

INNOVATION IN LOCAL KUIH: CONSUMER'S BEHAVIORAL INTENTION TOWARDS READY-MADE FROZEN FOOD (RMFF)

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Abstract

Local kuih based on ready-made frozen food (RMFF) product plays a significant role as a part of identity, culture, gastronomic legacy, and economic progress. Customer interest and preference may change over times. Due to this situation, the food industry entrepreneur must actively evolve with the innovation so they can retain or improve market share and profitability. However, this needs to correspond to the buyer preference. Therefore, this study investigated the antecedents that influence consumer behavioural intention towards purchasing local kuih ready-made frozen food (RMFF). In this study, an extended Theory of Planned Behavior (TPB) with modification was used. A quantitative e-survey was distributed through google form platform and was distributed to Penang residence in Malaysia. From this e-survey, 152 responses were received. Only 140 of the respondent's data were valid. The data from 140 Penang resident consumers were then analysed using a descriptive statistic, followed by correlation and multi regression using SPSS 21 version. From the collected data, majority of the respondents were female (54.6%) with 64.5% were between 20-29 years old. Respondents with single status recorded the highest with 58.2%. The data collected also showed that 24.8% of the respondents work in professional field with household income between RM2000-RM3000 (34.1%). All factors including attitude ($r=0.592$, $p=0.000$), subjective norms ($r=0.544$, $p=0.000$), perceived behavioural control ($r=0.677$, $p=0.000$) and innovation ($r=0.266$, $p=0.001$) have a positive significant relationship towards intention to buy local kuih ready-made frozen food (RMFF) among the respondents. These indicate 63% of all the factors were found to influence respondents towards intention to buy local kuih ready-made frozen food (RMFF). Hence, this may have a positive impact on Small Medium Enterprise (SME) who produce local kuih ready-made frozen food (RMFF) business while maintaining the authentic taste of the local delicacies.

Keywords: Local kuih ready-made frozen food (RMFF), Theory of Planned Behavior (TPB), Consumer, Innovation, Small Medium Enterprise (SME)

1. Introduction

The rising urbanization witnesses the high demand for frozen food in Malaysia to increased. Levels of income and employment also played an essential role in increasing demand on the ready-made frozen food (RMFF). The expansion of the frozen food sector and the creation of frozen food firms in Malaysia are also fuelled by Malaysia's proximity to better Asia-Pacific markets such as Australia, Japan, China, and the Korean Peninsula (Jha, 2018). Over the next five years, Malaysia's frozen food business is predicted to develop at a CAGR of more than 7%, generating a market value of more than \$800 million by 2023 (Sidhu, 2021). Malaysian frozen food producers deal with a variety of important foods such as frozen meat, seafood, vegetables, fresh fruits, ready meals, drinks, snacks, local *kuih*, and other products.

Besides that, there were a few factors that contribute to growth and demand for the frozen food industry (Sen et., al, 2019):

- growing preference for ready-to-cook food products because of changing lifestyles as a result due to global urbanization.
- the growing number of working women
- the increased availability of freezing medium, is expected to boost the expansion of frozen food enterprises around the world.
- The expanding popularity of fast food and western culture in Asia Pacific emerging economies
- Abundant choice of the frozen food available

Moreover, the traditional foods have received a lot of attention from food companies and government agencies. To maintain or increase market share and profitability, the conventional food sector, like all others in the food business, must continually adapt and grow its goods (Stewart-Knox & Mitchell, 2003; Vanhoner et al., 2013). As a result, to preserve the long-term viability of local food frozen manufacturing, Small Medium Enterprise (SME) food enterprises must innovate. Developing suitable methods for effective new product development (NPD) has needed a higher degree of thought, as well as matching with customer desires and expectations as those requirements and preferences grow over time (Guiné et al., 2021).

Therefore, this study was conducted to identify and fill a research gap by investigating the factors influencing the customers purchase behavior towards local *kuih* frozen food. The results of this analysis will give Small Medium Enterprise (SME) entrepreneurs useful insights into aligning their goals with consumer expectations.

