

HOUSEHOLD SIZE DOES MATTER IN SHAPING LOCAL FAST MOVING CONSUMER GOODS (FMCG) PURCHASING INTENTION IN SABAH

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ABSTRACT

This study investigates the impact of household size and age on consumer purchase intentions for locally produced fast-moving consumer goods (FMCG) food and beverage products in Sabah, Malaysia. Grounded in the Theory of Planned Behaviour, which highlights the influence of attitudes, subjective norms, and perceived behavioural control, this study aims to examine how these demographic factors shape consumer support for local FMCG food and beverage products. Although various government initiatives have been introduced to promote local consumption, empirical evidence on how household size and age affect consumer behaviour in the FMCG sector remains limited. Data were collected from 356 valid responses via an online self-administered questionnaire using snowball sampling. The study examined two (2) independent variables, household size and age, and their relationship with purchase intention, defined as consumers' willingness to buy locally produced FMCG food and beverage products. One-way ANOVA and Tukey post hoc tests were employed for analysis. The results indicate that household size has a statistically significant effect on purchase intention, with larger households demonstrating higher intention to purchase local products. In contrast, no significant differences were found across age groups, suggesting that support for local FMCG food and beverage products is relatively stable across generations. These findings have practical implications for both marketers and policymakers. Larger households may respond better to strategies such as value-driven promotions, bulk packaging, and family-focused campaigns. Meanwhile, the lack of significant age differences supports the use of inclusive marketing strategies that appeal across demographic boundaries. Future research should expand the demographic scope and explore behavioural factors such as trust, convenience, and product familiarity, which may mediate the relationship between consumer characteristics and purchase intention.

INTRODUCTION

Background and Rationale

Consumer behaviour research continues to explore how demographic variables shape purchasing decisions, particularly in the fast-moving consumer goods (FMCG) sector. In Sabah, where state-led programmes promote locally produced food and beverage products, household size and age influence both demand patterns and consumer preferences. These variables affect what people purchase, how often they buy, and the channels through which they buy. A recent study on food purchasing in Malaysia during the COVID-19 pandemic confirmed that demographic and socio-economic factors, especially household composition and age, had a measurable impact on food preferences, particularly among low-income and rural populations (Badari et al., 2023). However, there remains a lack of empirical data on how such demographic factors specifically shape consumer intentions toward local FMCG products in a geographically distinct regions such as Sabah. The extent to which Sabah-based producers tailor marketing strategies to demographic signals remains under-examined.

The consumer landscape in Sabah differs significantly from that of Peninsular Malaysia (Wong et al., 2024), primarily due to geographical isolation, a heavier dependence on informal markets, and the higher occurrence of multigenerational households within rural and indigenous communities. Dependence on traditional and informal economic systems continues to be reinforced by physical separation and underdeveloped infrastructure across the districts (Ladin et al., 2020). This dynamic is especially evident among indigenous and migrant communities, where multigenerational living arrangements are common and exert significant influence over household decision-making and consumption behaviour (Allerton, 2020; Somiah, 2022). Distinct barriers for local products have been created by the state's unique structural challenges, yet national initiatives such as the "Buy Malaysian

Products" campaign have not been adapted to suit Sabah's socioeconomic conditions. While the campaigns aim to encourage local consumption, their nationwide execution often overlooks the logistical, demographic, and infrastructural differences that characterise East Malaysia (Ruslan & Mokhtar, 2020). Given these limitations, examining consumer intentions in Sabah provides valuable insight into how national initiatives could be more effectively contextualised to fit East Malaysian realities. Accordingly, this study addresses a regional gap in the literature and contribute to the development of more inclusive and regionally responsive policy strategies for East Malaysian consumer markets.

Although the "Buy Malaysian Products" campaigns have been gaining traction in Sabah, their adoption is still observed to vary among different demographic groups. One contributing factor is the size of the household. In rural and indigenous communities, larger, often multigenerational, households are more frequently found (Teoh et al., 2024). These households are linked to a higher likelihood of food insecurity and are characterised by unique coping and consumption strategies developed to accommodate a greater number of members. Bulk purchases and value-based products are typically prioritised by larger households in an effort to optimise limited resources (Ayyash & Sek, 2020), whereas convenience formats and single-use packaging are more commonly favoured by smaller, predominantly urban-based households (Trinh et al., 2020). Additionally, household size was found by Cheah et al. (2020) to significantly influence spending on sugar-added foods, with larger households allocating a greater share of their budget to affordable, calorie-dense items designed for shared consumption. These findings underscore the importance of aligning product sizing, pricing, and promotion strategies with the varied purchasing frequencies, product quantities, and consumption preferences that are shaped by household size and regional context.

