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Roots and retail: identity-driven consumption in Sabah, Malaysia

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Abstract

In culturally diverse regions such as Sabah and Malaysia, local identity and pride frequently influence consumer purchasing decisions, even amidst economic uncertainties. This study investigates how region-of-origin shapes consumer behavior regarding locally produced fast-moving consumer goods (FMCG), specifically rice, coffee, and chocolate. While country-of-origin often serves as a heuristic cue of quality on a global scale, exploring the impact of the region of origin within the context of everyday food and beverage consumption in regions such as Sabah provides novel insights. Utilizing data from an online survey conducted between July and August 2024, this study examined demographic variables including age, sex, geographic location, ethnicity, and educational background among 356 Sabah consumers who had previously purchased local FMCG products. The findings show that residents of the West Coast and individuals from the Kadazan/Dusun communities exhibit stronger preferences for products associated with their region. In contrast, factors such as age, sex, and education had no significant influence. The results emphasize that local identity and cultural ties drive consumer preferences for regional products, offering fresh insights from the Southeast Asian context to the existing literature. Consequently, businesses targeting this region may benefit from emphasizing region-of-origin in their marketing strategies to foster consumer loyalty. Nonetheless, this study acknowledges the limitations inherent in the self-reported data collection within Sabah. Future research should address these constraints by employing cross-cultural comparisons, broader regional analyses, and more diversified survey methodologies.

Keywords:

Region-of-Origin;
Consumer behaviour;
Sabah;
Fast-moving consumer goods;
Cultural identity;
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1. Introduction

In today's interconnected world, a product's origin plays a fundamental role in shaping consumers' perceptions and purchasing choices. Many consumers use origin as a heuristic to assess quality, authenticity, and overall value, influencing both buying behavior and price sensitivity (Hasanzade et al., 2022; Turčić et al., 2022; Velarde-Mendivil et al., 2021). Research on the country-of-origin effect has extensively explored how a product's national identity influences consumers' judgements of quality and desirability (Lanfranchi et al., 2021; Septianto et al., 2022;

Vrontis & Basile, 2022). Early research Bilkey and Nes (1982) established that consumers associate national identity with product evaluations, a concept later refined Johansson et al. (1985) through structured analytical approaches. Shimp and Sharma (1987) expanded on this by developing CETSCALE, a tool designed to measure consumer ethnocentrism in purchasing decisions.

While country-of-origin research has traditionally focused on national reputation, recent studies suggest that consumers form even stronger associations with specific regions within a country (Hanchukova et al., 2024; Kireeva et al., 2024). This shift has sparked growing interest in the region of origin as a more localized and culturally nuanced factor in consumer decision making. The concept of region-of-origin highlights how consumers associate specific geographical areas with distinct cultural traditions, environmental characteristics, and traditional production methods (Ittersum, 2001). Charton-Vachet et al. (2020) argued that regional identity plays a key role in shaping consumer expectations of quality and authenticity. Unlike country-of-origin, which reflects national reputation, region-of-origin emphasizes local heritage, craftsmanship, and unique environmental influences, all of which can significantly affect consumer product evaluations.

This concept is particularly relevant in the food and beverage industry, where regional characteristics such as terroir in wine or traditional cheese-making methods enhance product differentiation and perceived value (Riefler, 2020; Waehning & Filieri, 2022). However, most studies have focused on Western markets, leaving limited research on how region-of-origin perceptions influence consumer behavior in emerging economies, particularly in Southeast Asia (Ho et al., 2024; Sáenz-Navajas & Jeffery, 2021). Given the cultural and economic diversity of Southeast Asian markets, understanding regional branding in this context is essential to identifying how local consumers evaluate authenticity and quality.

Sabah, a state in northern Borneo, presents a compelling case study to examine the role of region of origin in consumer behavior. Its rich ethnic diversity, distinct economic conditions, and strong indigenous cultural heritage create a unique environment in which regional identity strongly influences consumer preferences (Abdul Rahman et al., 2022; Tangit, 2023). Sabah's well-known regional products, such as Tenom coffee, Uinah Craft Soda, and traditional handicrafts, demonstrate how region-of-origin shapes perceptions of authenticity and value, eventually influencing consumer demand.

This study aims to bridge this research gap by exploring how demographic factors, including age, sex, geographic location, ethnicity, and education, affect consumers' perceptions of the region of origin in Sabah, Malaysia. The findings offer practical insights for local businesses looking to refine their regional branding strategies, policymakers aiming to strengthen economic sustainability efforts, and marketers seeking to develop culturally relevant campaigns that resonate with Sabah's diverse consumer base.

2. Literature review

2.1 The role of region-of-origin in consumer behavior

The region of origin plays a key role in shaping consumer perceptions of quality, authenticity, and trust. As a more localized extension of the broader country-of-origin concept, it reflects associations with traditional craftsmanship, unique environmental conditions, and cultural heritage (Tarabashkina et al., 2024). These factors influence how consumers evaluate products, reinforcing the idea that goods from a well-defined region of origin adhere to stricter local standards and well-established production techniques. This connection between place and product quality is particularly strong in markets where regional identity serves as a key driver of consumer decision-making (Santeramo et al., 2020).

The influence of the region of origin is especially evident in the food and agricultural sectors, where elements such as terroirs in wine or traditional cheese-making methods enhance a product's perceived value, reinforcing its authenticity and appeal (Charton-Vachet et al., 2020). Consumers are increasingly drawn to products that reflect local traditions, sustainability, and cultural significance, making the region of origin a crucial factor in fostering brand trust and long-term loyalty (Rasyid et al., 2024; Sabur, 2025).