2. Literature Review

2.1 Malaysian Local Kuih

Malaysia is a foodie's paradise, and Malaysians in general embrace their diverse society's distinct gastronomic history. Malaysian cuisine represents the country's many ethnic groups. Despite the existence of Malay, Indian, Chinese, Nyonya (Peranakan), and Eurasian cuisines, Malaysian cuisine has a long history of cross-cultural borrowing, adaptation, and hybridity (Kamaruzaman et al., 2020).

The term *kuih* is used broadly, and due to a lack of suitable documentation on the subject, fundamental understanding of what the local *kuih* conveys remains hazy. According to (Kamaludin H., 2017), *kuih* is widely accepted to be consumed throughout the day as snacks anytime they are available, and it is also occasionally included in feasts or holidays. While, Mustafa et al (2019) characterized traditional Malay *kuih* as a "confectionery,". Such as Indonesia, Singapore, and Brunei. Even though the disparities in the true definition of *kuih* in the regions mentioned would suggest a broad diversity of food types within them (Kamaruzaman et al., 2020).

Moreover, traditional Malaysian local *kuih* is a broad phrase that encompasses a variety of small-sized delights ranging from delectable pastries or bakeries to steaming and grilled delicacies, all of which have distinct sweet or savory flavors. Besides that, a wide variety of Malaysian local *kuih* or delicacies are available, including appetizers, salads, soups, main courses, desserts, and snacks (Kamaruzaman et al., 2020).

Malaysian local *kuih* product also plays an important role as part of identity, culture, gastronomic heritage. Consumers are now seeking more novel food inventions, in spite of the fact that traditional Malaysian cuisine has remained authentic over time. As a result, this may be the best time to give the usual classic offerings a fresh twist while maintaining their original identity.

The common local *kuih* are *popia, pau, karipap, cucur badak, cucur kacang hijau, apam kukus, samosa* and *otak-otak* (Haimid et al., 2014). The majority of local *kuih* originate in rural areas, but urban migration has made them available in cities as well. Thus, through food innovation using frozen technology it may widened the market and expanded the range of products.

2.2 Food Innovation

In the food supply chain, food innovation refers to the improvement of existing products and processes as well as the invention of new products and processes. While food suppliers and manufacturers are the primary drivers of innovation, consumers and the whole food supply market benefit from it as well (Rosenthal et al., 2021).

Novel processing technologies have been used in industrial production to produce healthier and safer products, highlighting non-thermal technologies such as static or dynamic high pressure, pulsed electric fields, cold gas plasma, and high-power ultrasound, among others, as well as for structuring food and incorporating bioactive compounds, such as 3D printing and nanoencapsulation, to name a few (la Peña et al., 2018).

The processing sectors, such as the canned food industry, the dairy industry, and the frozen food industry, all create more added value. Moreover, these trends will bolster the frozen food industry's growth, which stems from the transformation of basic materials into high-quality, added-value commodities that are simple to prepare and consume, extend people's lives, and can be stored for a long time (Distanton & Khongmalai, 2020).

Besides that, for the future research directions Food Value Chain (FVCs) and Regional Food Hubs (RFHs) business model is urged to be considered for the sustainability of the local foods (Herminatin et al., 2022).

Thus, in this study the innovation may focused on the frozen technology specially on the Malaysian local *kuih*.

2.3 Ready-Made Frozen Food (RMFF)

Ready-made Frozen snacks are pre-packaged, fresh or frozen foods that just need to be heated before serving. Ready-made Food that has been properly packed and prepared for consumption is referred to as frozen food. This sort of meal is unique in terms of excellent eating nutrients.