Variation in purchasing behaviour is influenced by age. In urban areas such as Kota

Kinabalu, younger consumers tend to be more responsive to digital marketing and are more frequently engaged with online platforms for shopping. This trend is supported by a study conducted on youth in Kota Kinabalu, which found that social media influence and convenience had a significant impact on online shopping behaviours (David et al., 2021; Rahlin et al., 2024). Additionally, local brands that feature contemporary design or promote environmental values are shown to attract greater interest from this demographic (Rusli et al., 2022; Yahya et al., 2022). Conversely, older consumers, who are more often based in rural and semi-urban settings, are inclined to depend on habitual purchasing patterns, familiarity with products, and personal network recommendations (Sulaiman et al., 2020). These tendencies are shaped by lower exposure to digital alternatives, a stronger attachment to trusted brands, and a higher level of trust in traditional retail environments. Accordingly, these patterns indicate that marketing strategies should be aligned with generational preferences. Visual branding and digital outreach are likely to resonate more with younger consumers, whereas consistent product presentation and communication grounded in local contexts are expected to be more effective for older consumers.

With this context in view, the study explores the extent to which household size and age influence the intention to purchase locally produced FMCG food and beverage products in Sabah. It has been shown in previous research that demographic characteristics influence not only purchase volume but also behavioural dimensions such as brand loyalty, price sensitivity, and preference for product origin (Akram et al., 2025; Samundeeswari & Sivapriya, 2025). As such, analysis of how these variables function within Sabah's consumer market serves as a foundation for developing more precise segmentation strategies. Insights from the findings are expected to guide decisions regarding product configuration, pricing structures, and promotional tactics that align with the consumption behaviours

associated with varying household sizes and age groups.

RESEARCH OBJECTIVES

This study seeks to investigate the influence of demographic factors on consumer behaviour regarding locally produced food and beverage FMCG products in Sabah, with a specific focus on two key variables: household size and age. Accordingly, the specific objectives are:

- a. To determine whether the household size significantly influences purchase intentions for locally produced FMCG food and beverage products in Sabah; and
- b. To determine whether the age significantly influences purchase intentions for locally produced FMCG food and beverage products in Sabah.

LITERATURE REVIEW

Household Size and Consumer Behaviour

Household size plays a significant role in shaping consumption patterns, particularly in the FMCG sector, where purchasing decisions are influenced by both financial constraints and household dynamics. In Malaysia, household size and household structure are closely related. Larger households often consist of multigenerational family members, particularly in rural and indigenous communities, where co-residence of parents, children and grandparents is common (Allerton, 2020; Badari & Selamat, 2024). While household size refers to the number of people in a household, household structure describes the composition of relationships among those members. This structural dynamic influences how products are selected, shared, and prioritised within the household, as consumption tends to be more collective and coordinated (Wong et al., 2023).

Empirical studies have consistently shown that larger households favour affordability, product quantity, and value-based purchases. They often prioritise bulk buying, cost-per-unit savings, and durable food items, reflecting a pragmatic approach to managing

shared consumption under constrained resources (Ayyash & Sek, 2020; Nazli et al., 2024). In East Malaysia, this trend is more pronounced due to extended family living arrangements, lower income levels, and rural infrastructure limitations. Thus, recognising that household size is often shaped by multigenerational living in rural Malaysia is essential for interpreting consumer behaviour accurately. However, this study focuses on household size as a measurable demographic variable, rather than on household structure or relational composition.

While these studies document observable behaviour, most stop short of examining purchase intentions, which are motivational and cognitive precursors to actual consumer action. Purchase intention, defined as the likelihood that a consumer will decide to purchase a specific product, is central in marketing research. According to the Theory of Planned Behaviour (Ajzen, 1991), intention is shaped by attitudes, social norms, and perceived behavioural control. In the context of household size, these dimensions may be influenced by factors such as joint decision-making, budgetary limitations, and shared consumption expectations, particularly in low-income or rural Malaysian settings (Baharuddin et al., 2024; Harun et al., 2022).

Despite of this theoretical grounding, few studies explicitly explore how household size affects intended, rather than actual purchase behaviour. Most research examines what larger households consume without clarifying whether such behaviour results from deliberate intention or practical necessity. For instance, Badari and Selamat (2024) found that in Lahad Datu, Sabah, larger households consumed more cereals and staple foods due to pooled resources and coordinated meal planning. However, their study did not assess whether these patterns were motivated by intention or constrained by affordability. Similarly, Encharang et al. (2022) reported that rural households in Sabah adjusted purchasing around unit pricing and multipack deals, but the underlying motivation behind these behaviours was not explored.

This gap is important as purchase intention cannot always be inferred from observed behaviour. Larger households may wish to support local FMCG products due to perceived value or cultural relevance but face constraints such as pricing, accessibility, or availability. Others may purchase routinely based on habit or necessity without a clear evaluative process. Without distinguishing between action and intention, both researchers and practitioners cannot reliably assess how marketing strategies influence consumer decisions or design effective interventions to support local brands (Harun et al., 2022; Mohamed et al., 2021).

Household size may also influence how consumers evaluate value. Larger households may adopt a collective approach to consumption, giving priority to portion size, price, and general utility. In contrast, smaller household and individuals often focus on taste preferences, convenience, and brand recognition (Chakraborty et al., 2022; Chelvarayan et al., 2022). In Sabah, where household composition differs from the urban and rural areas, these consumption patterns carry contextual relevance. Prior research has shown that larger households frequently prefer open-air markets, where price negotiation and bulk purchases are possible. While this behaviour is documented, the motivations behind it remain underexplored. Without a clearer understanding of why these preferences occur, local FMCG producers may struggle to predict consumer choices or tailor the product and promotion strategies effectively.

