

Yogurt Consumption and Purchasing Reasons among Consumers in Kuching, Sarawak

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ABSTRACT

Yogurt provides the body with nutrients such as vitamin B, minerals and proteins. Despite the nutrition offered by yogurt, local studies in Malaysia reported that the consumption of yogurt still remains as one of the lowest amongst all dairy products in Malaysia. This study was conducted to determine the yogurt consumption and purchasing reasons among yogurt consumers in Kuching, Sarawak. It was a descriptive study based on online survey via Google form. Respondents were recruited from a list of customers of a yogurt supplier in Kuching via an advertisement through social media. Data was analysed using IBM SPSS (version 27). A total of 236 respondents participated in this study whereby the majority were females (71.2%) and most of respondents bought their yogurt from being informed by advertisement. A majority used yogurt at least once a month and most likely type of yoghurt used was the yoghurt drink (61.9%). The largest share of respondents indicated that the quality of product (93.7%), variation in flavour (83.9%), information in product's label (79.7%), price consideration (71.2%), quality (71.2%), ease of location (76.2%) and access of transportation (69.9%) markedly stimulated their consumption behaviour in finalising their yogurt purchasing reasons. Consumer's behaviour toward the yogurt purchasing decision were controlled specifically by its product factors, prices offered and accessibility of conditions. Implications of this study have contributed to future local research on population study in the Sarawak and may increase the awareness of yogurt's benefits among non-yogurt buyers to encourage greater consumption.

Keywords: dairy product, purchasing reasons, yogurt consumption

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INTRODUCTION

Yogurt is a food product made by bacterial fermentation of milk such as *Streptococcus thermophilus* and *Lactobacillus bulgaricus* (Fisberg & Machado, 2015). It is an agitated milk product, with a constituent similar to that of milk but more directed towards of vitamin B, mineral and proteins (Baspinar & Guldaz, 2021). It also possesses patterns of amino acids of fine quality that decreases energy intake by inducing fullness and controls the blood glucose levels (El-Abbadi et al., 2014). Besides, yogurt contains a lot of calcium which is important for proper bone formation (Tremblay & Panahi, 2017). This leads to the maintenance of blood pressure (Baspinar & Guldaz, 2021). It also provides a major source of protein which is essential for proper metabolism and appetite regulation of a consumer (Halton & Hu, 2004). Yogurt also contains probiotics that is good for gut health (Roberfroid, 2002). Due to its effects, yogurt boosts the immune system by increasing the production of immunoglobulin A (Khurana & Kanawjia, 2007). Moreover, because of its high vitamin B content, such as riboflavin and cobalamin which are essential in protecting an individual from cardiovascular diseases and some neural tube birth defects (Ryan-Harshman & Aldoori, 2008).

Despite the high nutrition factor of yogurt, a local study in Malaysia reported that consumption of yogurt still remains as one of the lowest amongst dairy products in Malaysia (Boniface & Umberger, 2012). According to the Malaysian Adult Nutrition Survey (Institute for Public Health, 2014), prevalence of consumption of yogurt remains low with 17.1%. Nevertheless, like any of the Asian countries, Malaysia has undergone industrialization, urbanization, globalization that lead to change of food consumption patterns where consumers would demand for higher quality food products through branding and labelling information. Past studies had found that gender, presence of children in the household, pricing of the products, income, education level, age have been found to significantly influence food consumption in Malaysia (Ong et al., 2014; Radam et al., 2010).

To encourage higher consumption of yogurt, the dairy industry not only has to increase production capacity, but also develop a consumer-focused value chain (Boniface & Umberger, 2012) that will increase the demand of yogurt in terms of purchase and consumption. Currently, studies on understanding the factors influencing the consumers' demand for yogurt is scarce, particularly in Kuching, Sarawak. Kuching, the capital city of Sarawak has a population of 711,500 (Department of Statistics Malaysia, 2020), and has evolved to be one of the major food hubs in Borneo that provide a fusion of traditional and modern food. Thus, the aims of this study are: (1) to explore the consumption patterns of yogurt, perception and preferences for various types of yogurt; (2) to determine the product attributes and information to consumers when purchasing yogurt. The findings of this study can be used to improve the management of the yogurt supply chain.

MATERIALS & METHODS

This cross sectional study was carried out among the population of yogurt consumers staying in Kuching city, Sarawak, Malaysia. Kuching was selected due to its status as the largest city in East Malaysia. The sampling inclusion criteria were people who were Malaysian citizens, aged 18 and above, have been consuming yogurt for the past 6 months and agreed to participate in this study; exclusion criteria were those who did not have access to internet, illiterate and mentally unsound. The study was approved by the Medical Ethical Committee of Universiti Malaysia Sarawak [Ethics Ref. no. FME/21/33].

