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Consumer Snacking Behavior: A Survey of Biscuit Consumption Patterns

Noor Aslinda Abu Seman[1]*, Amir Zakwan Mansor[2], Arifha Mohamad[1], Muhammad Asyraf Hasim[2], Nurazwa Ahmad[2], Mohd Asmadi Mohd Angsor[2]

[1] *Johor Business School,*
Universiti Tun Hussein Onn Malaysia, Batu Pahat, 86400, MALAYSIA
[2] *Faculty of Technology Management and Business,*
Universiti Tun Hussein Onn Malaysia, Batu Pahat, 86400, MALAYSIA

*Corresponding Author: naslinda@uthm.edu.my
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Abstract

The growing prevalence of snacking has significantly impacted consumer behaviour, with biscuits emerging as a popular snack option. This study explores consumer preferences for biscuit consumption, focusing on packaging size, frequency of consumption, and timing. Data were collected through a survey of 106 respondents, revealing that 95.3% enjoy eating biscuits, with over half consuming them 2-3 times per week. The study highlights a strong preference for smaller packaging sizes, with 52.4% favouring small packs for convenience and portion control. Afternoon consumption was the most popular, with 70.8% of respondents choosing this time for snacking. Additionally, 62.3% of respondents purchase biscuits during festivals, indicating their cultural significance during special occasions. The findings suggest opportunities for manufacturers to tailor product offerings by focusing on smaller, resealable packages to maintain freshness and encourage frequent purchases. Marketing strategies can capitalize on the solid afternoon snack preference and the surge in festival demand. This research provides valuable insights for biscuit producers and marketers to align their products with consumer behaviour better, addressing everyday and festive consumption trends. Future studies should explore demographic influences on biscuit preferences and consider the role of health-conscious consumers in shaping the market.

1. Introduction

The growth of snacking as a critical eating occasion signals a significant shift in consumer food habits: away from traditional meal formats to more flexible and portable options. Based on recent studies, snacking is becoming increasingly more prevalent than conventional three square meals hardy during the day, with a growing contingent of consumers turning to many small meals a few times over a handful of larger ones. 63% of consumers worldwide prefer eating two meals with snacks interspersed in between to help stave off cravings and not eat large calorie-filled meals so they can be more productive throughout the day (Mondelez International, 2024; 84.51° Real-Time Insights, 2023). The rise in snacking is even more critical when looking at Millennial and Gen Z generational tendencies to eat on the go and during other activities (Innova Market Insight, 2024ab).

But snacking behaviours are essential for various reasons — driving market dynamics, health insights, and consumer loyalty. In this context, the widespread consumer practice of snacking—who reports that more than two-thirds of them snack once a day or more—creates considerable market space for firms that can innovate and deliver snacks in forms fitting with consumers' desire for convenience, flavour and healthfulness (Demeritt, 2017;

Innova Market Insight, 2024b). Consumer demand for snacks high in protein or fibre and low in undesirable ingredients provides an opportunity for further product development, such that companies can build their products around these macro trends (Innova Market Insight, 2024ab). Investigating snacking patterns can offer a window into consumers' diets and serve as a proxy for overall dietary behaviours, forming part of efforts to design public health interventions promoting healthy eating. Given the established link between snack choices and overall nutritional health, it is essential to understand what consumers choose during these eating episodes.

Similarly, consumer loyalty also seems to be exceedingly important in the snack market, with around 76% of consumers stating that they are loyal customers, albeit due in large part to emotional and shared values (Mondelez International, 2024; 84.51° Real-Time Insights, 2023). This loyalty drives brand engagement and creates unique points of differentiation in marketing strategies. Businesses may foster customer loyalty and promote healthy eating practices in society at large by educating consumers on what and how snacking works. In free time, many consumers eat snacks when they watch TV or read books, with 62% mentioning hunger as the main factor influencing their consumption (84.51° Real-Time Insights, 2023). So, such snacking behaviour reveals that snacks are our comfort foods, making activities more enjoyable. A key trend is a change in the approach to snacking, with more need for mindful eating and flavour clarity. Eighty-five per cent of consumers say they enjoy their snacks much more when consumed mindfully, which points to a more significant potential for brands to push products that are conducive to this habit (Mondelez International, 2024).

