Scientific Research Publishing

American Journal of Industrial and Business Management, 2017, 7, 1128-1135
http://www.scirp.org/journal/ajibm
ISSN Online: 2164-5175
ISSN Print: 2164-5167

Consumers' Purchase Intentions toward Traceable Beef—Evidence from Beijing, China

Huan Song, Ruimei Wang*, Yu Hu

College of Economics and Management, China Agricultural University, Beijing, China
Email: *wangruimei@cau.edu.cn

How to cite this paper: Song, H., Wang, R.M. and Hu, Y. (2017) Consumers' Purchase Intentions toward Traceable Beef—Evidence from Beijing, China. *American Journal of Industrial and Business Management*, **7**, 1128-1135.
https://doi.org/10.4236/ajibm.2017.710081

Received: September 11, 2017
Accepted: October 13, 2017
Published: October 16, 2017

Abstract

The utility of food traceability standards aims to reduce the of food security and to provide consumers with targeted information. A survey has been conducted on sample of consumers in Beijing (n = 234), aiming to explain the intention toward purchasing traceable beef using the theory of planned behavior (TPB). Based on the TPB, the present study has added new variable: past experience. Structural Equation Modeling is applied to test the TPB model. Results show that attitude, subjective norm and past experience are positively associated with intention to traceable beef.

Keywords

Traceable Beef, Theory of Planned Behavior, Purchase Intention

1. Introduction

Food safety has triggered growing attention because of the numerous food safety scandals that occurred in the last few decades. The food safety scandals that many factors caused have happened frequently. These factors include pesticide residues [1], antimicrobial contamination [2], the abuse of food additives [3] and the information asymmetry [4] [5] in food market to mention a few. The traceability system is effective to provide consumer with more food related information throughout the entire supply chain, which can be build a reputation for food and restored consumer confidence. Starting in 2000, Food traceability system has been introduced in China. However, the extra cost of traceability system is passed on to the food price, which exceeds consumer' affordability. Hence, consumers' intention to purchase traceable food is a key for both industries and policy makers.

At present, it is limited that the degree of Chinese consumer cognition for

traceable food. In terms of research content, region is usually considered very important factors influences consumers' cognition. And consumers have different cognition for traceable food in different regions. As well as, the concern about food safety affects the cognition for traceable food.

Previous studies have revealed that past behavioral was crucial factors in predicting Consumers' purchase intentions [6]. Consumers' purchase intentions toward traceable food are affected by a numbers of factors like concern about traceability system, trust for traceable food, and issuer for traceability certificate [7] [8]. Moreover, Consumers' purchase intentions were influenced by consumers' socio-demographic variables [9]. HAN and ZHANG found that age, income and education have a significant impact on consumers' purchase intentions [10] and Gou and Li found that female consumers gave more importance to the traceable milk [11]. The consumers' willing to pay for traceable food has mainly focused on traceable food price, and consumers have different price premium.

In conclusion, a large number of studies have focused on consumers' purchase intentions toward traceable food. The most studies showed that the consumer cognition for traceable food, trust for traceable food and socio-demographic variables, are the main determinants of consumers' purchase intentions toward traceable food, but have been rarely reported the factors such as subjective norms, perceived behavioral control and how they influence intention to purchase traceable food. To address this issue, attitude, subjective norms, perceived behavioral control, past behavior were included in the current study. This study aimed to assess Beijing consumers' purchase intentions toward traceable beef, as a typical sample of traceable food. The results of this study will provide important guidance for both industries and policy makers.

2. The Theoretical Framework

The theory of Reasoned Action suggests that the behavior of individuals is considered to be the consequence of intention about the object. And the behavior is driven by attitude and subjective norm [12]. Based on the TRA, Ajzen (1985) proposed the theory of planned behavior to predict and describe the behavior of individuals. According to the TPB model in **Figure 1**, individual's behavior is guided by their intention, and the intention is impacted by attitude, subjective norms and perceived behavioral control. The attitude is measure of the favorable or unfavorable a behavioral alternative. Subjective Norm is perceived social pressure to perform the behavior for an individual. Finally, Perceived Behavioral Control is perceived confidence to the possibility of performing the behavior.

