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Analysis of Willingness to Buy A Safe, Healthy and Whole Halal Beef Product

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Abstract
This study analyzes the factors of attitude, trust, product attribute, perceived risk, and traceability on willingness to purchase beef products. This analysis needs to be understood first by the company as it will provide information on a process safe, healthy, whole, and halal beef (ASUH). Factors that affect the willingness of consumers to purchase beef products will be considered in developing other systems and procedures to support the implementation of a better system. This research method used a survey by distributing questionnaires to respondents who consumed the product. The results of this study indicated that product attributes and traceability affected consumers' willingness to purchase. Attitude variables, trust, perceived risk did not affect consumers' willingness to purchase.
Keywords: Attitude, trust, product attribute, perceived risk, traceability
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1. Introduction

Beef is an important source of animal protein for Indonesians. Beef is also the main food ingredient that is often consumed by Indonesians, i.e. meatballs or rendang. Beef consumption is increasing because Indonesia has a large population, is developing, urbanizing, and most of them are Moeslem (Waldron et al., 2015). Beef consumption will increase along with the increase of population, income, urbanization and changes in consumption preferences for beef and its derivative products (Patrick et al. 2010; Kusriatmi et al. 2014). The beef of choice in this context is Safe, Healthy, Whole and Halal (ASUH).

The increase in national meat consumption is always followed by an increase in beef prices every year. Statistics note that the increase in beef prices in the last five years amounted to 9.58%. This shows that domestic beef production is still unable to respond to price changes because of the very long production cycle at the farmer level, low technology adoption and partially run cattle farming (PUSDATIN 2015). The Indonesian government, in order to reduce the supply of imports, has launched various strategies and policies to encourage a sustainable increase in domestic beef production. These efforts include increasing the performance and productivity of local livestock, increasing the skills and welfare of farmers, and improving the performance of the livestock supply chain from source areas to consumer areas.

With regard to meat consumption, there is a practical issue of food quality standards that is important in this study. In addition to the availability of beef from domestic production, there is also issue on beef product quality that have not fulfilled the needs of the Indonesians, i.e. fat thickness, conformation, color and color change (SNI). Another thing that should be of concern is food safety. The Bovine Spongiform Encephalopathy (BSE), avian flu virus that attacks livestock and the issue of food bio terrorism, requires the supervision of meat quality and safety. Disease outbreaks affecting livestock can negatively affect the reputation of meat producers, which in turn, consumer trust becomes an important issue in the food chain (Grunet 2005; Verbeke 2005).

These issues will become consumers' considerations and their willingness to buy meat products. First, consumer attitudes. Sarpong's research (2014) shows the importance of food especially meat, which in 2013 has become an important part of the global food industry. When the issue of disease outbreaks spreads, consumers will be suspicious of meat suppliers, especially on livestock. The disease outbreaks indicate the unsafe monitoring and

safeguarding of meat products. This can turn the meat management reputation into a negative light. Second, trust or consumer trust that is an important issue in the food chain (Grunet 2005, Verbeke 2005).

Third is the product attributes. Lim's research (2012) also shows that the issue of food safety causes consumers to pay attention to the origin of meat production, Country of Origin Labeling (COOL), when making purchases. COOL has become a dimension of consumer consideration in choosing products, and are credence attributes related to consumer demand for products that prioritize safety after the outbreak of mad cow disease. The choice of a label related to country of origin is a consideration for consuming beef products.

Fourth, related to risk perceptions, beef is a food favored by all levels of society. Therefore, various ways must be done by producers to provide beef that is suitable for consumption and reduce consumer perceptions of risk. Empowering business actors is not easy considering the low level of awareness and understanding. Non-ASUH beef, which is imported meat and meat that has been cut illegally, has entered the market with its relatively cheap price causes consumers to tend to buy the meat even though its quality is not guaranteed (Suhardi et al. 2005). Consumers should be more selective in buying beef products, in order to get the best beef for them. Meat quality is a characteristic that is assessed by consumers in determining beef purchases.

Fifth, another research issue with regard to the willingness to buy beef products is traceability. The traceability system has become an effective tool to ensure the quality and safety of food products by increasing transparency in the supply chain. Traceability is a part of logistics management that collects, stores and provides relevant information for an agricultural product at all nodes of the food production chain from upstream to downstream, where the product can be checked for safety, quality control and backward and forward tracking at any time. According to Pizazzuti and Mirabelli (2015) a tracking system is needed as a tool to control food quality and safety. Previous empirical studies related to traceability, namely Qing-Yao, et al. (2007); Grande and Vieria's (2013) research related to the use of Radio Frequency Identification Technology RFID technology as a traceability system can monitor all phases of development of an animal (from birth, breeding, fattening) and research by Mai et al. (2010) which shows that companies applying traceability will get benefits from quality and safety assurance because all manufacturing systems and practices are documented.