Most existing research on the region of origin has focused on premium product categories, particularly in Western markets, where high-end goods, such as wine, olive oil, and specialty foods, have long benefited from strong regional branding (Bannor & Abele, 2021; Bissinger & Herrmann, 2021). However, there remains a limited understanding of how region-of-origin shapes consumer perceptions of fast-moving consumer goods (FMCG), particularly in emerging markets such as Southeast Asia. Given Sabah's cultural diversity and distinct economic landscape, this serves as a valuable case study for examining how regional identity influences consumer trust and purchasing behavior in everyday goods.

Although the significance of the region of origin in luxury markets is well established, its impact on mass-market goods remains underexplored. Understanding how consumers perceive and respond to regional identity in FMCG is essential for businesses seeking to strengthen branding, enhance consumer loyalty, and refine their marketing strategies. Gaining insights into these dynamics allows local brands to leverage regional pride, build deeper consumer connections, and stand out in an increasingly competitive marketplace.

2.2 Region-of-origin as symbol of quality, authenticity, and value

The significance of the region of origin extends beyond cultural and emotional ties and often acts as a key indicator of quality and authenticity across a range of industries. In the food and beverage sector, the region-of-origin highlights how factors such as climate, soil composition, and traditional farming methods influence the distinct characteristics of a product (Ho et al., 2024).

Consumers frequently associate products from specific regions with high production standards, artisanal craftsmanship, and unique sensory qualities that reinforce trust and strengthen brand preferences (Fallas Rodríguez et al., 2022; Filete et al., 2022). This perception is not limited to food, but extends to industries such as fashion, luxury goods, and artisanal crafts, where regional identity is linked to heritage and workmanship. Products, such as Swiss watches, Italian leather goods, and Japanese ceramics, embody regional expertise, refined techniques, and long-standing traditions. Consumers often view geographical indicators as a mark of credibility and trust that products from well-regarded regions adhere to superior quality standards (Lee et al., 2020; Užar, 2022). In this way, region-of-origin functions not only as a quality assurance tool but also as a strategic competitive advantage, helping brands enhance their perceptions of exclusivity and authenticity.

Beyond its role in quality perception, region-of-origin can foster consumer loyalty, particularly when brands use storytelling to emphasize trust, sustainability, and ethical sourcing (Aldi & Adisaputra, 2024; Osei et al., 2024; Zhang et al., 2023). Consumers are increasingly drawn to products with regional connections not only for their superior quality but also because of their historical significance and responsible production practices. The global rise in conscious consumerism, in which ethical considerations heavily influence purchasing decisions, has heightened the importance of provenance. This presents an opportunity for brands to align their strategies with modern values, including environmental sustainability, fair labor practices, and the preservation of traditional knowledge.

Despite its advantages, leveraging the region of origin effectively presents challenges. Consumer perceptions vary, meaning that strong regional identities may be a powerful selling point in culturally affiliated markets yet less influential in regions where such attributes are not

prioritized (Ivanova et al., 2022; Sánchez-Bravo et al., 2020). Additionally, inconsistent regulations on geographical indications complicate efforts to protect regional branding, making it vulnerable to dilution and misuse. Furthermore, globalization and mass production have diminished exclusivity once associated with regional craftsmanship, shifting consumer priorities towards convenience and affordability (Kautish & Khare, 2022; Liu et al., 2024). To maintain and enhance the value of region-of-origin branding, businesses must be prepared to adapt to evolving market dynamics, ensuring that they remain competitive in a rapidly changing global landscape.

2.3 Influence of demographics on region-of-origin perception

The way consumers perceive their region of origin is shaped by a range of demographic factors, including ethnicity, geographic location, age, sex, and education. These elements influence whether the region of origin serves as a key driver in purchasing decisions or remains a secondary consideration within broader consumer preferences.

Ethnicity has a particularly strong impact on consumer preference for region-branded products. Individuals with deep ethnic ties to a region often associate their products with greater authenticity and quality (Kervyn et al., 2022; Silver et al., 2021). Indigenous communities show a stronger preference for locally produced goods, especially in the agri-food sector, where regional branding conveys cultural heritage, sustainability, and product authenticity (Santeramo et al., 2020). Although existing research confirms that consumers are often willing to buy products with geographical origin labels, little is known about how ethnic identity specifically influences these preferences, leaving a key gap in the current literature.

Cultural backgrounds also shape consumer attitudes toward regional branding. In collectivist cultures, where communal values and traditions are highly valued, regional products are often seen as symbols of cultural identity and community support, fostering emotional attachment and stronger brand loyalty (Kurušić et al., 2023; Santeramo et al., 2020). In contrast, individualist cultures tend to prioritize factors such as product innovation, variety, and established brand reputations over the region of origin (Vishkin et al., 2022). While some studies have explored region-of-origin effects in less-familiar markets (Pasquine et al., 2022), more research is needed to understand how different cultural backgrounds shape perceptions across various product categories.

Geographic location also plays a crucial role in shaping consumer behavior toward regional products. Rural and suburban consumers typically demonstrate stronger loyalty to regionally produced goods than urban consumers, who are more exposed to international brands and imported alternatives (Durbul et al., 2021; Zdravković, 2021). Rural consumers tend to associate local products with familiarity, freshness, and accessibility, whereas urban consumers are often influenced more by global trends, convenience, and brand reputation. These differences highlight the importance of tailoring region-of-origin marketing strategies to consumers' unique preferences in different locations.

