Determinants of e-grocery purchase retention and buyer profiling: A developing country perspective

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ABSTRACT

The COVID-19 pandemic has accelerated the growth of e-grocery, leading to a steady increase in e-grocery shoppers worldwide. E-grocery businesses, having invested in their operations, rely on continuous sales growth. However, few studies focus on purchase retention or shopper profiles within Malaysia's e-grocery sector. This study aims to address these gaps. Its objectives are to identify factors that influence e-grocery purchase retention and to profile e-grocery buyers. A total of 200 responses were gathered using convenience sampling. Data analysis was conducted using SPSS software (version 28), employing independent t-tests, ANOVA, and correlation analysis. Factors such as convenience, product availability, perceived security, efficiency, fulfillment, system availability, and privacy were found to impact purchase retention. Additionally, demographic factors like spending level and prior e-grocery experience showed a significant positive relationship with purchase retention. Gender differences in retention were also noted, and spending and e-grocery experience positively correlated with convenience, perceived security, efficiency, fulfillment, system availability, and privacy. Age, however, was negatively correlated with product availability. This research offers valuable insights for e-grocery retailers aiming to enhance their operations and provides a foundation for future research on this topic.

1. Introduction

The practice of shopping for groceries online, known as e-grocery, experienced significant growth during the pandemic. According to Lone et al. (2021), online sales saw the highest increase in groceries and pharmaceutical products. This was primarily due to the need for social distancing, as consumers avoided physical stores and preferred purchasing groceries online. Now that conditions have normalized, e-grocery retailers are focusing on sustaining their business growth. In major European economies, online grocery sales could account for 18-30% of the "food-at-home" market by 2030, under an aggressive growth scenario. In the United States, e-grocery sales are expected to grow at a compound annual rate of 11.7% over the next five years. In Malaysia, a developing country, e-grocery adoption is also expected to rise, with the number of grocery delivery users projected to reach 10 million by 2029 (statisca.com). Given these trends, it is crucial to identify the factors influencing e-grocery purchase retention and to profile e-grocery consumers. Understanding these aspects will enable e-grocery retailers to develop effective strategies to enhance their business performance. Handayani et al. (2020) defined e-grocery as the sale of grocery products online through mobile platforms or websites by retailers or supermarkets. Previous studies have explored various aspects of e-grocery, including online grocery retention (Hsu et al., 2014; Park and Thangam, 2019; Azhar and Bashir, 2018; Kuppusamy et al., 2022), e-loyalty, and consumer behavior (Hanus, 2016). Other areas of focus include customer attitudes towards acceptance (Kaur and Shukla, 2017), the perspective of e-grocers (Kureshi and Thomas, 2019), eServQual and situational factors (Muhammad et al., 2016), trust (Shao et al., 2022), and time availability. Demographic studies on e-grocery (Van Droogenbroeck and Van Hove, 2017; Seitz et al., 2017; Brand et al., 2020) also exist, but research in this area remains limited. To address this gap, the current study aims to identify the determinants of e-grocery purchase retention.

Additionally, it seeks to profile e-grocery buyers by examining the relationship between demographic characteristics and both e-grocery purchase retention and its determinants.

2. Literature review

2.1. E-grocery purchase retention

Online grocery shopping refers to buying groceries online using click-and-collect or home delivery services (Brand et al., 2020). According to Mokhtaruddin et al. (2019), customer retention is transferring new customers to become regular customers. In addition, the business should keep a good relationship with them. Alshurideh (2016) defined customer retention as the intention of a customer to repurchase a service or product, while Danesh et al. (2012) pointed out that customer retention is the propensity of a customer to stay with the provider in the future. Customer retention is important since it can increase profitability and revenue (Abu Zayyad et al., 2021; Alshurideh, 2019; Zeithaml et al., 1996).

2.2. Determinants of e-grocery

This study adopts two models: the e-satisfaction model by Szymanski and Hise (2000) and the e-ServQual model by Parasuraman et al. (2005). The factors tested as determinants of e-grocery purchase retention include convenience, merchandise, perceived security, efficiency, fulfillment, system availability, and privacy. Convenience is recognized as a critical factor in online shopping (Akram, 2018; Mahesh and Nathan, 2015). Kulkarni and Barge (2020) further highlighted that convenience was one of the most influential factors for both online and offline shoppers during the pandemic. Similarly, Brand et al. (2020) found that convenience drives online customers to continue purchasing groceries online, particularly due to the availability of delivery services provided by retailers. Nagyová et al. (2017) defined merchandising as ensuring products are available at the right place and price. Sethi et al. (2018) emphasized the importance of product variety in online shopping, particularly in their study of apparel, while Narayan and Chandra (2015) highlighted that effective merchandising can enhance customer satisfaction. Security, which involves protecting financial transactions during online shopping, is another critical factor (Nysveen et al., 2005) and is considered essential in the e-commerce environment (Shukla, 2014). In the context of e-grocery shopping, service quality plays a vital role. Service quality is assessed by comparing the service received with customer expectations (Liu et al., 2017), and it significantly influences customer satisfaction and loyalty (Yadav et al., 2018). For instance, website efficiency is identified as a key determinant in online grocery shopping in Sweden, while in India, user-friendly websites are highly