This study analyzed the attitude, trust, product attribute, perceived risk, and traceability factors on the willingness to buy beef products. This perception analysis needs to be understood first because it will provide information for companies that process safe, healthy, whole, and halal beef (ASUH). Factors that affect consumers' willingness to pay for Safe Healthy Whole Halal (ASUH) beef products will be considered in developing other systems and procedures to support a better system implementation.

2. Theoritical Basis

2.1 Consumers Willingness to Buy

Willingness to buy is an explanation of the intention to purchase (Phau et al., 2009). This concept indicates a strong willingness to make purchases and is an indicator of real buying behavior. Willingness to buy is a concept that lies between attitudes and behaviors that are influenced by the level of influence needed to execute behavior (Bagozzi et al., 1990) and is a more effective measure compares to a measure in the consumer's mind. Willingness to make a purchase has a high correlation with actual behavior (Oliver & Bearden, 1985). In other words, willingness to make purchases is a good predictor of actual product purchases.

2.2 Attitude

The definition of attitude most often used is that put forward by Gordon Allport, as quoted by Assael (2004) as follows: "Attitude is a learned predisposition to respond to an object or group of objects in a way that is consistently pleasant or unpleasant." The attitude of the consumer towards an object is the tendency he has learned to evaluate an object in a way that pleasant or unpleasant in a consistent manner, that is, his evaluation of that particular object as a whole, from the worst to the best.

Attitude is something that is learned, meaning that the relevant purchasing behavior attitudes are the result of direct experience with the product, family socialization, especially parents, information obtained from other parties such as mass media or various forms of direct marketing. Attitudes may be generated by behavior but attitudes are not the same as behavior. Attitude reflects a pleasant or unpleasant evaluation of an object. As a learned predisposition, attitude has a motivational nature, because it can encourage or avoid consumers to behave in a certain way. Regarding consumer attitudes, purchasing meat products with the ASUH label will convince consumers to buy them. Attitudes have a cognitive aspect of consumers, especially related to the belief in the benefits of ASUH meat products. In addition, consumers also feel confident about the consequences of consuming meat products because there is a sense of security. Information related to the ASUH label assures consumers to buy the product. Willingness to buy with regard to the relationship between attitude and behavior is influenced by the effort made to execute product purchases (Bagozzi et al., 1990). Willingness to buy products is closely related to actual behavior. Oliver & Bearden, 1985; Azjen& Fishbein, 1980). Brewer et al. (1994) argue that the positive attitude of consumers towards product safety issues affects willingness to buy. Thus, the formulation of hypothesis

1 is as follows.
H1: Attitude positively influences willingness to buy products.

2.3 Trust

Trust is the basis for developing relationships with other parties. A business transaction between two or more parties will occur if each of them trusts each other. This trust cannot just be recognized by other parties / business partners, but must be built from scratch and can be proven. Trust has been considered as a catalyst in various transactions between sellers and buyers so that consumer satisfaction can be realized as expected (Yousafzai et al., 2003). Several literatures have defined trust with various approaches (Mukherjee & Nath, 2003). At first, trust was studied mostly from the discipline of psychology, because it relates to one's attitude. Trust affects willingness to buy as a form of intention (Harris & Goode, 2010). According to McAllister (1995), trust has two main components, namely cognitive and affective. This shows that trust is an aspect of a person's belief in others to give good, while the affective aspect is related to liking or having a preference for something. According to Yee et al. (2005) stated that consumer trust is based on reliable information, demonstrating the ability and integrity of the supplier. Consumer evaluation of products, especially organic, for example, is related to the issue of strong trust. Consumer trust will foster long-term loyalty because it is related to consistency in service. Wang and Alexander (2018) show that food safety is very important to pay attention to. Business actors prioritize food safety, especially hygiene and quality so as to increase consumer confidence in product selection. The reputation of product suppliers also strengthens consumer confidence (Chen, 2013). In addition, food safety can increase consumer trust in distributors, companies and even the government (Han & Yan, 2019). Related to product choice, this research shows that strong trust will affect the willingness to buy the product. Thus H2 reads:
H2: Trust has a positive effect on willingness to buy a product.

2.4 Product Attribute

Akpoyomare et al. (2012: 196) suggest that product attributes play an important role in marketing from the perspective of marketers and consumers and have long been recognized as opportunities to differentiate brands. Consumers use product attributes as a basis for evaluating. Attributes provide the advantage that consumers seek when making a product purchase. Attributes can be categorized into two, namely concrete and abstract. Concrete attributes are real product characteristics and can be assessed such as color or shape. On the other hand, abstract attributes represent intangible and subjective characteristics that are not easily measured such as the design or computer operating system.