Studying biscuit consumption habits can provide insights into when and how people snack, which can inform public health interventions aimed at enhancing nutrition, encouraging healthier lifestyles, and tailoring marketing messages. Frequent biscuit consumption is associated with a high risk of obesity and cardiovascular disease, prompting the need to study dietary patterns and their effects on health (Shi et al., 2022). The timing of biscuit consumption can influence the overall healthfulness of one's diet, with frequent snacking on biscuits potentially leading to decreased consumption of fruits and vegetables (Zizza & Xu, 2012). Marketing events by high consumption occasions can benefit visibility and consumer desire (Kant & Graubard, 2015).

The present study is unique in that it seeks to explore consumer biscuit consumption and trends beyond traditional perceptions. By monitoring these consumption patterns, we hope this research can inform various sectors — from food product development to strategic marketing activities to increase consumer engagement. The paper ends with a summary of the primary conclusions and suggestions for future research or practice. The paper follows this structure: It begins with an introduction that clearly states the research objective and provides a review of relevant previous studies. The methodology section details the research design and data collection methods. The results and discussion section presents the findings, and the paper concludes with a summary of the main conclusions and recommendations for future research or practice.

2.0 Literature Review

2.1 Consumption Habits

The study of snacking behaviours has gained significant attention in recent years, particularly concerning the times of day individuals prefer to snack, the frequency of consumption, and emerging consumer trends. Research indicates that snacking has become a prevalent dietary behaviour across various demographics, with notable variations in frequency and timing. Research shows that snacking patterns are influenced by the time of day, with many individuals opting for snacks during late afternoon and evening hours. For instance, adolescents tend to consume larger snacks later in the day, often leading to increased caloric intake during these periods (Bo et al., 2014). Research indicates that people consume more calories later in the day and less at breakfast, which can lead to a feeling of less fullness and more significant meal portions. (Bo et al., 2014). Furthermore, a study focusing on children revealed that snacking rates peaked in the afternoon, with many children consuming at least four snacks daily, contributing significantly to their total energy intake (Gage et al., 2020).

The frequency of snacking has also seen a marked increase. In the United States, snacking now accounts for approximately 20-27% of total daily caloric intake, with children increasingly consuming three or more daily snacks (Nuru & Mamang, 2015). A study in Jakarta, Indonesia, revealed a significant increase in snacking among high school students, from 74% to 98% in recent decades, echoing similar trends found in other research (Lisetyaningrum et al., 2021). Additionally, Australian children and adolescents have shown a similar increase in snacking frequency, with significant shifts in the types of snacks consumed over the years (Fayet‐Moore et al., 2017).

Besides that, consumer trends indicate a growing preference for specific types of snacks, particularly those high in calories and low in fibre. Research highlights that grain-based desserts, sweetened beverages, and salty snacks dominate snacking (D'Aria et al., 2016). While traditional snacks like cakes and desserts remain popular, there's been a notable shift towards healthier options, such as Greek-style yoghurt, often perceived as a nutritious snack due to its higher protein content (Ortinau et al., 2013). This shift reflects a broader trend where consumers are becoming more health-conscious, seeking snacks that align with their dietary goals while satisfying cravings

Johor Business School (JBS) Nexus Vol. 1 No. 1 (2024) p. 48-56

(Vlieger et al., 2017). Moreover, studies have shown that the types of snacks consumed can vary significantly by region and demographic factors. For example, savoury snacks have seen increased consumption among older children in countries like China and Mexico, paralleling trends observed in the U.S. (Wang et al., 2018). The increased consumption of savoury snacks among older children in China, Mexico, and the U.S. suggests that cultural and regional factors significantly influence snacking behaviours. Thus, this indicates that the landscape of snacking behaviours is complex and influenced by various factors, including time of day, frequency of consumption, and evolving consumer preferences. Since snacking remains a crucial aspect of nutritional consumption, comprehending these patterns is vital for tackling public health issues associated with obesity and nutrition.