valued (Kaur and Shuklar, 2017). System availability, which refers to how well a system supports a seamless shopping experience, is another critical aspect of e-service quality. Fulfillment, encompassing delivery performance and item availability, is also crucial (Muhammad et al., 2016). Cosar (2017) noted that customer satisfaction hinges on timely, undamaged, and complete deliveries. Even in cases where products are damaged, efficient replacement and expedited delivery can satisfy existing customers, ensure retention, and attract new ones (Kumar and Velmurugan, 2017). Based on these insights, the following hypothesis is proposed:

H1: There is a significant relationship between determinants of e-grocery purchase retention.
H1a: There is a significant relationship between convenience and e-grocery purchase retention.
H1b: There is a significant relationship between merchandise and e-grocery purchase retention.
H1c: There is a significant relationship between perceived security and e-grocery purchase retention.
H1d: There is a significant relationship between efficiency and e-grocery purchase retention.
H1e: There is a significant relationship between fulfillment and e-grocery purchase retention.
H1f: There is a significant relationship between system availability and e-grocery purchase retention.
H1g: There is a significant relationship between privacy and e-grocery purchase retention.

2.3. Demographics characteristics

This study examines demographic characteristics such as gender, age, marital status, spending habits, and e-grocery shopping experience. Previous research provides varying insights into the relationship between these demographics and online grocery shopping behavior. Arce-Urriza and Cebollada (2010) and Naseri and Elliott (2011) observed a significant relationship between gender and the adoption of online grocery shopping. Arce-Urriza and Cebollada (2010) reported that males are more likely to shop for groceries online, a finding supported by Frank and Peschel (2020). Conversely, Naseri and Elliott (2011), Shen et al. (2022), and Eriksson and Stenius (2022) found that females are more inclined toward e-grocery shopping. Some studies, such as Hui and Wan (2009) and Prasad and Raghu (2018), found no significant gender differences in online grocery shopping behavior. Age also influences e-grocery purchasing behavior. Prasad and Raghu (2018) and Eriksson and Stenius (2022) reported that older adults (45–55 years) are more likely to shop for groceries online compared to younger groups. In contrast, marital status was not found to significantly affect online grocery shopping behavior in Prasad and Raghu's (2018) study in India. Income levels also play a role, with Hansen (2005), Eriksson and Stenius (2022), and Duffy et al. (2022) finding that higher-income individuals are more likely to engage in e-grocery shopping.

However, Prasad and Raghu (2018) reported different results in their study. Based on this review, the following hypotheses are proposed:

H2: There is a significant difference in e-grocery purchase retention with respect to gender.

H3: There is a significant relationship between age and e-grocery purchase retention.

H4: There is a significant difference in e-grocery purchase retention with respect to marital status.

H5: There is a significant relationship between the amount spent and e-grocery purchase retention.

H6: There is a significant relationship between shopping experience and e-grocery purchase retention.

H7: There is a significant difference in the determinants of e-grocery purchase retention with respect to gender.

H8: There is a significant relationship between age and the determinants of e-grocery purchase retention.

H9: There is a significant difference in the determinants of e-grocery purchase retention with respect to marital status.

H10: There is a significant relationship between the amount spent and the determinants of e-grocery purchase retention.

H11: There is a significant relationship between shopping experience and the determinants of e-grocery purchase retention.

3. Methodology

This study adopted a quantitative research design, focusing on Malaysian youths and working adults with basic knowledge or experience in e-grocery shopping. A non-probability sampling technique, specifically the convenience sampling method, was used to collect data from respondents of diverse racial and cultural backgrounds. Data were gathered using a structured questionnaire, which consisted of three sections. The first section collected demographic information about the respondents. The second section included questions designed to measure the determinants of e-grocery purchase retention, while the third section focused on measuring e-grocery purchase retention itself. The questions related to determinants and purchase retention were adapted from the works of Szymanski and Hise (2000), Chou et al. (2015), and Parasuraman et al. (2005). A total of 200 responses were collected through both online distribution and face-to-face interactions. Prior to the main survey, a pilot test was conducted to assess the reliability and validity of the questionnaire. Data analysis was performed using SPSS software, which included descriptive statistics, reliability analysis, correlation analysis, and independent samples t-tests. The research framework, which underpins the study, is illustrated in Fig. 1.