Attributes provide an advantage for a company's product brand, because it will help consumer awareness and recognition to consider a particular brand. The attribute value is used by consumers as the basis for evaluating the product. Consumers look for benefits when buying these products. Consumers also use attributes to make competitive brand comparisons. Product attributes provide a basis for marketers in differentiating and managing product brands, differentiating competitors based on certain product attributes or benefits. Attributes are used by marketers as the basis for developing specific product and positioning strategies.

Product shows the complexity of tangible and intangible attributes or features which include packaging, color, price, functional, social and psychological. Attributes are elements or features that an object may or may not have. The attributes possessed by a product must be different from other products so that consumers can differentiate the product from competitors. The elements of these product attributes must be able to become an attraction for consumers and are a factor that is considered important by consumers in making purchasing decisions. Lim's (2012) research also shows that food safety issues cause consumers to pay attention to the origin of meat production as a product attribute. If you are going to make a purchase, Country of Origin Labeling (COOL) has become a dimension of consumer consideration in choosing a product. These are credence attributes related to consumer demand for products that prioritize safety after the outbreak of mad cow disease. The choice of a label related to country of origin is a consideration for consuming beef products. Ernawati and Suwandojo (2019) argue that product attributes related to quality, price and taste are choices in choosing products. Montandon and Colli (2016) argue that labels are also the choice of consumers to decide to buy products.
H3: Product attributes have a positive effect on willingness to buy a product.

2.5 Risk Perception

Perceived risk is an important aspect in explaining consumer behavior because risk is often perceived as something that raises concerns in using something. There is uncertainty in using something because of the probability that it will not be successful. The higher the likelihood of a loss the greater the risk. Perceived risk is defined by Schiffman &Kanuk (2010) as the uncertainty faced by consumers when consumers do not know the consequences that can result in making decisions.

Perceptions of risk faced by consumers in making decisions about choosing and purchasing products consist of six dimensions, namely 1) functional risk is the potential risk of a product offering that cannot function as

expected by consumers; 2) physical risk is the potential risk of the product's impact on consumers; 3) financial risk is the potential financial loss that will be experienced by consumers in selecting and utilizing products; 4) social risk is a potential risk if the product selected or purchased can cause loss of self-respect or receive ridicule; 5) psychological risk is the potential risk of losing confidence in the selection or use of the product; 6) time risk is the loss of time and effort in using the product.

Regarding product risk, product safety is an important component in product quality. Perceptions of product safety will have an impact on decision making (Roseman et al., 2006). Consumption of quality products will also reduce the risks associated with product failure. Products that fail to meet quality criteria will also endanger consumers in consumption so that they can cause consumers to make other product choices. This can lead to accidents or dangers on the consumer side (Mo, 2013). The existence of a food quality problem scandal will affect the quality of the product and generate negative news about the product. Hoque and Alam (2018) argue that risk perception negatively influences willingness to buy a product. This relationship describes a concern about purchasing an uninformed product.

H4: Perceived risk negatively affects willingness to buy a product

2.6 Traceability System

Traceability is the ability to follow one element or a group of elements, this can be animals, plants, plants, food products, or foodstuffs from one point to another in the supply chain either going forward or backward. Traceability in livestock is based on three basic elements, namely animal identification, premise identification, and animal movement (Canadian Food Inspection Agency 2009). Mennecke et al. (2007) defines traceability as the ability to trace the history, attitude, location of animals starting from slaughtering meat, data storage and auditing systems or registered identification programs. Traceability usually refers to the ability to trace meat produced from animals. Souza-Monteiro and Caswell (2004) define traceability as the ability to follow the movement of food through processing, production and distribution stages; while Pouliout and Sumner (2008) define traceability as the ability to trace the history of the origin of products including the identity of farms and marketing companies along the supply chain. Thakur and Hurburgh (2009) define traceability as the ability to trace all foods, animals, or foodstuffs used for consumption through all stages of production, processing and distribution. Tracking includes the ability to follow the movement of products forward in the supply chain whereas traceability indicates the ability to identify the agriculture where food originates and material resources and the ability to determine the location and history of product movement through logging. Verbeke (2005) argues that consumers have a concern for food safety which demands information and transparency in the food chain so that this becomes the driving force for the development of a traceability system. Development of a traceability system that can address food security, health issues, food standards needs to be strengthened in order to create trust from consumers and other stakeholders.

H5: Traceability positively affects the willingness to buy a product.