Sample size was calculated by using Raosoft sample size calculator (<http://www.raosoft.com/samplesize.html>), based on sampling frame of 500 respondents, confidence level of 95%, margin error of 5%; the estimated sample size needed was 218. Taking into consideration the attrition rate of 10%, the sample size needed for this study was 240. The sampling frame was obtained from a list of customers of a yogurt supplier in Kuching.

This research was conducted using the questionnaire adapted from Kusumastuti (2012). The questionnaire was translated from English to Bahasa Malaysia using back-to-back translation. The questionnaire consists of 3 main sections: Section (1) consumer's socio-demographic characteristic; section (2) yogurt consumption pattern among the consumers; and section (3) perceived influence of yogurt purchase. For the section (3), the response was measured by using a 5-point Likert Scale. The questionnaire was then set up on the Google Form platform.

An advertisement to recruit the respondents was posted through the yogurt supplier's social media account (Facebook, WhatsApp). For those customers who were interested to participate, they would click the link and access the Google Form. Before answering the questionnaire, the respondents had to read thoroughly the consent form embedded in the Google Form before completion of the questionnaire. All participated respondents were given a discount coupon for purchasing yogurt upon completing the questionnaire.

Data entry and data analysis were performed by using IBM Statistical Package for Social Science Program (SPSS) version 27. The data from the survey was analyzed using descriptive analysis consisting of percentages, frequency, mean, and standard deviation.

RESULTS

A total of 236 respondents participated in this study whereby 71.2% were female, mean age of 32.34 (13.084) years, with the minimum age of 18 years to the maximum age of 65 years. The majority of the respondents were single (59.3%) and most of the respondents had attained tertiary education (77.1%). Detailed information on sociodemographic characteristics of the respondents was presented in Table 1.

Table 1. Socio-demographic characteristics of respondents (N=236)

	n (%)	Mean (SD)
Gender		
Male	68 (28.8)	
Female	168 (71.2)	
Age (years)		32.34 (13.084); Min; 18, Max: 65
Marital Status		
Single	140 (59.3)	
Married & Divorced	96 (40.7)	
Educational level		
Secondary school and below	54 (22.9)	
Tertiary	182 (77.1)	
Occupation		
Working	121 (51.3)	
Not working	115 (48.7)	
Monthly income (RM)		
<3000 ¹	151 (64.0)	
>3000 ²	85 (36.0)	

¹RM3000 is considered as median household income in the Bottom 40% (B40) group.

RM3000 and below (<RM3000) are in the B40 household income group.

²RM3000 above (>RM3000) household income is considered either in the Middle 40% (M40) or Top 20% (T20) group (Khazanah Research Institute, 2018).

Table 2 presented the yogurt consumption pattern among the yogurt consumers in Kuching. The majority of the respondents acquired their yogurt as a result of product advertisements (75.8%). About 45% of the respondents were found to buy yogurt once a month and most of the respondents had a duration of consumption for more than one year (66.6%). Staying healthy was the top reason for consuming yogurt (58.9%). More than 80% of the respondents believed that yogurt was good for digestion. The details of the findings were presented in Table 2.

Table 2. Yogurt consumption pattern among the yogurt's consumer. (N=236)

	n (%)
Source of yogurt*	
Product advertisements	179 (75.8)
Family/ relatives	65 (27.5)
Report	61 (25.8)
Product description	58 (24.6)
Scientific journals	8 (3.4)
Medical professionals	4 (1.7)
Lecturers	1 (0.4)
Last time consume yogurt	
< 1 month ago	123 (52.1)
1-2 months	95 (40.3)
≥ 3 months / certain days	18 (7.6)
How often bought yogurt	
≤ 2-3 times a week	50 (21.2)
≥ Once a month	106 (44.9)
≥ Once in 2 months	80 (33.9)
Duration of yogurt consumption (n = 108)	
≤ 6 months	26 (24.1)
7-12 months	10 (9.3)
≥ 1 year	72 (66.6)
Family member consume yogurt more*	
All family member	86 (36.4)
Certain family member	150 (63.6)
None	26 (11.0)
Type of yogurt liked	
Drinking yogurt	146 (61.9)
Plain yogurt	56 (23.7)
Frozen yogurt	34 (14.4)
Reason for consuming yogurt*	
To stay healthy	139 (58.9)
Good taste	135 (57.2)
Diet	92 (39.0)
Recommendation by medical doctor/nutritionist	14 (5.9)
Retard aging	6 (2.5)
Particular treatment/therapy	5 (2.1)
Curiosity, snacking and for other health purposes	5 (2.1)
Type of yogurt bought and consumed*	