Age and sex further contributed to variations in region-of-origin perceptions. Older consumers are more likely to value regional authenticity and trust traditional production methods and sourcing practices (Chacko, 2024). Their purchasing behavior is often driven by nostalgia, familiarity, and long-standing trust in regional brands. Younger consumers, on the other hand, tend to engage more with globalized markets, placing greater emphasis on brand image, innovation, and product variety rather than region-of-origin.

Sex also influences consumer attitudes towards region-branded products. Research suggests that women are more inclined to seek novelty and are more price conscious, often placing greater emphasis on quality and ethical sourcing when choosing regional products (Jad'ud'ová et al., 2020; Mehta, 2020; Teeken et al., 2021). In contrast, men typically prioritize functional benefits and established brand reputations, favoring convenience and reliability over regional

authenticity. These differences suggest that marketing strategies aimed at female consumers should focus on craftsmanship, heritage, and sustainability, whereas those targeting male consumers should emphasize performance, efficiency, and reliability (Goedertier et al., 2024).

Finally, education level plays an important role in how consumers perceive the region of origin. Highly educated consumers are generally more informed about product sourcing and production processes and often rely on geographical indicators to assess ethical business practices, sustainability claims, and product traceability (Ishra et al., 2022; Jad'ud'ová et al., 2023). Consumers are more likely to prefer products linked to organic farming, fair trade, and sustainable production models. By contrast, consumers with lower educational attainment are more likely to rely on brand familiarity and price as the primary factors that guide their purchasing decisions (De Nisco & Oduro, 2022).

3. Methods

This study adopted a cross-sectional quantitative survey design utilizing an online self-administered questionnaire (OSAQ) as the primary method of data collection. The OSAQ was selected for its ability to systematically gather quantitative data, support hypothesis testing, and analyze relationships within the target population (Bryman, 2016). This approach provided consistency in survey questions, improving validity and reliability while also allowing participants to complete the questionnaire at their convenience, reducing the likelihood of response bias (Malthus, 2017).

The study took place between July and August 2024, and participants were recruited through snowball sampling via social media platforms. The target population included Malaysians and Sabah natives currently residing in Sabah who had previously purchased local Sabah FMCG food and beverage products. The questionnaire was administered using Google Forms and distributed across social media channels to maximize its reach. A total of 404 responses were collected, of which 48 were excluded because they failed to meet the eligibility criteria or exhibited patterns of disengagement such as incomplete responses, unusually short completion times, or repetitive answer patterns. This screening process ensured that only valid and high-quality responses were included in the final dataset, resulting in 356 usable responses for the analysis.

The collected data were analyzed using descriptive statistics and chi-square tests to assess the relationship between demographic variables and consumer perceptions of the region of origin in relation to locally produced Sabah FMCG food and beverage products. Ethical approval for this study was granted by the researchers' institutions. Participants provided informed consent before participation, and anonymity was ensured as no personally identifiable information was collected. However, the online survey format may have limited participation from individuals without internet access, which should be considered when interpreting the results.

4. Findings

This study investigated how demographic factors such as age, sex, geographic division, education level, and ethnicity influence perceptions of region-of-origin among 356 respondents regarding purchasing Sabah's FMCG food and beverage products. Respondents' perceptions of region-of-origin were measured on a scale, categorized as high (1.0–2.5), Medium (2.6–3.5), and Low (3.6–5.0). A lower score indicates stronger appreciation for the region of origin. The relationships between demographic factors and region-of-origin perceptions were analyzed using chi-square tests, with a significance threshold of $p < 0.05$. Table 1 summarizes the distribution of region-of-

origin perceptions across demographic groups, while Table 2 presents the statistical outcomes, including Pearson's chi-square values (χ^2), degrees of freedom (df), and p -values (p).

Table 1. Relationship between region-of-origin perceptions and demographic factors