3. Research Methods

The research was carried out by taking samples of meat consumers in Jakarta and several other cities, taking the sample using the purposive sampling method by distributing a questionnaire and getting responses from 313 respondents. The method used in this research is quantitative analysis of SEM (statistical approach) which is a statistical technique for studying the causal relationship amongst latent variables (unobservable variables). The sampling technique used in this study was non-probability sampling using purposive sampling. This method is used to easier researchers in obtaining the necessary information from respondents to fit several criteria designed by the researcher. The criteria for respondents in this study are those who have known ASUH meat products and having used ASUH meat products in the last 3 months. Using measurement scale, each response on the Likert scale is given a numerical value which is used as an assessment for each answer. The answer that was least approved was given a score of 1 and a score of 5 was given for the most approved answer (Cooper & Schindler, 2014). The measuring instrument used to measure each variable refers to previous research, namely measurement of product attributes referring to Hornibrook et al. (2004), willingness to buy refers to Hsu et al. (2016), the measurement of trust refers to Kwok et al. (2015), measuring risk perception refers to Bruwer et al. (2013), and attitude measurement refers to Honkanen and Verplanken (2004).

4. Result

4.1 Respondent Profile

Table 1 shows the profile of the respondents. The number of men who filled out the questionnaire was 166 people while the number of women who filled out the questionnaire was 147 people. A total of 280 people has undergraduate education and dominate the research respondents. These respondents have consumed ASUH beef products. A total of 149 people had consumed it for more than 1 year; 15 people have consumed it in the last 1 year; 11 people had consumed it for 6 months, and 134 people had consumed it for less than 6 months. This study also showed that the number of family members less than 4 as many is 178 people; family members of 5 people is

89 people, and more than 6 family members is 21 people. A total of 56 people has monthly household consumption expenditures of more than IDR 10 million; as many as 42 people have monthly household consumption expenses of Rp. 8 million - Rp. 10 million; as many as 80 people have expenses for household consumption every month of Rp. 5 million-Rp. 8 million; as many as 133 people have monthly household consumption expenditures of IDR 3 million-IDR 5 million. With regard to their living areas, 182 people live outside Jakarta; 15 people live in Central Jakarta; 13 people live in West Jakarta; 26 people live in East Jakarta and 4 people live in North Jakarta.

Table 1. Respondent Profile

Profile		Amount
Gender	Male	166
	Female	147
Last Education	Elementary School	0
	Junior High School	0
	Senior High School	14
	Under Graduate/Academy (D3/D4)	17
	Graduate (S1/S2/S3)	280
Duration on consuming ASUH beef product	Not Respond	4
	0 - 6 months	134
	6.1 - 12 months	11
	1 year	15
	> 1.1 year	149
Number of Family Number	< 4 persons	178
	4 persons	0
	5 persons	89
	6 persons	25
	> 6 persons	21
Expenditures for household consumption per month	No respond	2
	Rp 3 million - Rp 5 million	133
	Rp 5,1 million - Rp 8 million	80
	Rp 8,1 million - Rp 10 million	42
	> Rp 10,1 million	56
Residence Area	No respond	5
	Jakarta Selatan	68
	Jakarta Utara	4
	Jakarta Timur	26
	Jakarta Barat	13
	Jakarta Pusat	15
	Di luar Jakarta	182

4.2 Model Analysis

Table 2 shows that, the value of the goodness of fit of the research model has increased in each type of measurement of goodness of fit, and is still strong enough to support the formation of a fit model. The modification index coefficient shows that there is an opportunity to increase the goodness of fit in the research model. Major model modifications should be made after careful consideration. Before identifying the possibility of having a respecification model, all relationships must be classified into two categories, namely theoretical and empirical.

Table 2. Goodness of fit test model

GOF	Cut off Value	Result	Remarks
Chi-square (χ^2)	Should be less than Df	2797,58	
Df		1352	
Chi-square (χ^2)/df	≤ 3 (2:1 (Tabachnik and Fidell 2007) and 3:1 (Kline 2005)	2,069	good fit
Probability (P-value)	≤ 0,05	0,0000	good fit
RMR	A good model should have small RMR (Tabachnik and Fidell 2007), ≤ 0,05 or 0,08 (Hair et al. 2007)	0,0498	good fit
RMSEA	≤ 0,08	0,08	good fit

GOF	Cut off Value	Result	Remarks
GFI	≥ 0,90	0,958	good fit
AGFI	≥ 0,90	0,954	good fit
CFI	≥ 0,90	1,000	good fit
NFI	≥ 0,90	1,000	good fit
NNFI	≥ 0,90	1,057	good fit
RFI	≥ 0,90	1,000	good fit
IFI	≥ 0,90	1,053	good fit

Table 3 shows that each construct variable shows the construct reliability in this research model. Construct reliability is a test of the ability of indicators to extract constructs and is carried out after testing the construct validity. Each construct has a reliability value of ≥ 0.7, except for willingness to buy. This means that each indicator measures the construct accurately. The analysis results can be used for further structural model testing.