Most existing studies describe what larger households purchase but offer limited explanation of the decision-making logic behind these patterns. This study addresses that gap by testing whether household size predicts purchase intention for locally produced FMCG food and beverage products in Sabah. By focusing on intention rather than behaviour alone, the study offers a framework for understanding how structural demographic factors relate to forward-looking consumer choices.

Age and Purchase Behaviour

Age is often seen as a key factor in shaping consumer behaviour, especially in the FMCG sector, where buying choices tend to reflect lifestyle needs, digital habits, and shifting value orientations. Research commonly suggests that younger consumers, particularly Millennials and Gen Z, are more digitally fluent, more open to trying new products, and more drawn to brands that align with their ethical or social values (Haroon et al., 2024; Tjiptono et al., 2020). However, this view often assumes that age alone can explain the traits. However, assuming that age alone explains these traits oversimplifies the issue and neglects the influence of generational identity, regional context, and socioeconomic background of behaviour.

The generational identity reflects shared historical, cultural, and technological experiences that may influence consumption patterns more significantly than age alone (Eger et al., 2021; Fan et al., 2023). In Malaysia, younger consumers demonstrate high levels of online activity, frequently interacting with influencer marketing, user reviews, and digital storytelling (Ramlee & Abdulwahab, 2025). However, whether this engagement consistently translates into sustained purchase intentions—particularly for locally produced FMCG products—has yet to be clearly established. Certain studies indicate that local brands may be perceived by younger consumers as lacking prestige or innovation, which, in turn, may diminish their willingness to make purchases, even when awareness of such products is present (Rusli et al., 2022). Nevertheless, this hesitation could be more accurately interpreted as a form of selective, value-oriented decision-making, guided by considerations of lifestyle compatibility and perceived authenticity rather than by weak or inconsistent purchase intentions (Djaruma & Keni, 2024; Safeer et al., 2023).

Older consumers are frequently described as brand loyal, risk-averse, and guided by familiarity and perceived reliability in their product choices. A substantial body of research has established that trust and a

sense of community are closely linked to long-term brand engagement among older consumers, with these factors consistently highlighted as foundational to sustained brand loyalty in this demographic (Kumar & Kumar, 2020; Zhang et al., 2021). Furthermore, recent studies focusing on Malaysian Gen X and older consumers have identified a strong prioritisation of product quality and store loyalty, with comparatively less attention given to promotional efforts or product variety (Chelvarayan et al., 2022). To interpret these preferences merely as habitual behaviour or a lack of digital engagement risks overlooking the deliberate value systems that shape their choices (Rosário & Casaca, 2025). Besides, the preferences for local products are often rooted in the community ties, economic solidarity, and trust-based evaluations, rather than limited exposure to alternatives (Permarupan et al., 2021; Sung & Yoon, 2024). These findings suggest that older consumers' preferences are intentional and value-driven, with trust and community sense playing key roles in purchase decisions.

While traditional research on age and consumer behaviour has focused on observable patterns, there is a recognised and ongoing shift toward investigating the motivational and cognitive processes that drive purchase intention, though this area remains underexplored (Zheng et al., 2024). According to the Theory of Planned Behaviour (Ajzen, 1991), intention arises from attitudes toward the behaviour, subjective norms, and perceived behavioural control, and substantial empirical evidence shows that the influence of these elements can vary by age. Empirical evidence suggests that these components influence different age groups in distinct ways. For instance, subjective norms are often more salient for younger consumers, but attitudes and perceived behavioural control tend to play a stronger role among older adults (Pan & Liu, 2024). These differences have important implications for designing the age-specific interventions and marketing strategies. However, the strength and direction of age moderation can be context-dependent, and more studies are needed to clarify the mechanisms underlying the age differences

and to generalise the findings across cultures and behaviours.

The predictive value of age as a consumer variable remains debated, and its effectiveness as a standalone basis for segmentation becomes limited when factors such as income, access, and perceived product value are taken into account. A study by Liu et al. (2023) on traceable agri-food products demonstrated that age, income, and perceived value all played roles in shaping consumer preferences; however, the influence of age was shown to be entangled with other sociodemographic and psychological dimensions. These findings imply that age, in isolation, may not serve as a sufficient segmentation variable, as its predictive strength often depends on interactions with variables like personal values, digital literacy, and infrastructural access. Therefore, a more refined approach, one that incorporates psychosocial and contextual dimensions, offers a deeper and more accurate understanding of consumer behaviour than approaches relying solely on generational or age-based segmentation.

