

## **Factors influencing consumer's purchase decision of formula milk in Malang City**

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**Abstract :** Various brands of formula milk offered by many companies make mothers having under five year old children difficult to make decision to buy formula milk. The purposes of this study were to analyze the simultaneous and partial effects of culture, social, personal, psychological, product and price variables on buying decision of formula milk, and to analyze the variables having dominant influence on the purchasing decisions of formula milk at Malang City. This study was conducted at Lowokwaru, Kedungkandang, Blimbing, Sukun and Klojen Districts of Malang City from November to December 2012. The method used for this study was an explanatory survey method using questionnaires to collect data from 120 mothers having under five year old children consuming formula milk that were selected by an accidental sampling method. Data of respondents were measured using Likert Scale that ranged from 1 (strongly disagree) to 5 (strongly agree). A multiple linear regression model was used to predict the effects of culture, social, personal, psychological, product and price variables on purchasing decision. The results showed that the six variables simultaneously affected significantly the purchasing decision of formula milk at Malang City. The six variables contributed 83.5% of the variation in formula milk purchasing decision. Partially, culture, social, personal, psychological, and product variables positively influenced the purchasing decisions of formula milk, while price variables did not significantly influence the purchasing decision of formula milk. Culture variable was the most dominant variable influencing purchasing decision of formula milk.

**Keywords** - formula milk, consumer, behaviour, purchase decision

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### **I. INTRODUCTION**

The increasing number of births in the city of Malang has led to the increasing demand for child formula milk. This is an opportunity for many companies to expand the market. The marketing concept aims to give satisfaction to the desires and needs of consumers. With so many companies offering various brands of infant milk formula, the mothers are faced with a variety of choices that make them difficult to make purchase decisions [1]. This happens because the consumers basically try to get the goods to meet their needs with a better level of satisfaction [2].

The process of consumer decision-making in general, includes five stages, i.e. introduction of need, information search, alternative evaluation, purchase and purchase evaluation [3]. Consumer behavior can be defined as activities related to acquiring, consuming, and get rid of the goods or services, which also includes the decision-making process preceding and after the event took place [3]. Factors that influence consumer buying behavior may include culture, social, personal and psychological [4]. It has been reported that factors related to the selection of formula + (AA and DHA) by mothers of children under five year old at Medan Johor District good knowledge formula, advertising and information from health workers [5].

Results of research conducted by Mahendrasari [6] suggested that cultural, social and personal factors influence consumer decisions in the purchase of infant formula milk at Tiara Gods Supermarket Denpasar. In an effort to improve marketing performances at the target markets, the company often uses the marketing mix (product, price, place, promotion) as a marketing device [7]. The purpose of this study was to analyze the effect of culture, social, personal, psychological, product and price factors, either simultaneously or partially, on the buying decision of formula milk for children in the city of Malang.

### **II. Methods**

#### **2.1. Time and location**

This study was conducted at Lowokwaru, Kedungkandang, Sukun, Blimbing and Klojen Districts of Malang in November to December 2012. The method used was an explanatory research method to explain the causal relationship between the tested variables [8].

## **2.2.Sampling**

Samples employed for this study were selected accidentally using an accidental sampling method because of the large population, limited time available, and cost. Accidental sampling is sampling technique based on chance, that anyone who by chance met with investigators can be used as a sample [8]. One hundred and twenty mothers from Lowokwaru, Kedungkandang, Sukun, Blimbing and Klojen, Malang were selected as samples for this study. The selected mothers regularly bought formula milk for their under-five-year old children.