4. Results

The data analysis was conducted using the Statistical Package for Social Sciences (SPSS) version 28. It includes a demographic profile, reliability analysis, and hypothesis testing. A preliminary descriptive analysis confirmed that the data followed a normal distribution, as the skewness and kurtosis values were within the acceptable range of +3 to -3.
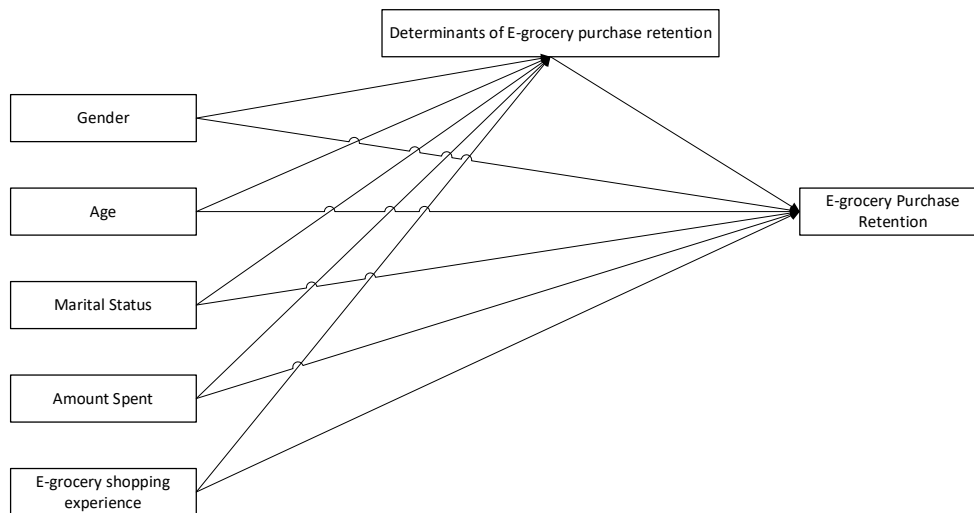

Fig. 1: Research framework

4.1. Demographic profile

Table 1 provides details about the respondents' profiles. Regarding gender, females make up the majority at 70.5%, while males account for the remaining 29.5%. The age group of 18–25 years constitutes slightly more than half of the respondents (57.5%), followed by the 26–35 age group at 23%. Respondents aged 36 years and above represent 19.5% of the total. In terms of ethnicity, the majority of respondents are Chinese (49.5%), followed by Malays (34.5%) and Indians (16%). Educational qualifications indicate that most respondents hold a bachelor's degree (50%), followed by those with postgraduate qualifications (22.5%). The marital status distribution shows that 68% of the respondents are single, while 32% are

married. Regarding monthly spending on e-groceries, 37.5% spend RM101–RM200, 26.5% spend less than RM100, and the remaining respondents fall into other categories. In terms of e-grocery shopping experience, 43.5% have 1–3 years of experience, while 13% have more than 5 years of experience. Figs. 2 to 6 display demographic information, including age groups (Fig. 2), gender (Fig. 3), marital status (Fig. 4), monthly spending (Fig. 5), and e-grocery shopping experience (Fig. 6).

4.2. Reliability analysis

Table 2 presents the result of the reliability analysis. Cronbach alpha values for all the variables are found to be above 0.70. This means all the variables are reliable since they met the acceptable level of reliability at 0.70. The highest Cronbach's Alpha value is found for fulfillment at 0.929. The lowest Cronbach's Alpha is for convenience at 0.780.

Table 1: Respondents' demographic profile

		Frequency	Percentage
Gender	Male	59	29.5
	Female	141	70.5
Age	18-25 years old	115	57.5
	26-35 years old	46	23.0
	36 years old and above	39	19.5
Ethnicity	Malay	69	34.5
	Chinese	99	49.5
	Indian	32	16.0
Education level	STPM and lower	31	15.5
	Diploma	24	12.0
	Bachelors	100	50.0
	Postgraduate	45	22.5
Marital status	Single	136	68.0
	Married	64	32.0
Amount spent	< than RM100	53	26.5
	RM101-RM200 RM201-RM300	75	37.5
		48	24.0
	RM301-RM400	24	12.0
E-grocery shopping experience	< than 1 year	39	19.5
	1-3 years	87	43.5
	3 -5 years	48	24.0
	> than 5 years	26	13.0