The TPB framework is applied in a wide range of health-related actions studies for predicting behavioral intentions. Mullan *et al.* [13] applied TPB towards safe food handling in the UK and Australia, showing that risk perception and PBC were a significant predictor of intention or behavior. Yadav [14] *et al.* demonstrated the utility of TPB in predicting the organic food purchase intention. However, it has been criticized for the level of prediction of the TPB. Numerous studies have developed the TPB models to understand and predict

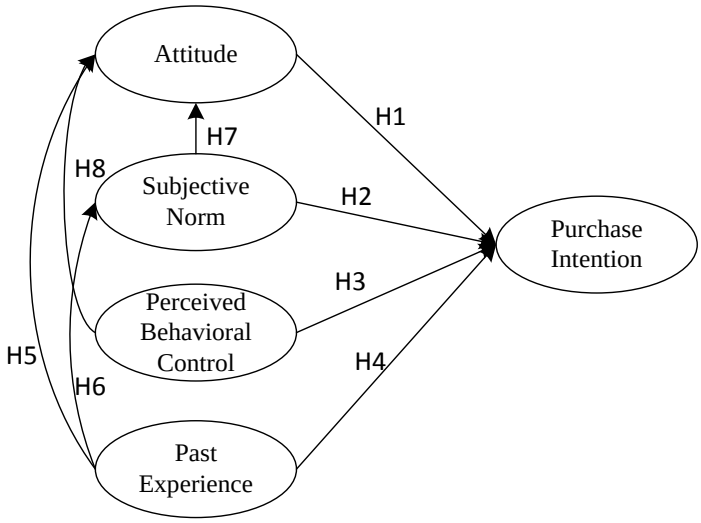

Figure 1. Proposed theoretical framework.

human behavior. And the past experience may be considered an important predictor of human behavior. To model consumers' purchase intention for traceable beef, in our study, an extended TPB model was tested by measuring consumers' purchase intentions that attitude, subjective norm, perceived Behavioral Control, past experience. On the basis of this discussion, following hypotheses are formulated.

H1: Consumer's attitude towards purchasing traceable beef positively influences consumers' purchase intention.

H2: Consumer's purchase intention towards purchasing traceable beef is positively influenced by the subjective norm.

H3: Perceived Behavioral Control significantly influences consumer's intention towards purchasing traceable beef.

H4: Past experience significantly increases consumer's intention towards purchasing traceable beef.

H5: Past experience influences consumer's attitude towards purchasing traceable beef.

H6: The past experience positively influences consumer's subjective norm.

H7: Consumer's attitude towards purchasing traceable beef is positively influenced by the subjective norm.

H8: Perceived Behavioral Control significantly influences consumers' attitude towards purchasing traceable beef.

3. Research Methodology

3.1. Designing of Questionnaire

To accomplish objective of the study, the questionnaire included items already used in the previous findings on similar literature [15] [16] [17], All items were scored on a 5-point Likert's type scale(1 = "totally disagree", 5= "totally agree"). All the items and their source are mentioned in **Table 1**.

Table 1. Questionnaire.

Constructs and measuring items	Sources
Purchase intention	
G1: I am willing to consume traceable beef if they are available for purchase	Yazdanpanah & Forouzani, 2015
G2: I plan to consume traceable beef if they are available for purchase	
G3: I plan to consumer traceable beef if they are available for purchase	
Attitude	
ATT1: Buying traceable beef is good idea	Yadav & Pathak (2016)
ATT2: Buying traceable beef is a wise choice	
ATT3: Buying traceable beef would be pleasant	
Subjective Norm	
SN1: I would buy traceable beef because people important to me buy it	Menozzi *et al*., 2015
SN2: I would buy traceable beef because media are in favor	
SN3: I would buy traceable beef because government promote it	
Perceived Behavioral Control	
PBC1: I am confident that I can purchase traceable beef rather than normal products when I want	Kamonthip *et al*., 2016
PBC2: I see myself as capable of purchasing traceable beef in future	
PBC3: I have resources, time and willingness to purchase traceable beef	
Past Experience	
PA1: I am familiar with eating traceable beef	Mitterer-Dalté *et al.* 2013
PA2: I have much experience in buying traceable beef	
PA3: I have much knowledge about traceable beef	