## **2.3.Data Collection**

The primary data obtained by distributing questionnaires to the respondents, i.e. mothers having under-five-year old children. The data were measured using a Likert scale in a closed question with answer choices starting from the lowest intensity to the highest [9]. Possible answers to these questions were, strongly disagree (score 1), agree (score 2), neutral (score 3), agree (score 4), and strongly agree (score 5). The secondary data were obtained from scientific reports and documents from related institutions. The observed variables consisted of culture =  $X_1$  (environment, halal certification, social class), social =  $X_2$  (reference groups, family, friends, co-workers), personal =  $X_3$  (age, occupation, personality), psychological =  $X_4$  (motivation, perception, memory), product =  $X_5$  (brand, packaging design, collateral halal, calcium and fat), price =  $X_6$  (brand, price compliance, pieces), and purchasing decision =  $Y$  (problem control, information search, evaluation, variation, behaviour). Validity of the questionnaire measured the product moment correlation formula. If the probability of the correlation results of less than 0.05 (5%), then the instrument is declared invalid, and vice versa if the probability of the correlation results of more than 0.05 (5%) declared invalid. Reliability was measured by Cronbach alpha formula ( $\alpha$ ). An instrument can be said to be reliable if it has a reliability coefficient of 0.6 (60%) or more [10].

## **2.4.Classical Assumption Test**

Detection of multicollinearity in the regression model was reviewed based on the value of tolerance and VIF (Variance Inflation Factor). If the tolerance values  $> 0.1$  or VIF value  $> 10$  then the multicollinearity is not detected [11]. Homoscedasticity was detected by looking at whether the presence or absence of a particular pattern on a graph the data processing on the X-axis and Y-axis X was predicted residuals (Y-Y real prediction). If there is no clear pattern, then there is homoscedasticity. Test for normality was conducted through the Kolmogorov-Smirnov test. If Sig. (P)  $> 0.05$  then the data are normally distributed, otherwise if Sig. (P)  $< 0.05$  then the data are not normally distributed.

## **2.5.Multiple Linear Regression Analysis**

In this study, a multiple linear regression model was used to predict the influence of independent variables (X) consisting of culture ( $X_1$ ), social ( $X_2$ ), personal ( $X_3$ ), psychological ( $X_4$ ), product ( $X_5$ ) and price ( $X_6$ ), on the dependent variable (Y), i.e. the purchasing buying decision of formula milk for under-five-year old children in the city of Malang. The formula are as follows [12]:

$$\begin{aligned} Y &= a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 && \text{(unstandardized)} \\ Y &= b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 && \text{(standardized)} \end{aligned}$$

where: Y = the purchase decision, a = constant, b = regression coefficient,  $X_1$  = culture,  $X_2$  = social,  $X_3$  = personal,  $X_4$  = psychological,  $X_5$  = product,  $X_6$  = price, e = error.

The influence of independent variables to the dependent variable was evaluated using the value of  $R^2$ . If the value of  $R^2$  is close to 100% then all the independent variables contribute to almost all of the information needed to predict the dependent variable. The simultaneous influence of culture ( $X_1$ ), social ( $X_2$ ), personal ( $X_3$ ), psychological ( $X_4$ ), product ( $X_5$ ) and price ( $X_6$ ) on purchasing decision of formula milk (Y) was tested using F-test at  $p < 0.05$ . The partial influence of each of the six independent variable on purchasing decision of formula milk was tested using T-test at  $p < 0.05$ .

## **III. Results And Discussion**

### **3.1.Profile of Respondents**

Age of respondents ranged from 22 years to 42 years. The largest frequency (33% respondents) was observed at the age of 26-30 years old (Fig. 1). This suggests that at the age range of 26-30 years old mothers are more objective than at other age ranges in searching information about the product or service that interests them. Age of the respondent's child ranged from 1 month to 60 months, with the largest number (95%) was observed at the range of 1-5 years (Fig.1). This suggests that under-five-year old children require supplementary food to support their growth. Based on the education level of respondents, the majority (48%) of respondents

had a bachelor of education degree. Consumer's education is closely connected with the knowledge of a good in terms of quality and benefits. Most respondents (73%) had side jobs such as opening stores and online businesses. The side jobs made respondents to have extra income to help their families and less dependent on the husband's income. There were 54 respondents (45%) having income between Rp. 1 million to Rp. 2 millions per-month (Fig.1). This suggests that the level of income in the city of Malang is quite good, so that the community can continue to strive to meet their needs which in turn affecting the quantity of goods demanded. Expenditure of 54 respondents (45%) to purchase formula milk in a month amounted to more than Rp. 400.000, whereas there were only 18 respondents (15%) spent less than Rp. 100.000 per month for formula milk.