2.2 Customer Preferences

The literature on customer preferences for food, particularly in the context of snacks such as biscuits, highlights several key factors influencing consumer choices, including convenience, taste, and health-related concerns. Understanding these preferences is crucial for manufacturers and marketers aiming to meet consumer demands effectively. Convenience is a significant driver of food choices, especially in the context of snacks. Consumers often prioritize quickly accessible options that fit into their busy lifestyles. Research indicates that the availability of nutritious snacks at low costs can positively influence healthier food choices among adolescents Rathi et al. (2018). The availability of nutritious snacks at low costs can positively influence healthier food choices among adolescents, particularly for biscuits and similar snack foods, often marketed for their portability and ease of consumption. The convenience factor is further emphasized by studies showing that parents and caregivers are more likely to purchase readily available snacks and require minimal preparation (Nordhagen et al., 2019).

Taste remains a dominant factor in consumer preferences for snacks. Studies have consistently shown that sensory attributes such as flavour, texture, and palatability significantly influence snack choices (Rodríguez et al., 2017). For instance, children often select snacks based on specific ingredients associated with taste, such as chocolate or cheese (Kiat et al., 2021). This taste preference is not limited to children; adults also exhibit strong taste preferences that guide their snack consumption. Research has demonstrated that individuals who prefer sweet flavours are more likely to consume sugary snacks, including biscuits, which often contain high sugar and fat (Ashi et al., 2017).

Additionally, marketing can significantly influence taste perception. Packaging featuring popular characters or appealing designs can enhance the perceived taste of snacks among children, leading to increased consumption (Roberto et al., 2010). This marketing strategy taps into the emotional and psychological aspects of food choices, further reinforcing the importance of taste in consumer preferences.

While taste and convenience are critical, health-related concerns are increasingly shaping consumer preferences. There is a growing awareness of the nutritional content of snacks, with many consumers seeking options that align with their health goals. A study indicated that consumers are willing to compromise on taste for healthier snack options, particularly when informed about functional ingredients' health benefits (Papoutsi et al., 2019). This trend is evident in the popularity of biscuits fortified with vitamins and minerals, catering to health-conscious consumers (Haile et al., 2020). However, the challenge remains in balancing taste and health. Research suggests that while consumers express a desire for healthier snacks, they often revert to traditional options that are more palatable (Potter et al., 2018). This dichotomy highlights the need for manufacturers to innovate in creating enjoyable and nutritious snacks. For example, biscuits that incorporate whole grains or natural sweeteners may appeal to health-conscious consumers without sacrificing taste (Shi et al., 2022).

2.3 Impact of Consumer Behavior on Marketing

Consumer behaviour significantly impacts marketing strategies, particularly in the snack food sector. Companies are increasingly tailoring their marketing approaches to align with customer habits and preferences, especially concerning the timing and frequency of snack consumption. Research indicates that the timing of snack consumption plays a crucial role in shaping marketing strategies. For instance, studies have shown that consumers often snack during specific times, such as mid-morning or late afternoon, which are critical for targeted marketing efforts (Vatanparast et al., 2019). Marketers capitalize on these peak consumption times by scheduling advertisements and promotions to coincide with these moments. For example, snack brands may launch campaigns highlighting their products as ideal for quick energy boosts during work breaks or school recesses. Retailers strategically place snack products to capture consumer attention during peak times. For instance, studies have demonstrated that the visibility of snack displays in supermarkets can trigger impulse purchases, mainly when consumers are hungry (Thornton et al., 2012). Those studies align with findings that suggest consumers are more likely to buy snacks when they encounter them at convenient locations, such as checkout counters or near the entrance of stores (Huitink et al., 2020).

