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RESEARCH ARTICLE

Evaluation of Consumer Preferences for Goat Meat in Thailand

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ABSTRACT

Goat meat is one of the healthy diet meats which contain low calories, fat, and cholesterol. However, the lack of consumer information in goat market is obstacle for the farmers who raise the goat population. Estimating the relevance of the willingness to buy goat meat will contribute to a better understanding of the driving forces of demand and will provide an empirical base for marketing activities. In order to evaluate the willingness to buy or eat goat meat, a probit model is employed. The finding of this study showed that gender and religion are considered to be an important in consumer behavior or willingness to try goat meat. Results suggest that in the near future, the elder is another notable factor. As more population gets retired in the coming year, the demand potential for goat meat is expected to be at record high.

INTRODUCTION

Goat meat is widely consumed across the world but still occupies a niche segment in many consumers' diets. According to the Food and Agriculture Organization (FAO, 2018), over 55 percent of the global goat population—approximately 1 billion head—is raised in Asia. Among Asian countries, Thailand has a relatively small goat population, but the demand for goat meat has been gradually increasing over the past ten years. This trend coincides with growing health consciousness among consumers, who are becoming more informed about the nutritional implications of the foods they consume. As a result, there has been a notable rise in the demand for healthier food options. Goat meat is considered a healthy alternative to beef, chicken, and pork due to its lower content of calories, fat, and cholesterol.

However, the goat meat market still suffers from a lack of consumer information, which poses a challenge for farmers raising goats. Furthermore, empirical research on goat meat consumption and consumers' willingness to purchase or try goat meat remains limited. Studies such as Knight (2005) and Maclean-Meyinsse (2003) have explored the effects of demographic, socioeconomic, and geographic variables on goat meat consumption. Knight (2005) employed an ordered probit model to estimate the probability that non-consumers would be willing to eat goat meat. His study found that households with five or more members were more likely to try goat meat, while smaller households exhibited lower levels of willingness.

Therefore, analyzing consumer demand for goat meat in Thailand could provide valuable insights not only for the domestic market but also for other regions, such as Asia and Europe, where goat meat consumption has declined. Estimating willingness to purchase goat meat will deepen understanding of the factors influencing demand and offer an empirical foundation for marketing strategies. In this study, a probit model is employed to evaluate willingness to purchase or consume goat meat—a commonly used method in binary response analysis.

MATERIALS AND METHODS

The data used in this study were collected from the upper southern region of Thailand, including three provinces: Chumphon, Surat Thani, and Nakhon Si Thammarat. A total of 400 individuals were interviewed face-to-face during the period from March 2017 to February 2018. The questionnaire was designed in two sections. The first section included questions related to demographic variables such as household size, age, income, and gender. The second section focused on consumer behavior and goat meat consumption. Key explanatory variables used in the model included goat meat price perception, education level, and occupation.

The sample size was determined using Taro Yamane's formula (1967) with a 5% margin of error and a 95% confidence level, based on a population of 3,088,883 households in the three provinces. The proportionate stratified sampling method was used to allocate the 400 respondents across provinces, based on population percentages. To estimate the probability of willingness to try goat meat, a binary probit model was employed. The model assumes a dichotomous dependent variable:

Y = 1 if the respondent is willing to try goat meat,

Y = 0 otherwise.

The probit model estimates the cumulative probability of a respondent choosing one alternative over the other based on the standard normal distribution:

$$p_i = Pr(Y_i = 1 \mid X)$$

$$= \int_{-\infty}^{x_i'\beta} (1/\sqrt{2\pi}) * \exp(-t^2/2)\, dt$$

$$= \Phi (x_i'\beta)$$

Where $\Phi(\cdot)$ is the cumulative distribution function of the standard normal distribution, and $x_i'\beta$ is the linear combination of independent variables and coefficients.

The marginal effect of each independent variable on the probability of willingness to try goat meat is calculated as:

$$\partial p_i/\partial x_{ik} = \varphi (x_i'\beta) * \beta_k$$

Where $\varphi(x_i'\beta)$ is the standard normal density function.

