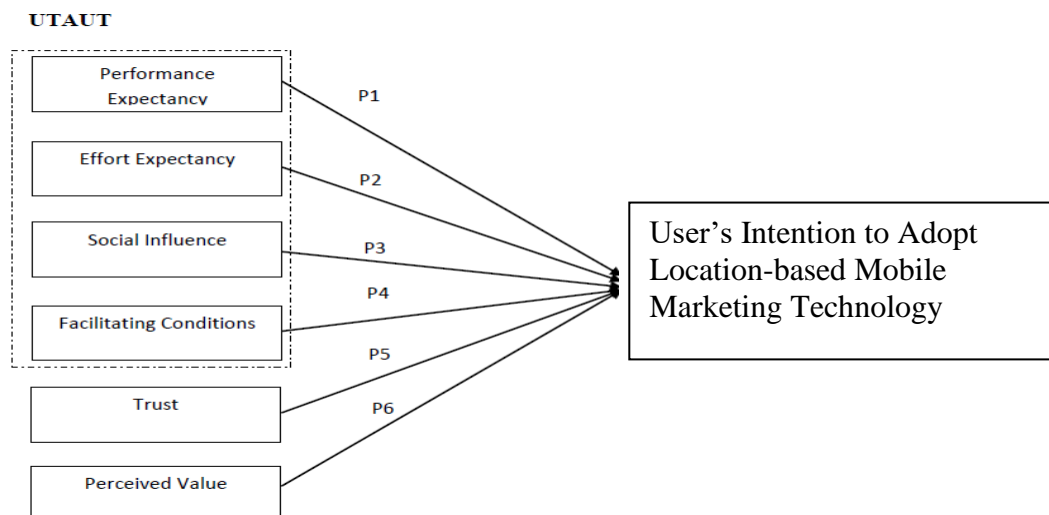

Figure 1- Conceptual Framework

Source; Cheah et al. (2013)

RESULTS AND DISCUSSION

Results

The sample consisted of 384 Generation Z smartphone users in the Colombo district who have not adopted location-based mobile marketing technology in supermarkets. Ans 342 responses were generated while only 303 were effective in the analysis. In the sample, 61.4% of respondents were female and 38.6% were male. 46.5% were employed in the private sector, 23.4% in the government sector, 13.9% were self-employed/business owners, 11.2% were students, and 5% had other employment. Further, 46.9% had a monthly income less than Rs. 50,000, 39.3% between Rs. 50,001-100,000, 11.2% between Rs. 100,001-150,000, and 2.6% more than Rs. 150,001.

The mean value for the dependent variable, consumer intention to adopt, is 3.98. Further, the mean for the independent variables, performance expectation, effort expectation, social influence, facilitating conditions, trust, and perceived value are 3.98,3.95,3.83,3.86,3.88, and 3.9 respectively. On a five-point Likert scale, the mean value typically denotes value 3. However, the research's mean value is greater than three. Hence the mean values for the constructs ranged from 3.83 to 3.98 on a 5-point Likert scale, all above the midpoint of 3.

The study has checked the Reliability and Validity also. The measuring scales can be examined for construct reliability and internal consistency using Cronbach's alpha (α) coefficient (Donga, 2020). Reliabilities are generally regarded as bad if Cronbach's alpha is less than 0.60, acceptable between 0.70 and 0.80, and good if greater than 0.80 (Sekran & Bougie, 2011). Cronbach's alpha values for all constructs were greater than 0.8, indicating excellent reliability.

Table 1 - Reliability

Variable	Cronbach's Alpha Value (>0.7)	Comment
Performance Expectancy	0.916	Excellent
Effort Expectancy	0.914	Excellent
Social Influence	0.9	Excellent
Facilitating Conditions	0.896	Good
Trust	0.928	Excellent
Perceived Value	0.903	Excellent
Intention to Adopt	0.907	Excellent

Content validity was confirmed by the academic supervisor's assessment of the questionnaire. Average Variance Extracted (AVE) values were greater than 0.5, Kaiser-Meyer-Olkin (KMO)

values were greater than 0.5, and Bartlett's test p-values were less than 0.05, demonstrating convergent validity. And the Composite reliability values were greater than 0.7.

Table 2 - Validity

Variable	AVE Value (>0.5)	KMO Value (>0.5)	Significant Value (<0.05)	Composite Reliability (>0.7)	Comment
Performance Expectancy	0.8	0.841	0.001	0.877	Good
Effort Expectancy	0.797	0.839	0.001	0.874	Good
Social Influence	0.833	0.753	0.001	0.938	Good
Facilitating Conditions	0.828	0.744	0.001	0.868	Good
Trust	0.824	0.847	0.001	0.893	Good
Perceived Value	0.838	0.749	0.001	0.877	Good
Intention to Adopt	0.843	0.755	0.001	0.881	Good

Also, the square roots of the AVE values were higher than the intercorrelation values, supporting discriminant validity. Hence it can be concluded that there is no relationship between independent variables. Therefore, the variable can be used for the study.