Fig. 2: Age group
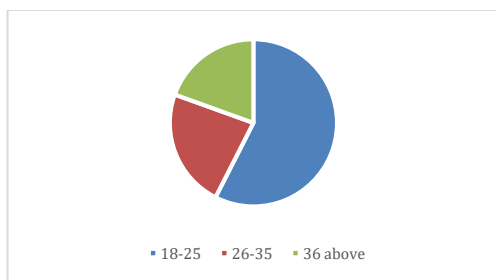
Fig. 3: Gender

Fig. 4: Marital status

Fig. 5: Amount spent
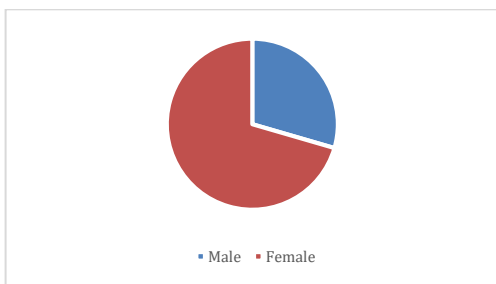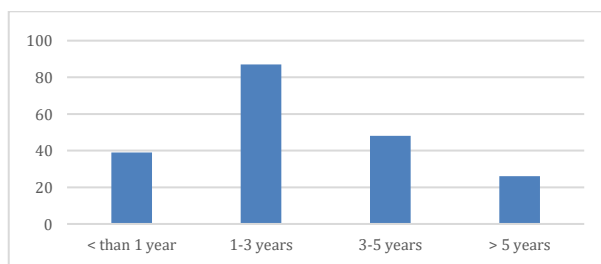
Fig. 6: E-grocery shopping experience
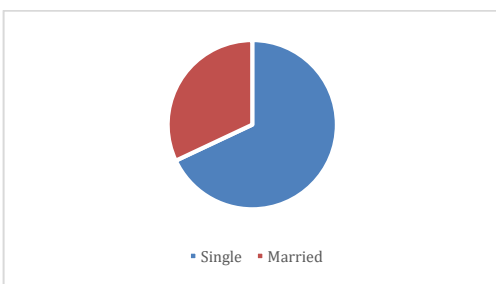
4.3. Relationship between determinants of e-grocery purchase retention and e-grocery purchase retention

The relationship between the determinants of e-grocery purchase retention (convenience, merchandising, financial security, efficiency, fulfillment, system availability, and privacy) and purchase retention was examined using Pearson correlation analysis. The results, summarized in Table 3, show that all factors have a significant

positive correlation with purchase retention. This is indicated by positive r values and p-values less than 0.001, confirming a relationship between each factor and purchase retention. Among the factors, efficiency has the strongest correlation r = 0.722), followed by convenience r = 0.658) and fulfillment (r = 0.639), indicating a strong positive relationship. The remaining variables show a moderate positive correlation with purchase retention, as their r values are approximately 0.5.

Table 2: Reliability analysis

Variables	Items	Cronbach alpha
Convenience (CO)	7	0.780
Merchandising (MD)	4	0.863
Financial security (FS)	4	0.919
Efficiency (EFF)	8	0.912
Fulfillment (FULL)	7	0.929
System availability (SA)	4	0.851
Privacy (PRI)	3	0.891
Purchase retention (PR)	4	0.925

Table 3: correlation results-determinants of e-grocery purchase retention an e-grocery purchase retention

Variable	r (correlation coefficient)	P-value
Convenience (CO)	0.658	< 0.001
Merchandising (MD)	0.518	< 0.001
Financial security (FS)	0.627	< 0.001
Efficiency (EFF)	0.722	< 0.001
Fulfillment (FUL)	0.639	< 0.001
System availability (SA)	0.483	< 0.001
Privacy (PRI)	0.592	< 0.001

4.4. Relationship between demographics (age, monthly spending, e-grocery experience, and e-grocery purchase retention

Table 4 shows the results of the correlation analysis examining the relationship between demographics and e-grocery purchase retention. The analysis reveals that average monthly spending on e-groceries and e-grocery shopping experience have significant positive relationships with purchase retention, as their significance values are 0.010 and 0.001, respectively, both below the threshold of 0.05. However, age does not exhibit a significant relationship with e-grocery repurchase intention, as its significance value is 0.208, which exceeds 0.05.

Table 4: Correlation results-demographics and e-grocery purchase retention (PR)

Variable	r (correlation coefficient)	P-value
Age	0.089	0.208
Average monthly spending	0.182	0.010
E-grocery shopping experience	0.226	0.001

4.5. Relationship between demographics (age, monthly spending, e-grocery experience) and determinants of e-grocery purchase retention

Table 5 presents the correlation results examining the relationships between age, amount spent, and online shopping experience with the determinants of e-grocery purchase retention.

For age, two factors show significant relationships with p-values less than 0.05. First, merchandise has a negative significant correlation (r = -0.196), indicating that younger shoppers are more concerned with the variety and type of merchandise available. Second, privacy has a positive significant correlation (r = 0.152), suggesting that older shoppers are more concerned about the privacy of their information on e-grocery platforms.

For the amount spent, there are significant positive correlations with convenience, financial security, efficiency, fulfillment, system availability, and privacy, as these factors have positive correlation coefficients and p-values below 0.05. This suggests that higher spending on e-groceries is associated with these factors. However, merchandise does not show a significant correlation with the amount spent. Regarding the e-grocery shopping experience, significant positive correlations are observed with convenience, financial security, efficiency, fulfillment, system availability, and privacy. This indicates that customers with more shopping experience are likely to continue shopping due to these factors. However, merchandise does not have a significant relationship with shopping experience.