3.2. Data Collection

Primary data were collected through face-to-face interviews using a structured questionnaire at a number of parks and supermarkets in Beijing. In this study, a total of 300 questionnaires were distributed among target population who bought traceable beef from March 2016 to April 2016. In the end 249 questionnaires were returned, but only 234 questionnaires were considered complete. From the descriptive statistics shown in Table 2, most respondents were females (55.6%), age between 30 and 39 (43.6%), or between 20 and 29 (34.2%). Almost 47.8% respondents reported a family monthly income between $10001- $20000. In terms of completed education, University (64%) and Secondary (21%) were most often reported.

4. Results

To test the internal consistency among the items, the Cronbach's α coefficient were calculated. According to Hair [18], the Cronbach's α should be greater than 0.700. Therefore, all of Cronbach's α ranged from 0.732 to 0.886. The value of composite reliability (CR) ranged from 0.732 to 0.886, which also met the

Table 2. Sample characteristics.

Items Classification		Frequency	Percentage
Gender	Females	130	55.6%
	Males	104	44.5%
Age	20 - 29	80	34.2%
	30 - 39	102	43.6%
	40 - 49	34	14.5%
	50 - 59	13	5.6%
	>60	5	2.1%
Educational level	Elementary	28	6.5%
	Secondary	89	21%
	University	272	64%
	Graduate and Doctoral	36	8.4%
Family Monthly income(RMB)	<1000	8	1.9%
	1000 - 3000	23	5.4%
	3001 - 5000	65	15.3%
	5001 - 10,000	84	19.8%
	10,001 - 20,000	203	47.8%
	20,001 - 30,000	31	7.3%
	30,001 - 40,000	9	2.1%
	>40,001	2	0.5%

acceptable limit of 0.700, and all the average variance extracted (AVE) estimates were >0.60. Therefore, the items had composite reliability. Confirmatory Factor Analysis (CFA) was applied on the consumers' purchase intention towards traceable beef model to access the information about validity. In this study, five-factor CFA model (see Table 3) was tested. The results indicated the hypothesized measurement model was reliable.

In Table 4, χ^2/df = 1.600, RMSEA = 0.051, CFI = 0.963, GFI = 0.924, AGFI = 0.890, NFI = 0.909, IFI = 0.964, TLI = 0.953. All these indices were higher than the suggested goodness-of-fit values for the proposed structural model.

As can be seen form Table 5, Subjective norm and past experience are all significant and positively related to consumer's intention towards purchasing traceable beef ($p < 0.05$), which supported the hypothesisH2 and H4. Attitude has also a positive effect on purchase intentions ($\beta = 0.535$), this confirms our H1. Similarly, past experience, subjective norm and perceived behavioral control are all significant and positively related to attitude. The hypotheses for the model (H5, H7, H8) are supported. Past experience has a positive effect on subjective norm ($\beta = 0.238$), supporting H6. Perceived behavioral control showed no significant influences on consumer's intention towards purchasing traceable beef, hence H3 was not supported.

Table 3. Reliability and validityof the items.