Table 3 - Discriminant Validity

Correlations							
	PE_MEAN	EE_MEAN	SI_MEAN	FC_MEAN	T_MEAN	PV_MEAN	CI_MEAN

PE_MEAN	Pearson Correlation	0.894					
	Sig. (2-tailed)						
EE_MEAN	Pearson Correlation	0.862	0.893				
	Sig. (2-tailed)	0.000					
SI_MEAN	Pearson Correlation	0.858	0.846	0.913			
	Sig. (2-tailed)	0.000	0.000				
FC_MEAN	Pearson Correlation	0.842	0.857	0.858	0.909		
	Sig. (2-tailed)	0.000	0.000	0.000			
T_M	Pearson Corr	0.8	0.7	0.7	0.7	0.9	

E A N	elation	0.5	97	98	73	08		
	Sig. (2-tailed)	0.000	0.000	0.000	0.000			
P V _M E A N	Pearson Correlation	0.796	0.834	0.811	0.821	0.783	0.915	
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000		
C I _M E A N	Pearson Correlation	0.851	0.850	0.804	0.838	0.800	0.817	0.918
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	
. Correlation is significant at the 0.01 level (2-tailed).								

When it comes to the regression analysis,

Table 4 - Model Summary

Model	R	R Square	Adjusted R square	St. Error of the estimate	Durbin Watson
5	0.90	0.811	0.808	0.445	2.19

	0 e				

The adjusted R square value in the model summary table represents model adequacy, or how much of the total variance is explained by the model (Farzin et al., 2021). According to Table, the adjusted R Square value is 0.808 which is 80.8% and approximately 81%. Hence the independent variables, performance expectancy, effort expectancy, facilitating conditions, trust and perceived value explain 81% of the variation of intention to adopt location-based mobile marketing technology which is the dependent variable. However, the other 19% variance of the dependent variable is explained by the other variables which are not included in this study.

Table 5 - ANOVA Table

Model		Sum of Squares	Df	Mean Square	F	Sig.
5	Regression	251.567	5	50.313	254.431	<0.001[f]
	Residual	58.731	297	0.198		
	Total	310.298	303			

The model is statistically significant if, at a 95% confidence level, the p-value is less than 0.05. The table above indicates that the p-value is 0.001. The fitted model is statistically significant as a result.

Table 6 - Coefficient Table

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Collinearity Statistics	
					Tolerance	VIF
Constant	0.082		0.730	0.466		
Performance Expe	0.279	0.267	4.670	0.001	0.195	5.127

ctancy						
Effort Expectancy	0.162	0.162	3.138	0.002	0.240	4.165
Facilitating Conditions	0.213	0.204	3.346	0.001	0.172	5.814
Trust	0.194	0.191	3.397	0.001	0.202	4.949
Perceived Value	0.145	0.148	3.131	0.002	0.284	3.520

According to the above table Performance expectancy (β=0.279, p=0.001), effort expectancy (β=0.162, p=0.002), facilitating conditions (β=0.213, p=0.001), trust (β=0.194, p=0.001), and perceived value (β=0.145, p=0.002) all had a significant positive impact on intention to adopt.

Table 7 - Excluded Variable

Model		**Beta In**	**t**	**Sig.**	**Partial Correlation**
5	**Social Influence**	-0.061 f	-1.030	0.304	-0.060

The social influence significance level is 0.304 which is greater than 0.05(p >0.05) at the 95% confidence interval. Hence, the social influence does not influence Generation Z consumers' intention to adopt location-based mobile marketing technologies.

In hypothesis testing Performance expectancy (β = 0.279, p = 0.001), Effort expectancy (β = 0.162, p = 0.002), Facilitating conditions (β = 0.213, p = 0.001), Trust (β = 0.194, p = 0.001), and Perceived value (β = 0.145, p = 0.002) shows a positive impact towards the adoption intention of location-based mobile marketing technology since the beta values are positive and the p values are less than 0.05 at the 95% confident level. While the Social influence did not significantly impact the adoption intention of location-based mobile marketing technology (β

= -0.061, p = 0.304) since its P-value is not acceptable at a 95% confidence level since the p-value is greater than 0.05. Hence, Apart from H3, all other hypotheses were accepted since respective P-values are less than 0.05.

Discussion

H1: There is a significant impact on performance expectancy on the adoption intention of location-based mobile marketing technology of supermarkets; with special reference to Generation Z consumers in Colombo district.

According to the outcomes of the study, there is a positive impact of performance expectancy on the adoption intention of location-based mobile marketing technology of supermarkets; with special reference to Generation Z consumers in Colombo district. This was validated by Cordiglia and Van Belle (2017) stating that the ability to boost one's productivity was thus one of the important components found in this study, with performance expectation being the most statistically significant factor influencing behavioral intention. Further, Correa et al. (2021) concluded that Performance expectations have an advantageous impact on the decision to adopt proximity marketing technologies with a p-value of 0.023 since it is greater than 0.05 at a 95% confidence level. Moreover, Williams et al. (2015) stated that 93 studies (80%) out of 116 studies that investigated the impact between behavioral intention and performance expectation found it to be significant.