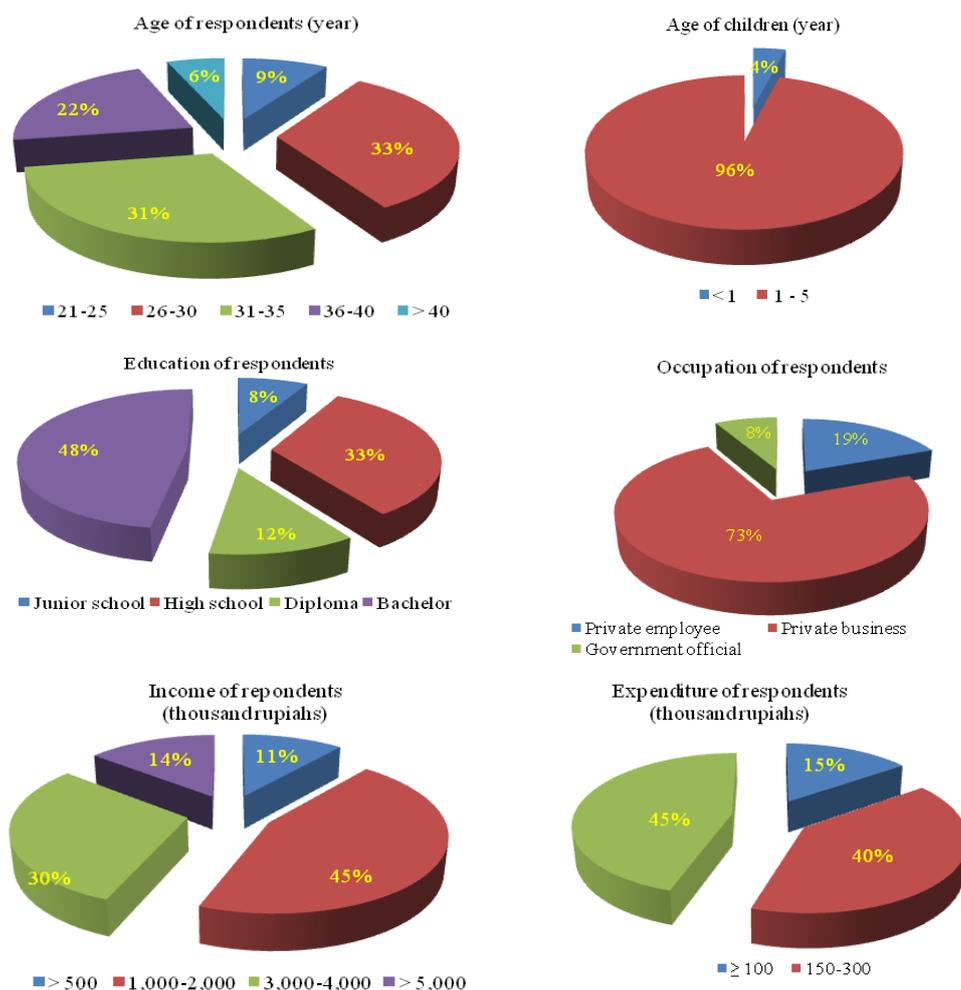


Figure 1. Profile of respondents

### 3.2. Validity and reliability of research instrument

Results of validity test using Product Moment Correlation showed that significance values for all X and Y variables were 0.000 (<0.05) indicating that the instrument used to collect the data was valid. The Cronbach alpha values for the X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub>, X<sub>5</sub>, X<sub>6</sub> and Y variables were 0.756, 0.920, 0.635, 0.771, 0.853, 0.710, and 0.634, respectively. As the Cronbach alpha values were all greater than 0.6, the instrument used to collect the data was reliable.

