

## A comparative study of 'nasi kandar' eating patterns among patrons in the Klang Valley and Penang of Malaysia

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### Abstract

'Nasi kandar' is defined as boiled white rice placed inside a wooden basket and carried on the shoulder using a pole. The rice is served with a variety of pairing dishes that are usually fried, curried or boiled. The tradition of carrying rice and pairing dishes on the shoulder began to die out in the 20<sup>th</sup> century as seller resorted to a more conventional way of selling 'nasi kandar'. The 'nasi kandar' business in Malaysia has evolved from being sold as a street food into a multi-million dollar franchise business rivalling the fast food business. It is available 24 hours and enjoyed by Malaysians from all walks of life. This study aims to compare 'nasi kandar' eating pattern among patrons in the Klang Valley and Penang. Three hundred sets of questionnaires were answered and collected. Data from the questionnaires were analyzed in PASW 18.0 using descriptive statistics and chi-square test for association. Klang Valley patrons (72%) would consume 'nasi kandar' once a week. More than half (53.3%) of the patrons from Penang consumed 'nasi kandar' more than twice a week. A significant relationship exists between patron's region and frequency of 'nasi kandar' consumption where  $p = <0.0001$  and  $r = 0.277$ . A significant but moderate relationship between patron's region and consumption of 'nasi kandar' during breakfast ( $p = <0.001$ ,  $r = 0.250$ ), lunch ( $p = <0.0001$ ,  $r = 0.264$ ) and dinner ( $p = <0.0001$ ,  $r = 0.336$ ). Patrons in Penang consumed 'nasi kandar' more often than their Klang Valley counterparts. Klang Valley patrons were more particular than Penang patrons when it comes to cleanliness, menu pricing, friendly service, air-condition and separate smoking area. Klang Valley patrons tend to consume more chicken based dishes while Penang patrons tend to consume more meat, fish, and squid based dishes.

### Keywords

'Nasi kandar'

Eating patterns

Pairing dishes

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### Introduction

'Nasi kandar' originated way back during the 18<sup>th</sup> Century when Indian Muslim from Southern India migrated to Penang during the British Colonial period (Siti Fatimah, 2003). 'Nasi kandar' got its name from the way the rice is being placed inside a wooden basket which gives the rice its distinctive aroma and balance on the shoulder using a pole. The word 'nasi' in Malay means rice while 'kandar' or 'kandha' is an Urdu word which means shoulder (Shanul, 2003). Thus the name 'nasi kandar' reflects the way rice is carried on the shoulder using a pole. It is usually eaten with pairing dishes such as fried chicken, curried spleen, cubed beef, fish roe, fried prawns or fried squids (Chin, 2006). The vegetable dishes would usually be brinjal, okra or bitter gourd. Back in the olden days, it was only available in the morning where 'nasi kandar' was put into large brass pots placed in two baskets and carried by the seller on a pole balanced on his shoulder (Chin, 2009). The sellers would usually be operated by the roadside

or under shady trees, but never from a shop (Syed, 2004). In the 20<sup>th</sup> century, the sellers resorted to a more conventional method of selling where stalls were setup in coffee shops and the alleyways thus continue to be vended as a street food. Tables and chairs were setup around the stall area for customers to dine in and slowly the tradition of carrying the rice in wooden basket on the shoulder began to die out (Siti Fatimah, 2003). The business continues to evolve in the early 1970's as more 'nasi kandar' seller began to venture into the restaurant business. From being sold on the streets it has evolved into a multi-million dollar business available 24 hours (Ahmad, 1999) and competes with the other fast food franchises (Siti Fatimah, 2003). The modern 'nasi kandar' business today have long abandon practice of carrying rice baskets on their shoulder in favour of selection counter with bain-marie heating systems. Today 'nasi kandar' is enjoyed by Malaysian from all walks of life regardless of age, gender, profession, race or religion thus becoming a multi-ethnic food (Netto, 2003). There were total of 250 'nasi kandar'

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outlets in Penang alone (Anonymous, 2008).

However, the pairing dishes being offered tend to emphasize more on protein based especially gravies and fried items. These items are often to be high in fat due to methods of cooking. Limited vegetable dishes are offered for selection. Usually only 3 or 4 vegetable dishes being sold. Consumption of high protein food especially from animal source will increase the high fat intake in the diet (Drummond and Brefere, 2004). Thus, frequent consumption of '*nasi kandar*' which is believed to contain high fat could be linked various ailments such as cardiovascular diseases. This especially true when the patrons do not practice a balance in choosing the pairing dishes. In Perlis obesity inflicts 37,000 people. Thus places Perlis third in the country on the obesity chart (Anonymous, 2011). The rapid growth of '*nasi kandar*' outlet in the state has lead people to crave and eat '*nasi kandar*' frequently according to the State Health Department director Datuk Dr Ghazali Othman. Malaysia is the first country in ASEAN that record high obesity problem and the sixth in the Asia Pacific level (Awang Selamat, 2012). Frequent consumption of '*nasi kandar*' as well as other food items in a typical Indian Muslim restaurant such as '*roti canai*', fried noodles and '*teh tarik*' is believed to be some of the contributing factors in the rise of obesity. Despite such criticism, the '*nasi kandar*' businesses continue to thrive in Malaysia. Throughout the country, Malays, Chinese and Indians from all walks of life continuously dine at '*nasi kandar*' restaurants. This study aims to compare '*nasi kandar*' eating pattern between patrons in Penang and patrons in the Klang Valley.