Drinking yogurt	206 (87.3)
Plain yogurt	147 (62.3)
Frozen yogurt	103 (43.6)
Knowledge about advantage of yogurt	
Yes	203 (86.0)
No	33 (14.0)
Main advantages of consuming yogurt*	
Good for digestibility	199 (84.3)
Improves mineral and vitamin absorption	25 (10.6)
Enhance immune system	23 (9.7)
To prevent gastrointestinal infections	17 (7.2)
Nutritious	14 (5.9)
Reduce lactose intolerance	11 (4.7)
Maintains smooth skin	6 (2.5)
Prevent colon cancer	5 (2.1)
For other health purposes & no yogurt knowledge	4 (1.7)
Prevent allergies	3 (1.3)

*Multiple responses

In terms of perception of product, Table 3a showed that the majority of respondents strongly agreed that product's quality (93.7%), variation in flavor (83.9%), information's on product label (79.7%) and 'Halal food' label (69.9%) affected their yogurt purchasing behavior. The respondents also strongly agreed that brand (72.1%) and packaging (69.0%) were their considerations in purchasing yogurt.

Table 3a Perceived influence of yogurt purchase – product

	n (%)					Mean(SD)
	SA	A	N	D	SD	
Product						3.9(0.64), Min = 1 Max = 5
Brand	81(34.4)	89(37.7)	44(18.6)	17(7.2)	5(2.1)	
Quality of product	155(65.7)	66(28.0)	10(4.2)	4(1.7)	1(0.4)	
Variation in flavour	107(45.3)	91(38.6)	24(10.2)	8(3.4)	6(2.5)	
Packaging	81(34.3)	82(34.7)	50(21.2)	17(7.2)	6(2.5)	
Information in product's label	105(44.5)	83(35.2)	37(15.7)	8(3.4)	3(1.3)	
Guarantee of 'Halal food' label	139(58.9)	26(11.0)	31(13.1)	13(5.5)	27(11.4)	
Lifestyle	56(23.7)	45(19.1)	92(39.0)	28(11.9)	15(6.4)	
Prestige	42(17.8)	50(21.2)	87(36.9)	35(14.8)	22(9.3)	

SA – Strongly agree, A – Agree, N – Neutral, D – Disagree, SD – Strongly disagree

Table 3b showed that the majority of the respondents strongly agreed that price (71.2%) was their main consideration in purchasing yogurt. The respondents also strongly agreed that price according to quality of the product (71.2%) also affected their purchasing decision and they strongly agreed that price of the yogurt was beyond reach (55.9%).

Table 3b Perceived influence of yogurt purchase - price

	n (%)					
	SA	A	N	D	SD	Mean(SD)
Price						3.7(0.66), Min = 1 Max = 5
Price consideration	89(37.7)	79(33.5)	49(20.8)	14(5.9)	5(2.1)	
Price according to quality	81(34.3)	87(36.9)	56(23.7)	9(3,8)	3(1.3)	
Price beyond reach	60(25.4)	72(30.5)	69(29.2)	27(11.4)	8(3.4)	
Price increase and consideration	32(13.6)	67(28.4)	103(43.6)	22(9.3)	12(5.1)	

SA – Strongly agree, A – Agree, N – Neutral, D – Disagree, SD – Strongly disagree

Table 3c showed that most of the respondents strongly agreed that yogurt store location (76.2%), access of transportation (69.9%), and convenience (66.5%) were their considerations in purchasing yogurt.

Table 3c Perceived influence of yogurt purchase - accessibility

	n (%)					
	SA	A	N	D	SD	Mean(SD)
Accessibility						3.8(0.73), Min = 1 Max = 5
Ease of location	90(38.1)	90(38.1)	44(18.6)	8(3.4)	4(1.7)	
Ease of access transportation	80(33.9)	85(36.0)	50(21.2)	14(5.9)	7(3.0)	
Distance	88(37.3)	64(27.1)	57(24.2)	17(7.2)	10(4.2)	
Convenience of this place	80(33.9)	77(32.6)	65(27.5)	7(3.0)	7(3.0)	
Service of salesperson	54(22.9)	59(25.0)	79(33.5)	24(10.2)	20(8.5)	
Home delivery service	50(21.2)	66(28.0)	73(30.9)	27(11.4)	20(8.5)	

SA – Strongly agree, A – Agree, N – Neutral, D – Disagree, SD – Strongly disagree

