Consumer affinity for frozen traditional cakes in Selangor
(Kecenderungan pengguna terhadap kuih-muih tradisional sejuk beku di Selangor)

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Abstract
A study was carried out in 2014 on the demands and consumptions of frozen traditional cakes in Selangor. It involved 406 respondents, and face-to-face interviews were undertaken with them. The study looked into the affinity of consumers for frozen traditional cakes and their purchasing behaviour in the acquirement of these cakes. The results of the study indicated that there are four main factors that influenced consumer behaviour. These include quality of products, price and physical aspects, marketing strategies of local producers and nature of the products. The quality of products includes the existence of halal logo, high quality, nutritional contents, ingredients used and product safety, cleanliness and expiry dates. The second factor comprised the lowest cost and discounted price offered for the products, a free offer if any, and their size as well as packaging. The third factor included products that were local, branded, manufactured by a bumiputera company and the shape or form they were sold. Imported products, commercial branding and products of non-bumiputera companies made up the fourth factor of the consumer preference. It was worthy of note that appropriateness of product prices had a unanimous agreement amongst respondents and it was taken to be universal among them.

Introduction
The direction of the development of agro-based industries particularly food processing industry is in line with the Third Industrial Master Plan (IMP3) 2006 – 2020. Under this master plan, emphasis is on value-adding activities that can generate additional incomes for entrepreneurs, farmers, livestock breeders and fishermen. This master plan also focuses on the development of business activities that can increase participation of bumiputera entrepreneurs in manufacturing sector, as well as poverty alleviation.

Bumiputera entrepreneurs are encouraged to participate in manufacturing that they have the competitive advantage and skills.

There are 19 categories (clusters) of processed food namely confectionery; bakery products; ice creams; dairy products; sweet and savory snacks; snack bars; meal replacement products; ready-to-eat meals; soups; pasta; noodles, canned/preserved food; processed frozen food; dried processed food; oils and fats; sauces, dressings and condiments; infant food and spreads. Bakery

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products tap the largest market share for processed food followed by dairy products, chilled processed food and confectionery. These four categories alone accounted for 61.3% share of processed food market in 2007 with a value of USD943.1 billion (Ahadiah 2007).

The improvement in the standard of living, changes of lifestyle and concerns towards health have changed the eating habits of the consumers. The demand for frozen products is expected to increase driven by the less time to prepare the products due to longer working time outside the house. This situation has created market opportunities for health food, nutritious, convenience and easy-to-eat frozen food, lower calorie snacks and fats as well as health drinks. Generally, frozen traditional cakes are relatively new to Malaysian consumers.

Consumers preferred home made products that self-prepared originally and has original taste (Mohd Hafizudin 2010). Frozen products are associated with modern and mass production that might change the original taste. It is also normally kept for longer time and not fresh. These factors are important in marketing the frozen products, especially to traditional consumers. Previous study revealed some information on consumer's perception and preferences towards frozen food in Malaysia in general (Mohd Hafizudin 2010).

The information on consumer perception and preferences towards frozen traditional cakes, especially in Selangor is still lacking. This study aimed to understand consumers behaviour in Selangor towards frozen traditional cakes. Selangor was chosen as its research setting because it is recognised as a modern state where most areas are considered urban or semi-urban.

Food industry in Malaysia

Malaysia's food industries are as diverse as its attribute of multi-cultures, with a wide range of processed food with Asian tastes. The food processing industries are predominantly Malaysian-owned. It is estimated that the present global retail sales in food products are worth around RM11.2 trillion and are expected to grow at an annual rate of 4.8% to RM20.48 trillion by 2020 (MIDA 2014). The food processing sector accounts for about 10% of Malaysia's manufacturing outputs. Processed food are exported to more than 200 countries, with an annual value of more than RM13.5 billion which amounts two-third of the total food exports of over RM20 billion in 2012.

Although the export performance of this sector has doubled over the last 10 years, Malaysia continues to be a net importer of food products with annual import of more than RM36 billion in 2012. The advancements in processing technology have widened the usage of local raw materials, expanded the range of products and increased the investment absorbing capacity in the food industry (MIDA 2014). The demand for convenience food is a growing trend worldwide. Locally made convenience food include frozen food such as TV dinners, spiced fish and chicken cuts, traditional cuisines, instant powdered juices and retort pouch products. The driving factors of the growth in sales of chilled and frozen food in Malaysia are reportedly busy lifestyles, demographic changes, a higher portion of females in the job market and delayed marriages amongst others (Sagunda 2009).