4.6. Test of differences: Gender and e-grocery purchase retention with its determinants

The independent t-test is applied to examine whether differences exist in e-grocery purchase retention and its determinants based on gender and marital status. The results presented in Table 6 indicate a significant difference between males and females in e-grocery purchase retention (p = 0.044). The mean values suggest that males are more likely to continue purchasing groceries online. Regarding the determinants of e-grocery purchase retention, the findings also show a significant gender difference in convenience (p = 0.009). The mean values indicate that male shoppers rely more on e-grocery services

for convenience compared to females. However, no significant gender differences were found in terms of merchandising, financial security, efficiency, fulfillment, system availability, and privacy, as the p-values for these factors exceed 0.05.

4.7. Test of differences-demographics (marital status) and determinants of e-grocery purchase retention

The results in Table 7 indicate no significant difference in purchase retention based on marital status (p = 0.396). The mean values, both exceeding 4, suggest that e-grocery purchasing is utilized regardless of marital status. Additionally, the results show a significant difference between single and married individuals only in terms of merchandise, as the p-value is less than 0.05. The mean values

suggest that single individuals are more attracted to e-grocery merchandise compared to married individuals. There are no significant differences between the two groups for the remaining factors, including convenience, financial security, efficiency, fulfillment, system availability, and privacy.

5. Discussion

The study aims to identify the factors influencing e-grocery purchase retention and to profile e-grocery buyers. The factors examined as potential determinants include convenience, merchandising, financial security, efficiency, fulfillment, system availability, and privacy. Demographic characteristics considered in the study are gender, age, marital status, average monthly spending, and e-grocery shopping experience.

Table 5: Correlation results-demographics and determinants of e-grocery purchase retention

Variable	CO	MD	FS	EFF	FUL	SA	PRI
Age	0.152*	-0.196*	0.120	0.091	0.105	0.024	0.299**
Average monthly spending	0.168*	0.052	0.186**	0.200**	0.209**	0.184**	0.264**
E-grocery shopping experience	0.140*	0.044	0.196**	0.204**	0.209**	0.211**	0.205**

*: Significant at 0.05 level; **: Significant at 0.01 level

Table 6: Independent samples t-test for gender differences with respect to purchase retention and its determinants

	Gender	Mean	Standard deviation	T-value	P-value
Purchase retention	Male	4.5339	0.57133	2.027	0.044*
	Female	4.3156	0.73960		
Convenience	Male	4.6925	0.38517	2.7	0.008*
	Female	4.4762	0.56234		
Merchandising	Male	4.0805	0.69704	-0.853	0.395
	Female	4.1791	0.76493		
Financial security	Male	4.2203	0.74435	1.547	0.123
	Female	4.0266	0.83222		
Efficiency	Male	4.4979	0.48273	1.688	0.093
	Female	4.3449	0.62194		
Fulfillment	Male	4.3535	0.58923	1.864	0.064
	Female	4.1824	0.59323		
System availability	Male	4.3856	0.73743	0.867	0.387
	Female	4.2837	0.76603		
Privacy	Male	4.3559	0.71079	1.492	0.137
	Female	4.1820	0.76788		

*: Significant at 0.05 level

Table 7: Independent samples t-test for differences in marital status with respect to purchase retention and its determinants

	Marital status	Mean	Standard deviation	T-value	P-value
Purchase retention	Single	4.3511	.57925	-0.851	0.396
	Married	4.4414	.90714		
Convenience	Single	4.5326	.42466	2.700	0.771
	Married	4.5558	.69526		
Merchandising	Single	4.2463	.63827	-0.853	0.007*
	Married	3.9453	.90465		
Financial security	Single	4.0386	.74652	1.547	0.252
	Married	4.1797	.93060		
Efficiency	Single	4.3925	.53080	1.688	0.931
	Married	4.3848	.69697		
Fulfillment	Single	4.1922	.51003	1.864	0.160
	Married	4.3192	.74329		
System Availability	Single	4.3254	.70862	0.867	0.753
	Married	4.2891	.85707		
Privacy	Single	4.1936	.69632	1.492	0.279
	Married	4.3177	.86359		

*: Significant at 0.05 level

The findings indicate that all the tested factors are significantly related to e-grocery purchase retention, highlighting their importance. As a result, the hypothesis (H1 and its sub-hypotheses: H1a, H1b, H1c, H1d, H1e, H1f, H1g) is supported. This

aligns with prior research. For example, Brand et al. (2020) emphasized the role of convenience in motivating online grocery purchases, while Sethi et al. (2018) highlighted the importance of product variety in online apparel shopping. Security,

identified by Shukla (2014) and Nguyen et al. (2021), and website efficiency, noted by Kaur and Shukla (2017), were also found to be critical. Additionally, Cosar (2017) and Vasudevan et al. (2022) underscored the importance of service quality, particularly delivery, for customer satisfaction in e-grocery shopping.