Demographic	Region-of-origin perception						Total	
	High (1.0 – 2.5) Count	%	Medium (2.6 – 3.5) Count	%	Low (3.6 – 5.0) Count	%	Count	%
<u>Age (years)</u>								
18–29	61	67	25	27.5	5	5.5	91	25.6
30–35	44	77.2	11	19.3	2	3.5	57	16.0
36–50	110	75.9	32	22.1	3	2.1	145	40.7
51–65	39	73.6	10	18.9	4	7.5	53	14.9
65+	7	70	2	20.0	1	10.0	10	2.8
Total	261	73.31	80	22.47	15	4.21	356	100
<u>Sex</u>								
Male	117	70.9	40	24.2	8	4.8	165	46.3
Female	144	75.4	40	20.9	7	3.7	191	53.7
Total	261	73.3	80	22.5	15	4.2	356	100
<u>Division in Sabah</u>								
West Coast	202	78.0	51	19.7	6	2.3	259	72.8
Interior	19	67.9	6	21.4	3	10.7	28	7.9
Kudat	7	58.3	1	8.3	4	33.3	12	3.4
Sandakan	19	57.6	13	39.4	1	3.0	33	9.3
Tawau	14	58.3	9	37.5	1	4.2	24	6.7
Total	261	73.3	80	22.5	15	4.2	356	100
<u>Education Level</u>								
Primary/Secondary School	57	81.4	12	17.1	1	1.4	70	19.7
Pre-University/Certificate	87	68.0	34	26.6	7	5.5	128	36.0
Bachelor's Degree	97	74.6	28	21.5	5	3.8	130	36.5
Postgraduate Degree	20	71.4	6	21.4	2	7.1	28	7.9
Total	261	73.3	80	22.5	15	4.2	356	100.0
<u>Ethnicity</u>								
Kadazan/Dusun	154	83.7	28	15.2	2	1.1	184	51.7
Bajau/Sama	33	91.7	3	8.3	0	0.0	36	10.1
Murut	6	100.0	0	0.0	0	0.0	6	1.7
Brunei Malay	12	66.7	6	33.3	0	0.0	18	5.1
Rungus	4	66.7	2	33.3	0	0.0	6	1.7
Sino Kadazan/Dusun	16	72.7	4	18.2	2	9.1	22	6.2
Suluk	1	50.0	1	50.0	0	0.0	2	0.6
Bugis	2	33.3	4	66.7	0	0.0	6	1.7
Jawa	1	33.3	2	66.7	0	0.0	3	0.8
Dayak	0	0.0	0	0.0	1	100.0	1	0.3
Iban	3	100.0	0	0.0	0	0.0	3	0.8
Malay	14	56.0	8	32.0	3	12.0	25	7.0
Chinese	15	40.5	16	43.2	6	16.2	37	10.4
Indian	0	0.0	6	85.7	1	14.3	7	2.0
Total	261	73.3	80	22.5	15	4.2	356	100.0

4.1 Non-significant associations: age, sex, and education

No statistically significant association was found between region-of-origin perceptions and age ($\chi^2 = 6.560$, $df = 8$, $p = 0.585$). While respondents in the 30–50 age group, classified within the prime working age group based on international standards (OECD, 2022), exhibited slightly higher region-of-origin perceptions than did early working adults (18–29) or mature working adults (51+), these differences were not statistically significant. This finding contrasts with prior studies suggesting that older consumers, particularly those with stronger cultural and community ties, are generally more inclined toward local products than younger, more globalized

consumers (Hanchukova et al., 2024; László & Wahlen, 2024). This indicates that in multicultural regions such as Sabah, shared cultural identity may have a stronger impact than generational differences.

Similarly, sex was not a significant factor ($\chi^2 = 0.966$, $df = 2$, $p = 0.617$). However, female respondents displayed a marginally higher preference for local products than male respondents. Education also had no significant effect ($\chi^2 = 5.452$, $df = 6$, $p = 0.487$). While respondents with primary or secondary education displayed the highest preference for local brands, postgraduate degree holders showed a slightly higher tendency toward lower region-of-origin perceptions. However, these variations were not statistically significant.

4.2 Significant associations: geographic division and ethnicity

By contrast, both geographic division ($\chi^2 = 40.973$, $df = 8$, $p < 0.001$) and ethnicity ($\chi^2 = 108.656$, $df = 26$, $p < 0.001$) significantly influenced consumer perceptions.

- (a) Geographic Division: Consumers from the West Coast exhibited the highest region-of-origin preferences, likely due to the greater market penetration of local brands and regional branding initiatives. Conversely, respondents from Sandakan and Kudat displayed lower regional loyalty, which may be attributed to greater exposure to imported goods and limited access to locally branded FMCG products.
- (b) Ethnicity: Ethnicity played a critical role, with the Kadazan/Dusun, Bajau/Sama, and Murut communities displaying stronger regional preferences. By contrast, Chinese and Indian respondents showed weaker connections to local branding, potentially reflecting greater trust in international brands or differences in culinary traditions. Given the small sample sizes for certain ethnic groups, such as Murut ($n=6$) and Indian ($n=7$) respondents, these findings should be approached with caution. The limited representation of these groups means that the results may not fully reflect broader consumer trends, and further research with a more balanced sample is needed for a more comprehensive understanding.

Table 2. Chi-square test for region-of-origin

Demographic	Pearson Chi-Square (χ^2)	Degrees of Freedom (df)	p-value	Significance ($p < 0.05$)
Age	6.560	8.000	0.585	Not Significant
Sex	0.966	2.000	0.617	Not Significant
Division in Sabah	40.973	8.000	0.000	Significant
Education Level	5.452	6.000	0.487	Not Significant
Ethnicity	108.656	26.000	0.000	Significant

5. Discussion

5.1 Age and region-of-origin perception

The lack of significant age-related differences in this study contrasts with global research suggesting that younger consumers are more receptive to digital branding, whereas older consumers tend to prioritize familiarity and tradition (Correia et al., 2025; Miljanović, 2023). However, this uniformity in Sabah's market may suggest that local identity and authenticity hold a cross-generational appeal, making universal branding strategies more effective than age-specific marketing approaches. For example, younger consumers, such as Gen Z and Millennials, are often described as highly responsive to modern marketing elements, including product labelling, branding, and sustainability claims (Pasirayi et al., 2023; Vlastelica et al., 2021).

By contrast, older consumers, including Baby Boomers, are generally expected to value familiarity and traditional associations, viewing the region of origin as a key indicator of quality and reliability (Kankam, 2022; Rutherford & Tuntivivat, 2024). However, the findings of this study suggest that consumer preferences in Sabah's FMCG market are shaped by broader factors, such as cultural resonance and perceived authenticity, rather than by age-specific attributes (Kervyn et al., 2022; Kurušić et al., 2023).

