# The Influences of Marketplace Knowledge, General Product Class Knowledge, and Knowledge in Meat Product with Traceability on Trust in Meat Traceability

Kawpong Polyorat

*Abstract*—Since the outbreak of mad cow disease and bird flu, consumers have become more concerned with meat quality and safety. As a result, meat traceability is adopted as one approach to handle consumers' concern in this issue. Nevertheless, in Thailand, meat traceability is rarely used as a marketing tool to persuade consumers. As a consequence, the present study attempts to understand consumer trust in the meat traceability system by conducting a study in this country to examine the impact of three types of consumer knowledge on this trust. The study results reveal that out of three types of consumer knowledge, marketplace knowledge was the sole predictor of consumer trust in meat traceability and it has a positive influence. General product class knowledge and knowledge in meat products with traceability, however, did not significantly influence consumer trust. The research results provide several implications and directions for future study.

*Keywords*—Consumer knowledge, marketing, product knowledge, traceability.

## I. INTRODUCTION

SINCE the crisis in food safety such as the emergence of mad cow disease in Europe [1] and H5N1 bird flu in poultry in Asia [2], consumer concerns on meat safety have been increased while the trust in meat safety has possibly decreased. As a consequence, to reduce risks in any unusual incident, consumer may search for a quality assurance mark or label detailing the manufacturing process [3]. Meat traceability is therefore adopted as one approach to mitigate consumers' concern in this issue. Meat traceability system can record and display meat product information from every step in the supply chain. Therefore, meat producers and meat consumers may be able to trace back or audit the meat quality and safety from the beginning to the end of the production and selling process [4]. In Thailand, however, meat traceability is fairly common mostly within manufacturer-wholesaler-retailers cycle. It is rarely used as a marketing tool to persuade meat consumers. Therefore, consumer knowledge or exposure to meat traceability is rather limited. This is especially true for Thailand where the use of meat traceability is at the beginning stage. As a consequence, the present study attempts to fill in this void by conducting a study with consumers in Thailand to

examine different types of consumer knowledge and their influences on trust in meat traceability. It is expected that the results from the present study will provide several implications for marketers and academics interested in using meat traceability as a marketing tool.

## II. THEORETICAL FRAMEWORK

Trust is a psychological mechanism. Consumer trust occurs when a consumer relies on a promise given by a seller [5]. In meat purchase and consumption, the meat traceability system may influence consumer trust because it can increase transparency in the food supply chain [6]. In other words, trust reflects the degree to which consumers are willing to believe that the information disclosed from sellers is trustworthy, transparent, and accurate [7]. In this sense, trust also represents the favorable relationships between sellers and buyers. Therefore, it could be expected that when consumers trust in meat traceability, their intention to purchase is likely to increase. As a result, it is important for meat marketers to understand the antecedents of consumer's trust in meat traceability system.

The present study attempts to examine the impact of consumer knowledge on consumer trust in meat traceability system. In order to better understand this impact, consumer knowledge is divided into 3 categories: Marketplace knowledge, general product class knowledge, knowledge in meat products with traceability.

Marketplace knowledge reflects the degree to which consumers perceive themselves to be informed about the marketplace [8]. Consumers high in this construct are likely to view themselves as knowledgeable in purchase and consumption, knowing a lot about different types of stores, and well-informed about what is a reasonable price or deal to pay for products or service. This perception, however, is not restricted to a specific product class or brand, but related to marketplace in general.

General product class knowledge reflects the extent to which consumers perceive themselves to have knowledge, familiarity, and/or experience regarding various types of that product class on the market in comparison to other consumers [9]. For example, for the washing machine product class, some consumers may consider themselves to have more knowledge or exposure to information or experience concerning washing

Kawpong Polyorat, Ph.D. is an assistant professor in marketing at the Faculty of Business Administration and Accountancy, Khon Kaen University, Thailand (corresponding author's e-mail: kawpong@kku.ac.th).

World Academy of Science, Engineering and Technology
International Journal of Economics and Management Engineering
Vol:10, No:9, 2016

machine and thus know more about features or different types of washing machines than other consumers.

Finally, in order to achieve a better understanding of consumer behavior in the meat traceability context, the present study not only examines the meat product class in general but also specifically examines consumer's perceived knowledge in meat product with traceability. As the meat traceability is relatively new in Thailand, while a number of consumers may be quite knowledgeable or have ample experiences with meat product in general, they may lack knowledge of or familiarity with meat product with traceability. As a consequence, it

appears necessary to differentiate these two types of product knowledge. On the basis of this discussion, in order to examine the relationships between different types of consumer knowledge and trust in meat traceability, the present study, as displayed in Fig. 1, proposes that:

H1. Marketplace knowledge positively influences trust in meat traceability.

H2. General product class knowledge positively influences trust in meat traceability.