Consumer behaviour in Sabah is influenced by a complex interplay of geographic, infrastructural, and cultural dynamics. Among urban youth, the primary challenge often lies in brand salience and digital visibility, as local brands must contend not only with global brands on quality but also on visibility and perceived prestige (Chang et al., 2023; Ratnasari & Kesumahati, 2024). In contrast, stronger purchase intentions for local goods among older consumers are often shaped by habitual behaviour, community connections, and constrained choices, rather than by active preference (Duc & Mujahida, 2024). These insights underscore the importance for marketers and policymakers to discern the underlying drivers of consumer behaviour. Interventions designed to counter status-driven avoidance will necessarily differ from those intended to address limited exposure or infrastructural access (Septiani et al., 2024). The identification on the motivation behind consumer behaviour, particularly in Sabah, is essential for effective market engagement and policy, as age-based patterns are deeply

shaped by context, access, and psychosocial factors.

METHODOLOGY

Research Design

This study adopted a cross-sectional quantitative research design to examine the influence of household size and age on purchase intention for locally produced FMCG products in Sabah. The survey method facilitated systematic data collection and enabled statistical analysis of consumer behaviour across distinct demographic groups.

Sample and Data Collection

The target population for this study comprised Malaysian consumers residing in Sabah who had previously purchased locally produced FMCG food and beverage products. This included both Sabah-born individuals and other Malaysians who live in the state, regardless of ethnicity or place of origin. Data were collected using an online self-administered questionnaire (OSAQ), which enabled broad digital outreach while preserving respondent anonymity. A snowball sampling strategy was applied via social media platforms to recruit participants representing diverse household sizes and age groups. Data collection occurred between July and August 2024, yielding 404 initial responses. Following data screening for eligibility and quality, including survey completion time, internal consistency, and missing responses, 48 cases were excluded. The final sample consisted of 356 valid responses.

Measurement of Variables

Purchase intention was measured using five (5) items adapted from established consumer behaviour literature (Charton-Vachet et al., 2020; Waehning & Filieri, 2022). Each item was rated on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The five items were aggregated to produce a composite score, with higher scores indicating stronger purchase intention toward local FMCG products. Respondents

rated their agreement with the following statements:

- a) PI1: I prefer to buy local FMCG food and beverages produced in Sabah.
- b) PI2: If two local Sabah FMCG food and beverage products were equal in quality, but one was made with local Sabah ingredients and the other with imported ingredients, I would pay more for the one made with local Sabah ingredients.
- c) PI3: I am more likely to buy local Sabah FMCG food and beverage products because they have a lower impact on the environment.
- d) PI4: I will feel guilty if I buy local Sabah FMCG food and beverage products that harm the environment.
- e) PI5: We should buy local Sabah FMCG food and beverage products to strengthen our local economy.

Data Analysis Techniques

Cronbach's alpha was used to assess the internal consistency of the five-item purchase intention scale (PI1-PI5). The resulting reliability coefficient of 0.900 indicated a high level of internal reliability, justifying the use of a composite mean score for purchase intention in subsequent analyses. To assess differences in purchase intention across demographic groups, a one-way analysis of variance (ANOVA) was applied. This method was selected to compare mean scores across more than two groups and was preferred over independent samples t-tests, which are limited to binary comparisons. Where ANOVA indicated statistically significant differences, Tukey's Honest Significant Difference (HSD) post hoc test was used to identify specific group-level variation.

Both household size and age were analysed as categorical variables. Age was divided into five (5) groups (18-29, 30-35, 36-50, 51-65, and 65 and above), reflecting an adaptation of generational structures found in consumer behaviour literature (Khaw et al., 2022; Tjiptono et al., 2020), and aligning with the categorical grouping used in Malaysian health and population studies, despite variation in exact cutoffs across

sources. Household size was grouped into four (4) categories (1-2, 3-5, 6-8, and 9 or more members), following the observed distribution within the dataset and consistent with Malaysian demographic studies that treat household size as a categorical variable, although exact groupings differ across studies (Cheah et al., 2021; Sayuti & Sukeri, 2022). Treating these variables as categorical allowed for discrete group comparisons and was consistent with the assumptions required for ANOVA, including independence of observations, normality of residuals, and homogeneity of variances. This analytical strategy aligns with the study objectives of determining whether the household size and age significantly influence purchase intention for locally produced FMCG food and beverage products in Sabah.

RESULTS AND ANALYSIS

Descriptive Analysis

This section describes the distribution of household sizes and age groups and their respective levels of purchase intention for locally produced FMCG food and beverage products in Sabah. The dataset contains 356 valid answers, without any missing values. Respondents were fairly distributed across household size and age categories, allowing for meaningful subgroup comparisons. These descriptive insights provide a baseline for assessing group-level variation in purchase intention, which is further examined in the inferential analysis section.

Household Sizes

Most respondents belonged to medium-sized households (3-5 members), accounting for 53.7% of the sample. Small households (1-2 members) represented 23.6%, followed by large households (6-8 members) at 21.3%. Extra-large households (9 or more members) made up 1.4% of the sample. The low representation in this group warrants caution in interpreting group-level comparisons involving this category. The mean purchase intention across all respondents was 3.873 (SD = 0.743), with a minimum score of 1.40 and a maximum of 5.00.