H2: There is a significant impact of effort expectancy on the adoption intention of location-based mobile marketing technology of supermarkets; with special reference to Generation Z consumers in Colombo district.

When it comes to the effort expectancy, based on the output there is a positive impact of effort expectancy on the adoption intention of location-based mobile marketing technology of supermarkets; with special reference to Generation Z consumers in Colombo district. Effort expectancy which, in many technology adoption studies, demonstrates that less effort at the time of employing a marketing technology increases the intention of adoption and use (Correa et al., 2021). 64 out of 110 research (58%) have identified a significant link between behavioral intention and effort expectancy, as revealed by Williams et al. (2015). According to Cordiglia and Van Belle (2017), it is one of the most significant variables affecting the intention to adopt marketing technologies. As such, the hypothesis for the impact of effort expectancy on the adoption intention of location-based mobile marketing technology is accurate.

H3: There is a significant impact on social influence on the adoption intention of location-based mobile marketing technology of supermarkets; with special reference to Generation Z consumers in Colombo district.

According to the outcomes of the study, there is no impact from social influence on the adoption intention of location-based mobile marketing technology of supermarkets; with special reference to Generation Z consumers in Colombo district. This is supported by, Correa et al. (2021), who demonstrated study respondents did not see the social influence variable as significant, as they did not see a connection between using nearby technology and how others

perceive them, and this outcome may be impacted by ignorance of the technologies as the social influence was rejected with 0.311 of p-value which is greater than 0.05.

H4: There is a significant impact on facilitating conditions on the adoption intention of location-based mobile marketing technology of supermarkets; with special reference to Generation Z consumers in Colombo district.

Based on the outcomes of the study, there is a positive impact of facilitating conditions on the adoption intention of location-based mobile marketing technology of supermarkets; with special reference to Generation Z consumers in Colombo district. This finding is validated by the study of Eneizan et al. (2019), revealing that behavioral intention to adopt mobile marketing in the context of Jordanian customers was significantly impacted by facilitating conditions. Williams et al. (2015) looked at 48 studies that explored the association between behavioral intention and enabling conditions and found that 33 of them (69%) found it to be significant. Furthermore, it was discovered that the enabling condition had a significant impact on behavioral intention ($\beta = 0.303$, $p = 0.000$) (Haron et al., 2021).

H5: There is a significant impact on trust in the adoption intention of location-based mobile marketing technology of supermarkets; with special reference to Generation Z consumers in Colombo district.

According to the outcomes of the study, there is an impact of trust on the adoption intention of location-based mobile marketing technology of supermarkets; with special reference to Generation Z consumers in Colombo district. Although the impact of trust on the intention to adopt technologies was found to be significantly consistent with earlier research (Vahdat et al., 2020), (Alkhowaiter, 2022), Singh and Srivastava (2018) found a very strong relationship between trust and behavioral intention, highlighting the role of trust in behavior. Therefore, the results are accurate.

H6: There is a significant impact of perceived value on the adoption intention of location-based mobile marketing technology of supermarkets; with special reference to Generation Z consumers in Colombo district.

According to the outcomes of the study, there is a positive impact of perceived value on the adoption intention of location-based mobile marketing technology of supermarkets; with special reference to Generation Z consumers in Colombo district. To testify to this Aini and Hariguna (2019), stated that the intention to adopt was significantly influenced by perceived value.

CONCLUSIONS AND IMPLICATIONS

Conclusion

The study fills a research gap on factors influencing Generation Z consumers' adoption intention of location-based mobile marketing technology in supermarkets in the Colombo district. It highlights the importance of mobile marketing and connecting with this tech-savvy consumer group. The study extends the UTAUT model by including perceived value and trust,

and findings show that performance expectancy, effort expectancy, facilitating conditions, perceived value, and trust positively influence adoption intention. However, social influence does not have a significant impact. The study demonstrates the opportunity for Colombo retailers to improve marketing strategies with location-based technology for Generation Z and contributes to understanding factors shaping their adoption of these technologies.

Implications

The study offers valuable insights for supermarkets and marketers targeting Generation Z consumers in the Colombo district. To increase the adoption intention of location-based mobile marketing technology, businesses should focus on enhancing performance expectancy, streamlining user experience, providing necessary resources and support, building trust through transparent data practices and security measures, and offering personalized experiences to enhance perceived value. Targeted marketing campaigns, educational programs, continuous feedback collection, and collaborations with technology companies can further improve adoption rates. The findings emphasize the importance of understanding and catering to Generation Z's unique preferences and expectations to effectively engage this tech-savvy demographic through location-based mobile marketing strategies.

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