### 3.3. Multicollinearity, homoscedasticity, and normality tests

Results of classical assumption tests showed that there was no multicollinearity detected in the regression model used for this study. The VIF values for all independent variables were 4.596, 4.530, 1.588, 4.211, 1.761, and 3.772, with tolerance values of 0.218, 0.221, 0.630, 0.237, 0.568, and 0.265, for the X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub>, X<sub>5</sub> and X<sub>6</sub>, respectively. The occurrence of a random distribution of all values indicated that the regression model used in this study was homoscedasticity. The test One-Sample Kolmogorov-Smirnov showed that Asymp. Sig. (2-tailed) of Unstandardized Predicted Value was 0.262 or a sign. p > 0.05. This indicated that the residual data had a normal distribution.

**3.4. The influence of culture, social, personal, psychological, product and price factors on purchase decision of formula milk**

The result of multiple linear regression analysis showed that the F calculated value of 101,68 is greater than the F table of 2.175 (df1 = 6, df2 = 113;  $\alpha = 5\%$ ), with the significance value of 0.000 which is smaller than 0.05. This indicates that the social, culture, personal, psychological, product and price factors simultaneously influenced the buying decision of formula milk. Considering the value of the coefficient of determination ( $R^2$ ) of 0.835 (Table 1), it can be stated that the six variables contributed 83.5% to the variation of purchase decision of formula milk, while the remaining 16.5% seemed to be determined by other factors that were not included in the analysis model. By employing the standardized coefficients (Table 1), the linear regression model is  $Y = 0.601X_1 + 0.184X_2 + 0.070X_3 + 0.264X_4 + 0.059X_5 - 0.095X_6$ .

Table 1. Multiple Linear Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.272	0.192		1.415	0.160
X <sub>1</sub>	0.594	0.079	0.601	7.533	0.000
X <sub>2</sub>	0.102	0.044	0.184	2.327	0.022
X <sub>3</sub>	0.057	0.038	0.070	1.484	0.141
X <sub>4</sub>	0.199	0.058	0.264	3.457	0.001
X <sub>5</sub>	0.037	0.031	0.059	1.199	0.233
X <sub>6</sub>	-0.068	0.052	-0.095	-1.315	0.191
	R <sup>2</sup>	0,844			
	Adjusted R <sup>2</sup>	0,835			
	F calculated	101.683			
	Sig F Change	0,000			

The coefficients of culture (X<sub>1</sub>), social (X<sub>2</sub>), personal (X<sub>3</sub>), psychological (X<sub>4</sub>), and product (X<sub>5</sub>) variables are all positive. This indicates that the five variables have direct relationships with purchasing decision process. Increasing culture, social, personal, psychological and product values will enhance the buying decision process. On the other hand, the negative coefficient value of the price variable (X<sub>6</sub>) indicates that the increase in price will decrease the purchasing decision process of formula milk. As the coefficient value of the culture (b<sub>1</sub>) variable is greater than other five variable coefficients, it can be stated that the culture variable is the dominant factor influencing purchase decision of formula milk.

**3.5. Implications of Study**

Culture variable includes religion, occupation, education and income. Based on the Schiffman Kanuk theory, elements of culture that strongly determine decision-making process are the values of tradition or persistent belief that contribute to a particular personal behavior in a community. The Schiffman Kanuk theory also explains that socially consumers will seek opinions or information from others to be used as a guideline in selecting new products to be consumed, especially when the new products are rarely available in the market. Psychological variable that consists of motivation, perception, learning and memory, can bring the consumer to interact with the surrounding social environments to recognize feelings, collect and analyze some information, formulate ideas, opinions, and take action. Purchasing decision can also be influenced by personal characteristics that comprising age, occupation, economic condition, lifestyle, and personality and buyer's self-concept [4]. The positive influence of product variable on the purchasing decision of formula milk is basically associated with consumer's satisfaction to own and consume their needs [7]. Although the price variable in this study did not significantly affect the purchasing decision process, this variable cannot be ignored so that mothers can choose the right infant formula milk for their children.

**IV. Conclusion**

Culture, social, personal, psychological, product and price variables simultaneously influenced the purchasing decision process of formula milk in Malang City. Partially, however, price variable did not significantly influenced purchasing decision of formula milk. Culture was the dominant variable influencing purchase decision of formula milk in Malang City.

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