

Correlation Between Consumer Characteristics and Preferences of Rabbit Meat Consumption

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ABSTRACT

Food security is one of the pillars of the power of a country. But now, there has been a significant increase in the price of some food. Therefore, it is important to accept the suggestion of research results indicate the presence of some food choices that have good nutrition for human health. One of them is a rabbit meat that has been known to have the characteristics of nutrient levels better than other animal protein sources. The problem is that the number of rabbit meat consumers are still low. Therefore, research has been conducted to determine the factors that affect the level of preference in the rabbit meat. Factors that observed consumer characteristics that X_1 . Gender/Sex; X_2 . Age; X_3 . Ethnic; X_4 . Type of Work; X_5 . Religion; X_6 . Education; X_7 . Married or not; X_8 . Willing to eat meat rabbits. Respondents consisted of a variety of people with different characteristics. The seventh factor of X_1 to X_7 had been tested whether has high correlation with X_8 , using factors analysis and eigen value. Results showed that all of variables has MSA value $0.618 > 0.5$ and Chi-square value of Bartlett's test of Sphericity 206.043 with a significance level of < 0.05 . Furthermore, the eigenvalues obtained three variables that play a role in determining the level of preference on rabbit meat that X_1 Gender may explain the diversity of 43.9%, X_2 Age 17.8% and Ethnic 14.4%. While variables Work, Religion, Education, or Married or not has no effect on the consumption of rabbit meat.

Key Words: Rabbit, Preferences, Consumer Characteristics

INTRODUCTION

Food security is one of the pillars of the power of a country. But now, there has been a significant increase in the price of some food. Therefore, it is important to accept the suggestion of research results indicate the presence of some food choices that have good nutrition for human health. The efforts to increase the availability of nutritious food, especially meat need maximum support, one of the efforts among other things explores the potential of livestock that have high reproductive ability and the effort of processing so that it can be accepted by the Community (Suradi 2005a). One of them is a rabbit meat that has been known to have the characteristics of nutrient levels better than other animal nutrient sources. The interesting aspect in rabbit meat is high protein and low cholesterol. It can be promoted as a healthy meat. But there are many constraints to be faced, e.g. the difficulty of marketing – rabbit meat has not popular in society yet (Suradi 2005b). The consumer is very interested in the healthiness of meat, hedonistic quality, sensory

properties, cooking easiness and swiftness, and price (Zotte 2002). This is equivalent to be said by Zotte and Szendrő (2011) that increasing consumer knowledge of the link between diet and health has raised the awareness and demand for functional food ingredients. Meat and its derivatives may be considered functional foods to the extent that they contain numerous compounds thought to be functional.

Rabbit is a beautiful and cute furry animals is indeed said to have the good quality meat for consumption. Besides delicious, it turns out rabbit meat contains less fat and rich in protein. In addition, rabbit meat also contains a compound called ketotifen are efficacious relieve asthma. In Indonesia alone, the rabbit is much more popular than cultivated as an ornamental rabbit. Indeed, the level of consumption of rabbit meat in Indonesia is low. This is due to the lack of information on rabbit meat as a cheap alternative to meat (Kusmayadi 2012). Therefore, the problem is that the number of rabbit meat consumers are still low.

According Sumarwan et al. (2012), diet is a human behaviour to meet their needs that

includes attitudes, beliefs, and the selection of food. The attitude of people towards food can be both positive and negative. Positive or negative attitude sourced on affective values derived from the environment (natural, cultural, social and economic) in which human that is growing. Similarly, the confidence in the food-related cognitive values are good or bad quality, attractive or unattractive. Selection is the process of psychomotor to choose food according to the attitudes and beliefs. A diet can be defined as the way of people in choosing foods and eating in response to the influence of psychology, physiology, culture, and social. Hernandez (2008) said that nutritional value and safety have gained great importance among the factors that determine meat quality. The close relationship between diet and health has lead to changes in consumer habits, demanding products that meet their dietary and nutritional preferences. Rabbit meat is highly valued for its nutritional and dietary properties; it is alean meat with a low-fat content and less saturated fatty acids and cholesterol than other meats.