Despite consumers aged 36–50 showing slightly stronger region-of-origin perceptions (75.9%), similar trends were observed among the younger and older groups. This suggests that marketing strategies should focus on universal product attributes, such as authenticity, quality, and cultural heritage, rather than relying on rigid age-based segmentation (Correia et al., 2025; Đukić et al., 2023; Sorrentino et al., 2022). A more effective approach would be to emphasize the product characteristics that resonate across different age groups. For instance, marketing campaigns that showcase traditional preparation methods and local heritage may appeal to younger consumers seeking unique cultural experiences while also attracting older consumers who value consistency and nostalgia (Soonsan et al., 2024).

Additionally, the absence of major age-related variation in region-of-origin perceptions may reflect Sabah's distinct sociocultural landscape, where local identity and pride in regional products cut across generational boundaries (Durbul et al., 2021; Kim et al., 2024; Soonsan et al., 2024). Unlike global markets, where generational preferences often diverge due to rapid technological advancements and shifts in media consumption (Damanik et al., 2023; Popović-Šević et al., 2021), Sabah's close-knit cultural environment may foster a more unified appreciation of local products (Kunjuraman, 2022). As a result, FMCG businesses may benefit more from inclusive marketing strategies that use storytelling to highlight cultural heritage and product quality rather than strictly tailoring promotions to specific age groups.

5.2 Sex and region-of-origin perception

As with age, sex did not have a statistically significant impact on region-of-origin perceptions ($p = 0.617$). This finding supports previous research, indicating that sex plays a limited role in shaping perceptions of product quality (Buchynska et al., 2021; Kervyn et al., 2022). However, this contrasts with studies suggesting that female consumers are often more receptive to cultural, ethical, and emotionally driven branding cues (Sun, 2024; Zdravković, 2021), which could make region of origin an important marker of trust and authenticity. Despite these perspectives, sex-based differences in Sabah's FMCG market appear to be minimal, as both male and female respondents display similar attitudes towards locally produced food and beverages.

The data indicate that female respondents show a slightly stronger preference for local products (75.4%) than male respondents (70.9%), potentially reflecting their traditional role as primary household shoppers (D'Acunto et al., 2021). This responsibility may contribute to a stronger inclination towards locally sourced products, which are often viewed as safer or more beneficial to local communities in economic terms (Dudziak et al., 2023; Merlino et al., 2022). However, as this difference is not statistically significant, it does not necessarily justify distinct marketing strategies based on sex alone.

Instead of focusing on sex-specific messaging, broad-based marketing strategies that emphasize quality, authenticity, and community-driven branding are likely to appeal to both male and female consumers. Highlighting universal attributes, such as the reliability of local ingredients, traditional production methods, and overall value, can strengthen consumer engagement across demographics (Nickel et al., 2020; Praxmarer-Carus & Gathen, 2023). This approach aligns with marketing principles that prioritize universal consumer appeal over demographic segmentation. Given the absence of major sex differences, FMCG businesses in Sabah may gain deeper insights by exploring other factors, such as lifestyle choices, purchasing motivations, and brand perceptions, to better understand consumer behavior.

5.3 Education level and region-of-origin perception

Examining education level as a demographic factor provides additional insights into region-of-origin perceptions, although no statistically significant relationship was found in this study. While the data do not confirm a strong correlation, a clear trend emerges: consumers with lower educational attainment display a stronger preference for region-of-origin products (81.4%), whereas those with postgraduate degrees show the lowest affinity (7.1%).

This trend suggests that purchasing behavior may be influenced by traditional consumption habits, cultural familiarity, and economic considerations. Consumers with lower educational backgrounds may have stronger ties with local communities and traditional food practices, which could foster a greater sense of trust in Sabah-produced goods (Damanik et al., 2023; Hong & Kangas, 2022). By contrast, highly educated consumers, particularly those with postgraduate qualifications, are more likely to be exposed to international brands, global quality standards, and contemporary marketing strategies (Kurušić et al., 2023). As a result, they may adopt a more critical approach to evaluating local products or develop a preference for imported alternatives.

Although these observations highlight meaningful trends, they are not sufficient to establish a definitive causal link, warranting further statistical research to confirm their significance. From a practical standpoint, these findings suggest that FMCG businesses in Sabah can refine their marketing strategies to appeal to different educational groups. For consumers with lower educational backgrounds, branding efforts that emphasize tradition, local pride, and community engagement by using accessible language and relatable storytelling may strengthen their connection to local products (Durbul et al., 2021). Meanwhile, marketing directed at highly educated consumers could focus on product quality, sustainability credentials, and nutritional benefits, aligning with their tendency to prioritize globally recognized standards (Unal & Tascioglu, 2022).

5.4 Ethnicity and region-of-origin perception

Ethnicity plays a key role in shaping consumer perceptions of the region of origin in Sabah's FMCG market ($p = 0.000$), reflecting distinct preferences for locally produced food and beverage products across different ethnic groups. This finding aligns with previous research suggesting that ethnic identity and cultural heritage significantly influence food purchasing behavior, particularly in multicultural contexts such as Sabah, where traditional consumption patterns remain deeply ingrained (Intharacks et al., 2023; Reddy & Dam, 2020; Zhang et al., 2022).

Sabah's cultural landscape is shaped by its diverse population, consisting of both indigenous and immigrant communities (Fang et al., 2022; Tangit, 2023). Indigenous groups, particularly Kadazan/Dusun and Bajau/Sama, form the cultural backbone of the state, while Chinese and Indian minorities contribute to ethnic diversity. These variations in cultural background lead to distinct consumer preferences, highlighting the need for FMCG businesses to adopt nuanced marketing strategies.