Constructs	Items	Cronbach's α	Factor loading	CR	AVE	KMO	Bartlett's test significant
Purchase intention	G1	0.732	0.802	0.733	0.692	0.718	0.000
	G2		0.612				
	G3		0.541				
Attitude	ATT1	0.731	0.724	0.735	0.783	0.749	0.000
	ATT2		0.708				
	ATT3		0.682				
Subjective Norm	SN1	0.747	0.671	0.748	0.761	0.850	0.000
	SN2		0.698				
	SN3		0.713				
Perceived Behavioral Control	PBC1	0.804	0.711	0.809	0.822	0.725	0.000
	PBC2		0.655				
	PBC3		0.761				
Past Experience	PA1	0.885	0.844	0.886	0.623	0.821	0.000
	PA2		0.838				
	PA3		0.793				

Table 4. Goodness-of-fit indices of the research model.

Fit Indices	Criteria	Indicators	Results
Chi-square/df	<2.000	1.600	Supported
Root Mean Square Error of Approximation (RMSEA)	<0.100	0.051	Supported
Comparative Fit Index(CFI)	>0.900	0.963	Supported
Goodness of Fit Index(GFI)	>0.900	0.924	Supported
Adjusted Goodness of Fit Index (AGFI)	>0.800	0.890	Supported
Normed Fit Index(NFI)	>0.900	0.909	Supported
Incremental Fit Index	>0.900	0.964	Supported
Tucker-LewisIndex	>0.900	0.953	Supported

Table 5. Hypothesis test results.

Path Correlation	Standardized Path Coefficient	Results
H1: Attitude ---> purchase intentions	0.535***	supported
H2: Subjective norm ---> purchase intentions	0.596**	supported
H3: Perceived behavioral control ---> purchase intentions	0.119	not supported
H4: Past experience ---> purchase intentions	0.101**	supported
H5: Past experience ---> Attitude	0.182***	supported
H6: Past experience ---> Subjective norm	0.238***	supported
H7: Subjective norm ---> Attitude	0.163***	supported
H8: Perceived behavioral control ---> Attitude	0.201***	supported

Note: p-value: ***$p < 0.001$, **$p < 0.05$.

5. Discussion

A structural equation model (SEM) technique was employed on the data collected to test consumers' purchase intention towards traceable beef in the extended framework of the TPB model. The result suggested that consumers' purchase intention towards purchasing traceable beef can be predicted by attitude, subjective norm and past experience. However, subjective norm seemed to be the strongest determinants, which showed that consumers would buy traceable food if friends, members, media and government approve of it. The result has already been validated in other studies [16]. Therefore, we can argue that developing relevant marketing strategies of traceable food, such as advertising and price promotion, may improve the level of consumer awareness about traceable food and consequently their intention to purchase intention.

Attitude was found to be significant and positive for consumers' purchase intentions. To increase consumers' purchase intention, it is imperative to share more information on traceable beef, and government departments should fully strengthen the supervision of sharing information to improve the level of consumers' trust in food traceability system.

Finally, the past experience exerted a stronger influence on consumers' purchase intention towards traceable beef which showed that customer loyalty should be considered as important parameters while devising strategy for traceable beef. So the traceable business should increase the cultivation of old customers. This could help increase the consumers' purchase intention towards traceable beef.

Acknowledgements

This paper was partially supported by National Key Technology R&D Program of the Ministry of Science and Technology (No. 2014BAL07B05), Humanities and Social Sciences Foundation of Ministry of Education of China (No. 13YJCZH182).

References

[1] Malarkodi, C., Rajeshkumar, S. and Annadurai, G. (2017) Detection of Environmentally Hazardous Pesticide in Fruit and Vegetable Samples Using Gold Nanoparticles. *Food Control*, **80**, 11-18. https://doi.org/10.1016/j.foodcont.2017.04.023

[2] Li, K., *et al.* (2017) Sources and Fate of Antimicrobials in Integrated Fish-Pig and Non-Integrated Tilapia Farms. *Science of the Total Environment*, **595**, 393-399. https://doi.org/10.1016/j.scitotenv.2017.01.124

[3] Chen, M. (2017) Modeling an Extended Theory of Planned Behavior Model to Predict Intention to Take Precautions to Avoid Consuming Food with Additives. *Food Quality and Preference*, **58**, 24-33. https://doi.org/10.1016/j.foodqual.2017.01.002

[4] Wang, J. and Chen, T. (2016) The Spread Model of Food Safety Risk under the Supply-Demand Disturbance. *SpringerPlus*, **5**, 1765. https://doi.org/10.1186/s40064-016-2881-2

[5] Wang, J., Chen, T. and Wang, J. (2015) Research on Cooperation Strategy of Enterprises' Quality and Safety in Food Supply Chain. *Discrete Dynamics in Nature and Society*, **3**, 1-15.