Table 3. Reliability Value

Latent Variable	Indicator	Reliability		Remarks
		CR≥0,7	VE ≥ 0,5	
Attitude		0,706	0,466	Fair Reliability
Trust		0,954	0,543	Good Reliability
Product Attribute		0,944	0,534	Good Reliability
Risk Perception		0,83	0,293	Fair Reliability
Traceability		0,856	0,662	Good Reliability
Willingness to Buy		0,664	0,641	Poor Reliability

Based on the results of hypothesis testing and the estimated value in Table 4, the attitude variable does not have a significant effect on willingness to buy, because the t-value is -1.43 <t-table (1.96) with a low estimate value with directional negative, which is equal to -0.16. The trust variable has a significant negative effect on the willingness to buy at the real level of 10%, the direct effect shows the coefficient value with a negative direction of -0.17 and the t-value of -1.81 <t-table (1.64 if alpha is 10 %, while the t value alpha 5% is 1.96). The results of this study indicate that public / consumer trust is still low in the policy of protection / quality assurance of meat products, thus reducing interest in buying (negative effect on WP).

The product attribute variable has a significant effect on willingness to buy with a t-value of 3.34> t-table (1.96) and the estimated value of direct influence is in a positive direction of 0.43. Product attributes have a positive and significant effect on purchases, it can be seen that product attributes are product elements that are considered important by consumers and are used by consumers as the basis for purchasing decisions. The risk perception variable has no significant effect on willingness to buy with the direct effect of SLF of -0.04 with a t-value of -0.42> t-table (1.96). Traceability variable (TR) has a significant effect on willingness to buy with a direct effect of 0.26 and a t-value of 2.55> t-table (1.96).

Table 4. Hypothesis testing results

Alternative Hyphotesis (HA)	Path (Relationship)	Score t Calculation (≥1.64)	Impact			Hyphotesis Conclusion
			Direct	Indirect	Total	
H1	Attitude →Willingness to Buy	-1,43	-0,16		-0,16	Reject
H2	Trust →Willingness to Buy	-1,71	0,17		0,17	Reject
H3	**Product Attribute →Willingness to Buy**	**3,34**	**0,43**		**0,43**	**Accept**
H4	Risk Perception →Willingness to Buy	-0,42	-0,04		-0,04	Reject
H5	**Traceability →Willingness to Buy**	**2,55**	**0,26**		**0,26**	**Accept**

5. Discussion

The results showed that attitude did not affect willingness to buy. This is due to consumers' lack of confidence in the ASUH label on meat products. Respondents felt that domestic meat products had lack of information, that consumers did not understand ASUH meat products.

The variables of trust and risk perception do not affect willingness to buy. This is in line with research by Aubeeluck (2010) which analyzes food safety and perceptions of the safety of meat consumption in Japan and Canada. The aspects studied were risk perception, willingness to pay for beef traceability (BT) from livestock to

the end consumer and willingness to pay for animal testing of Bovine Spongiform Encephalopathy (BSE) or mad cow. This study explains that the perception of risk comes from the existence of trust in the form of interpersonal trust and social trust. Interpersonal trust is associated with information sources and target recipients, while social trust is related to trust that a person has in an institution (Trautman et al. 2008). Trust in social actors such as manufacturers, farmers, retailers and the government or the leading authority can help ensure consumer confidence in food safety. However, research shows that trust does not influence willingness to buy. Consumers in this study do not believe in the government openness in food safety, have a concern for food security, and are unable to control food safety. Apart from that, other related institutions that also involve is the farmers. Indonesian farmers do not have the competence in controlling food, are not honest in product safety and are not open to food safety. Distributors also have the same perception, that they do not have the knowledge to guarantee food safety, and are open to food safety. This also involves the management of cattle products and retail traders.

Consumers also have suspicions about cattle traders. This is in line with Sarpong's (2014) research regarding the importance of food, especially meat, which is an important part of the global food industry. When the issue of disease outbreaks spreads, consumers will be suspicious of meat suppliers, especially on livestock. The government also has a role to strengthening consumer confidence in the food chain. Many incidents of disease outbreaks indicate the unsafe monitoring and safeguarding meat products. This can turn the meat management reputation into a negative light. In the end, consumer trust becomes the important issue in the food chain.