The data revealed significant differences in region-of-origin perceptions among the ethnic groups. Indigenous communities, particularly Kadazan and Dusun (83.7%) and Bajau and Sama (91.7%), demonstrated a strong preference for locally produced products. This is largely because of their deep-rooted cultural connections with Sabah's land, traditions, and cuisine (Chang et al., 2023; Fang et al., 2025; Mohd. Yakin et al., 2022). For these communities, locally sourced food and beverages evoke nostalgia, authenticity, and trust, reinforcing loyalty to regional goods.

By contrast, Chinese (40.5%) and Indian (0%) respondents showed significantly lower attachment to local products. This disparity may stem from various factors, including differing culinary traditions, a preference for internationally recognized brands, or a lack of product offerings that align with their dietary habits. Chinese consumers who have historically been associated with trade and commerce tend to favor imported goods, often perceiving them as

higher in quality or more prestigious. Purchasing decisions are influenced by factors such as country-of-origin effects, cultural consumption habits, and trust in international certifications (Hossain et al., 2024; Shen et al., 2021; Wang et al., 2020).

The low engagement among Indian consumers with locally produced FMCG products may reflect the limited availability of options that cater to their culinary traditions as well as a preference for imported spices and ingredients. Research suggests that Indian consumers often perceive foreign brands, particularly in sectors such as food, electronics, and clothing, as superior to local alternatives, because of their perceived reliability and status (Lohan et al., 2020; Verma & Naveen, 2021).

These findings highlight the potential benefits of ethnically targeted marketing strategies for Sabah's FMCG sector. For indigenous communities, campaigns that emphasize cultural heritage, traditional recipes, and community-driven values are likely to resonate strongly (Fam et al., 2020; Meisin & Gisip, 2022; Mohd. Yakin et al., 2022). Promoting indigenous ingredients, such as Sabah's wild herbs or seafood, in advertising and branding efforts could further strengthen engagement among Kadazan/Dusun and Bajau/Sama consumers.

Conversely, attracting Chinese and Indian consumers may require a different approach, with a focus on competitive pricing, international quality standards, and product innovations that align with culinary preferences (Ho et al., 2024). For example, introducing ready-to-cook sauces or culturally inspired snacks that blend Sabahan flavors with elements of Chinese or Indian cuisine could encourage greater acceptance of locally produced FMCG products.

Beyond product positioning, these findings underscore the broader role of cultural identity in shaping consumer behavior. The FMCG businesses in Sabah can strengthen consumer engagement by ensuring inclusivity in their product lines and marketing efforts. Actively representing diverse ethnic groups through culturally relevant branding can foster a strong sense of belonging and trust. Collaborating with ethnic festivals, community leaders, or local culinary influencers can further enhance brand visibility and consumer loyalty across different segments. By acknowledging and celebrating Sabah's rich cultural diversity, businesses can build deeper connections with their target audience and create more meaningful engagement with regional products.

5.5 Division in Sabah and region-of-origin perception

The findings revealed a statistically significant link between Sabah's regional divisions and perceptions of the region of origin ($p = 0.000$), highlighting the crucial influence of geographic location on consumer preferences for locally produced food and beverage products. This aligns with existing research, which suggests that factors such as regional economic conditions, infrastructure, and cultural identity play a significant role in shaping attitudes towards local goods (Cvijanović et al., 2020; Fernández-Ferrín et al., 2020). Within Sabah, disparities between urban and rural areas as well as coastal and inland regions contribute to varying levels of consumer affinity for Sabah-produced FMCG food and beverage products.

A closer look at these regional differences reveals that the West Coast division has the strongest preference for local products (78%). This trend is likely influenced by the division's urbanized and economically developed landscape, where greater consumer awareness and better access to locally produced FMCG goods support stronger engagement with regional brands (Cvijanović et al., 2020; Maheswari & Kannan, 2024). Additionally, areas within this division, such as Kota Kinabalu, may have more prominent cultural narratives that reinforce local pride and identity, thus further strengthening region-of-origin perceptions.

On the other hand, divisions such as Sandakan (57.6%) and Tawau (58.3%) exhibit lower levels of engagement with locally produced goods. This complex issue may stem from increased

exposure to imported products, weaker regional branding, and economic factors that make foreign goods a more attractive option (Ge et al., 2023; Harun et al., 2023; Zhang et al., 2022). Tawau, for instance, is the largest trading port on Sabah's east coast, serving as a hub for imported fruit, dried seafood, household items, and cosmetics from Indonesia and the Philippines (Siswanto & Rudiati, 2024). A steady influx of foreign goods means that consumers in this region are frequently presented with international alternatives, which may reduce their engagement with Sabah-produced FMCG products.

These regional variations have important implications for Sabah's FMCG producers. Tailoring marketing strategies to suit the unique characteristics of each division could help increase consumer engagement and strengthen demand for local products (Chen, 2021; Hoskins et al., 2021). In the West Coast division, campaigns that celebrate local heritage, regional pride, and product quality can reinforce existing loyalty. By contrast, areas such as Sandakan and Tawau, where region-of-origin perceptions are weaker, may benefit from targeted educational campaigns designed to build awareness and trust in local brands. Initiatives, such as product demonstrations, collaborations with local influencers, and certification programs that validate product authenticity and quality, could help bridge this gap.