[6] Honkanen, P., Olsen, S.O. and Verplanken, B. (2005) Intention to Consume Seafood the Importance of Habit. *Appetite*, **45**, 161-168. https://doi.org/10.1016/j.appet.2005.04.005

[7] Zhao, R., Qiao, J. and Chen, Y.S. (2009) Empirical Study on Purchase Behavior of Consumer to Traceable Food: A Survey from Haidian District in Beijing. *Technology Economics*, **28**, 53-56.

[8] Zhang, C., Bai, J. and Wahl, T.I. (2012) Consumers' Willingness to Pay for Traceable Pork, Milk, and Cooking Oil in Nanjing, China. *Food Control*, **27**, 21-28. https://doi.org/10.1016/j.foodcont.2012.03.001

[9] Wu, L.H., Wang, S.X. and Hu, W.Y. (2014) Consumers' Preferences and Willingness-to-Pay for Traceable Food-Pork as an Example. *Chinese Rural Economy*, **8**, 58-75.

[10] Han, W.W. and Zhang, W. (2012) Based on the Effects of Three Factors, the Empirical Analysis of Consumers Purchasing Intention for Traceable Food: Taking Tianjin as an Example. *Ecological Economy*, **8**, 119-124.

[11] Guo, F. and Li, L. (2016) A Study on Purchase Behavior and Influencing Factors of Consumers to Traceable Milk Powder: Based on the Empirical Research of 388 Survey Date. *Chinese Journal of Animal Science*, **16**, 24-32.

[12] Shang, X.D., Qiao, J. and Li, B.L. (2012) Regional Difference, Subjective Feeling and Purchase Intention of Consumer to Traceability Food—Based on the Survey Data from Guangzhou and Harbin City. *On Economic Problems*, **11**, 69-74.

[13] Mullan, B.A., Wong, C. and Kothe, E.J. (2013) Predicting Adolescents' Safe Food Handling using an Extended Theory of Planned Behavior. *Food Control*, **31**, 454-460. https://doi.org/10.1016/j.foodcont.2012.10.027

[14] Yadav, R. and Pathak, G.S. (2016) Intention to Purchase Organic Food among Young Consumers: Evidences from a Developing Nation. *Appetite*, **96**, 122-128. https://doi.org/10.1016/j.appet.2015.09.017

[15] Yazdanpanah, M. and Forouzani, M. (2015) Application of the Theory of Planned Behaviour to Predict Iranian Students' Intention to Purchase Organic Food. *Journal of Cleaner Production*, **107**, 342-352. https://doi.org/10.1016/j.jclepro.2015.02.071

[16] Menozzi, D., *et al.* (2015) Motives towards Traceable Food Choice: A Comparison between French and Italian Consumers. *Food Control*, **49**, 40-48. https://doi.org/10.1016/j.foodcont.2013.09.006

[17] Maichum, K., Parichatnon, S. and Peng, K. (2016) Application of the Extended Theory of Planned Behavior Model to Investigate Purchase Intention of Green Products among Thai Consumers. *Sustainability*, **8**, 1077. https://doi.org/10.3390/su8101077

[18] Mitterer-Daltoé, M.L., *et al.* (2013) Structural Equation Modelling and Word Association as Tools for a Better Understanding of Low Fish Consumption. *Food Research International*, **52**, 56-63. https://doi.org/10.1016/j.foodres.2013.02.048