The frequency of snack consumption also influences marketing strategies. Research has identified distinct consumer segments based on snacking habits, such as high-frequency snackers who prefer healthier options and

low-frequency snackers who often choose indulgent snacks (Vatanparast et al., 2019). Companies leverage this segmentation by developing targeted marketing messages that resonate with each group. For example, health-focused brands may emphasize the nutritional benefits of their products to appeal to health-conscious consumers. In contrast, indulgent snack brands may highlight taste and pleasure to attract those seeking comfort foods. Studies have indicated a link between the frequency of snacking and overall dietary patterns. For example, one study suggests that frequent snackers often have higher overall caloric intake, which can inform marketing strategies that promote portion control or healthier alternatives (Hartmann et al., 2012). Brands may consider their products suitable for frequent consumption by emphasizing smaller, portion-controlled packaging for guilt-free snacking.

Health-related concerns are increasingly shaping consumer preferences and, consequently, marketing strategies. As consumers become more health-conscious, companies adapt their product formulations and marketing messages to highlight health benefits. Research shows that consumers are willing to pay more for snacks perceived as healthier, prompting brands to reformulate products to reduce sugar, fat, and calories while enhancing nutritional content (Ciudad‐Mulero et al., 2022). Furthermore, marketing strategies often incorporate health claims and endorsements from nutritionists or health organizations to build consumer credibility and trust (Vehmas et al., 2019). For instance, brands may promote snacks as "high in protein" or "made with whole grains" to appeal to health-focused consumers. This trend is particularly relevant in the biscuit category, where companies are increasingly introducing whole grain or fortified options to meet consumer demand for healthier snacks (Aljefree et al., 2022).

3. Methodology

We conducted an online survey to gather information about biscuit consumption patterns among Malaysian consumers in Sungai Petani. Using the Krejcie and Morgan formula, we determined a sample size 384 for this population. The survey was distributed randomly via Google Forms to capture a diverse range of feedback, ultimately yielding 106 completed responses, resulting in a response rate of approximately 27.6%. The survey included questions about consumer preferences, how often they consume biscuits, and the specific times they eat them. This approach helped us better understand consumption patterns. We used convenience sampling to select respondents, ensuring a diverse representation of the target demographic. Of the 106 respondents, 29.2% were male, and 70.8% were female. We analyzed the data using SPSS, focusing on descriptive statistics like frequency distributions and percentages to get a clear picture of the consumption patterns in the study.

4. Results and Discussion

4.1 Customer Biscuit Consumption

The survey results on customer biscuit consumption provide essential insights into the preferences and habits of 106 respondents, as shown in Table 1.

Table 1 *Customer biscuit consumption*

Question	Response	Percentage
Do you like to eat biscuits?	Yes	95.30%
	No	4.70%
How many times do you eat biscuits in a week?	One time	25.50%
	2-3 times	52.80%
	4-5 times	9.40%
	More than five times	12.30%
At what times do you prefer to eat biscuits?	Morning	31.10%
	Afternoon	70.80%
	Night	37.70%
	Late Night	15.10%

Table 1 presents an astounding 95.3% of the respondents who said they like to eat biscuits, with only 4.7% indicating that they do not. This overwhelming majority may suggest that biscuits are a favourite type of snack, and only a tiny portion of the population is lacklustre about consuming this food. These tendencies can provide a positive signal for producers, retailers, and marketers, as the snack can attract many clients. Moreover, it aligns with Moitra and Madan (2022), who stated that snacking is a prevalent behaviour that significantly contributes to adolescents' daily energy resumes.

Upon examining the consumption frequency results, it became clear that eating habits were diverse. Only 25.5% of the participants eat biscuits once a week, whereas for the rest of the respondents, the frequency of consumption is higher. Most participants, up to 52.8%, eat biscuits two to three times a week. Moreover, 9.4% of the respondents reported doing so four to five times a week, and 12.3% ate biscuits more than five times a week. Therefore, one can say that around 74.5% of the respondents eat biscuits more than once a week. At this point, it is possible to assume that there is stable demand for biscuits and that producers could introduce packaging more fitting for weekly consumption or offer promotions encouraging to buy and consume. This aspect is consistent with the findings made by Silva et al. (2023), who mentioned that the frequency of eating snacks, including biscuits, is not low among adolescents, which could affect dietary patterns. Producers could use this information to tailor packaging sizes or promotional offers to encourage frequent purchases and consumption.