Beyond marketing, these findings highlight the need for adapted supply chain and distribution strategies that reflect regional differences. Increasing the availability of local products in divisions where region-of-origin affinity is lower through partnerships with local retailers or community markets could help close existing perception gaps. Overall, this study underscores the importance of a region-specific approach in Sabah's FMCG sector, allowing businesses to better understand and respond to the diverse preferences and needs of consumers in different geographic areas.

6. Implications

6.1 Contribution to region-based consumer behavior literature

The findings of this study make a valuable contribution to the growing body of research on region-based consumer behavior by demonstrating how geographical and ethnic identities influence consumer preferences in Sabah's FMCG food and beverage sector. The statistically significant link between regional divisions and region-of-origin perceptions highlights the role of place-based identity in consumer decision making, supporting existing consumer ethnocentrism models (Shimp & Sharma, 1987) and regional branding frameworks (Charton-Vachet et al., 2020).

The strong influence of ethnicity on region-of-origin perceptions further reinforces the idea that cultural heritage and traditional consumption patterns are the key drivers of consumer loyalty. This is particularly evident among indigenous communities such as the Kadazan/Dusun and Bajau/Sama groups. By examining these patterns in a multicultural and geographically diverse region such as Sabah, this study expands the theoretical framework for understanding region-of-origin effects. Unlike more homogenous markets, Sabah's diversity calls for more nuanced marketing strategies that recognize the intersection of regional pride and ethnic identity in shaping distinct consumer segments.

6.2 Strategic marketing and branding for businesses

Consumer behavior in Sabah is shaped by a combination of cultural heritage, urbanization, and exposure to global brands. Understanding these factors allows businesses to create marketing strategies that connect different demographic groups in meaningful ways.

Kadazan/Dusun consumers have a strong affinity for region-of-origin branding and respond well to marketing, highlighting cultural heritage and authenticity. Businesses can use storytelling-based branding to showcase traditional Sabahan recipes and indigenous ingredients, thus

strengthening the emotional connection between consumers and the product. Organizing heritage food festivals and collaborating with local cultural organizations can further reinforce consumer loyalty, helping to sustain the long-term appeal of regional products.

Urban consumers, particularly in Kota Kinabalu and other commercial centers, tend to be more brand-conscious and influenced by global trends. To appeal to this segment, businesses must focus on digital marketing and premium positioning. Establishing a strong social media presence, partnering with influencers, and promoting high-quality production standards can help Sabah-made goods to be competitive alternatives to imported brands. Convenience-driven strategies such as subscription boxes and online delivery services can also cater to the fast-paced lifestyles of urban consumers, increasing engagement with local brands.

Chinese and Indian consumers generally have lower attachment to regional products and often prefer globally recognized brands. To attract this segment, businesses should focus on product innovation by introducing fusion flavors that blend Sabahan elements with Chinese or Indian culinary traditions. For example, Tenom coffee-infused mooncakes or spicy sambal-flavored chocolates could serve as distinctive offerings that merge local identity with familiar taste. Emphasizing international quality standards and sustainability credentials would also help build consumer trust, making local brands more competitive.

The Bajau/Sama and Murut communities, such as the Kadazan/Dusun, show strong loyalty to locally produced goods. These consumers respond well to community-focused branding, which highlights the origins and production processes of the products. Businesses can strengthen authenticity and trust by incorporating local farmers and fishermen into their marketing campaigns. Additionally, offering halal-certified FMCG products would align with the dietary preferences of Bajau/Sama consumers, further enhancing brand acceptance and expanding the market reach.

6.3 Competitive positioning against non-local brands

Local businesses need to position themselves strategically to compete with imported and internationally recognized brands. Branding should focus on emotional and cultural appeal for consumers, with a strong connection to the region of origin. By contrast, for urban and brand-conscious consumers, modern packaging, quality assurance, and product distinctiveness are likely to be more persuasive.

Introducing exclusive, limited-edition regional products could elevate the prestige of local brands and spark consumer interests. However, for those with weaker region-of-origin perceptions, competitive pricing and brand visibility alone may be insufficient. Building trust through third-party certifications, sustainability initiatives, and transparent sourcing practices can strengthen consumer confidence and enhance the credibility of local brands in the market.

6.4 Policy implications for regional economic growth

Policymakers play a crucial role in enhancing region-of-origin perceptions by supporting branding initiatives and encouraging the growth of the local FMCG businesses. Introducing an 'Authentic Sabah' certification could help build consumer confidence in locally produced goods, following the example of Thailand's One *Tambon*, One Product' (OTOP) initiative, which successfully promoted regional crafts and food products at both national and international levels.

Government efforts should focus on providing targeted support for micro, small, and medium-sized enterprises (MSMEs) through funding, marketing assistance, and digital transformation programs. Offering grants for e-commerce expansion and brand development would enable local businesses to compete more effectively with imported products, helping them establish stronger market presence and long-term sustainability.

Investing in infrastructure to improve regional distribution networks also plays a key role in making locally produced FMCG products more accessible, particularly in rural and suburban areas. In addition, public awareness campaigns could help educate consumers on the economic benefits of choosing local products, reinforce the importance of regional industries, and contribute to long-term economic resilience.