Research on eating patterns has been done in past focusing on night markets, fast foods, street foods, cafeterias, and full service restaurants. Demographic data like age, gender and ethnicity were use to measure associations and differences in eating pattern variables. Finding from this research provide information on the frequency of '*nasi kandar*' consumption, consumption period, criteria to consider choosing an outlet to dine, criteria to consider when selecting pairing dishes, and the commonly chosen pairing dishes in '*nasi kandar*' meals among patrons in the Klang Valley and Penang. Rice is the staple food in Malaysia yet there has not been enough research published focusing on the eating patterns of rice whether it be the Malay mixed rice, Chinese mixed rice or the Indian origin '*nasi kandar*'. It is hoped that this research will set the foundation for future studies on different types of rice eating pattern in Malaysia and other parts of the world.

## Methodology

### Study design

Klang Valley and Penang were chosen for this study because both locations were considered to be most urbanized part of Peninsular Malaysia where the rapid growth of Indian Muslim outlet selling '*nasi kandar*' was evident. A set of questionnaires was prepared based on research on eating habits of fast foods (Driskell *et al.*, 2006) and leisure motives of dining at night markets (Chang and Hsieh, 2006). The questionnaires were written in Bahasa Malaysia but the findings were later translated into English for writing purposes. Section A consists of participant's age, qualification, marital status, gender, race, occupation and monthly income. Section B consists of introduction to '*nasi kandar*', brand loyalty, dining in or take away, '*nasi kandar*' consumption within a week, '*nasi kandar*' consumption period, typical pairing dish selections, eating out either alone or with companion, criteria when choosing an outlet to dine and criteria for selecting '*nasi kandar*' dishes. The questions on criteria for outlet selection and pairing dish selections were based on 5-point Likert scale (1 = not important at all, 2 = not important, 3 = slightly important, 4 = very important, 5 = most important). With the exception of consumption and commonly selected pairing dishes for their '*nasi kandar*' meal patrons were allowed to select only one answer for each question. The questionnaires were pilot tested for validation in May 2010 with Cronbach Alpha score of 0.768.

### Minimum sample size calculation

Based on findings by Azmi *et al.* (2009) which showed a prevalence of 12% obesity in Malaysia, the estimated minimum sample size needed for patrons in the study was calculated based on the following modified formula by Daniel (1999):

$$n = \left[ \frac{Z}{d} \right]^2 p(1-p)$$

where:

n = Estimated sample size

Z = The standard value at confidence level at 95%  
= 1.96

p = The estimated prevalence based on the reported prevalence of 12% obesity rate in Malaysia.

d = The margin of error is set at 5%  
= 0.05

Minimum sample size estimated for '*nasi kandar*' patrons samples:

$$n = \left[ \frac{1.96}{0.05} \right]^2 \times 0.12(1 - 0.12)$$

$$n = 1536.64 \times 0.88$$

$$n = 162$$

### Data collection

This study was approved by the Ethical Committee of Universiti Sains Malaysia. A total of 300 randomly selected patrons were chosen to answer the set of questionnaires. A hundred and fifty questionnaires were collected and answered completely in the Klang Valley and Penang respectively. The criteria for participants were: being a Malaysian, living or working in either Penang or Klang Valley and consume 'nasi kandar' at least once a week. Twenty outlets within of Shah Alam, Subang Jaya, Kelana Jaya, Petaling Jaya and Ampang in Klang Valley were visited from July to September 2010. Twenty five outlets within George Town, Jelutong, Sungai Dua, Bayan Baru, Seberang Jaya, Butterworth and Bukit Mertajam were visited from October to December 2010. Tables with a single pax, two pax and four pax were approached after the patrons have completed their meal. If any patrons decline to participate the researcher will then approach another table. An average of 7 patrons participated for every outlet. Patrons were required to answer on site and given token of appreciation upon survey's completion. While waiting for the patrons to answer the questionnaires, observation of the outlet was done. Pairing dishes selection counter and overall condition of restaurant were monitored.