Differences in mean scores were observed across household groups. Small households (1-2 members) had the lowest purchase intention ($M = 3.595$, $SD = 0.796$). Medium-sized households scored higher ($M = 3.915$, $SD = 0.719$), followed by large households ($M = 4.050$, $SD = 0.662$). Extra-large households had the highest score ($M = 4.240$, $SD = 0.792$). While these results suggest a positive association between household size and purchase intention, the small sample size in the 9-or-more group may limit the generalisability of this finding. Table 1 summarises these figures.

Table 1 Descriptive Statistics for Household Size and Purchase Intention

Household Size	Frequency	Percent (%)	Mean Purchase Intention (M)	Standard Deviation (SD)	Min	Max
1 – 2 members	84	23.6	3.5952	0.796	1.8	5.0
3 – 5 members	191	53.7	3.9152	0.719	1.4	5.0
6 – 8 members	76	21.3	4.050	0.662	2.4	5.0
9 or more members	5	1.4	4.240	0.792	3.0	5.0
Total	356	100.0	3.873	0.743	1.4	5.0

Age Groups

The largest group of respondents fell within the 36-50 age range (40.7%). The 18-29 group made up 25.6%, followed by 30-35 (16.0%), 51-65 (14.9%), and 65 and above (2.8%). The smallest age group, 65 and above, comprised only 10 respondents, which may not be sufficient for robust group-level statistical comparison. Mean purchase intention scores were relatively consistent across groups. The 18-29 group had a mean score of 3.873 ($SD = 0.797$). Those aged 30-35 and 36-50 had nearly identical scores ($M = 3.916$, $SD = 0.715$; $M = 3.915$, $SD = 0.733$, respectively). The 51-65 group reported a slightly lower mean ($M = 3.796$, $SD = 0.703$), while the 65 and above group had the lowest score ($M = 3.440$, $SD = 0.717$). **Error! Reference source not found.** presents the details.

Table 2 Descriptive Statistics for Age Groups and Purchase Intention

Age Group (years old)	Frequency	Percent (%)	Mean Purchase Intention (M)	Standard Deviation (SD)	Min	Max
18-29	91	25.6	3.8725	0.797	1.4	5.0
30-35	57	16.0	3.9158	0.715	2.4	5.0
36-50	145	40.7	3.9145	0.733	1.8	5.0
51-65	53	14.9	3.7962	0.703	2.0	5.0
65+	10	2.8	3.44	0.717	2.2	4.8
Total	356	100.0	3.873	0.743	1.4	5.0

The descriptive results suggest that household size is a more salient differentiator of purchase intention than age. This finding provides preliminary support for household-based market segmentation strategies for local FMCG food and beverage products in Sabah. However,

the small subgroup sizes for the oldest age group and extra-large households indicate that caution should be taken when interpreting results involving these categories, particularly with ANOVA.

Reliability Analysis

Cronbach's alpha was employed to assess the internal consistency and validity of the purchase intention scale. The scale comprised five (5) items (PI1-PI5), each rated on a five-point Likert scale. The analysis yielded a Cronbach's alpha of 0.900, exceeding the commonly accepted threshold of 0.70, indicating excellent internal consistency. Additionally, the corrected item-total correlations ranged from 0.655 (PI4) to 0.821 (PI2), suggest that all items contributed meaningfully to the overall construct. The "Cronbach's Alpha if Item Deleted" values showed that removing any item would not improve reliability, supporting the retention of all five items for further analysis. The composite mean score for purchase intention was 19.37 ($SD = 3.716$), confirm the internal coherence of the construct. Table 3 reports the reliability results.

Table 3 Reliability Statistics and Item-Total Correlation Analysis for Purchase Intention Scale

Variable	Cronbach's Alpha	Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Purchase Intention	0.900	PI1	15.56	8.861	0.783	0.872
		PI2	15.63	8.369	0.821	0.863
		PI3	15.69	9.262	0.765	0.876
		PI4	15.49	9.479	0.665	0.897
		PI5	15.08	9.322	0.734	0.882

Household Size and Purchase Intentions

One-way ANOVA was conducted to test for differences in purchase intention across household size groups. Levene's test for homogeneity of variances was first performed to verify that the assumption of equal variances had not been violated. As shown in Table 4, the test produced a non-significant result ($F(3, 352) = 1.226$, $p = .300$), indicating that the variance in purchase intention scores was consistent across household sizes. Thus, ANOVA was applied using the standard interpretation method.

Table 2 Levene's Test for Homogeneity of Variances for Household Size

Household Size	Statistics	df1	df2	Sig. (p-value)
	1.226	3	352	0.300

The ANOVA results, presented in Table 5, revealed a statistically significant difference in purchase intention across household sizes ($F(3, 352) = 6.222, p < .001$). The effect size, measured using eta squared (η^2), was 0.050, suggests that a small-to-moderate contribution of household size to the variance in purchase intention.