Regarding the relationship between demographics and e-grocery purchase retention, the study reveals that average spending and e-grocery shopping experience are significantly associated with purchase retention. Specifically, individuals who spend more are more likely to regularly use e-grocery services, consistent with Eriksson and Stenius (2022), who found a correlation between income and online grocery shopping in Finland. Gender differences were also observed, with males demonstrating greater e-grocery purchase retention, supported by Frank and Peschel (2020), who found males more likely to shop for groceries online than females.

However, age and marital status do not significantly influence e-grocery purchase retention. This contrasts with studies such as Prasad and Raghu (2018), which reported significant differences in online grocery behavior among age groups, with older individuals (45–55 years) purchasing more. Conversely, the finding on marital status aligns with Prasad and Raghu (2018), who found no significant differences in purchase retention between single and married individuals.

The relationship between demographic factors and e-grocery determinants reveals that age negatively influences merchandise preferences but positively affects privacy concerns. Younger shoppers prioritize merchandise variety, while older shoppers place greater emphasis on privacy. Additionally, male and female shoppers differ significantly in their motivations, with males primarily valuing convenience. Single individuals are more concerned with merchandising compared to married individuals. Factors such as convenience, financial security, efficiency, fulfillment, system availability, and privacy collectively contribute to higher spending, regular usage, and repeat purchases in e-grocery shopping.

6. Conclusion

Globally, online grocery shopping (e-grocery) has grown significantly. During the COVID-19 pandemic, movement restrictions and health concerns encouraged many people to adopt e-grocery shopping, a trend that has continued post-pandemic. This study focuses on identifying the determinants of e-grocery purchase retention and profiling e-grocery buyers, particularly in the context of a developing country like Malaysia.

The results show that convenience, merchandising, financial security, efficiency, fulfillment, system availability, and privacy significantly influence e-grocery purchase retention. Demographic factors, such as gender, spending amount, and e-grocery shopping experience, also play a crucial role. Notably, spending amount and shopping experience have the strongest influence, indicating that frequent and higher-spending shoppers are more likely to remain loyal to e-grocery platforms.

Demographic analysis highlights differences in preferences and behavior. Male shoppers prioritize convenience, while older individuals and married customers value merchandising more. These findings underscore the importance of tailoring retail strategies to meet the needs of specific demographic groups. Retailers must ensure convenience, offer diverse product selections, maintain system trustworthiness, and provide secure payment and delivery systems. These elements are critical for increasing customer satisfaction and fostering purchase retention.

Government support is equally vital for the growth of e-grocery. The Malaysian Digital Economy Blueprint (MyDigital) aims to enhance the digital economy by 2030. Initiatives like e-wallet incentives, such as the RM400 million allocation in the 2023 budget, aim to encourage digital adoption, particularly among younger consumers. To promote e-grocery access in rural areas, the government should offer incentives for expansion. Additionally, workshops and training programs could help potential e-grocery retailers understand market dynamics, create effective websites, and navigate the business ecosystem. Improved internet infrastructure, particularly with the rollout of 5G, will further support e-commerce growth.

This study contributes to the literature on e-grocery purchase retention and the role of demographic factors. However, it has limitations. The quantitative-only approach restricts the exploration of customer perceptions, and the respondent pool is predominantly composed of individuals aged 30 or younger. While this is consistent with the age distribution observed in previous studies, such as Kusuma et al. (2022), future research should aim for a more diverse age range. Mixed-method approaches could provide deeper insights into e-grocery shopper behavior. Additionally, exploring other demographic characteristics and examining trends across diverse cultural and regional contexts would enrich the understanding of this evolving market.

Acknowledgment

Compliance with ethical standards

Ethical considerations

All participants provided informed consent, and their confidentiality was safeguarded throughout the study.

Conflict of interest

The author(s) declared no potential conflicts of interest concerning this article's research, authorship, and/or publication.

References

Abu Zayyad HM, Obeidat ZM, Alshurideh MT, Abuhashesh M, Maqableh M, and Masa'deh RE (2021). Corporate social responsibility and patronage intentions: The mediating effect of brand credibility. Journal of Marketing Communications, 27(5): 510-533. https://doi.org/10.1080/13527266.2020.1728565

Akram MS (2018). Drivers and barriers to online shopping in a newly digitalized society. TEM Journal, 7(1): 118-127. https://doi.org/10.18421/TEM71-14

Alshurideh DM (2019). Do electronic loyalty programs still drive customer choice and repeat purchase behaviour? International Journal of Electronic Customer Relationship Management, 12(1): 40-57. https://doi.org/10.1504/IJECRM.2019.098980

Alshurideh MT (2016). Exploring the main factors affecting consumer choice of mobile phone service provider contracts. International Journal of Communications Network and System Sciences, 9(12): 563-581. https://doi.org/10.4236/ijcns.2016.912044

Arce-Urriza M and Cebollada J (2010). A theoretical evaluation of the internet's potential as a shopping channel. ESIC Market Economic and Business Journal, 135: 149-180.