### Data analysis

Data from the questionnaires were analyzed in PASW 18.0 using descriptive statistics and chi-square test for association. Cramer's V score was used to measure the strength of relationship between patrons in different regions and eating habits variables, criteria for outlet selection, criteria for pairing dish selection and commonly selected pairing dishes. The level of significance was fixed at  $p < 0.05$ .

## Results and Discussion

### Eating patterns

Table 1 summarized the eating patterns of 'nasi kandar' patrons for the region of Klang Valley and Penang. Most patrons from Klang Valley (84%) and Penang (71%) acquired their first taste of 'nasi kandar' during their adolescence. There were more Penang patrons (28.7%) who got their first taste of 'nasi kandar' after they have started their working compare to the Klang Valley patrons (16.9%). Chi-square analysis in Table 2 shows that a significant

Table 1. Eating patterns

Eating patterns	Klang Valley n(%)	Penang n(%)
<b>Introduction to 'nasi kandar' during:</b>		
Adolescence	126(84.0)	102(71.3)
Working	24(16.9)	43(28.7)
<b>Brand loyalty</b>	48(32.0)	54(36.0)
<b>Dining out:</b>		
Alone	14(9.3)	13(8.7)
With friends	97(64.7)	96(64.0)
With family members	39(26.0)	41(27.3)
<b>'Nasi kandar' consumption in a week</b>		
Once	108(72.0)	70(46.7)
2-4 times	36(24.0)	64(42.6)
5-7 times	6(4.0)	10(6.7)
More than 7 times	0	6(4.0)
<b>Consumption Period</b>		
Breakfast	11(7.3)	39(26.0)
Lunch	115(76.7)	77(51.3)
Afternoon tea break	22(14.7)	13(8.7)
Dinner	41(27.3)	91(60.7)
Supper	14(9.3)	21(12.7)

Table 2. Correlation between region and eating patterns

	$\chi^2$	p-value	Cramer's V
Region* Introduction to 'nasi kandar'	6.937	0.008	0.152
Region* Brand Loyalty	0.535	0.465	0.042
Region* Dining out with companions	0.092	0.955	0.018
Region* Frequency of consumption	22.952	$p < 0.0001$	0.277
Region * Breakfast	11.816	$p < 0.0001$	0.250
Region * Lunch	20.891	$p < 0.0001$	0.264
Region * Tea	2.620	0.106	0.093
Region * Dinner	33.820	$p < 0.0001$	0.336
Region * Supper	0.851	0.356	0.053

but weak relationship between patron's region and introduction to 'nasi kandar' ( $p = 0.008$  and  $r = 0.152$ ). Only 32% of Klang Valley and 36% of Penang patrons in this study are loyal to certain 'nasi kandar' branding. Patrons from both regions tend to dine out at 'nasi kandar' outlets with either friends or family members as oppose to eating out alone. A slightly higher percentage of Klang Valley patrons (64.7%) would dine with friends while patrons in Penang (27.3%) would dine out with family members.

The growth of 'nasi kandar' business has created a wider choice for dining out. As 'nasi kandar' outlets are easily available throughout major urban districts in Penang and Klang Valley, it is easily accessible and manages in attracting customer at a very young age. There were a total of 250 'nasi kandar' outlets in Penang (Anonymous, 2008) alone thus reflecting a thriving business and created a large choice selection for patrons. One does not necessarily have to travel to the heart of Georgetown or Butterworth just to find a wide selection of 'nasi kandar' outlets in the state. When a quick service food outlet is widely available and within close proximity it often encourage people especially among adolescents to consume it frequently (Feelay et al., 2012).

Despite the growth of 'nasi kandar' business it shows that Malaysians do not really develop the habit of brand loyalty among restaurants. In that sense it shows that the businesses are not monopolized by only a few individuals since each 'nasi kandar' brand will still have their own target customers. For



the customers, they will have a wide variety of '*nasi kandar*' outlets to choose from and the tendency to reduce boredom of eating the same food at the same outlet.

The trend of eating out is becoming ever popular for the foodservice industry including '*nasi kandar*' outlet. In Malaysia the younger, wealthier, more educated, smaller family size, and urban residents were known to eat out frequently compare to the older, less affluent, less educated, larger family size, and rural residents (Helen and Andrew, 2007). More than 90% of the patrons in both the Klang Valley and Penang would either dine with friends or family members as opposed to dining alone. In a nutshell, it shows that eating '*nasi kandar*' is a mean of solidifying social ties (Bryant *et al.*, 2003). Similar findings in the state of Indiana revealed that 61% of elderly respondents (above the age of 60 years old) preferred to dine out with friends as a mean of socialization (Yamanaka *et al.*, 2003). Survey in Taiwan on the other hand revealed that 60% would eat at night market with friends (Chang and Hsieh, 2006). Being working parents and constantly having to travel often are the factors families spend time dining at fast food and full service restaurants (McIntosh *et al.*, 2011).