Regarding preferred times for eating biscuits, the majority of respondents, 70.8%, like to have them in the afternoon. The result suggests that biscuits are a popular afternoon snack, possibly associated with tea or coffee breaks. However, a substantial number of respondents, 37.7%, indicated that they enjoy biscuits at night, while 31.1% prefer them in the morning, and 15.1% consume them late at night. The distribution reveals that consumers consume biscuits at various times of the day, but the strong preference for afternoon consumption provides a clear target for marketing efforts. For example, promoting biscuits as the perfect complement to a mid-afternoon snack could help boost sales during this time. These findings align with Vatanparast et al. (2019), who noted that the timing of snack consumption is crucial for effective marketing strategies. In brief, the data shows that biscuits are a widely enjoyed snack with consistent consumption patterns. The strong preference for afternoon consumption offers a potential area for focused marketing efforts. In contrast, the frequency of consumption highlights the importance of providing biscuits in various formats that cater to different needs—whether for daily consumption or occasional snacking.

4.2 Customers' Preference on Biscuits

Table 2 illustrates the customers' preference for biscuits, including packaging size, quantity, and purchase timing.

Table 2 *Customer biscuit consumption*

Question	Response	Percentage
Which biscuit packaging do you prefer to consume?	Small Size	52.40%
	Medium Size	40%
	Big Size	7.60%
If biscuits were measured by quantity, how many quantities would you prefer to buy/purchase?	Less than 30	39.60%
	30-50	43.40%
	60-80	8.50%
	More than 80	8.50%
When will you buy biscuits? During:	Festival	62.30%
	Feast	12.30%
	Normal Day	66%

4.2.1 Packaging Size Preference

According to the data, 52.4% of respondents prefer to consume biscuits in small-sized packaging, while 40% prefer medium-sized packaging. Only 7.6% indicated a preference for large-sized packaging. This finding shows a

clear consumer preference for more petite or moderately sized packages, likely due to convenience, portion control, or affordability. Small-sized packaging might appeal to consumers looking for single-serve options or avoiding overindulgence. At the same time, medium-sized packages balance quantity and ease of consumption. The low percentage of preference for large-sized packaging suggests that bulk packaging may not be as attractive to the majority, possibly due to storage limitations or concerns over product freshness. Bucher et al. (2016) support this preference for smaller packaging and emphasize the importance of promoting appropriate portions in public health campaigns. The preference for smaller packaging indicates that consumers may favour biscuits as an on-the-go snack or for individual consumption. Additionally, the lack of demand for large packages implies that consumers might not want to buy in bulk, possibly due to concerns over freshness or wastage. Companies may find it beneficial to create smaller, resealable packages that preserve freshness and cater to these preferences, as Harris et al. (2012) noted the impact of packaging on snack consumption behaviours.

4.2.2 Biscuit Quantity Preference

Regarding biscuit quantity preference, 43.4% of respondents preferred to buy between 30 and 50 biscuits per purchase. Another 39.6% of respondents preferred to buy fewer than 30 biscuits, while only 8.5% preferred to buy 60-80 biscuits or more than 80 biscuits. The data reflects a clear trend toward purchasing biscuits in smaller quantities. Most respondents seem to favour quantities that balance convenience and freshness, likely to avoid having excess products that could go stale. For retailers, this suggests that offering products in more miniature quantity packs might lead to better sales, as most consumers are not looking for large quantities of biscuits at once. This result aligns with the findings of Utami et al. (2022), which highlighted that consumers often prefer smaller quantities to manage freshness and avoid waste. These results align with the preference for smaller packaging sizes, as both highlight the trend of consumers favouring smaller purchases. A desire for portion control might drive this or to try different varieties without committing to larger quantities. Retailers and producers could consider offering smaller multipacks or variety packs that allow consumers to enjoy different types of biscuits without purchasing a large amount of any single type.