DISCUSSION

The findings reported a higher participation of female respondents for yogurt consumption with 71.2%, consistent with studies by Amarukachoke (2015) and Kusumastuti (2012). Women were known for dominating the grocery shopping market, and is the sole meal preparer in the household (McGuirt et al., 2018). In addition, yogurt was proven to be good for women's health as it enhances body metabolism, improved infection and inflammatory outcomes of pregnancy and decreasing risk of preterm births (He et al., 2020). The findings also indicated that more than 50% of the respondents were single, consistent with studies by Högskola (2011) and Kusumastuti (2012). The reasons given were that single people took care of their eating behaviour especially single women, believing that consumption of yogurts can maintain their desirable body weight, to appear more beautiful and attractive (Averett et al., 2008; Burnett, 2013). Supported by Kusumastuti (2012) and Miftari et al. (2011), this study showed that those respondents with higher education level were more likely to purchase yogurt. Those with higher education level tended to have better knowledge on nutrition and well-being, this thus influenced their consumption of yogurt (Van de Water & Naiyanetr, 2003).

More than two third of the respondents received their yogurt information through product advertisement, particularly with the advancement of internet. Such method to reach the public had proven to be effective in

product advertisement and branding where social media such as Facebook, Instagram, Twitter played an important role in reaching the consumers (Hanaysha, 2016; Högskola, 2011 & Mattos et al., 2010). As the sampling frame of this study was from the list of customers of a yogurt supplier, it was expected that most of the respondents would have consumed yogurt less than a month ago and had been purchasing yogurt one or more times per month. In addition, the study also reported that 63.6% of the respondents' family members consumed yogurt as well. This indicated the consumption of yogurt was not limited to individual and considered as family food, that gave health benefits to all age groups (El-Abbadi et al., 2014). Yogurt drinks remained as the most preferred yogurt among the respondents (61.9%). Similar studies by Kusumstuti (2012) and Tribby (2008) found that yogurt drinks has more variety in terms of flavour, especially the fruity taste. The majority of the respondents stated their main reason of consuming yogurt was to stay healthy, supporting the role of yogurt in gut health as well as others such as dental and bone health, and liver health (El-Abbadi et al., 2014). Followed closely to the health benefit of yogurt, respondents claimed that yogurt was tasty, appealing to younger age group, consistent with findings by Amal, et al. (2016) and Kusumastuti (2012).

In the decision of purchasing yogurt, the top three criteria for respondents were quality of product (93.7%), variation in flavor (83.9%) and information on product label (79.7%). Following closely were brand (72.1%), guarantee of Halal food label (69.9%) and packaging (69.0%). Consistently with study by Ares et al. (2010), consumers showed a higher tendency to purchase functional yogurt from familiar national brands. Consumers tended to choose yogurt with better quality (Urala & Lähteenmäki, 2004), attractive packaging (Sheng & Lee, 2020) and information on the product label (Lin & Chen, 2006). Since Malaysia is a multi-religious country, with Muslims as the majority, the guarantee of "Halal food" label is the most important criteria for purchasing among the Muslim consumers.

In terms of influence of pricing on purchasing yogurt, majority of respondents (71.2%) considered pricing as a determining factor and that it must match with product quality (71.2%). This was obvious as any increment of the pricing can have an impact on consumers' decision making process (Davis et al., 2010). About 56% of the respondents reported that yogurt was expensive despite knowing the health benefits of yogurt. The top three reasons under accessibility that influenced the purchasing of yogurt were ease of location (76.2%), ease of access transportation (69.9%) and convenience of purchasing (66.5%). Like any purchasing decision, locality or product channel distribution help to promote choosing of the items (Blackwell et al., 2006).

There were several limitations of this study to be noted. Due to the Movement Control Order enforced by the Sarawak government, the collection of the data was based on the list of yogurt customers of a yogurt supply company. The response was also based on those who volunteered to participate, therefore a proper sampling method was not implemented. Thus, generalization of the findings was limited. In addition, because of the nature of survey research using questionnaire, the response bias was unavoidable.

CONCLUSION

The study showed that the majority of the consumers knew about yogurt from product advertisement and perceived the advantages of consuming yogurt to stay healthy and to promote good digestion. Consequently, brand of the product, available flavour, product information, pricing, quality of product, ease of location, transportation and convenience factors played the role of influencing purchasing reasons of yogurt. It is hope with this finding, relevant parties such as government bodies can work closely with the dairy industry in promoting yogurt consumption, facilitate supply chain and to ensure the its affordability to all segments of society in both urban and rural areas.

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CONFLICTS OF INTEREST

The authors declared that there were no conflicts of interest regarding the publication of this paper.

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