Table 3 One-way ANOVA Results for Household Size

Source	Sum of Squares	df	Mean Square	F	Sig. (p-value)	η^2
Household Size	Between Groups	9.875	3	3.292	6.222	<.001
	Within Groups	186.226	352	0.529		
	Total	196.101	355			

Tukey's Honest Significant Difference (HSD) post hoc test was used to explore specific group differences, as shown in Table 6. There is a significant difference in purchase intention which was between 1-2 person households and 9 or more person households ($p = 0.002$). The comparison between 1-2 and 3-5 person households approached significance ($p = 0.054$), which may be worth further exploration with a larger or more balanced sample. Other pairwise comparisons were not statistically significant.

Table 4 Tukey's Post Hoc Test for Household Size

Household Size (members)	Comparison	Mean Difference	Sig. (p-value)
	1-2 vs. 3-5	-0.319	0.054
	1-2 vs. 6-8	-0.454	0.018
	1-2 vs. 9+	-0.645	0.002
	3-5 vs. 6-8	-0.135	0.562
	3-5 vs. 9+	-0.326	0.119
	6-8 vs. 9+	-0.191	0.733

These results suggest that larger households reported higher levels of purchase intention, which may reflect shared consumption needs, joint decision-making, or increased prioritisation of affordability and quantity. However, it is important to note that the extremely small sample size for 9+ households ($n = 5$) limits the generalisability of this specific finding and may introduce the instability in group comparisons.

Age and Purchase Intentions

To evaluate whether purchase intention differs across age groups, the data were grouped into five predefined categories. Mean scores were compared using a one-way

ANOVA. Prior to analysis, Levene's test was conducted to assess the assumption of equal variances. The result was not significant ($F(4, 351) = 0.586, p = 0.673$), confirming the assumption of homogeneity of variances was met, as shown in Table 5.

Table 5 Levene's Test for Homogeneity of Variances for Age Groups

Age Groups	Statistics	df1	df2	Sig. (p-value)
	0.586	4	351	0.673

The ANOVA results in

Table 6 show that there was no statistical difference in purchase intention across age groups ($F(4, 351) = 1.152, p = .332$). The calculated effect size ($\eta^2 = 0.013$) indicates that age explained only by 1.3% of the total variance in purchase intention. This negligible effect suggests that age has limited explanatory power in predicting the purchase behaviour in this context.

Table 6 One-way ANOVA for Age Groups

Age Groups	Between Groups	Sum of Squares	df	Mean Square	F	Sig. (p-value)	η^2
Age Groups	Between Groups	2.541	4	0.635	1.152	0.332	0.013
	Within Groups	193.56	351	0.551			
	Total	196.101	355				

To examine specific group differences, Tukey's post hoc test was conducted. No pairwise comparison were statistically significant, as all p-values exceeded the 0.05 threshold (Table 7). While the 65 and above group reported the lowest mean score, this difference was not statistically meaningful compared to other age categories. These results that purchase intentions toward local FMCG food and beverage products were not significantly influenced by age in this sample.

Table 7 Tukey's Post Hoc Test for Household Sizes and Age Groups

Age Groups (years old)	Comparison	Mean Difference	Sig. (p-value)
	18-29 vs. 30-35	-0.043	0.987
	18-29 vs. 36-50	-0.042	0.987
	18-29 vs. 51-65	-0.076	0.927
	18-29 vs. 65+	-0.432	0.213
	30-35 vs. 36-50	0.001	1.000
	30-35 vs. 51-65	-0.033	0.999
	30-35 vs. 65+	-0.389	0.386
	36-50 vs. 51-65	-0.034	0.999
	36-50 vs. 65+	-0.390	0.387
	51-65 vs. 65+	-0.357	0.578

DISCUSSION

Interpretation of Findings

The analysis identified a statistically significant relationship between household size and purchase intention for locally produced FMCG food and beverage products in Sabah. Respondents from larger households

consistently reported higher mean scores than those from smaller households. The highest average was observed among households with 9 or more members ($M = 4.24$, $SD = 0.79$), while the lowest was recorded among those in 1-2 person households ($M = 3.60$, $SD = 0.80$). These group differences were confirmed by ANOVA and Tukey's post hoc comparisons, which showed significant differences between the smallest and largest household categories.

Household size may influence purchase intention through mechanisms such as shared consumption patterns, pooled resource management, and coordinated decision-making, especially in multigenerational or extended family settings (Nazli et al., 2024; Badari & Selamat, 2024). In such households, cost-effectiveness, quantity, and availability often become central to purchase decisions, which may lead to a preference for local FMCG products when these are perceived as more affordable, accessible, or culturally familiar. Empirical findings from rural Sabah suggest that larger households adjust their purchasing to maximise value, often favouring bulk purchases and familiar local brands due to shared consumption needs and logistical convenience (Baharuddin et al., 2024; Encharang et al., 2022). While direct evidence linking household size to a general preference for all locally produced products remains limited, research has demonstrated that household size moderates purchase decisions for staple and regionally rooted goods, including local food and beverages (Badari et al., 2023). Factors such as affordability, product familiarity, and social reinforcement within the household may collectively strengthen the intention to support local producers.