The results showed that product attributes influence consumers to make product purchases. The meat product attribute provides an advantage to a company's products, because it helps consumer awareness and recognition of meat products. The attribute value is used by consumers as the basis for evaluating the product. Consumers seek benefits when buying these meat products. Product attributes provide a basis for marketers in differentiating and managing product brands, differentiating competitors based on certain product attributes or benefits. Attributes are used by marketers as the basis for developing actual meat products and strategies.

Despite of consumers belief, consumers know that ASUH beef products taste good. The quality of meat products is perceived as better, has less fat content. In addition, prices are perceived as being proportional to product quality, and the product is easier to process. The ASUH label also become a guarantee in accepting the product. Product with country of origin label is considered when consuming beef products. This is in line with the research of Ernawati and Suwandojo (2019) which shows that product attributes like quality, price, and taste become considerations in choosing products. This research also shows that labels are important in influencing purchasing decisions. This study is in accordance with the research of Montandon and Colli (2016) who argue that labels are also of consumers consideration when deciding to buy products.

Activities in the supply chain for agricultural products are inseparable from various uncertainties that result in risks that can affect the flow of materials and components in the supply chain. Food contamination can occur in products ranging from cultivation to distribution to consumers (Sudibyo, 2012). Thus, the application of traceability information systems is very important as an effort to integrate quality and food safety (Pinto et al. 2006). This is in line with this research. Traceability variables affect willingness to buy meat products. According to Bosona and Gebresenbet (2013) food traceability is part of a logistics management system that provides the ability to capture, store and transmit information about food, feed, and all substances in the supply chain which is useful in controlling food quality and safety so that it can be traced upstream. and downstream. In principle, implementation of a traceability system includes two main things, namely tracing and tracking. Tracing is the system's ability to trace the origin of food, while tracking is the ability to trace a post-production (Schwägele 2005). According to Kumar et al. (2017), traceability acts as a link for sharing important information between actors in the supply chain. Therefore, traceability can create transparency by managing all relevant information related to the production process.

6. Conclusion and Suggestion for Future Research

The results showed that the traceability aspect showed an effect on the willingness to buy meat products. The traceability aspect is an effort to support food security so that the community's food needs are met, which is reflected in the availability of sufficient food, in terms of quantity, quality, safety, variety, nutrition, equality, and affordability and does not conflict with the religion, belief and culture of the community, live healthy, active and productive in a sustainable manner. In the context of the beef commodity, food security can be defined as the fulfillment of national beef consumption needs, both in quantity and quality, safely and affordably. Beef is an important source of animal protein for Indonesian society. Consumption of meat will continue to increase in line with increasing population, increasing income, urbanization and changes in consumption preferences for beef and its derivative products.

Indonesia does not yet have an optimal traceability system for cattle. Local cows or cows born in Indonesia do not have uniform identification and are not recorded in a central database so traceability cannot be carried out. Each region has its own way of giving identity to livestock, for example hot stamps. Feeder cattle, cows imported from Australia have identity, these cows already have identity in the form of RFID chips that are attached to the

ears of the feeder cattle. Traceability for feeder cattle is only up to the Slaughterhouse where feeder cattle being slaughtered must be recorded the time and weight when slaughtered. This recording is more due to the requirements and requests of the exporting country to know the development of the feeder cattle and to treat them at the time of slaughter which must meet the animal welfare principles. In this case, traceability is for the interests of the exporting country.

Livestock producers in Indonesia need to apply a traceability system. The system can improve product quality, improve supply chain management, increase foreign market access, attract new domestic consumers, differentiate products, increase product prices, reduce production costs, reduce unused products, reduce consumer complaints, reduce demands from consumers, and reduce labor costs. Producers who apply traceability will get benefits of quality and safety assurance, reduce retailers' costs by supervising the upstream industry, environmentally friendly production practices, guaranteeing animal breeding, animal safety, and creating product differentiation because of complete information for consumers.

The traceability system has become an effective tool to ensure the quality and safety of food products by increasing transparency in the supply chain. Traceability is a part of logistics management that collects, stores and provides relevant information for an agricultural product at all nodes of the food production chain from upstream to downstream, where the product can be checked for safety, quality control and backward and forward tracking at any time. Companies that have accreditation and a verified traceability system are guaranteed to reduce the possibility of occurring desease. Radio Frequency Identification Technology (RFID) can be a traceability system for improving logistical control as it shows the exact position from cutting the meat until the product is delivered to the final consumer. RFID also helps in supply control with greater reliability at the exact time. Mai et al. (2010) stated that companies that apply Traceability will reduce costs for retailers or managers in monitoring upstream activities. Traceability also includes labeling which includes credence attributes related to food safety, environmentally friendly production practices, animal breeding assurance, animal safety, creating product differentiation, serves as the complete information for consumers.