Klang Valley patrons (72%) would consume '*nasi kandar*' once a week. Only 46.7% of the Penang patrons stated that they would consume '*nasi kandar*' once a week. In total, those who consumed '*nasi kandar*' more than 2 times a week recorded an accumulated percentage of 53.3%. Chi-square analysis further showed that there was a significant but moderate relationship between patron's region and frequency of '*nasi kandar*' consumption ( $p = <0.0001$  and  $r = 0.277$ ). This suggests that patrons in Penang would consume '*nasi kandar*' more often than their Klang Valley counterparts.

Findings in this study may indicate that '*nasi kandar*' patrons in Penang were more 'hardcore' eaters compared to their Klang Valley counterparts since Penang is where '*nasi kandar*' originated and flourished. Some of the Klang Valley patrons share their thoughts of seeing the commercialization of '*nasi kandar*' has resulted in the decline of authenticity of the popular dish as reported by Syed (2004). Some would prefer to travel 300 km up north during the holidays to get a taste of the so call 'true *nasi kandar*' meal. This indicated why Klang Valley patrons did not consume '*nasi kandar*' frequently. Through observation the researcher noticed that customers who dine at Indian Muslim outlets at night would prefer freshly cooked items rather than eating '*nasi kandar*'. At some outlets, pairing dishes at the selection counter were cold and no longer

fresh thus discouraging customers from consuming '*nasi kandar*' at night. It may indicated that these restaurants only provide freshly made pairing dishes in the afternoon and the pairing dish dispenser were not replenish regularly between lunch period and dinner.

Klang Valley patrons tend to consume '*nasi kandar*' during lunch (76.7%) and afternoon tea break (14.7%) while their Penang counterparts had the tendency to consume it during breakfast (26%), dinner (60.7%) and supper (12.7%). Chi-square analysis further shows that there is a significant but moderate relationship between patron's region and consumption of '*nasi kandar*' during breakfast ( $p = <0.001$ ,  $r = 0.250$ ), lunch ( $p = <0.0001$ ,  $r = 0.264$ ) and dinner ( $p = <0.0001$ ,  $r = 0.336$ ). These findings suggested that Klang Valley patrons preferred to consume '*nasi kandar*' more often during lunch while Penang patrons were likely to consume '*nasi kandar*' more often during breakfast and dinner.

While originally being consumed as breakfast (Chin, 2009), the frequency of those consuming it during morning is only 7.3% for Klang Valley patrons and 26% for Penang patrons. In this study it is discovered that patrons nowadays prefer to eat '*nasi kandar*' during lunch and dinner. It may suggest that over time social dynamic changes took place. As more outlets are moving towards a modern approach so does the consumption time. Culture is not a static condition and changes over time, from place to place and in response to social dynamics (Kittler and Sucher, 2004). Changes in food habits also change along together with culture. '*Nasi kandar*' has become available 24 hours especially among the franchise owned outlets (Ahmad, 1999). Patrons in the Klang Valley tend to consume '*nasi kandar*' during the afternoon as lunch but their Penang counterparts would tend to consume '*nasi kandar*' at night mainly as dinner.

Ordering '*nasi kandar*' does not require long waiting time as compare to ordering hot freshly cooked items like '*nasi goreng*' since pairing dishes are already arranged in food dispensers. All the patrons need to do is line up, select the pairing dishes, find a place to sit and eat. Lunch break for most offices is between 12.00 pm to 2.00 pm. People normally do not have a lot of time to dine at their own leisure. The fast service at '*nasi kandar*' outlets is usually why patrons especially patrons from the Klang Valley (76.7%) tend to dine there during lunch as compare to dining a typical table service restaurant where the waiting time for a dish to reach the table for consumption is fairly long. Similar findings by Neumark-Sztainer *et al.* (1999) revealed that youths

Table 3. Criteria for selecting a 'nasi kandar' outlet to dine and pairing dish selection among Klang Valley and Penang patrons