The 9th Malaysia Plan has seen the development of manufacturing machines for traditional cakes to help local entrepreneurs to enhance their productivity. The food industry in Malaysia has also undergone massive transformation over the past two decades. Modern innovations and increased disposable income, lifestyle and food habits of the population have changed over the years with the onset of new technologies. They are better informed about nutrition and are more aware of the environmental and societal impacts. Thus, there is more demand for better quality, safe, functional, convenience and ready-to-eat foods

that conform to local and international regulations such as Good Manufacturing Practices (GMP) and Hazard Analysis Critical Control Point (HACCP).

The food processing sector in Malaysia has a trade net deficit estimated at RM13 billion. It will be expanded and diversified in IMP3 period (2006 – 2020), towards making Malaysia a regional food production and distribution hub with particular emphasis on halal foods. The food industry in Malaysia has contributed towards its economic growth. It is estimated that about 15% or RM80 billion is attributed by this sector to the manufacturing industry. In 2008 alone, the frozen food sector had come up with RM705.8 million in sales (5.1%) compared to that of other food sectors. The quantity of frozen foods has seen yearly increment since then with an annual growth of 3.7%. Cold or chilled foods are kept at temperatures of –1 °C to 10 °C whereas frozen foods are kept at –18 °C and below. The main reason for keeping frozen foods at these temperatures is to ensure that the food remains fresh and lasts longer. This method of freezing foods through the control of the surrounding temperature will prevent the proliferation of microorganisms that will damage the products.

Urban consumers will look for auxiliary food products that are easy to prepare and to be served at meal times. These products should also be guaranteed in their nutritional value and quality. There is an abundance of economical and convenient frozen food products found in the markets these days. This has led to an increase in purchases for them and they are high on consumers' household expense list.

Malay traditional cakes form part of the eating habits of consumers. They have a unique taste and are produced using the original recipes that have been handed down from generation to generation. These cakes have their origins in the rural areas, but urban migration has made them available in urban areas too. Common traditional cakes include *cucur badak, cucur kacang hijau, karipap pusing, apam kukus, samosa, popia, roti perata, pau kukus* and *otak-otak*. Townsfolk are now able to enjoy traditional cake products in the chilled or frozen forms. The number of local operators is also escalating as the products have high value in the local market. There is no dispute that the traditional cake still has a place among the population in urban areas despite potent competition from imported food products available in the market. However, some constraints exist for local producers in the form of labour shortage and reduced productivity due to the intricacy of the manufacturing processes.

Research and development have brought about processed and instant foods that are marketed in the frozen form such as meats, vegetables, fruits as well as breads, pastries and cakes. In this paper, emphasis is on manufacturing of frozen traditional cakes. These would include curry puffs and other pastries, *pau, keria, kuih bakar, onde-onde, lopes pulut*, doughnut, *apam kukus, cek mek molek* and others. Most of these traditional cakes are available in their fresh forms, but the frozen versions have been acceptable to consumers and demand for them is currently on an increase.

The objective of this study was to identify consumers' behaviour towards frozen traditional cakes in Selangor. It aimed to determine the trend of the consumption of frozen traditional cakes among the population in Selangor, Malaysia. The factors underlying the purchasing behaviour of consumers were investigated and the potential of marketing frozen traditional cakes according to the demands of consumers would be looked into for the enhancement of this industry.

Methodology
A survey was carried out by the Technology Development and Promotion Centre, MARDI. The sampling unit for the study was made up of visitors to shopping complexes and also employees at these premises. The sampling size and the selected

locations were based on several factors which comprised costs, duration of study and the cooperation from the shopping complex managements to allow the interviews to be carried out. A total of 406 respondents were interviewed on a face-to-face basis and their answers were recorded on the questionnaire forms.

Several outlets have been identified where frozen traditional cakes can be purchased, that include hypermarkets, supermarkets, retailers, factories, agricultural markets, night markets, wholesale markets and other locations.

Data and information obtained from the face-to-face interviews were standardised for the sections to be analysed statistically, and both qualitative and quantitative descriptions were made. The former was used to formulate a simple initial finding for the data collected. Data were analysed by utilising the package SPSS vers 13.0 for the latter.