These frozen items have the largest market value in Malaysia after dairy and pastries. The frozen food sector's sales value was fairly high—RM705.8 million (5.1%)—in comparison to other sales (Alias & Mohamad Noor, 2022)

The two most essential motivations that inspire purchasers to purchase quick meals are 'convenience or ease of usage' and 'saving time' (Hawa et al., 2014). These meals are designed for rapid availability, consumption, and ingestion with little consideration for quality. Thus, ready-made frozen food (RMFF) is potential to be explored.

2.4 Theory of Planned Behavior (TPB)

An extended of the Theory of Planned Behavior (TPB) with modification was chosen for this study. TPB comprises of three variables, as defined by Ajzen (1991), namely attitude, subjective norm, and perceived behavioral control (PBC).

According to consumer research, customer needs, attitudes, and priorities, as well as how these priorities are developed in their minds, impact consumer behavior (Guiné et al., 2021). The individual's purpose of the behavior elements is the emphasis of this theoretical method. The TPB considers behavioral intention to be a function of behavioral control in terms of attitudes and subjective norms. Behavioral control is comprised of control ideas and perceived power.

Behavioral intentions are indicators of actual actions when the behavior is highly under one's own control. In other words, even if someone is urged to engage in a behavior, if the action is forbidden or restricted by the environment, they may not engage in it or modify their behavior.

This hypothesis has been widely applied to several areas of human behavioral research, and it is supported by numerous empirical studies. The TPB was used in food marketing to model customer behavior toward organic goods (Asif et al., 2018; Yadav & Pathak, 2016) or genetic modification (Akbari et al., 2019; Kim et al., 2014; Zhang et al., 2018).

2.5 Research Framework

A research framework, such as the one shown in Figure 1.0 below, is needed to carry out the ideas clearly. Factors in the extended TPB namely attitude, subjective norm, perceive behavioral control and food innovation acted as variables to influence the consumer's behavioral in purchasing the local *kuih* ready-made frozen food (RMFF) products.

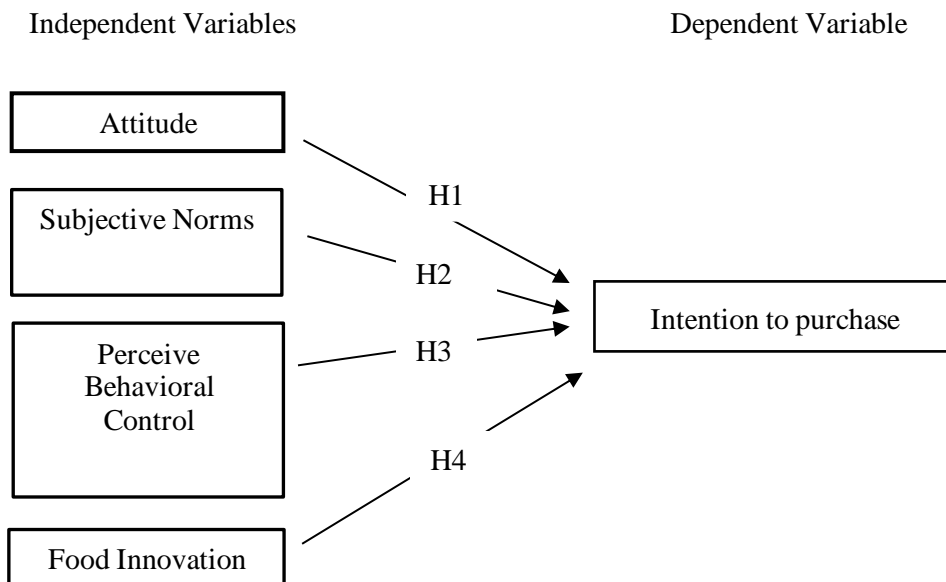


Fig. 1 Research Framework

3. Methodology

3.1 Research Design

A purposive sampling was used to conduct a cross-sectional e-survey among Penangites, with a screening question presented to only consumer that buy and consume frozen local *kuih*. The G*power software was used to calculate the sample size for this study. The required sample size is 129 when the power is ninety five percent (95%), the effect size is 0.15, and there are four predictors. All instruments were taken from a prior study that employed a five-point Likert scale. A total of 140 legitimate responders were received, and SPSS 21 was used to analyse them.