Young (2014) revealed that the protein in rabbit meat is very high, whereas low calorie. Rabbit meat is very nutritious for humans, especially in the growth age of child. Therefore rabbit meat are beneficial to health. United States Department of Agriculture (USDA) has conducted research on rabbit meat and officially declared that rabbit meat is healthy meat to eat. In fact, the USDA also recommends to consume rabbit meat because it is the most nutritious and healthy meat for humans. Furthermore, according to the USDA's own, taking three and a half ounces of rabbit contains 173 calories a little less than three and a half ounces of white chicken meat and beef. Rabbit meat is also low in saturated fat than veal. There are about four grams of fat in three ounces of rabbits compared to about 22 grams of fat in saturated fat in beef. Another fact, the level of cholesterol contained in rabbit meat is very low when compared with other animals such as cows, chickens, pigs and turkeys. Cholesterol in the rabbit around 164 mg per 1000 g of meat. While the beef, pork, lamb and chicken with cholesterol levels between 22-250 mg per 1000 g of meat. Actually a lot of people already has known the benefits of this rabbit meat, but not much use

as a source of protein. Therefore, research has been conducted to determine the characteristic of consumers which influence the level of preferences in the rabbit meat.

MATERIAL AND METHOD

In the form of quasi-experimental study in which treatment was not made yet been observed in a state that has occurred. The data obtained through interviews with respondents randomly who have different backgrounds in terms of Sex (X_1), Age (X_2), Ethnic (X_3), Work (X_4), Religion (X_5), Education (X_6), Married (X_7) and Consumer rabbit meat (X_8). Consumer characteristics, namely X_1 to X_7 were tested whether correlated or not with X_8 . The analysis factor was used to select factors among independent variables X_1 to X_7 most influenced in explaining the diversity of variables X_8 . Factor analysis is a statistical data reduction technique used to explain variability among observed random variables in terms of fewer unobserved random variables called factors. It is useful to reduce the number of variables, by combining two or more variables into a single factor, thus "simplifying" the original dataset. A first step in a factor analysis is determining the number of factors using a SCREE option to plot the eigenvalues. This plot is a two-dimensional graph with factors on the x-axis (bottom) and eigenvalues on the y-axis (vertical). The eigenvalues are produced by principal components analysis (PCA) and they represent the variance accounted for by each underlying factor. By looking at the highest eigenvalues and their variance, factors can be selected that has high influence in the level of consuming rabbit meat preference.

RESULT AND DISCUSSION

Characteristics of respondents

Respondents consisted of a few people with the characteristics or different backgrounds. Characteristics of respondents who obtained consists of men and women (X_1), where men more than women; covering all ranges of age, but that many are in adolescents and the elderly (X_2); coming from 10 different regions but