Criteria	Level of Importance									
	Not Important at all		Not Important		Slightly Important		Very Important		Most Important	
	Klang Valley n(%)	Penang n(%)	Klang Valley n(%)	Penang n(%)	Klang Valley n(%)	Penang n(%)	Klang Valley n(%)	Penang n(%)	Klang Valley n(%)	Penang n(%)
<b>Outlet selection</b>										
Cleanliness	2(1.3)	2(1.3)	4(2.7)	2(1.3)	15(10.0)	36(24.0)	31(20.7)	51(34.0)	98(65.3)	59(39.0)
Menu pricing	3(2.0)	5(3.3)	4(2.7)	8(5.3)	30(20.0)	48(32.0)	52(34.7)	55(36.7)	61(40.7)	34(22.7)
Variety of menu items	3(2.0)	0	2(1.3)	2(1.3)	22(14.7)	27(18.0)	61(40.7)	78(52.0)	62(41.3)	43(28.7)
Location	6(4.0)	7(4.7)	10(6.7)	17(11.3)	32(21.3)	37(24.7)	54(36.0)	55(36.7)	48(32.0)	34(22.7)
Friendly service	2(1.3)	1(0.7)	4(2.7)	8(5.3)	21(14.0)	38(25.3)	53(35.3)	58(38.7)	70(46.7)	45(30.0)
Air-condition	15(10.0)	18(12.0)	33(22.0)	50(33.3)	55(36.7)	60(40.0)	36(24.0)	12(8.0)	11(7.3)	10(6.7)
Separate smoking area	51(34.0)	35(23.3)	12(8.0)	31(20.7)	19(12.7)	24(16.0)	33(22.0)	21(14.0)	35(23.3)	39(26.0)
<b>Pairing dish selection</b>										
Value for money	3(2.0)	5(3.3)	5(3.3)	11(7.3)	33(22.0)	51(34.0)	46(30.7)	46(30.7)	63(42.0)	37(24.7)
Good tasting dishes	3(2.0)	0	2(1.3)	3(2.0)	8(5.3)	14(9.3)	53(35.3)	50(33.3)	84(56.0)	83(55.3)
Short waiting time	2(1.3)	4(2.7)	5(3.3)	8(5.3)	17(11.3)	30(20.0)	53(35.3)	54(36.0)	73(48.7)	54(36.0)
Large portion	4(2.7)	3(2.0)	16(10.7)	20(13.3)	39(26.0)	52(34.7)	50(33.3)	53(35.5)	41(27.3)	22(14.7)
Health factors	7(2.0)	4(2.7)	9(6.0)	14(9.3)	31(20.7)	36(24.0)	34(22.7)	41(27.3)	69(46.0)	55(36.7)
Filling the stomach	3(2.0)	1(0.7)	7(4.7)	8(5.3)	30(20.0)	41(27.3)	65(43.3)	50(33.3)	45(30.0)	50(33.3)

consider time as one of the most important factors that influence food choices. Driskell *et al.* (2006) findings revealed that 71% of their subjects preferred to eat fast food for its short waiting time. Furthermore 85% of their respondent would prefer to consume fast food during lunch. Similarly to 'nasi kandar' pairing dishes fast food are normally pre-cooked or already cooked and are kept on holding prior to being serve to customers thus resulting in minimal serving time. In contrast patrons from Penang (60.7%) tend to consume 'nasi kandar' for dinner. As the trend of eating out continue to become ever popular people nowadays do not really make it a habit of cooking after coming back home from after a long days work.

#### Criteria for 'nasi kandar' outlet selection and 'nasi kandar' pairing dish selection

Table 3 summarized the criteria which were put into consideration when choosing a 'nasi kandar' outlet to dine and pairing dish selection among Klang Valley and Penang patrons. Chi-square analysis in Table 4 shows a significant but moderate relationship between patron's region and cleanliness ( $p = <0.0001$ ,  $r = 0.282$ ), menu pricing ( $p = 0.008$ ,  $r = 0.214$ ), friendly service ( $p = 0.016$ ,  $r = 0.202$ ), air-conditioned ( $p = 0.003$ ,  $r = 0.231$ ) and separate smoking area ( $p = 0.005$ ,  $r = 0.222$ ). No significant relationship was found between region and variety of menu items and location of outlet. Based on the chi-square analysis it was found that Klang Valley patrons were more particular when it comes to cleanliness, menu pricing, and friendly service,

compare to Penang patrons. Penang patrons were less concern about air-conditioned and separate smoking area. As for criteria for pairing dish selection the only significant relationship was between patron's region and value for money ( $p = 0.010$ ,  $r = 0.211$ ) suggesting that Klang Valley patrons were more particular about this criteria compared to Penang patrons. There was no significant relationship between patron's region and good tasting dishes, short waiting time, large portion, health factors and filling the stomach.

Even though not as grand as eating in an upscale restaurant but people still expect basic cleanliness elements like clean tables, minimal dust and particles on the floor, clean sets of cutleries and plates and free from insects and rodents. It shows that majority of 'nasi kandar' are hygiene cautious. As the business continues to evolve mainly through franchising the hygiene standards are also improving.

