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Some factors affecting the demand for horse meat

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Some factors affecting the demand for horse meat

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Abstract. Meat horse was one source of animal protein. The aim of this research was to know some factors affecting the demand for horse meat. This research was conducted in 2018 in Bone regency. Total respondent was 50 persons who purchased horse meat at Tanabatue market and Parigi market. Data were collected through observation and interviews by using a questionnaire. The quantity of horse meat was the dependent variable, while income, family number, age, and education level were independent variables. The linear regression result showed that the adjusted R^2 was 0.719. Simultaneously, all independent variables significantly affected the demand for horse meat ($p < 0.05$). Partially, only income significantly affected the demand for horse meat ($p < 0.05$).

1. Introduction

Horse meat is one of the meat sources for consumers in South Sulawesi, especially in Jeneponto regency and Bone regency. According to [1], horse population increase significantly from 178,077 head in 2014 to 1,002,705 heads in 2015. This means that horse meat has a good chance to substitute beef and chicken meat.

Compared to pork, beef or poultry, the dietary composition of horse meat is defined by low levels of fat and cholesterol (approximately 20 percent lower). Horse meat can, therefore, add excellent value products to the meat industry, although like other nutritional elements [2]. According to [3], horse meat is a valuable new food, with higher or closer physical, chemical and nutritional features to those of other domestic animals, being part of the traditional diet in many communities. The main problems, however, are the ethics-related ones.

There were many studies on factors affecting the demand for meat. However, it was rare research the demand for horse meat. According to [4], the demand for pork consumption was affected by key factors such as the price of pork meat, fish, and chicken, as well as real household income. On the other hand, certain factors such as beef prices, consumer personal backgrounds (such as the source of income, age, gender, and current household living space) have no effect on demand (of pork).

According to [5], it was determined that consumers' gender, level of education, income and birthplace were important in determining the demand for veal and beef; until now, there is still a gap between beef supply and demand [6]. Furthermore, chicken meat had the highest expenditure elasticity (0.9394), grills are the most economical livestock when compared to other livestock, the advantage is the speed of increase/production of meat in a relatively fast and short time [7], followed by veal and beef (0.8691), eggs (0.8528) and mutton (0.7415). Meaning that those kinds of meats, consumers' income were responsive.

In explaining perceived variations in the consumption of meat products, socio-demographic factors such as household location, the proportion of household members and family size are important factors [8]. The variable price of beef, population and per capita income has a positive and significant effect on beef demand in Semarang regency while the variable chicken price in Semarang regency does not significantly affect the demand for beef [9]. The research found that household income, family size and retail price of poultry meat were found to be major variables, while age and household education were non-significant variables influencing demand [10]. Reference [11] stated that the outcome of the regression analysis showed that the independent variables together significantly affected the dependent variable (demand for eggs) with a value of R^2 ($p < 0.01$) was 0.731. In addition, each of the egg prices, household income, family members, and education influenced egg demand in Malang City.

According to [12], family habits in consuming beef, family tastes in consuming beef, family income per capita, and availability of beef simultaneously influence beef in consumption in coastal communities. However, only partially per capita income of a family influence beef consumption in coastal communities in Tanjung Jabung Timur regency.

Based on the results of a survey conducted in Lappariaja Subdistrict, Bone regency, the community buys horsemeat more than beef, even in the five markets in Lappariaja Subdistrict, there is less selling of beef. Slaughter carried out in Lappariaja subdistrict, Bone regency, was carried out in two markets i.e. Tanabatue and Parigi market, unless there were large orders and celebration activities such as marriage and child circumcision. Horse meat is traded not only from Lappariaja district but also from other regions. From interviews with slaughterhouses and meat traders, information on sources of horse meat supplied to the study area came not only from Lappariaja subdistrict, Tulang regency and surrounding areas, but also offers from various regions such as Soppeng, Wajo, Sinjai, and Sumba with prices between IDR 10,000,000 up to IDR 14,000,000 per head weighing 80–100 kg per head. This causes horse meat classified as meat with a high price of IDR. 140,000 per kilogram [13]. The objective of this research was to obtain some factors affecting the demand for horse meat.