Marketers also need to strengthen the attributes of meat products in order to increase consumer confidence. Dissemination of information regarding the attributes and benefits of meat products can be done through an integrated and consistent marketing communication strategy. This information dissemination is a product socialization to consumers in order to increase consumer awareness and confidence of product benefits. Consumers' knowledge needs to be built so that they can better understand the benefits of the product. In addition, continuous strengthening of promotion using brand endorsers that can convince consumers and increase consumer preferences for products also needs to be done.

This research is to understand the attitude aspect, trust, risk perception, product attributes and traceability. Future research could use other external aspects, such as the use of reference groups that can influence consumers to purchase products. In addition, future research could also use experimental studies to analyze the acceptance of meat products that already use a traceability system. Thus, we can understand the effectiveness of the system on product application.

References

Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behaviour. Englewood Cliffs, NJ: Prentice Hall

Assael, H. (2004). Consumers Behavior and Marketing Action. Edisi 3. Ohio (US): South Western College Publishing

Aubeeluck, A. (2010). A comparative analysis of consumer attitudes towards food safety, animal testing and traceability in the meat industry: Japan and Canada [Thesis]. Edmonton (CA): Department of Rural Economy Alberta

Bagozzi, R. P., Yi, Y., & Baumgartner, J. (1990). The level ofeffort required for behavior as a moderator of the attitude–behavior relation. European Journal of Social Psychology, 20(1), 45–59

Bosona T. & Grebesenbet G. (2013). Food traceability as an integral part of logistics management in food and agricultural supply chain. *Food Control*, 33: 32-48

Brewer, M. S., Sprouls, G. K. & Craig, R. (1994). Consumer attitude toward food safety issues. *Journal of Food Safety*, (14),63–76

Bruwer, J., Fong, M., &Saliba, A. (2013). Perceived risk, risk-reductionstrategies (RRS) and consumption occasions: Roles in the wine consumer's purchase decision. *Asia Pacific Journal of Marketing and Logistics*, 25(3), 369-390

Chen, W. (2013). The effects of different types of trust on consumer perceptions of food safety. *China Agricultural Economic Review*, 5(1), 43-65

Cooper, D. R., & Schindler, P. S. (2014). Business research methods 12/e. New York: McGraw-Hill

Ernawati, H., & Suwandojo, D. P. E. H. (2019). Consumer preferences for indonesian food. *Journal of Indonesian Economy and Business*, 34 (3), 280 – 293

Grande, E. T. G, & Vieira S. L. (2013). Beef traceability by radio frequency identification system in the production process of slaughterhouse. *Journal of Information Systems and Technology Management*, 10(1): 99-118

Grunert, K. G. (2005). Food quality and safety: consumer perception and demand. *European Review of Agricultural Economics*, 32: 369-391

Han, G. & Yan, S. (2019). Does food safety risk perception a ect the public's trust in their government? An empirical study on a national. *International Journal of Environmental Public Health*, 16

Harris, L. C. & Goode, M. M. H. (2010). Online service scapes, trust, and purchase intentions. *Journal of Services Marketing*, 24(3), 230-243

Hornibrook, S. A., McCarthy, M. & Fearne, A. (2004). Consumer's perception of risk: The case of beef purchases in Irish supermarket. *International Journal of Retail & Distribution Management*, 33(10), 701-715

Hoque, M. Z. & Alam, N. (2018). What determines the purchase intention of liquid milk during a food security crisis? The role of perceived trust, knowledge, and risk. *Sustainability*, 10

Hsu, Shu-Yen., Chang, Chiao-Chen., & Lin, T. T. (2016). An analysis of purchase intentions toward organic food onhealth consciousness and foodsafety with/under structural equation modelling. *British Food Journal*, 118 (1), 200-216

Kwok, M. L. J., Wong, M. C. M., & Lau, M. M. (2015). Examining how environmental concern affects purchaseintention: Mediating role of perceived trust and moderatingrole of perceived risk. *Contemporary Management Research Pages,* 11(2), 143-152

Kumar, V. E. N., Chibuzo, J. A., Garza-Reyes, A ., Kumari, L., Rocha-Lona., & Lopez-Torres, G. C. (2017). The impact of supply chain integration on performance: Evidence from the UK food sector. *Procedia Manufacturing*, 11, 814-821

Kusriatmi., Oktaviani, R., Syaukat, Y., & Said. A. (2014). Analysis of the effects of beef import restrictions policy on beef self-sufficiency in indonesia. *J. ISSAAS*, 20(1): 115-130