3.2 Data Analysis

The data was examined using the Statistic Package for Social Science (SPSS) version 21.0 software and a statistical analysis technique. To analyses and create the findings, a reliability analysis was performed, followed by descriptive and multi regression.

4. Results and Discussion

4.1 Respondents' Profile

Respondents' profile is crucial for demonstrating the relationship between socio-demographic characteristics such as gender, age, marital status, occupation and household monthly income with respect to purchase local ready-made frozen food (RMFF) as shown in table 1.0 below.

Table 1: Respondents' Profile

Socio-demographic criteria		Percentage (%)
Gender	Male	45.4
	Female	54.6
Age	20-29 years old	64.5
	30-39 years old	23.4
	40-49 years old	10.6
	50-59 years old	0.7
	60-69 years old	0.7
Marital Status	Single	58.2
	Married	41.8
Occupation	Professional	24.8
	Administration	24.1
	Skilled Labor	20.6
	Self-employed	10.6
	Others	19.9
Household Monthly Income	Under RM 2000	24.6
	RM 2000-RM3000	34.1
	RM 3000-RM5000	24.6
	RM 5000-RM10000	10.1
	Over RM 10000	6.5

Based on table 1, female respondents were found to be the majority (54.6%) group compared to male respondents (45.4%). Majority of the respondents (64.5%) were between the ages of 20 to 29 and most of the respondents were single (58.2%) with 24.8% were professional workers. Thus, these showed that the younger generation was more interested in buying frozen local *kuih*. Meanwhile, the respondents with RM 2000-RM3000 household monthly income had the highest number of consumers purchase local ready-made frozen food (RMFF).

4.2 Reliability Analysis

The Cronbach's alpha value was used to determine the internal consistency of items during the reliability test (Nunnally, 1979). Nunnally (1979) argued that for early stages of research, an alpha of 0.6 was sufficient. Cronbach's alpha scores in this study were all more than 0.6, indicating that all the items are reliable and can be used to further test the hypotheses.

4.3 Type of local kuih ready-made frozen food (RMFF) purchased

Result showed that, 92.8% of Penangites buy frozen local *kuih* from two main hypermarkets. Only 7.2% of those polled had no prior experience with readymade frozen local *kuih*. Besides that, majority of Penangites preferred frozen *Popia*, *Pau* and *Karipap*. Figure 2.0 below indicate types of frozen local *kuih* that has been purchased by the Penangites.