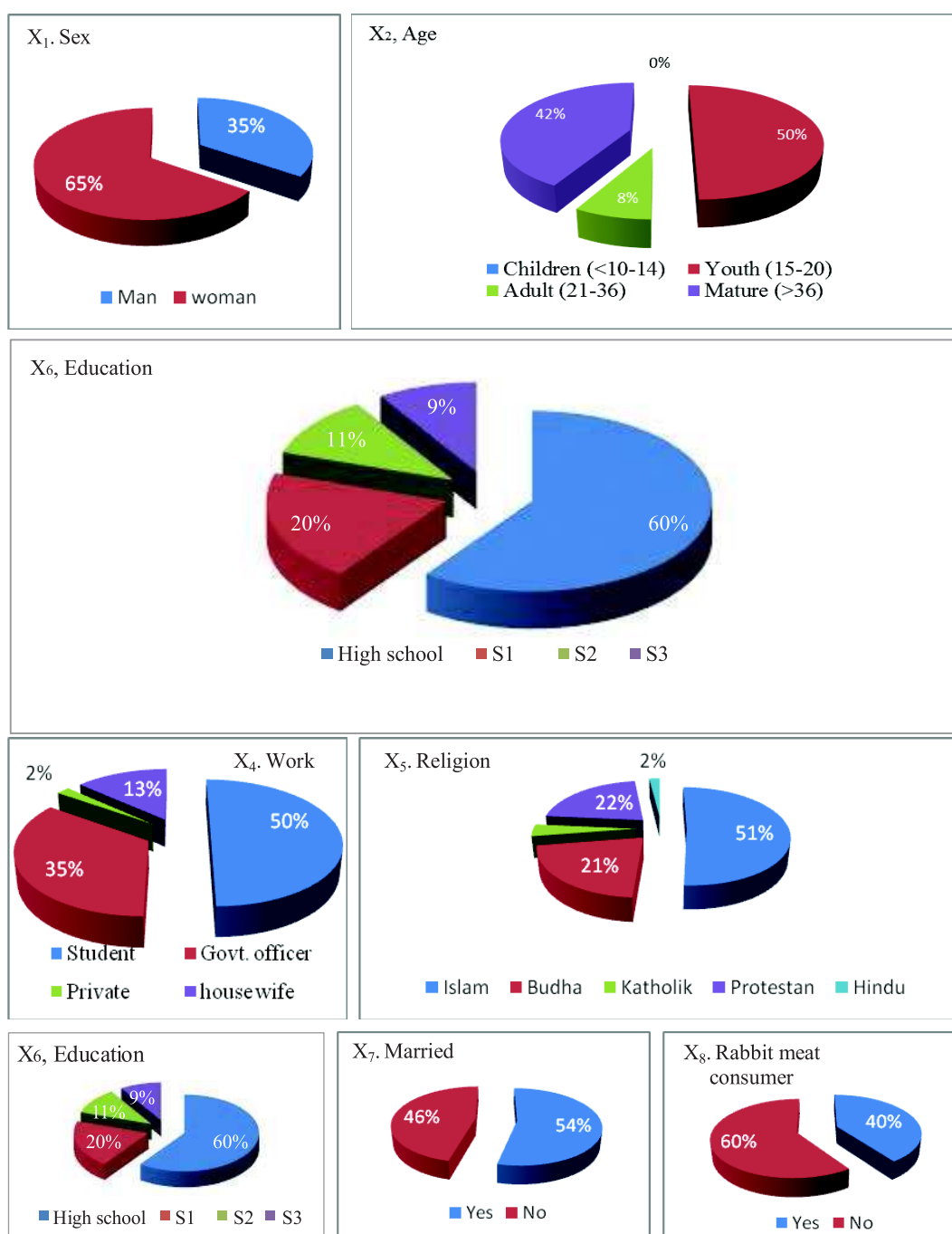


Figure 1. Percentage of respondent in each consumer characteristic

most of Borneo, Java, and Batak (X3); have different jobs there are private employees, government officials, housewives and some are students (X4) which dominated by government officials and student; all religions in Indonesia

(X5); education ranging from high school to S3 (X6); marital status (X7) are almost equally between those who are married and who have not; A rabbit meat preferences, where as who are liked more than those unlike (X8) (Figure 1).

The influence of consumer characteristic on the level of rabbit meat preference

Consumer consists of a variety of different backgrounds to see its influence on the possibility of eating rabbit meat. With different backgrounds was seen that there were respondents who are not willing to answer or that do not have an understanding of rabbit meat (Figure 2). This case shows that there are people who do not like meat rabbits or do not have experience in consuming rabbit meat.

If seen the model graph 1, the number of consumer understanding of the rabbit shows that many people are not able to comment at all if she would like it or not (13.2%), most do not even want to answer at all as much as 34%. However, if the answers are listed on the chart from left to right conveniently indicates a positive opportunity, then the peak of the answers contained in the positive response that

states that rabbit meat seems tasty, savory, soft, smooth and like a chicken meat. From this condition indicates that there is a chance of rabbit meat will be favored by consumers depends on how to cook it and depending on how socialize the benefits of rabbit meat.

Consumer characteristics that contribute to the preference level of the rabbit can be seen from the value of MSA. Table 1 shows that the MSA value (Measure of Sampling Adequacy) is $0.618 > 0.6$ indicates that these variables can be predicted without error by the other variables, which can be analyzed further. While the value of Bartlett's Test of Sphericity of 206.043 with a significance level of $0.00 < 0.05$, then H_0 that there is no correlation between the variables in the population is rejected. which shows the H_1 factor analysis can be used. When the value of KMO and significancy of Bartlett's Test of Sphericity