2. Research methods

This research was conducted in Bone regency in 2019. The total sample was 50 person which was chosen through purposive sampling in Tanabatue and Parigi markets. Data were collected through observation and depth interviews by using a questionnaire. The dependent variable was the quantity of demand for horse meat, while independent variables consisted of age, education level, family number, and income. To obtain some factors affecting the demand for horse meat, linear model regression was used with the equation as follows:

$$Y_i = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$$

where:

- Y_i : quantity of demand for horse meat (kg)
- a : constant
- b_1, b_2, b_3, b_4 : coefficient of regression for X_1, X_2, X_3 and X_4
- X_1 : income (IDR/month)
- X_2 : family number (person)
- X_3 : age (years)
- X_4 : education level (years)
- e : error

Y_i was the dependent variable on it. It was defined as the amount of horse meat demanded by consumers. X_1 was an independent variable that was expressed as household income and it was assumed to have a positive sign. X_2 was expressed as the family number and it was assumed to have a positive sign. X_3 was expressed as the age of respondents and it was assumed to have a positive sign. X_4 was expressed as an education level and it was assumed to have a positive sign.

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3. Results and discussion

Based on the age of the respondents, the average was 38.8 years, meaning that the respondent was in the productive age. The average length of time respondents received education was 10.28 years, meaning that respondents had graduated from junior high school, because according to the regulation of education in Indonesia Government, students spent six years in elementary school, three years in junior high school, three years in senior high school and four years in the university. The family number showed an average of 4.4 people, indicated that the respondent came from small families. Based on average family income was IDR 2,504,000. The average purchase of horse meat was 3.12 kg/month [13].

Table 1. Regression analysis.

Variabel	Coefficient regression	t-test	p value
Constant	-3.100	-2.517	0.015*
Age (years)	0.154	0.182	0.857
Number of family (person)	0.079	0.787	0.438
Education level	0.086	0.106	0.916
Family income (IDR)	0.829	9.972	0.000*
Adjusted R ² : 0.719			
F ratio: 32.291 P = 0,000			

Table 1 showed that R² was 0.719, indicated that 71.9% of the independent variables namely age, number of family, education level and household income influenced the demand for horse meat, while 18.1% was affected by other variables that were not included in the model. Based on F-test, simultaneously all variables influenced significantly (p<0.05) the demand for horse meat. Partially, according to t-test, only household income influenced the demand for horse meat (p<0.05).

Based on table 1 coefficient regression of age was 0.154 and positive, meaning that as age increase by one year, the demand for horse meat increased by 15.4%. The family number was positive with the coefficient regression was 0.079, indicated that as the number of family increased by one person, demand for horse increased by 7.9%. Education level was also positive with the coefficient 0.086, meaning that as the level of education increased by one year, the demand for horse meat increased by 8.6%. Finally, household income response positive to demand for horse meat with the coefficient 0.829. As household income increased by IDR 1,000,000 demand for horse meat will increase by 82.9%.

The results of this research was supported by [14] who found that variables in age, education, revenue, gender, occupation, number of employees, replacement products and tastes have an important impact on horse meat consumption, whereas racial and rational variables have a negative impact on horse meat consumption (P<0.05). Based on the F test, gender, age, education, occupation, income, cost, number of members, substitute products, race, reasons and tastes had a significant effect on horse meat consumption.

Reference [15] argued that horse meat prices, total family income, and pork prices have a significant impact on horse meat demand, partially total family income, and pork prices have a significant impact on horse meat demand. There is a significant relationship between the level of education and the number of family members with horse meat demand, but there is no significant age relationship.

4. Conclusion

Based on the result it can be concluded that simultaneously factors affecting to demand for horse meat were: age, education level, household income and the number of family. Partially, only household income influence the demand for horse meat.

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