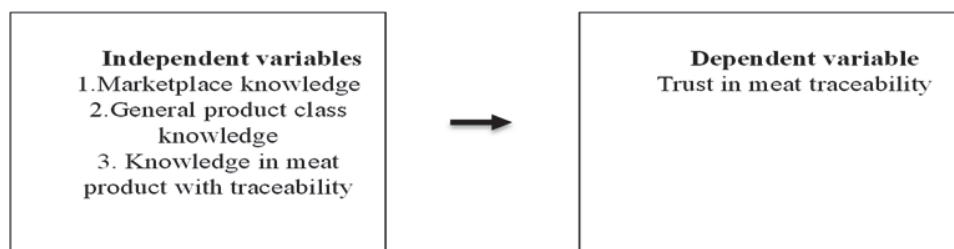H3. Knowledge in meat product with traceability positively influences trust in meat traceability.



Fig. 1 Conceptual Framework

### III. METHODOLOGY

#### A. Sample and Procedure

One hundred ninety-five consumers in the Northeastern region of Thailand participated in this survey via judgmental sampling. The majority of the research participants are female (67%), between 21 to 30 years old (54%), bachelor's degree holders (69%), public sector workers (42%), and with an income of 10,001-20,000 baht/month (63%).

First, the research participants were informed of the study description. Subsequently, they were asked to complete the measures of marketplace knowledge, general product class knowledge, knowledge in meat products with traceability, and trust in meat traceability. Finally, they provided the personal data.

#### B. Measures

The survey asked the research respondents to indicate the degree to which they agreed or disagreed with each of the scale items in the Likert type (1 = strongly disagree, 5 = strongly agree). Marketplace knowledge was measured with three items (e.g., "I am a knowledgeable consumer") from [8]. General product class knowledge was measured with three items (e.g., "Compared to an average person, how knowledgeable you are about the features of different types of meat products in the market") adopted [9]. Knowledge in meat products with traceability (e.g., "Compared to an average person, how knowledgeable you are about the features of different types of meat products with traceability in the market") was measured with three items adapted from [9]. Finally, traceability trust was measured with three items (e.g.,

"Information provided by the traceability system is trustworthy") from [10].

### IV. RESULTS

To assess the validity and dimensionality of the research instrument, all items from these four scales were simultaneously factor-analyzed with a four-factor solution imposed a priori. The factor analysis results as displayed in Fig. 2 reveal that all scale items loaded on the intended factors with factor loadings all higher than .80. Moreover, the Cronbach's alphas for these 4 scales are decent, ranging from .83-.95. Altogether, the scales used in the present study appear to possess validity and reliability [11], [12]. As a consequence, average scores were computed for each factor. The means for marketplace knowledge, general product class knowledge, knowledge in meat products with traceability, and trust in meat traceability were 3.37, 3.12, 2.74, respectively and their corresponding standard deviations were 3.64 and .69, .76, .82, and .75, respectively, as displayed in Fig. 3.

To test the three research hypotheses, a multiple regression analysis was conducted where three types of consumer knowledge were the three independent variables while trust in meat traceability was the dependent variable. The overall regression model was significant (F=5.237, p<.01). The results reveal that marketplace knowledge significantly influenced trust in meat traceability ($\beta$ = .22, t =2 .64, p< .01) whereas general product class knowledge ($\beta$ = .10, $t$ =1 .10, $p$> .1) and knowledge in meat product with traceability ($\beta$ = -.02, $t$ =- .25, $p$> .1) did not, as displayed in Fig. 4.

World Academy of Science, Engineering and Technology
International Journal of Economics and Management Engineering
Vol:10, No:9, 2016

| # | Scale Items | Knowledge in Meat Product with Traceability | General Product Class Knowledge | Traceability Trust | Marketplace Knowledge |
|---|---|---|---|---|---|
| 1. | I am a knowledgeable consumer. | | | | .80 |
| 2. | I know a lot about different types of stores. | | | | .86 |
| 3. | I am usually well-informed about what is a reasonable price to pay for something. | | | | .80 |
| 4. | Compared to others you know, how knowledgeable are you about the features of different types of meat products in the market. | | .84 | | |
| 5. | In general, how knowledgeable are you about different types of meat product in the market? | | .88 | | |
| 6. | Compared to your friends, how much experience do you have with different types of meat products? | | .84 | | |
| 7. | Compared to others you know, how knowledgeable are you about the features of different types of meat products with traceability in the market. | .86 | | | |
| 8 | In general, how knowledgeable are you about different types of meat product with traceability in the market? | .91 | | | |
| 9. | Compared to your friends, how much experience do you have with different types of meat products with traceability? | .89 | | | |
| 10 | The traceability system provides objective information on agro-product sufficiently. | | | .90 | |
| 11 | Information provided by the traceability system is trust worthy. | | | .92 | |
| 12 | I expect the traceability system to provide accurate information trustfully. | | | .85 | |
| | Variance explained (%) | 22.50 | 21.44 | 20.51 | 19.46 |

Fig. 2 Factor analysis results

| Constructs | Mean | SD | Cronbach's alpha |
|---|---|---|---|
| Marketplace Knowledge | 3.37 | .69 | .83 |
| General Product Class Knowledge | 3.12 | .76 | .93 |
| Knowledge in Meat Product with Traceability | 2.74 | .82 | .95 |
| Traceability Trust | 3.64 | .75 | .88 |