Azhar KA and Bashir MA (2018). Understanding e-loyalty in online grocery shopping. International Journal of Applied Business and International Management, 3(2): 37-56. https://doi.org/10.32535/ijabim.v3i2.158

Brand C, Schwanen T, and Anable J (2020). 'Online omnivores' or 'willing but struggling'? Identifying online grocery shopping behavior segments using attitude theory. Journal of Retailing and Consumer Services, 57: 102195. https://doi.org/10.1016/j.jretconser.2020.102195

Chou S, Chen CW, and Lin JY (2015). Female online shoppers: Examining the mediating roles of e-satisfaction and e-trust on e-loyalty development. Internet Research, 25(4): 542-561. https://doi.org/10.1108/IntR-01-2014-0006

Cosar C (2017). Try not to be late!–The importance of delivery service in online shopping. Organizations and Markets in Emerging Economies, 8(16): 177-192. https://doi.org/10.15388/omee.2017.8.2.14186

Danesh SN, Nasab SA, and Ling KC (2012). The study of customer satisfaction, customer trust and switching barriers on customer retention in Malaysia hypermarkets. International Journal of Business and Management, 7(7): 141-150. https://doi.org/10.5539/ijbm.v7n7p141

Duffy EW, Lo A, Hall MG, Taillie LS, and Ng SW (2022). Prevalence and demographic correlates of online grocery shopping: Results from a nationally representative survey during the COVID-19 pandemic. Public Health Nutrition, 25(11): 3079-3085. https://doi.org/10.1017/S1368980022001756 PMid:35983641 PMCid:PMC9464506

Eriksson N and Stenius M (2022). Online grocery shoppers due to the COVID-19 pandemic-An analysis of demographic and household characteristics. Procedia Computer Science, 196: 93-100. https://doi.org/10.1016/j.procs.2021.11.077

Frank DA and Peschel AO (2020). Sweetening the deal: The ingredients that drive consumer adoption of online grocery shopping. Journal of Food Products Marketing, 26(8): 535-544. https://doi.org/10.1080/10454446.2020.1829523

Handayani PW, Nurahmawati RA, Pinem AA, and Azzahro F (2020). Switching intention from traditional to online groceries using the moderating effect of gender in Indonesia. Journal of Food Products Marketing, 26(6): 425-439. https://doi.org/10.1080/10454446.2020.1792023

Hansen T (2005). Consumer adoption of online grocery buying: A discriminant analysis. International Journal of Retail and Distribution Management, 33(2): 101-121. https://doi.org/10.1108/09590550510581449

Hanus G (2016). Consumer behaviour during online grocery shopping. In the CBU International Conference on Innovations in Science and Education, Prague, Czech Republic: 10-13. https://doi.org/10.12955/cbup.v4.737

Hsu MH, Chang CM, Chu KK, and Lee YJ (2014). Determinants of repurchase intention in online group-buying: The perspectives of DeLone and McLean IS success model and trust. Computers in Human Behavior, 36: 234-245. https://doi.org/10.1016/j.chb.2014.03.065

Hui TK and Wan D (2009). Who are the online grocers? The Service Industries Journal, 29(11): 1479-1489. https://doi.org/10.1080/02642060902793334

Kaur H and Shukla RK (2017). Consumer's attitude for acceptance of online grocery shopping in India. Journal of Current Research, 9(5): 50776-50784.

Kulkarni SR and Barge P (2020). Effect of COVID-19 on the shift in consumer preferences with respect to shopping modes (offline/online) for groceries: An exploratory study. International Journal of Management, 11(10): 581-590.

Kumar VM and Velmurugan R (2017). Customer satisfaction towards online shopping in Coimbatore District. International Journal of Pure and Applied Mathematics, 117(15): 41-49.

Kuppusamy J, Angusamy A, and Raman K (2022). What drives e-grocery purchase retention in a post pandemic era? Journal of System and Management Sciences, 12(6): 264-281.

Kureshi S and Thomas S (2019). Online grocery retailing–Exploring local grocers beliefs. International Journal of Retail and Distribution Management, 47(2): 157-185. https://doi.org/10.1108/IJRDM-05-2018-0087

Kusuma AC, Najib M, and Hermadi I (2022). Antecedent and consequences of consumers' satisfaction in online grocery shopping. International Journal of Electronic Business, 17(1): 37-60. https://doi.org/10.1504/IJEB.2022.119992

Liu WK, Lee YS, and Hung LM (2017). The interrelationships among service quality, customer satisfaction, and customer loyalty: Examination of the fast-food industry. Journal of Foodservice Business Research, 20(2): 146-162. https://doi.org/10.1080/15378020.2016.1201644

Lone S, Harboul N, and Weltevreden JWJ (2021). 2021 European e-commerce report. Amsterdam University of Applied Sciences, Amsterdam, Netherlands.