In contrast, age did not show a statistically significant association with purchase intention toward locally produced FMCG food and beverage products in Sabah. Although mean scores varied slightly across age categories, ranging from the highest among respondents aged 30-35 ($M = 3.92$, $SD = 0.72$) to the lowest in the 65 and above ($M = 3.44$, $SD = 0.72$), these differences were not statistically meaningful, as confirmed by

ANOVA results. This consistency in purchase intention may reflect a convergence of consumer attitudes across generations, influenced by shared exposure to government-led buy-local campaigns, improved product visibility, and increased availability across retail formats (Baharudin et al., 2021; Shamri et al., 2021). While younger consumers may encounter local products via digital marketing, influencer content, or online marketplaces, older individuals may favour local goods out of familiarity, community trust, or habitual purchasing behaviour (Chelvarayan et al., 2022). These differing behavioural pathways may lead to comparable levels of intention, even when the channels of engagement diverge. Additionally, prior research on low-involvement, high-frequency products such as staple foods and beverages, has shown the purchase intention tend to be less influenced by age and more by accessibility and price. This may explain why age had limited explanatory power in this study's context.

Comparison with Existing Literature

Prior studies commonly associate household size with purchasing patterns, with larger households typically exhibiting volume-based and cost-conscious behaviours. Yet many of these assumptions rest on surface-level correlations rather than tested causal relationships. Treating household size as an independent driver of purchasing behaviour risks overlooking structural factors such as per capita income, regional pricing schemes, and retail access, which may more accurately account for observed outcomes.

Alias et al. (2021) reported that larger households in Johor, Malaysia, allocated a higher share of their spending to non-essential items. While this outcome appears consistent with expectations about increased consumption in larger households, the study did not control for income burden per capita or cost of living differences between urban and rural settings. Without accounting for these variables, the relationship between household size and expenditure cannot be reliably established. Similarly, Nazli et al. (2024) observed that larger households adjusted their purchasing habits to better

manage quantity and reduce waste. These behavioural adaptations may reflect planning strategies or logistical constraints rather than household size as a direct causal factor.

The present study found a statistically significant relationship between household size and intention to purchase locally produced FMCG products in Sabah. Respondents from larger households reported stronger intention, consistent with Trinh et al. (2020), who observed more frequent purchasing activity among larger Malaysian households. Yet the model also indicated variation across household types, suggesting that household size does not operate in isolation. In Sabah, structural conditions, such as uneven access to large-format retail outlets and greater reliance on informal markets may shape purchase intention more strongly than household composition itself. What appears to be the effect of household size may, in part, reflect regional differences in price sensitivity, market infrastructure, and access (Jaratin et al., 2022; Sarker et al., 2024).

By contrast, this study did not identify any statistically age-related differences in purchase intention. This finding contrasts with Hassan et al. (2023), who linked younger consumers with greater impulsiveness and digital responsiveness. One possible explanation lies in the product category. Staple food and beverage items are low-involvement, high-frequency goods, which may reduce variability in intention across age groups. Cheah et al. (2020) reached a similar conclusion, noting minimal generational differences in the consumption of low-risk products.

Nationwide policy interventions may also help explain the convergence. During the movement control order (MCO), government campaigns promoted support for local producers across demographic lines (Baharudin et al., 2021). These campaigns may have produced a temporary flattening of generational distinctions in awareness or preference for local products. Whether this pattern reflects a shift in long-term attitudes remains unclear. Shamri et al.

(2021) also questioned the reliability of demographic variables as predictors of consumer behaviour in basic product categories. Their findings do not dismiss the relevance of demographic segmentation but call for more precise behavioural metrics. Variables such as responsiveness to price discounts, attention to labelling, or preference for digital versus in-person shopping may vary across age groups but are not captured by generalised measures of intention. Future research should examine these finer behavioural dimensions to move beyond demographic profiling and toward more predictive consumer segmentation models.

Thus, while household size emerged as a significant differentiator in this study, age did not. This reinforces the notion that demographic indicators such as age and household size offer partial but not complete insights into consumer behaviour. Their explanatory value depends on how these variables intersect with structural, cultural, and market factors. Research that isolates these interactions can generate more targeted and actionable insights for both policy development and marketing strategy.

IMPLICATIONS FOR INDUSTRY AND POLICY

Household Size as a Predictor of Purchase Intention.

Larger households reported stronger intention to purchase locally produced goods compared to smaller households. This pattern was consistent across household categories within the scope of local FMCG food and beverage products. These findings suggest that household size may shape consumer behaviour in ways that extend beyond basic demographic descriptors, particularly in settings where purchase decisions are shared or resources are pooled.

Marketers can leverage this insight by tailoring segment-specific strategies for larger households. Moreover, promotions may include volume-based incentives such as bulk discounts or family-sized packaging, which appeal to cost-conscious, high-volume

consumers (Chelvarayan et al., 2022; Nazli et al., 2024). The product development could focus on features that enhance practicality for group use, such as resealable containers or multi-pack options, while marketing content can highlight the family-oriented consumption scenarios to enhance the relatability and emotional appeal (Hussein & Fikry, 2021; Trinh et al., 2020).