'Nasi kandar' patrons especially those from the Klang Valley are budget cautious. The more expensive dishes like shellfish, squid and lamb are usually avoided or seldom chosen while the cheaper and wider variety of chicken, fish, and vegetables are more popular. People also may not want to eat 'nasi kandar' every time they dine in at any Indian-Muslim food outlets. Some may order 'nasi kandar' while some may order hot dish or freshly cooked items or some may just come for a drink. As long as these items are worth their portion and not overpriced consumer will consider them reasonable enough to come back again. Street foods are often preferred by those with low income in Hanoi because of the cheap price (Maruyama and Trung, 2009). In contrast,

Table 4. Correlation between region and criteria for outlet and pairing dish selection

Criteria for outlet selection and pairing dish selection	$\chi^2$	p-value	Cramer's V
<b>Outlet selection</b>			
Region* Cleanliness	23.880	p < 0.0001	0.282
Region* Menu pricing	13.745	0.008	0.214
Region* Variety of menu items	9.027	0.060	0.173
Region* Location	4.653	0.325	0.125
Region* Friendly service	12.225	0.016	0.202
Region * Air-conditioned	16.020	0.003	0.231
Region * Separate smoking area	14.836	0.005	0.222
<b>Pairing dish selection</b>			
Region * Value for money	13.367	0.010	0.211
Region * Good tasting dishes	4.930	0.295	0.128
Region * Short waiting time	7.807	0.099	0.161
Region * Large portion	8.262	0.082	0.166
Region * Health factors	4.312	0.341	0.123
Region * Filling the stomach	4.991	0.288	0.129

Taiwanese were not really strict when it comes to overall pricing of food sold at night markets as only 36% of their respondent prefer food at night markets for it cheap pricing (Chang and Hsieh, 2006). Similarly a study among university men and women revealed that less than 20% of respondents consider the cost as an important reason when eating fast food (Diskel *et al.*, 2006). Thus suggesting that respondents in both studies are not really concern about cost since fast foods and street foods at night market are within affordable range. In times of economic recession it was found that people would dine quick service restaurants mainly for its cheap price menu (Dave and Kelly, 2010).

People are always looking for something new or something that is rarely available at home when dining out. The wide variety of pairing dishes and alternative menu items that are offered at '*nasi kandar*' outlet caters for a wide range of ethnic groups and ages. It also reduces the chances of boredom consuming the same dishes over and over again. Similar findings in Taiwan found that 70% of night market patrons consider variety of dishes the top most priority when dining at night markets (Chang and Hsieh, 2006). Taiwanese were believe to eat at night markets as a means of "self identity" since most would consume local food rather than western or Japanese food. In contrast less than 10% respondents prefer eating fast food for its variety of menu choices regardless of gender (Driskell *et al.*, 2006).

An outlet which is easily accessible by transportation or within a close proximity is often desired by majority of '*nasi kandar*' customers. Not everyone can afford their own transportation to travel long distance thus a near and convenience outlet location is preferable especially among youths (Neumak-Sztainer, 1999). Maruyama and Trung (2009) study in Vietnam found that location as one of the important in influencing the choice by consumers for informal markets for food. In contrast Yamanaka *et al.* (2003) highlighted that people age 60 years and above tend to dine for leisure than for convenience as

compare to the younger generation who often adapt to the trend of "eating on the go" and "eating on the run" where convenience of food outlet location is must.

'*Nasi kandar*' business has evolved over the years. Some outlets even install air-conditioned for their dining area for a more comfortable dining experience while some provide a separates smoking zone. However majority of the patrons in both regions only consider the factor of having air-conditioning as "a bit important" (36.7% for Klang Valley, 40% for Penang) while having a separate smoking area was considered as "not important at all" (34% for Klang Valley, 23.3% for Penang). It may indicate that only people who cannot tolerate Malaysia's humid weather and does not feel comfortable dining in the same area with smokers especially those with little children or elderly would prefer dining in an air-conditioned restaurant which often has a separate smoking zone.

Appetite is defined as a psychological desire to consume specific foods which is often motivated by the environment and the pleasant appearance of the food (Thompson and Manore, 2007). While hunger is define as physiological drive prompts us to eat whatever is available without the desire to consume a specific food. Findings in this study suggested that most people would eat '*nasi kandar*' because of the appetite factor rather than hunger as more than 50% of Klang Valley and Penang patrons in this study consider good tasting dishes as "most important". The excellent taste may motivate the customers to return more than once thus encouraging more turnovers. Similar findings by Neumark-Sztainer *et al.* (1999) revealed that youths consider good appeal as one of the most important factors that influence food choices. In contrast only 41% prefer to eat fast food for the good taste (Driskell *et al.*, 2006). It may suggest that fast food patrons were motivated by hunger rather than appetite.

Items that are often associated with high fat, salt and cholesterol such as prawn, crab, lamb and beef are often avoided. Patrons in this study showed a much higher selection of chicken, fish and vegetable based pairing dishes for their '*nasi kandar*' meal. When it comes to fast food consumption women tend to consider choosing healthy fast food menu choice compared to men (Driskell *et al.*, 2006). Elderly people above the age of 60 years old would consider that a variety of healthy meals was important or very important when they dine out (Choia and Zhaob, 2010).