Lim, K. H. (2012). Willingnes to pay for country of origin labeled traceable, and BSE-tested beef. Thesis, Agricultural Economic. University of Kentucky

Mai, N., Bogason, S. G., Arason, S., Arnason, S. V, & Matthiasson, T. G. (2010). Benefits of traceability in fish supplychains – case studies. *British Food Journal*, 112(9): 976-1002

McAllister, D. J. (1995). Affect-and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal*, 38 (1), 24-59

Mennecke, B. E., A. M. Townsend, D. J. H. and Lonergan, S. M. (2007). A study of the factors that influence consumer attitudes toward beef products using the conjoint market analysis tool. *Journal of Animal Science*, 85:2639-2659

Mo, L. (2013). Impact of food safety information on US poultry demand. *Applied Economics*, 45 (9), 1121-1131

Montandon, A. & Colli, C. (2016). Effective nutrition labels for fast food consumers. *British Food Journal*, 118 (10), 2534-2549

Mukherjee, A. & Nath, P. (2003). A model of trust in online relationship banking. *International Journal of Bank Marketing*, 21 (1): 5-15

Oliver, R. L., & Bearden, W. O. (1985). Crossover effects in thetheory of reasoned action: A moderating influence attempt. *Journal of Consumer Research*, 12(3), 324–340

Honkanen, P. & Verplanken, B. (2004). Understanding attitudes towards genetically modified food: The role of values and attitude strength. *Journal of Consumer Policy*, 27: 401–420, 2004

Patrick, I. W., Marshall, G. R., Ambarawati, I., & Abdurrahman, M. (2010). Social capital and cattle marketing chains in Bali and Lombok, Indonesia, ACIAR Technical Reports No. 74. *Australian Centre for International Agricultural Research*. Canberra

Pizzuti, T. & Mirabelli, G. (2015.) The global track and trace system for food: general framework and functioning principles. *Journal of Food Engineering*, 159, 16-35

Pouliot, S. & Sumner, D. A. (2008). Traceability, liability, and incentives for food safety and quality. *American Journal of Agricultural Economics*, 90, 15-27

Pusat Data dan Sistem Informasi Pertanian (PUSDATIN). (2015). OUTLOOK Komoditas Pertanian Sub Sektor Peternakan – Daging Sapi. Pusat Data dan Sistem Informasi Pertanian (PUSDATIN) Sekretariat Jenderal Kementerian Pertanian, Jakarta

Qing-Yao, L., Liang, Y., Ting, F. R., Zhao-Hui, L., & Jia-Rong, Z. (2007). A practical web based traking and traceability information system to the pork products supply chain. *New Zealand Journal of Agricultural Research*, 50: 725-733

Sarpong, S. (2014). Traceability and supply chain complexity: Confronting the issues and concerns. *European Business Review*, 26 (3): 271-284

Schwägele F. (2005). Traceability from a european perspective. Kulmbach (DE): Institute for Chemistry and Physics, Federal Research Centre for Nutrition and Food

Souza Monteiro, D. & Caswell, J. A. (2004). The economics of implementing traceability in beef supply chains:

Trends in major producing and trading countries. University of Massachusetts, Amherst Working Paper

Sudibyo, A. (2012). Peran cokelat sebagai produk pangan derivat kakao yang menyehatkan. Jurnal *Riset Industri*, 6 (1): 23-40

Roseman, M., Kurzynske, J. & Tietyen, J. (2006). Consumer confidence regarding the safety of the US food supply. International Journal of Hospitality & Tourism Administration, 6(4), 71-90

Thakur, M. & Hurburgh, C. R. (2009). Framework for implementing traceability system in the bulk grain supply chain. *Journal of Food Engineering*, 95: 617-626

Trautman, D., Goddard, E., & Nilsson, T. (2008). Traceability. Department of Rural Economy, University of Alberta Project Report 08-02

Verbeke, W. (2005). Agriculture and the food industry in the information age. *European Review of Agricultural Economics*, 32: 347-368

Yee, W. M., Yeung, R. M. & Morris, J. (2005). Food safety: building consumer trust in livestock farmers for potential purchase behaviour. *British Food Journal*, 107 (11), 841-854

Yousafzai S. Y., Pallister J. G., & Foxall G. R. (2003). A proposed model of etrust for electronic banking. *Technovation*, 23: 847-860

Wang, S. & Alexander, P. (2018). The factors of consumerconfidence recovery after scandalsin food supply chain safety. *Asia Pacific Journal of Marketing and Logistics*, 30(5), 1379-1400

Waldron S., Erwidodo, & Nuryati Y. (2015). The indonesian beef industry in "regional workshop on beef markets and trade in southeast asian and china, ben tre, Vietnam, 30 November-3rd December 2015