The underlying motivations for this pattern, however, remain unclear. Stronger purchase intention in large households could stem from pragmatic concerns such as budget optimisation and shared decision-making, or from cultural values tied to supporting local economies (Baharudin et al., 2021; Sarker et al., 2024). Without the clarity on these drivers, marketing and policy interventions may risk addressing symptoms rather than structural factors. Future research should investigate the decision-making dynamics within households of different sizes to determine whether economic necessity, convenience, or shared values are the primary influences.

Age does not significantly affect purchase intention in this context.

This study found no statistically significant differences in purchase intention across age groups. Mean scores across all five categories were closely aligned, with only minor variations that did not reach statistical significance. This suggests that consumers across age brackets may hold similarly favourable attitudes toward locally produced FMCG food and beverage products in Sabah. As for marketers and policymakers, this implies that age-based segmentation may not be a reliable strategy in this context. Instead, communication efforts could focus on common concerns such as product quality, local economic benefits, or environmental sustainability, in which these factors likely to appeal across generations. Moreover, broader and inclusive messages and multi-channel distribution may be more effective than targeting specific age cohorts.

Nonetheless, similar intentions across the age groups do not guarantee uniform

purchase behaviour. Older consumers may rely on in-store experiences and respond more to traditional media, while younger individuals often engage via mobile platforms and social media (Chelvarayan et al., 2022; Tan & Feng, 2021). They may also differ in how they interpret the trust signals, packaging, or convenience. Segmenting based on behavioural tendencies rather than chronological age may offer a more accurate and strategic approach (Naseri et al., 2021; Tong et al., 2023). Future campaigns may be more effective when tailored to consumer behaviours, preferences, and media habits rather than age alone.

Policymakers could use household data to inform support for local producers.

If larger households demonstrate stronger intention to purchase locally produced FMCG food and beverage products, areas with a higher concentration of such households may represent zones of untapped demand. Therefore, policymakers can capitalise on this insight by prioritising infrastructure investments, cooperative development, and supply chain support in these regions (Alias et al., 2021; Sarker et al., 2024). For instance, funding producer cooperatives in high-demand localities, improving cold chain logistics in under-served areas, or offering incentives to retailers operating in dense household zones could improve the market reach and accessibility.

Additionally, the multi-stakeholder coordination which involves local governments, retailers, and community networks, can further enhance the visibility and uptake of local products (Mohd. Yakin et al., 2022). However, this strategy assumes that household size remains geographically patterned and relatively stable. Structural changes such as urbanisation, internal migration, or shifts in family composition may alter these patterns over time. Other contextual variables such as per capita income, infrastructure quality, and educational attainment, may also exert greater influence on purchase behaviour than household size alone (Badari et al., 2023; Nazli et al., 2024). Without accounting for these intersecting factors, well-intended

interventions risk oversimplifying local demand and may inadvertently reinforce existing inequalities.

Industry and public campaigns may benefit from coordinated strategies, but only if based on tested messaging.

If household size emerges as a more consistent predictor of purchase intention than age, both public campaigns and private-sector marketing should consider aligning their strategies accordingly. Government efforts to promote local product adoption could be synchronised with retailer promotions that feature family-oriented consumption settings. For instance, public messaging about food security or economic resilience could be reinforced through retail campaigns that emphasise affordability, bulk value, or community support (Permarupan et al., 2021). Cross-platform consistency, such as using shared visual language or reinforcing themes across digital, print, and in-store channels, may also improve the message retention and consumer engagement (Naseri et al., 2021).

However, alignment alone is insufficient. Campaigns must be grounded in behavioural insights and validated through empirical testing. What appeals to one household size or community segment may fall flat elsewhere. Without the evidence of what motivates consumer action, coordinated messaging risks being superficial or ineffective. Evaluations should move beyond visibility metrics to assess tangible behavioural outcomes, such as changes in trial rates, repeat purchases, or local brand awareness (Chan et al., 2024; Tong et al., 2023). This is because effective communication requires iterative testing and adaptation, not just harmonisation of intent.

CONCLUSION

This study finds that household size is a statistically significant predictor of purchase intention toward locally produced FMCG food and beverage products in Sabah. Larger households consistently reported stronger intention, likely reflecting cost-efficiency

considerations, shared consumption dynamics, and practical household management. In contrast, age showed minimal explanatory value, suggesting that generational cohort alone does not meaningfully influence stated intentions in this context. These results highlight the importance of focusing on household-level characteristics over broad age-based segmentation when developing marketing or policy interventions. The absence of significant age-related differences also challenges the utility of generational profiling in this product category. While younger and older consumers may differ in media usage or purchasing channels, these variations do not appear to translate into differences in support for local products. Instead, the findings point to a shared orientation toward local purchasing that cuts across age groups. Thus, future research should explore additional variables such as income, education, digital access, and retail infrastructure to better understand the drivers of local product adoption. Incorporating the qualitative approaches could also help uncover the motivations and decision-making processes within households. Additionally, deeper understanding of these behavioural factors will support the development of more targeted, inclusive, and effective marketing and policy strategy for the Sabah context.

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