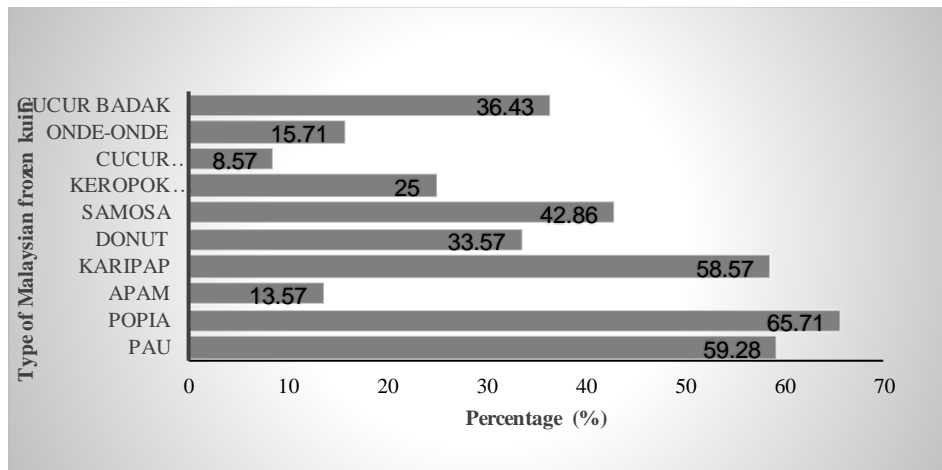


Fig.2.0 Type of local kuih ready-made frozen food (RMFF) purchased

4.4 Factors that Influence the Purchase of Local kuih ready-made frozen food (RMFF)

The ready-made frozen food (RMFF) is receiving more requests and attention. This item is well-known among customers. Aside from sociodemographic characteristics, a consumer's decision to purchase RMFF is influenced by several additional elements. These influencing factors were attitude, subjective norms, perceive behavioral control and food innovation of the products, which were found to be significantly influenced the consumers towards purchasing the RMFF as shown in table 2 below.

Table 2.0: Pearson's correlation coefficient correlations

		Correlations				
		Attitude	Subjective_Norms	Perceive_Behavioral_Control	Intention	Innovation
Attitude	Pearson Correlation	1	.464**	.441**	.592**	.165
	Sig. (2-tailed)		.000	.000	.000	.051
	N	140	140	140	140	140
Subjective_Norms	Pearson Correlation	.464**	1	.500**	.544**	-.016
	Sig. (2-tailed)	.000		.000	.000	.852
	N	140	140	140	140	140
Perceive_Behavioural_Control	Pearson Correlation	.441**	.500**	1	.677**	-.028
	Sig. (2-tailed)	.000	.000		.000	.746
	N	140	140	140	140	140
Intention to buy	Pearson Correlation	.592**	.544**	.677**	1	.266**
	Sig. (2-tailed)	.000	.000	.000		.001
	N	140	140	140	140	140
Innovation	Pearson Correlation	.165	-.016	-.028	.266**	1
	Sig. (2-tailed)	.051	.852	.746	.001	
	N	140	140	140	140	140

** . Correlation is significant at the 0.01 level (2-tailed).

4.5 Multiple Regression

Table 3.0: Model Summary

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
1	.677 ^a	.459	.455	.36126
2	.752 ^b	.565	.559	.32492
3	.785 ^c	.616	.607	.30658
4	.801 ^d	.641	.630	.29752

a. Predictors: (Constant), Perceive_Behavioural_Control

b. Predictors: (Constant), Perceive_Behavioural_Control, Attitude

c. Predictors: (Constant), Perceive_Behavioural_Control, Attitude, Innovation

d. Predictors: (Constant), Perceive_Behavioural_Control, Attitude, Innovation, Subjective_Norms

e. Dependent Variable: Intention

A multiple regression analysis was used to see if Attitude, Subjective Norms, Perceived Behaviour Control, and food innovation could all predict Penangites' consumers' desire to consume local *kuih* ready-made frozen food. The regression findings show that Model Summary (Subjective Norm (SN), Attitude (ATT), Perceive Behavioral Control (PBC) and food innovation explained 63% of the variation and this model was the most significant predictors, $F(1,135)=60.235, p<0.0005$.

5. Conclusion and Recommendation

In general, this study demonstrated that consumers were open towards innovations and they are willing to buy the local *kuih* ready-made frozen food (RMFF). The key drivers for the increased demand in local *kuih* Ready-Made Frozen Food (RMFF) based on the following demographic factors:

Gender: Male and female do shop considering different motives, perspectives, rationales and considerations

Age : Different ranges of age may have different opinion and lifestyle

Occupation: People's food choice behavior depends on profession

These results are expected to highlight the significance of innovation role in continuing and sustaining the Malaysian local *kuih* Ready-Made Frozen Food (RMFF) against the globalization and urbanization. Continuous and proactive efforts need to be taken by society, academia, government and foodservice industry to ensure continuous sustainability of Malaysian local *kuih* Ready-Made Frozen Food (RMFF). Hence, it may also have a positive impact on the Malaysian local *kuih* Ready-Made Frozen Food (RMFF) food business and tourism food heritage industry in the future.

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