Mahesh R and Nathan AS (2015). Buyers attitude towards online purchase a study with special reference to erode city. Journal of Business Management and Social Sciences Research, 4(11): 641-644.

Mokhtaruddin SA, Wel CAC, and Khalid NR (2019). Employee rhetorical sensitivity as a mediator in the relationship between customer orientation and customer retention. The South East Asian Journal of Management, 13(2): 170-182. https://doi.org/10.21002/seam.v13i2.11346

Muhammad NS, Sujak H, and Abd Rahman S (2016). Buying groceries online: The influences of electronic service quality (eServQual) and situational factors. Procedia Economics and Finance, 37: 379-385. https://doi.org/10.1016/S2212-5671(16)30140-X

Nagyová Ľ, Horská E, and Berčík J (2017). Application of neuromarketing in retailing and merchandising. In: Horská E and Berčík J (Eds.), Horská, Neuromarketing in food retailing:

119-142. Wageningen Academic Publisher, Wageningen, Netherlands. https://doi.org/10.3920/978-90-8686-843-8_6

Narayan G and Chandra R (2015). Factors affecting the purchase of food and grocery products from modern retail stores: An empirical study. IUP Journal of Management Research, 14(2): 7-23.

Naseri MB and Elliott G (2011). Role of demographics, social connectedness and prior internet experience in adoption of online shopping: Applications for direct marketing. Journal of Targeting Measurement and Analysis for Marketing, 19: 69-84. https://doi.org/10.1057/jt.2011.9

Nguyen L, Nguyen TH, and Tan TKP (2021). An empirical study of Customers' satisfaction and repurchase intention on online shopping in Vietnam. The Journal of Asian Finance Economics and Business, 8(1): 971-983.

Nysveen H, Pedersen PE, and Thorbjørnsen H (2005). Explaining intention to use mobile chat services: Moderating effects of gender. Journal of Consumer Marketing, 22(5): 247-256. https://doi.org/10.1108/07363760510611671

Parasuraman A, Zeithaml VA, and Malhotra A (2005). ES-QUAL: A multiple-item scale for assessing electronic service quality. Journal of Service Research, 7(3): 213-233. https://doi.org/10.1177/1094670504271156

Park JY and Thangam D (2019). What makes customers repurchase grocery products from online stores in Korea. International Journal of E-Business Research, 15(4): 24-39. https://doi.org/10.4018/IJEBR.2019100102

Prasad J and Raghu Y (2018). Determinant attributes of online grocery shopping in India-An empirical analysis. IOSR Journal of Business and Management, 20(2): 18-31.

Seitz C, Pokrivčák J, Tóth M, and Plevný M (2017). Online grocery retailing in Germany: An explorative analysis. Journal of Business Economics and Management, 18(6): 1243-1263. https://doi.org/10.3846/16111699.2017.1410218

Sethi RS, Kaur J, and Wadera D (2018). Purchase intention survey of millennials towards online fashion stores. Academy of Marketing Studies Journal, 22: 1-16.

Shao Z, Lim KQL, Mohd Johan MR, and Annuar N (2022). Influencing consumers' trust in online grocery shopping: A survey among Malaysian. Jurnal Intelek, 17(1): 128-139. https://doi.org/10.24191/ji.v17i1.15917

Shen H, Namdarpour F, and Lin J (2022). Investigation of online grocery shopping and delivery preference before, during, and after COVID-19. Transportation Research Interdisciplinary Perspectives, 14: 100580. https://doi.org/10.1016/j.trip.2022.100580 **PMid:35291491 PMCid:PMC8913267**

Shukla P (2014). The impact of organizational efforts on consumer concerns in an online context. Information and Management, 51(1): 113-119. https://doi.org/10.1016/j.im.2013.11.003

Szymanski DM and Hise RT (2000). E-satisfaction: An initial examination. Journal of Retailing, 76(3): 309-322. https://doi.org/10.1016/S0022-4359(00)00035-X

Van Droogenbroeck E and Van Hove L (2017). Adoption of online grocery shopping: Personal or household characteristics? Journal of Internet Commerce, 16(3): 255-286. https://doi.org/10.1080/15332861.2017.1317149

Vasudevan A, Ping TP, and Wider W (2022). Online grocery shopping behavior among consumers in Singapore. International Journal of Management and Sustainability, 11(1): 58-69. https://doi.org/10.18488/11.v11i1.2977

Yadav SK, Agrawal V, Khandelwal U, and Tripathi V (2018). Customer satisfaction and loyalty relationship: The mediating role of trust. IUP Journal of Marketing Management, 17(2): 38-57.

Zeithaml VA, Berry LL, and Parasuraman A (1996). The behavioral consequences of service quality. Journal of Marketing, 60(2): 31-46. https://doi.org/10.1177/002224299606000203