An Exploratory Factor Analysis (EFA) was used as the factor extraction procedure with the varimax normalisation as the rotation method. This was put into effect only after the Kaiser-Mayer-Olkin (KMO) test was conducted to satisfy the requirements of the analysis. The KMO test of sampling adequacy and Bartlett's test of sphericity were initially performed on the data to confirm the appropriateness of conducting the factor analysis (Tabachnick et al. 2001). The Cronbach's alpha (α) was also used to assess the reliability of the Likert scale (1 = Least important, 2 = Not important, 3 = Neutral, 4 = Important, 5 = Most important) in the survey by investigating the internal consistency of the responses for the items given. The values KMO >0.5 and α >0.7 would indicate that the sample size was appropriate and the reliability of data collected was good. The factor analysis was run to explore the factors that affected the purchasing behaviour among Malaysian consumers of frozen traditional cakes.

The objective of a factor analysis is to identify the not-directly-observable factors based on a set of observable variables. The analysis involves many variables and in general the model for the ith standardised variable is written as:

$$X_i = A_{i1}F_1 + A_{i2}F_2 + A_{i3}F_3 + \ldots\ldots + A_{ik}F_3 + U_i$$

where F the common factor, U the unique factor and A the constant used to combine the k factor. The unique factors are set to be uncorrelated with each other and with the common factors. The factors are inferred from the observed variables and can be estimated as linear combinations of them. While it is possible that all the variables contribute to a factor or component, it is hoped that only the subset of variables characterises that factor, as indicated by their large coefficients. The general expression for the estimate of the jth factor F_j is:

$$F_j = \sum (W_{j1}X_1 + W_{j2}X_2 + \ldots\ldots + W_{jp}X_p)$$

where W_j is known as factor score coefficients and p is the number of variables.

Results and discussion
Profile of respondents
The profiles of respondents are important to show the correlation among socio-demographic characteristics such as age, ethnicity, gender, household income, and household size with respect to the consumption of frozen traditional cakes (*Table 1*). It should be noted that the respondents were mostly Malays (86%) with the rest being made up of other ethnic groups. This was due perhaps to the location of the interviews being conducted in Selangor. A majority of the respondents (75%) was below 35 years and this might be that the younger generation was more attuned toward the purchase of the frozen products. Generally, about equal numbers of responses were obtained from both male and female interviewees. It should be of interest that 58% of respondents were earning RM2,000 or lower. This could be an indication that those in this income

Table 1. Demography of respondents

	Category	Percentage
Ethnicity	Malay	86.4
	Chinese	4.2
	Indian	8.6
	Others	0.8
Age (years)	<25	52.1
	26 – 35	22.7
	36 – 45	12.8
	46 – 55	8.6
	>56	0.8
Gender	Male	49.0
	Female	51.0
Household income	<RM1000	27.5
	RM1001 – RM2000	30.6
	RM2001 – RM3000	18.9
	RM3001 – RM4000	11.9
	RM4001 – RM5000	4.9
	>RM5001	6.2
Household size	<3	23.7
	4 – 6	52.0
	7 – 9	19.8
	>10	4.5

Note: Percentages include respondents who were
not aware of the existence of frozen
traditional cakes

*Figure 1. Reasons for non-consumption of frozen
traditional cakes*

*Figure 2. Reasons for the consumption of frozen
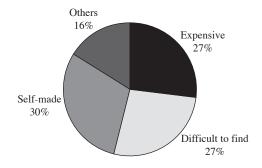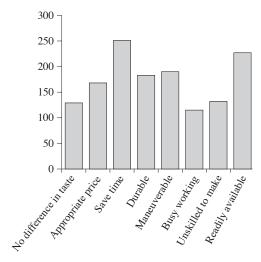traditional cakes*

category would buy frozen traditional cakes,
not withstanding their higher prices and
availability. Those with household size of
six or less persons (76%) made up the bulk
of respondents who would go for the frozen
products.

Consumption of frozen traditional cakes
The respondents were queried on their
preference for frozen traditional cakes and
most of them had replied in the affirmative.
Those that did not respond positively gave
various reasons for their non-acceptance of
these cakes (*Figure 1*). About 30% of them
stated that they could produce freshly made
traditional cakes themselves.