Bigger portion not only provides larger quantity but brings more enjoyment when eating. Historically, '*nasi kandar*' was sold to cater for port workers in



Table 5. Commonly selected pairing dishes

Pairing dish selection	Klang Valley n(%)	Penang n(%)
Chicken korma	35(23.3)	19(12.7)
Beef korma	13(8.7)	16(10.7)
Lamb korma	17(11.3)	24(16.0)
Beef curry	18(12.0)	26(17.3)
Chicken curry	56(37.3)	66(44.0)
Fish curry	35(23.3)	62(41.3)
Lamb curry	23(15.3)	16(10.7)
Chicken is chilli sauce	44(29.3)	10(6.7)
Beef in chilli sauce	16(10.7)	5(3.3)
Chicken in soy sauce	19(12.7)	16(10.7)
Beef in soy sauce	13(8.7)	23(15.3)
Squid eggs	11(7.3)	23(15.3)
Fish roe	30(20.0)	38(25.3)
Boiled egg	28(18.7)	46(30.7)
Dhal gravy	32(21.3)	26(17.3)
Fried fish	15(10.0)	31(20.7)
Fried squid	41(27.3)	45(30.0)
Fried chicken	59(39.3)	56(37.3)
Fried long beans	40(26.7)	25(16.7)
Fried cabbage	61(40.7)	60(40.0)
Boiled okra bean	41(27.3)	69(46.0)

Penang (Siti Fatimah, 2003). Back then port workers would have to do heavy work including uploading and bringing down cargo from ships. It may indicate why the pairing dish itself was rich in protein and carbohydrate mainly due to the rice and gravy items. Men would prefer large portion while women would prefer small portion when consuming fast food. It proof that men often have a much bigger appetite than women when it comes to eating fast food (Diskell *et al.*, 2006). Additionally it was found that men would consume everything on plate while women will stop eating once full when it comes to eating fast food. However consuming a meal too high in protein and fat often whether it be a fast food or 'nasi kandar' will result in potential risk of illness like obesity and cardiovascular diseases (Drummond and Breffere, 2004; Larson *et al.*, 2011). When rice is mixed with gravies and other pairing dishes the result is a full stomach effect that often last for a long period of time upon consumption. While the carbohydrates in the rice is easily digested by the body but protein and fat from gravies and fried items requires a much longer time to be digested by the body. Patrons should refrain from taking too much protein such as fried chicken, fish, eggs and squid in one meal (Sabanayagam, 2006). It is recommended to take at least two servings of vegetables and choose curried or korma dishes instead of fried ones. Chicken, quail or beef that is usually large in serving should be shared with someone.

#### Commonly selected pairing dishes

Patrons were allowed to choose more than one answer for the commonly selected pairing dishes for their 'nasi kandar' meal. Twenty-one types of dishes were chosen and listed in Table 5. Klang Valley patrons showed a much higher selection for the following dishes: chicken korma (23.3%); lamb curry (15.3%); chicken in chilli sauce (29.3%); beef in chilli sauce (10.7%); chicken in soy sauce (12.7%); fried chicken (39.3%); fried long beans (26.7%); fried cabbage (40.7%); dhal gravy (21.3%).

Table 6. Correlation between regions and commonly selected pairing dishes

Pairing dish selection	$\chi^2$	p-value	Cramer's V
Chicken korma	5.781	0.016	0.139
Beef korma	0.344	0.558	0.034
Lamb korma	1.384	0.239	0.068
Beef curry	1.705	0.192	0.075
Chicken curry	1.381	0.240	0.068
Fish curry	11.107	0.001	0.192
Lamb curry	1.444	0.229	0.069
Chicken is chilli sauce	26.107	p < 0.0001	0.295
Beef in chilli sauce	6.196	0.013	0.144
Chicken in soy sauce	0.291	0.590	0.031
Beef in soy sauce	3.157	0.076	0.103
Squid eggs	4.777	0.029	0.126
Fish roe	1.217	0.270	0.064
Boiled egg	5.812	0.016	0.139
Dhal gravy	0.769	0.380	0.051
Fried fish	6.573	0.010	0.148
Fried squid	0.261	0.610	0.029
Fried chicken	0.127	0.722	0.021
Fried long beans	4.419	0.036	0.121
Fried cabbage	0.014	0.906	0.007
Boiled okra bean	11.254	0.001	0.194

On the other hand, Penang patrons showed a much higher selection for the following dishes: beef korma (10.7%); lamb korma (16.0%); beef curry (17.3%); chicken curry (44.0%); fish curry (41.3%); beef in soy sauce (15.3%); squid eggs (15.3%); fish roe (25.3%); boiled egg (30.7%); fried fish (20.7%); fried squid (30.0%); boiled okra bean (46.0%).