7. Limitations

7.1 Sample size and generalizability

The research is centered on Sabah, Malaysia, which is characterized by its cultural diversity and distinct economic and ethnic dynamics. As a result, the findings may not be fully generalizable to other Malaysian or non-Western economies with different consumer behaviors. Sabah's distinct ethnic composition and economic landscape, particularly its indigenous communities and reliance on local industries, may influence consumer loyalty towards regional brands differently from other Malaysian states such as Peninsular Malaysia, which has a more urbanized and commercially integrated market. Future research should examine whether these differences affect region-of-origin preferences across distinct economic and cultural environments.

7.2 Potential confounding variables

This study primarily examined demographics (age, sex, ethnicity, education, and geographic location) as factors influencing region-of-origin perceptions. However, other key variables that might shape consumer behavior were not controlled, potentially acting as confounding factors.

First, wealthier consumers may exhibit different region-of-origin perceptions, particularly regarding their willingness to pay premiums for local products. High-income groups often have greater access to imported brands, which can dilute their region-of-origin loyalty. Future studies should include an income-level analysis to examine whether economic standing influences consumer attachment to regional brands. Second, urban consumers, especially those in globalized commercial centers such as Kota Kinabalu, may have greater exposure to international brands and imported goods, shaping different attitudes toward regional products compared to rural consumers. This study does not directly measure urban-rural differences in region-of-origin perception, which represents a gap that future research should explore.

Consumer awareness of and familiarity with local brands plays a significant role in perceived authenticity and quality. Respondents who regularly purchase local FMCG products may exhibit a stronger region-of-origin bias, while those unfamiliar with local brands may rely on alternative cues such as price, packaging, or global reputation. Future research could measure brand recognition levels and their correlations with region-of-origin preferences.

7.3 Cross-sectional design and evolving consumer behavior

This study adopts a cross-sectional approach that captures consumer attitudes at a single point in time. However, consumer preferences have evolved due to economic shifts, globalization, and digital commerce. For example, regional branding may gain traction during periods of economic nationalism, while expanding global trade may weaken region-of-origin attachment. Longitudinal studies tracking these shifts over time would provide a more nuanced understanding of how consumer attitudes toward local products evolve.

8. Future research

8.1 Interplay of demographic factors and psychographic influences

While this study examined demographic factors such as ethnicity and regional division, future research should explore how these interact with psychographic traits such as ethical consumerism, novelty-seeking, and digital engagement. For instance, do younger consumers in urbanized, globalized settings embrace region-of-origin branding due to sustainability concerns or support for local entrepreneurship rather than cultural tradition? Qualitative research methods, including focus groups and in-depth interviews, offer detailed contextual insights that enhance quantitative analyses and provide a more comprehensive understanding of complex interactions.

8.2 Impact of digital commerce on region-of-origin perceptions

The rise of e-commerce presents a critical frontier for region-of-origin research, which this study does not address. Future studies should investigate how digital consumers in Sabah engage with region-of-origin cues in online settings, where traditional physical interactions, such as packaging and in-person experiences, are replaced by virtual interactions. Key questions include whether geographical indicators such as PDO or Geographic Indication (GI) certifications hold the same weight in digital purchases as in physical retail. Understanding how online reviews, influencer marketing, and brand storytelling shape trust in region-of-origin-based products would offer businesses valuable insights into adapting regional branding strategies for a digital-first economy.

8.3 Cross-cultural, cross-regional, and cross-industry comparisons

While this study focused on Sabah's FMCG food and beverage industry, future research should examine how region-of-origin perceptions vary across industries and national contexts. One key area is the comparison between developed and emerging markets. For instance, does a product's regional identity hold the same consumer value in a developed economy like New South Wales, Australia, as in an emerging market like Sabah, Malaysia? Understanding whether regional branding carries a premium in different economic environments can enhance global marketing strategies.

Beyond national differences, cross-industry research could explore whether region-of-origin influences consumer trust equally across different sectors such as fashion, tourism, and handicrafts. Industries with strong cultural and heritage associations may benefit more from regional branding, while industries driven by technology or standardization (e.g., electronics and pharmaceuticals) may rely less on geographic identity. Future studies should investigate how region-of-origin branding effectiveness varies by industry and whether certain sectors should emphasize regional authenticity more than others.

9. Conclusion

This study examines the influence of demographic factors on region-of-origin perceptions in Sabah's FMCG food and beverage industry, revealing that regional division and ethnicity play a significant role in shaping consumer preferences, whereas age and sex have a more limited impact. Consumers in urban centers, such as the West Coast, and indigenous groups, such as the Kadazan/Dusun, demonstrate strong loyalty to local products, reinforcing the importance of geographic and cultural identity in purchasing behavior. These findings highlight the need for marketing strategies that emphasize regional authenticity and cultural resonance, providing

businesses with a means to strengthen consumer engagement, and policymakers with a tool to drive economic growth through regional branding.

While this study offers valuable insights, its focus on Sabah limits the extent to which the findings can be applied to other contexts. The reliance on a cross-sectional design also prevents analysis of how region-of-origin perceptions evolve over time. Future research should explore these dynamics through comparative studies across different regions, longitudinal research that tracks shifts in consumer behavior, and investigations into how digital commerce influences the perceptions of regional branding. Such studies provide a more comprehensive understanding of the role of region of origin in diverse consumer markets.

By shedding light on the relationship between demographics and regional identity, this study contributes to the literature on region-based consumer behavior and offers a foundation for leveraging the region of origin to support cultural preservation and economic resilience in multicultural markets, such as Sabah. Scholars and practitioners are encouraged to build on these insights to address emerging consumer trends and the growing impact of globalization on regional branding.

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