The following table presents the definition of all variables used in the analysis:

Variables	Definition
Y	Willingness to try goat meat (1 = willing, 0 = not willing)
Gender	Gender (1 = female, 0 = male)
Age	Age of respondent (years)
Edu1	Education: Junior high school (1 = yes, 0 = otherwise)
Edu2	Education: High school (1 = yes, 0 = otherwise)
Edu3	Education: University degree (1 = yes, 0 = otherwise)
Edu4	Education: Master's degree (1 = yes, 0 = otherwise)
Occ1	Occupation: Farmer (1 = yes, 0 = otherwise)
Occ2	Occupation: Non-farmer (1 = yes, 0 = otherwise)
HSize	Household size (number of people per household)

RESULTS

This research aimed to identify the factors that influence willingness to try goat meat consumption. A probit model was employed to estimate the probabilities of non-consumers' willingness to eat goat meat.

Descriptive statistics of the respondents revealed that 56.2% were female, and 92.5% had an average monthly income of more than 8,000 baht, which is considered low income. Males had a higher average income than females, consistent with previous studies (Hill, 2013; Nelson et al., 2004; Maclean-Meyinsse, 2003; Hui and Mclean-Meyinsse, 1996). Most respondents (89.7%) had at least a primary school education. Regarding age distribution, the largest group (56%) was between 31 and 50 years old, while 16.8% indicated they had no children.

Table 2 presents the results estimated from the probit model. The model was estimated using the maximum likelihood method and was statistically significant at the 1% level. The chi-square value of 23.31 confirms the good predictive power of the variables included. Estimated coefficients, standard errors, and marginal effects highlight the factors influencing consumers' willingness to try goat meat.

Table 2. The results estimated from the probit model

Variable	Coefficient	Standard Error	Marginal Effects
Constant	0.84	0.80	-
Gender	0.54***	0.14	-0.16
Age	0.003	0.01	-0.01
Edu1	-0.143	0.45	0.04
Edu2	-0.44	0.44	0.124
Edu3	-0.34	0.41	0.10
Edu4	-0.81	0.44	0.23
HSize	0.67	0.07	-0.02
Occ1	-0.27	0.57	0.08
Occ2	-0.16	0.59	0.05

Note: *** indicates significance at the 0.01 level.

The results show that gender is a significant factor influencing willingness to try goat meat, significant at the 1% level. Each unit change in gender decreases meat consumption by 16%, as indicated by the negative marginal effect, suggesting that women are more likely to consume goat meat than men. This finding is consistent with Knight (2005), Maclean-Meyinsse (2003), and Gossard and York (2003), who found that gender strongly influences meat consumption.

In contrast, age was found to be an insignificant factor, differing from Knight (2005) and Maclean-Meyinsse (2003), who argued that age influences preferences. However, the negative marginal effect suggests that younger individuals are more likely to consume goat meat than older individuals.

Education levels (Edu1 to Edu4) were found to be insignificant, aligning with Gossard and York (2003), who reported that higher education correlates with reduced meat consumption. Marginal effects suggest that as education increases, meat consumption decreases by approximately 10%. This contrasts with Daniel et al. (2011), who observed that better-educated households showed higher demand for goat meat.

Household size (HSize) was significant in explaining willingness to try goat meat, with a marginal effect of about 2%. Larger households were associated with a decrease in consumption. This is consistent with Leahy et al. (2011), who reported that household size influences meat and fishconsumption. Finally, occupation variables (Occ1 and Occ2) were found to be insignificant, indicating no difference in goat meat preferences between farmers and non-farmers

Authors' Contributions

AT (Areerat Todsadee) conceived and designed the research, developed the questionnaire, coordinated data collection, performed the statistical analysis, interpreted the results, and drafted the manuscript. AT was responsible for over 80% of the overall research and writing process.

PT (Passakorn Thammachote) provided guidance on the research design, assisted with interpretation of results, and contributed to manuscript revisions.

JR (JessadaRattanawut) supported the preparation of research materials, facilitated fieldwork logistics, and reviewed the manuscript.

All authors read and approved of the final manuscript.

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