With the exception for chicken in chilli sauce which showed a significant but moderate relationship ( $p = <0.0001$ ,  $r = 0.295$ ), chi-square analysis in Table 6 showed a significant but weak relationship between patron's region and the selection of chicken korma ( $p = 0.016$ ,  $r = 0.139$ ), fish curry ( $p = 0.001$ ,  $r = 0.192$ ), beef in chilli sauce ( $p = 0.013$ ,  $r = 0.144$ ), squid eggs ( $p = 0.029$ ,  $r = 0.126$ ), boiled egg ( $p = 0.016$ ,  $r = 0.139$ ), fried fish ( $p = 0.010$ ,  $r = 0.148$ ), fried long beans and boiled okra beans ( $p = 0.001$ ,  $r = 0.194$ ). Base on the chi-square analysis it can be said that Klang Valley patrons have the tendency to choose the following dishes compare to their Penang counterparts: chicken korma; chicken in chilli sauce; beef in chilli sauce; and fried long beans. Penang patrons on the other hand have the tendency to choose the following dishes: fish curry; squid eggs, boiled egg, fried fish and boiled okra beans.

The popularity and high demand for chicken base dish may be the reason why 'nasi kandar' seller would offer a wider choice of chicken selection. Chicken is also considered to have a more 'universal' appeal as most religion and cultural beliefs do not have restrictions on chicken consumption. While originally not one of the core dish selections back in the old days (Shukor, 2004) it has now made its way to becoming one of the favourite choices among 'nasi kandar' patrons especially among those in the Klang Valley. The chicken egg is usually cheap and simple to cook. However patrons in this study would only select boiled chicken eggs. Patrons in Penang showed a significantly higher selection of boiled egg compare to their Klang Valley counterparts. Other egg

based variation like salted egg and omelettes were not often chosen. Through observation these egg based dishes were often being placed not under heating for instance on the glass shelf and not properly covered even at franchise outlets. Over time the texture of these egg base items looks pale and unattractive to stimulate appetite. Hygiene cautious customers may feel discouraged to select these items.

As one of the most fundamental elements in the early history of '*nasi kandar*' mentioned by Syed (2004), fish curry remains one of the most popular gravy based selection significantly among the Penang patrons. Fish roe was more often chosen compared to the typical fried fish. Fried fish itself is also widely available at Malay and Chinese mixed rice outlet. Thus suggesting patrons would prefer to select fish roe for its exclusivity at certain '*nasi kandar*' outlet. Overall Penang patrons would select fish base dishes more often compare to their Klang Valley counterparts.

Through the researcher's observation a typical '*nasi kandar*' outlets will normally offer up to three to four selection of vegetable dishes. Patron in this study would select either fried cabbage, fried long beans or boiled okra bean. Despite recording high selection percentages (above 20%) it cannot be deduced that most patrons select a balance and healthy '*nasi kandar*' meal. Patrons tend to select multiple protein base dishes selection and through the researcher's observation the portion size of any vegetable dish barely covers a quarter of the plate while the rice and protein dish often exceeding half of the plate. The recommended plate portion size would be half a plate for vegetables, a quarter of a plate for protein and a quarter of a plate for starch (Zelman, 2012). Quick service food outlets were known to offer very little selection of fruits and vegetable in their menus (Dave and Kelly, 2010; Babey *et al.*, 2011). Campus cafeterias recorded higher scores on healthy meals that include fruits and vegetables but poses the biggest challenge in promoting healthy eating since they often encourage people to eat as much as they can similar to buffet style (Horacek *et al.*, 2012). The authors added that off-site fast food outlets despite offering less healthy meals had the highest level of facilitators with include standardize portion size and providing nutritional information on the food offered. In the future '*nasi kandar*' sellers could develop a similar approach by putting posters near the '*nasi kandar*' selection counter. Information on nutrition content of rice and pairing dishes along with the recommended daily intake and food guide pyramid can encourage patrons to select a more balance and healthy '*nasi kandar*' meal.

## Conclusion

Patrons in the Klang Valley and Penang consumed their first '*nasi kandar*' meal at a young age and would often eat it with companions. Despite the rapid growth of the '*nasi kandar*' business brand loyalty among certain outlets is low. Patrons in Penang consumed '*nasi kandar*' more often than their Klang Valley counterparts. Klang Valley patrons often consume '*nasi kandar*' for lunch while Penang patrons often consume it during dinner. Klang Valley patrons were more particular on when it comes to cleanliness, menu pricing, friendly service, air-condition and separate smoking area compare to Penang patrons. Patrons from both regions are more particular about good tasting dishes, short waiting time and health factors; not too strict when it comes to large food portion and the ability to fill the stomach. Klang Valley patrons tend to consume more chicken based dishes while Penang patrons tend to consume more meat, fish, and squid based dishes.

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