Those respondents that consume frozen
traditional frozen cakes gave the following
reasons for their willingness to buy the
frozen products (*Figure 2*):
- Time could be saved by purchasing
  frozen traditional cakes rather than
  preparing freshly made ones

- Frozen traditional cakes were readily
  available in the markets
- Maneuverability of frozen products for
  transportation
- Durability of frozen products
- Price of frozen products was appropriate
  and reasonable
- They did not have the skill to make fresh
  traditional cakes
- There was no difference in taste for both
  frozen and fresh traditional cakes
- They did not have the time to make
  fresh traditional cakes

Table 2. Factors that influence the purchase of frozen traditional cakes

Code	Variables	Code	Variables
X_1	Appropriate and reasonable prices	X_{11}	Cheap/Discounted prices
X_2	Branding	X_{12}	Manufactured locally
X_3	Attractive packaging	X_{13}	Imported product
X_4	Products are of high quality	X_{14}	Product size
X_5	Use of the halal logo	X_{15}	Size of packaging
X_6	Physical shape/form of products	X_{16}	Free offers with products
X_7	Products of bumiputera companies	X_{17}	Ingredients used
X_8	Products of non-bumiputera companies	X_{18}	Safety of products
X_9	Commercial brand of products/promotion	X_{19}	Date of expiry
X_{10}	Information on nutritional content	X_{20}	Cleanliness

Factors influencing the affinity for frozen traditional cakes

In this study, a total of 20 factors that were considered to be influential in the affinity of consumers for frozen traditional cakes had been determined (*Table 2*).

Exploratory Factor Analysis (EFA)

An EFA was performed to identify common threads linking the 20 items for affinity for frozen traditional cakes. The factor analysis is a suitable statistical tool for estimating the underlying factor pattern for a number of attributes which have been manageably consolidated for analysis (Kim and Mueller 1978).

The reliability analysis was conducted to ensure the internal consistency of the items in the questionnaire presented in a Likert scale was at least maintained (α = .887) and, if not, improved upon. An issue in assessing Cronbach's alpha (α) is its positive relationship to the number of items in the scale. This is because increasing the number of items, even with the same degree of intercorrelation, will increase the reliability value.

Based on the cross-factor loadings in the rotated component matrix, the interpretation of the factors is summarised. The advantages of varimax rotation are the stabilisation and the unaffected eigenvalues.

The percentage of total variance (dimensions of factors), because of the angle of each factor remaining the same, is not changed by the rotation. Four components were adapted for further analysis which succeed the suppress value of factor loading based on sample size (Hair et al. 2006). The outcome of the EFA with eigenvalues >1.0 will be the factors that influence the affinity of respondents for frozen traditional cakes. This factor its determined for it significance by using the standard ratio constant (a_{im}): non-significant, $a_{im} \geq 0.5$; significant, $0.51 < a_{im} < 0.69$; very significant, $0.7 < a_{im} < 0.79$; highly significant, $a_{im} \geq 0.80$.

As can be seen in *Table 3*, KMO measure of sampling adequacy test for the set of predetermined items, reached values of at least 0.869 while Bartlett's test of sphericity was statistically significant: χ^2 = 3244.37, p <0.000. The KMO value meant that the degree of common variance among the items was meritorious (Kaiser 1974).

Results and discussion

The EFA (*Table 4*) in the data extraction performed four main components which were categorised accordingly by:
- quality of products
- costs and physical appearance
- marketing
- other marketing considerations

Table 3. Kaiser-Mayer-Olkin (KMO) and Bartlett's test of sphericity

Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy	Bartlett's test of sphericity (χ) and significance
0.869	3244.37
	(p <0.000)

Note: Bartlett's test of sphericity at the significant level p <0.000 and Kaiser-Meyer-Olkin measure of sampling adequacy >0.60

The eigenvalues were above 1.0 for the four components extracted with a percentage cumulative variance explained of 57.83. The eigenvalue is the column sum of squares for a factor and it also represents the amount of variance accounted for by a factor (Hair et al. 2006).

The first factor was labelled as 'the quality of products' and was explained by 33.98% variance of the components. This component comprised seven items that contributed towards the affinity of

Table 4. Component matrix of items based on factors

Variables affecting purchase	Components/Factors			
	1	2	3	4
Quality of products				
Expiry date	0.909			
Cleanliness	0.880			
Safety of product	0.864			
Ingredients used	0.671			
Nutritional content	0.627			
High quality	0.603			
Halal logo	0.572			
Cost and physical appearance				
Package size		0.767		
Product size		0.751		
Free offer		0.697		
Cheap/discounted		0.565		
Marketing				
Product shape			0.695	
Bumiputera company product			0.638	
Branding			0.617	
Local product			0.467ns	
Other marketing considerations				
Non-bumiputera company product				0.838
Commercial brand/promotion				0.700
Imported product				0.572
Eigenvalues	6.795	2.197	1.382	1.192
% Variance explained	33.977	10.984	6.908	5.958
% Cumulative variance explained	33.977	44.961	51.869	57.827

ns = Not significant (p <0.05)

consumers for frozen traditional cakes. Three of these items gave significantly higher correlation values: expiry date (0.909), safety of product (0.864) and cleanliness (0.880). Other items in this component (the ingredients used, nutritional contents, high quality and halal logo) gave lower correlation values and were deemed to be of lower importance in this grouping. This finding indicated that respondents were very emphatic on the safety considerations of the products that they had bought for consumption.