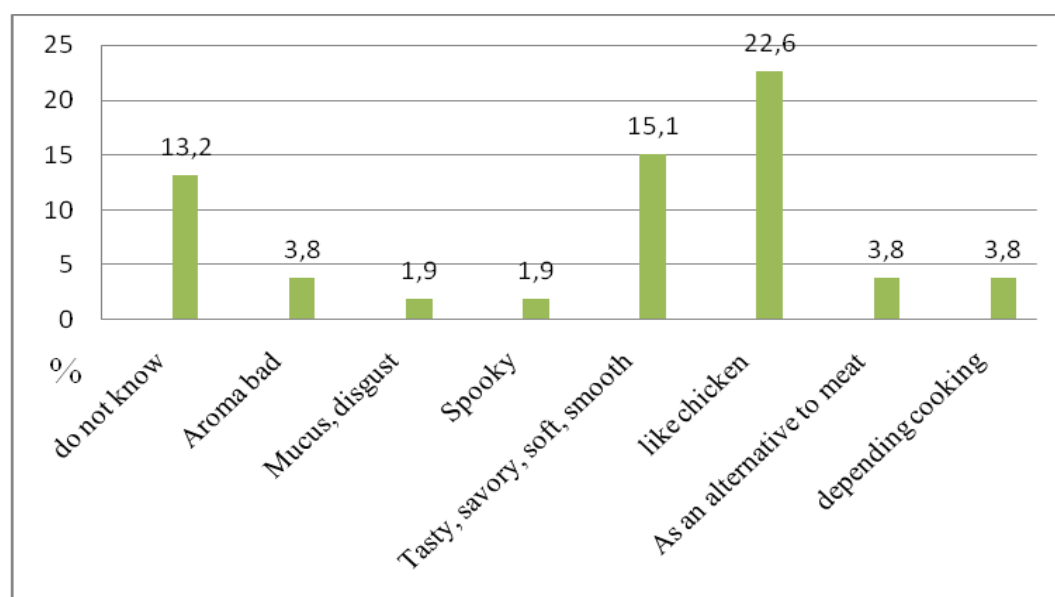


Figure 2. Respondent Perception on rabbit

Table 1. KMO and Bartlett's test

Test	Variable	Score
Kaiser-Meyer-Olkin	Measure of sampling adequacy (MSA)	0.618
Bartlett's Test of Sphericity	Approximately chi-square	206.043
	Degrees of freedom (df)	28.000
	Significancy	0.000

over 0.6 and under 0.05 respectively, then an extraction method was used. Factor analysis examines the inter-correlations that exist between a large number of items (questionnaire responses) and in doing so reduces the items into smaller groups, known as factors. These factors contain correlated variables and are typically quite similar in terms of content or meaning. (Hooper 2012). This analysis was used for selecting multiple factors that play a role in a relationship. In this data, which sought variables of X_1 , X_2 , X_3 , X_4 , X_5 , X_6 , X_7 or X_8 can explain the diversity of variables. That is, among the independent variables are searched factor most responsible X_8 as the dependent variable.

The results of factor analysis showed that there are five variables are X_1 , X_2 , X_3 , X_4 , X_5 , are correlated with the X_8 . Obtained in Table 2 that the gender effect on the level of preference in the rabbit where it appears that women are more prefer in consuming rabbit meat than men. This is somewhat different from the opinions Kim Terakes, author of The Great Aussie Bloke's Cookbook, that many men feel not eat if they do not eat protein in large portions. While women have had enough with little carbohydrate or salad at mealtime (Anna 2013). Further conveyed to him that when viewed from the sense of taste, men are not too sensitive to the bitter taste. In contrast to women who are more sensitive to bitter taste so much like something sweet. As well as by research results Sumarwan et al. (2012) also

showed that gender and treatment ($P>0.05$) did not significantly influence the formation of preferences, as well as the interaction between gender and treatment had no significant effect ($P>0.05$) in preferences. Educational background and has been married or not was not correlated with fondness on rabbit meat. This is a bit different to the results of research on the degree of buffalo meat preferences by Burhanuddin et al (2002) showed that personal characteristic like age, education level and amount of member household have significant correlation with preference level of buffalo's meat.

Furthermore, the five factors that correlated to the X_8 , further selected seen from the eigenvalues. The resulting Scree plot is shown below along with additional information include the importance of components (Figure 3).