Fig. 3 Descriptive statistics and reliabilities

| Independent Variable | Traceability trust | |
|---|---|---|
| | β | t-value |
| Marketplace knowledge | .22 | 2.64** |
| General product class knowledge | .10 | 1.10 |
| Knowledge in meat product with traceability | -.02 | .25 |

$F(3,191) = 5.24$; $p<.01$,   *: $p<.05$; **: $p<.01$; ***: $p<.001$ (two-tailed)

Fig. 4 Regression analysis results

## V. DISCUSSIONS

The hypothesis testing demonstrates that marketplace knowledge was the only type of consumer knowledge examined in the present study that significantly predicted consumer trust in meat traceability and it had a positive influence. General product class knowledge and knowledge in meat products with traceability, however, did not have significant impacts.

The present study provides a number of research implications. In Thailand, the main target for meat product with traceability is more likely to be consumers who have knowledge about marketplace in general. These group of consumers need not to be knowledgeable in meat product, though. Marketers thus need to identify and locate consumers who are knowledgeable in purchase and consumption, who know a lot about different types of stores, and who are well-informed about what is a reasonable price or deal to pay for products or service. These consumers are more likely to have trust in meat traceability and thus could be view as the primary target group of meat product with traceability.

It seems perplexing that the marketplace knowledge which is not directly related to the focal product was the sole significant predictor while the more relevant types of product knowledge are not. Future research should attempt to revalidate our findings and seek to explain the reasons underlying this finding. It could be possible that, in Thailand where traceability is seldom used as a marketing communication tool, consumers are not familiar with traceability. Therefore, knowledge in meat products with traceability may fail to develop desired impact. In this regard, future research may seek to study consumers from other countries where traceability is more common. Country-specific characteristics such as level of economic and technological development and cultural dimensions [13], [14] may also need to be investigated to get a better understanding of antecedents of trust in meat traceability.

REFERENCES

[1]  P. Sans, G. de Fontguyon, and G. Giraud, "Value-based labels for fresh beef: an overview of French consumer behaviour in a BSE crises context", *International Journal of Consumer Studies*, vol. 32, no. 5, pp. 407-413, 2008.

[2]  S. Burgos, and S. A Burgos, "Avian influenza outbreaks in Southeast Asia affects prices, markets and trade: A short case study", *International Journal of Poultry Science*, vol. 6, no.12, pp. 1006-1009, 2007.

[3]  R.M.W. Yeung, and J. Morris, "Consumer perception of food risk in chicken meat", *Nutrition and Food Science*, vol. 31, no. 6, pp. 270-278, 2001.

[4]  J. E. Hobbs, "Information asymmetry and the role of traceability systems," *Agribusiness*, vol. 20, no. 4, pp. 397-415, Autumn (Fall) 2004.

[5]  P. A. Pavlou, "Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model," *International Journal of Electronic Commerce*, vol.7, no.3, pp.101-134, 2003.

[6]  W. van Rijswijk, L. J Frewer, D. Menozzi, and G. Faioli, "Consumer perceptions of traceability: A cross national comparison of associated benefits," *Food Quality and Preference,* vol.19, no.5, pp.452-464, 2008.

[7]  M. F. Chen, and C.H. Huang, "The impacts of the food traceability system and consumer involvement on consumers' purchase intentions toward fast foods," *Food Control*, vol.33, no.2, pp. 313-319, 2013.

[8]  T.F. Mangleburg, and T. Bristol, "Socialization and adolescents' skepticism toward advertising," *Journal of Advertising*, vol.27, no.3, pp. 11-21, 1998.

[9]  A. Mukherjee, and W.D. Hoyer, "The effect of novel attributes on product evaluation. Journal of Consumer Research," vol. 28, no. December, pp.462-472, 2001.

[10] Y. C. Choe, J. Park, M. Chung, and J. Moon, "Effect of the food traceability system for building trust: Price premium and buying behavior," *Information Systems Frontiers*, vol. 11, no. 2, pp. 167-179, Apr. 2009.

[11] J.C. Nunnally, *Introduction to Psychological Measurement.* New York: McGraw-Hill. 1970.

[12] K. Polyorat, and S. Sophonsiri, "The influence of consumer relationship proneness on the perceived importance of relational benefits in a university canteen context in Thailand," *The 9th SMEs in a Global Economy Conference Proceeding*, 2012.

[13] K. Polyorat, and D.L. Aldeni, "Self-Construal and Need for Cognition Effects on Brand Attitudes and Purchase Intentions in Response to Comparative Advertising in Thailand and the United States," *Journal of Advertising,* vol.34, no.1, pp. 37-48. 2005.

[14] J.M. Jung, K. Polyorat, and J.J. Kellaris, "A Cultural Paradox in Authority-Based Advertising Appeals," *International Marketing Review*, vol. 26, no. 6, pp. 601-632, 2009.