The second factor labelled 'cost and physical appearance' had grouped together product and packaging sizes to be very significant and of lesser significance, whether the product price was discounted or free offers were available. This component had a very much lower percentage of variance explained (10.98%) than the previous one. Consumers were expecting frozen traditional cakes to be of reasonable size and attractively packaged. Lower or discounted prices were also significant for consumers to be encouraged to buy frozen traditional cakes.

The third and fourth components of the analysis pointed towards the marketing characteristics of the frozen traditional cakes. These components showed the percentage variance explained values not to be too far apart (6.91 and 5.96 respectively). Imported products seemed to be sought after by the respondents and local ones were listed but were not as favourable to them. It seemed that the affinity for frozen products leant more towards imported ones. Both bumiputera and non-bumiputera companies contributed favourably to the choice of consumers to buy the frozen cakes. Promotions, advertisements and brandings also played a part in the affinity of consumers for the frozen traditional cakes as indicated by these components.

It was to be noted that respondents were made aware of the accreditation of standards issued by various agencies for the manufacture of frozen traditional cakes.

The standards have to be adhered to and among the agencies involved are SIRIM, Standards Malaysia, JAKIM and MARDI itself. The certificates issued include the Halal Development Corporation (HDC), Good Manufacturing Practices (GMP), Hazard Analysis Critical Control Point (HACCP), Quality Assurance System (QAS) and the Malaysian Standards (SM). These certificates are referred to by consumers for the choices that they make and preference will surely be given to products that are recognised for their quality and safety.

Conclusion

Frozen and instant foods are not uncommon to Malaysian consumers. These foods have become a necessity especially for those living in urban areas. They are also alternative products due to their fast and time-saving preparation. The frozen foods also include ready-made and instant traditional cakes that are sought after by consumers. This study looked into the affinity of consumers for these frozen traditional cakes.

It was clearly discerned in the study that the affinity for frozen traditional cakes took into account, first and foremost, the high quality of products for sale. Secondly, the physical appearance of products and their cost were also important to consumers. The marketing channels for their disbursement were also given some prominence in the choices of consumers. These comprise advertisements in the mass media, and with the advent of tele-marketing, the purchase of frozen traditional cakes is even easier. These criteria play an important role in consumer acceptance of frozen traditional cakes sold in Malaysia.

The findings in the study are important for manufacturers of frozen traditional cakes in Malaysia to plan their development of new products, improve on the quality of current ones and determine their marketing strategies. These actions will assist them to enhance the performance of their sales.

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Abstrak
Satu kajian telah dijalankan pada 2014 untuk melihat permintaan dan penggunaan kuih tradisional sejuk beku di Selangor. Kajian ini melibatkan 406 responden dengan menggunakan kaedah temu bual muka-ke-muka pada setiap responden. Artikel ini melihat kecenderungan pengguna terhadap kuih tradisional sejuk beku dan tabiat pembelian. Keputusan kajian ini menunjukkan bahawa terdapat empat faktor utama yang mempengaruhi tingkah laku pengguna. Ini termasuk kualiti produk, harga dan aspek fizikal, strategi pemasaran pengeluar tempatan dan sifat produk itu sendiri. Kualiti produk termasuk kewujudan logo halal, berkualiti tinggi, kandungan nutrien dan bahan-bahan yang digunakan, keselamatan produk, kebersihan dan tarikh luput. Faktor kedua terdiri daripada kos terendah dan harga diskaun yang ditawarkan untuk produk, tawaran percuma jika ada dan saiz serta pembungkusan. Faktor ketiga termasuklah produk tempatan, berjenama dan produk yang dikeluarkan oleh syarikat bumiputera. Produk import, penjenamaan komersial dan produk syarikat bukan bumiputera adalah komponen terakhir keutamaan pengguna. Dapat diperhatikan bahawa kesesuaian harga produk mempunyai hubungan terus dalam kalangan responden dan ia diambil sebagai kesamaan/kesetujuan dalam kalangan mereka.