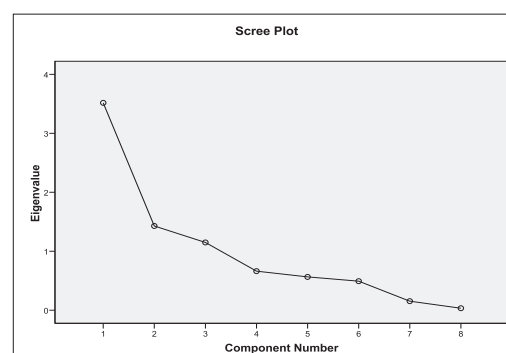


Figure 3. Scree plot of the consumer characters

Table 2. Principal Component Analysis for the X_i ($i=1 \dots 7$) with X_8

Factors	Name	Pearson correlation	Significancy	Result
X_1	Sex	57,632	0,000	Women > men
X_2	Age	57,190	0,000	Youngth > mature > adult
X_3	Etnic	35,186	0,019	China > Jawa > Sunda Padang, Batak, Kalimantan > NTB Bali = Sumsel = Aceh
X_4	Work	54,995	0,000	Student>government official House wife = private official
X_5	Religion	31,928	0,001	Islam > Budha Katholik=Protestan=Hindu
X_6	Education	7,147	0,521	not significant
X_7	Married			not significant
X_8	Consume rabbit meat			

From scree plot of the graph can be seen easily factors that have the higher value of eigen value, they are X₁, X₂ and X₃. The next graph slope looks flat. The third factor contributing value greater diversity than the other factors of diversity X₈ (Table 3). From that table shows that by using variables X₁ can explain the diversity of 43%, if added X₂ added 17, if added X₃ plus 14%. Total %, other variables do not add of eigenvalues values are only 3 that X₁, X₂ and X₃. This means that consumer characteristics that influence the level of consumption of rabbit meat is sex, age and ethnic. It can be used as a basis for the promotion of rabbit meat as an alternative source of protein that is cheap but has excellent nutritional value. This is in accordance with the opinion Rahayuningsih (2008) that the product selection items, namely supplies determining factor is determined in part by personal characteristics (age and stage of life cycle,

jobs, economy, lifestyle, personality and self-concept). The expectations and preferences of the different respondents regarding rabbit meat is an important factor to be considered in the marketing thereof (Hoffman et al. 2004). Rabbit meat consumption could be a good way to provide bioactive compounds to human consumers, since manipulation of rabbit's diet is very effective in increasing the levels of ω 3 PUFA, CLA or Vitamin E (Hernandez 2008). In addition, as submitted by Qoriah (2008) who stated that sufficiency of food determines the quality of human resources and the resilience of a people. Therefore efforts to achieve food sufficiency should be done in a sincere manner. To form a quality human food must be available at all times in adequate amounts, equitable, secure, high quality, nutritious, varied and at an affordable price. Realization of food security is not only a responsibility of the Government but all of society.

Table 3. Total variance explained/principal component analysis (PCA) for the consumer characteristic data

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative (%)	Total	% of Variance	Cumulative (%)
X ₁	3,516	43,953	43,953	3,516	43,953	43,953
X ₂	1,428	17,856	61,809	1,428	17,856	61,809
X ₃	1,149	14,365	76,174	1,149	14,365	76,174
X ₄	0,662	8,280	84,454			
X ₅	0,565	7,061	91,515			
X ₆	0,492	6,153	97,668			
X ₇	0,153	1,916	99,584			
X ₈	0,033	0,416	100,000			

Extraction method: Principal Component Analysis

CONCLUSION

All variables that X₁ (Gender/Sex), X₂ (Age), X₃ (Ethnic), X₄ (Type of Work), X₅ (Religion), X₆ (Education), X₇. (Married or not) and X₈ (Willing to eat meat rabbits) have MSA value 0.618 > 0.5 and Chi-square value of Bartlett's test of Sphericity 206.043 with a significance level of <0.05. Furthermore, the eigenvalues obtained three variables that play a role in determining the level of preference on rabbit meat that X₁ Gender may explain the diversity of 43.9%, X₂ Age 17.8% and Ethnic 14.4%. While variables Work, Religion,

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