4.2.3 Purchase Timing

Regarding purchasing patterns, 66% of respondents indicated they buy biscuits regularly, while 62.3% also reported buying biscuits during festivals. A smaller percentage (12.3%) mentioned purchasing biscuits during feasts. These findings indicate that biscuits are consumed regularly throughout the year and are essential during special occasions such as festivals. The fact that a substantial portion of the respondents purchase biscuits during festivals shows that biscuits are a popular item for celebrations and social gatherings. These findings align with Pries et al. (2016), which noted that snack foods play a significant role in cultural and social contexts, particularly during festive occasions.

The data on purchase timing shows that while biscuits are a regular snack choice for many consumers, demand significantly increases during festivals. This could be related to cultural or traditional practices where biscuits are shared with family, friends, and guests. Thus, producers can capitalize on this increased demand by marketing special, festive-themed packaging or offering promotions around essential holidays and festivals. At the same time, maintaining a focus on everyday packaging and promotional efforts will ensure steady sales throughout the year.

Overall, the data highlights a clear preference for small and medium packaging sizes, with consumers favouring smaller quantities of biscuits. Biscuits are a year-round snack, but purchases spike during festivals, presenting a valuable opportunity for targeted marketing. To meet consumer needs effectively, manufacturers and retailers should focus on offering a variety of packaging sizes, particularly smaller options, while taking advantage of festive periods with special promotions and packaging tailored to those occasions.

5. Conclusion

The findings of this study highlight several critical insights into consumer behaviour and preferences regarding biscuit consumption. The high percentage of respondents (95.3%) who selected biscuits as their preferred snack underscores the widespread popularity of this food item. A significant portion of consumers (52.8%) reported consuming biscuits 2-3 times per week, and 62.2% indicated weekly or multiple weekly consumption, demonstrating a steady demand for biscuits as a snacking option. Afternoon is the most common time for biscuit consumption, with 70.8% of respondents choosing this period, indicating potential opportunities for targeted marketing. Smaller packaging sizes were preferred by 52.4% of consumers, emphasizing convenience, portion control, and freshness. This trend suggests opportunities for manufacturers to innovate in packaging design, particularly for consumers who prioritize convenience. Additionally, biscuits' role in festive celebrations, with 62.3% of respondents purchasing biscuits during such occasions, reveals cultural and seasonal opportunities for

marketing strategies. Capitalizing on the demand for festive packaging and promotional offers could further boost sales during peak times.

The findings from this study highlight several critical opportunities for biscuit manufacturers and marketers. By tailoring product offerings towards smaller, resealable packaging, manufacturers can better meet the growing demand for freshness and convenience, encouraging more frequent purchases. Moreover, marketing strategies can capitalize on consumers' strong preference for biscuits as an afternoon snack and the heightened demand during festival seasons. Aligning product offerings with these consumption patterns offers a strategic advantage, allowing companies to position their products as everyday essentials and festive treats. Furthermore, the data underscores the importance of understanding the broader demographic factors influencing biscuit consumption. Future research should investigate how age, gender, and income shape preferences and consumption habits. Additionally, with an increasing shift towards health-conscious snacking, further exploration into how ingredient choices and packaging innovations can attract this growing consumer segment is warranted. This study provides foundational insights that can guide product development and strategic marketing, ensuring better alignment with evolving consumer behaviour in the biscuit market.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

The authors confirm their contributions to this paper as follows: Noor Aslinda Abu Seman was responsible for the study's ***conception and design****, as well as manuscript* ***drafting and preparation****. Amir Zakwan Mansor handled* ***data collection and preparation****. The* ***analysis and interpretation of the results*** *were conducted by Arifha Mohamad and Muhammad Asyraf Hasim. Additionally, Mohd Asmadi Mohd Angsor and Nurazwa Ahmad were in charge of the* ***final review, including checking the language and grammar*** *of the manuscript. All authors reviewed the results and approved the final version of the manuscript.*

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