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DETERMINANTS OF CONSUMERS' ATTITUDE TOWARDS FOOD RISK MESSAGES

Consumers are increasingly concerned with safety, integrity and wholesomeness of food products, as food safety crises increase around the world, and food safety is emerging as one of the key global issues. Negative publicity of food risk messages may hamper the food industry and increase consumer distrust. As consumer perception of food risk is heavily affected by the way media disseminate food risk messages, this study aims to assess the effects of factors of risk communication on consumer perception and address the importance of risk communication of food products. The findings of this study provide important antecedents that determine consumers' response to food risk messages.

Keywords: food risk communication; media management; consumer risk perception.

Рені Б. Кім

ВИЗНАЧАЛЬНІ ЧИННИКИ ВІДНОШЕННЯ СПОЖИВАЧІВ ДО ІНФОРМАЦІЇ ПРО БЕЗПЕКУ ПРОДУКТІВ ХАРЧУВАННЯ

У статті показано, що споживачі стають все більш свідомими стосовно безпеки, екологічної чистоти і корисності продуктів харчування, оскільки у світі назріває продуктова криза і безпека продуктів стає глобальною проблемою. Погана репутація відносно донесення інформації про небезпечні продукти харчування може стримувати розвиток харчової промисловості і збільшувати недовіру споживачів. Сприйняття споживачами харчових ризиків тісно пов'язане з тим, як ЗМІ подають цю інформацію. Розглянуто вплив чинників сповіщення про ризики на клієнтське сприйняття, підкреслено важливість сповіщення про ризики, пов'язані з продуктами. Висновки дослідження дають уявлення про чинники, що визначають відгук споживачів на донесення інформації про небезпечні продукти.

Ключові слова: сповіщення про ризики, пов'язані з продуктами; управління ЗМІ; сприйняття ризику споживачами.

Рис. 1. Табл. 2. Літ. 34.

Рени Б. Ким

ОПРЕДЕЛЯЮЩИЕ ФАКТОРЫ ОТНОШЕНИЯ ПОТРЕБИТЕЛЕЙ К ИНФОРМАЦИИ О БЕЗОПАСНОСТИ ПРОДУКТОВ ПИТАНИЯ

В статье показано, что потребители постоянно повышают сознательность относительно безопасности, экологической чистоты и полезности продуктов питания, поскольку в мире назревает продуктовый кризис и безопасность продуктов становится глобальной проблемой. Плохая репутация в отношении донесения информации о небезопасных продуктах питания может сдерживать развитие пищевой промышленности и увеличивать недоверие потребителей. Восприятие потребителями пищевых рисков тесно связано с тем, как СМИ подают эту информацию. Рассмотрено влияние факторов оповещения о рисках на клиентское восприятие и подчеркивается важность оповещения о рисках, связанных с продуктами. Выводы исследования дают представление о факторах, определяющих отклик потребителей на донесение информации о небезопасных продуктах.

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Ключевые слова: оповещение о рисках, связанных с продуктами; управление СМИ; восприятие риска потребителями.

Introduction. Food safety, together with globalization and technological revolution, is one of the key emerging issues in food policy research (Pinstrup-Andersen, 1999). Technological revolution in agricultural production (i.e., biotechnology), development of complex food processing industry increasing international trade of food products placed food safety at forefront of public attention with growing uncertainty and perceived risk for consumers. Consumers are increasingly concerned with the safety, integrity and wholesomeness of food products, as food safety crises increase around the world. Widely publicized food safety events such as *E. Coli* outbreaks in the fresh produce and meat products, Salmonella, *bovine spongiform encephalopathy* (BSE), genetically modified (GM) grains and melanin in processed milk led consumers to revise their attitude to and behavior in food consumption. Negative publicity of these events may lead to devastating impacts on the food industry with significant losses in revenue and market share while increasing consumer distrust. Concerns and increased sensitivity of consumers towards food risk may be exacerbated by complex, confusing, inconsistent, or incomplete risk messages (Covello, 2001); lack of trust in information sources (Renn, 1991); selective and biased reporting by media; and psychological factors that affect how risk information is processed (Sjoberg, 2000). Developing effective risk management in food supply chain has become increasingly important worldwide, given increased public concern and distrust to regulatory institutions on food safety and consumer protection.

Consumer concern for food risk management has been ascribed to differences in opinion between experts and consumers regarding the potential severity and consequences of food risks, which is described as the "expert-lay discrepancy" phenomenon (Hansen et al., 2003; Jensen et al., 2005). Risk is a social construction, and the perception is the core issue. Consumers use interpretive frames to make their decisions on food risks and their risk perceptions are affected by the norms of the groups with which they identify, just as the risk assessment of the experts reflect the norms of their associates (i.e., scientists) (Morrow, 2009). Thus, consumers' perception of food risks may not reflect objective reality as defined by the experts, but more heavily affected by psychological factors, personal experiences and circumstances (Sparks and Shepherd, 1994; Fife-Schaw and Rowe, 1996, 2000; Shaw, 1999, 2004; Frewer et al., 2002; Hansen et al., 2003).

Risk experts concentrate on the scientific assessment and fail to consider the multiple risks, in particular psychological aspects of risk (Lave & Menkes, 1985). Scientific proof of small probability of exposure is seen as little help in reducing consumer concern (Anderson, 1999). Thus, crises in food risk management may be attributed to disconnection between the stakeholders involved. In the past, risk communication was shaped by, and resulted from risk management, which, in turn, was shaped by the outcome of risk assessment (Fischer et al., 2005), but recently it has recognized the importance of developing a dialogue on food safety between key stakeholders (including consumers) and different actors in a food chain (Houghton et al., 2008). How risk messages are communicated among major stakeholders may determine effectiveness of risk management in a food chain.

Risk communication is defined as "an interactive process of exchange of information and opinion among individuals, groups, and institution, involving multiple messages about the nature of risk and other messages, not strictly about risk, that express concerns, opinions, or reactions to risk messages or to legal and institutional arrangements for risk management" (Covello, 2001). Risk communication involves various stakeholders, regarding providing knowledge needed for informed decision-making about risks; building or rebuilding trust among stakeholders; and engaging stakeholders in a dialogue aimed at resolving disputes and reaching consensus (Morgan et al., 1992).

Consumer perception of risk is affected by wide media coverage (Wahlberg & Sjoberg, 2000). Consumers focus more on negative than positive information in media, and their perception of risk is highly affected by the psychological aspect of risk rather than the objective risk (Slovic, 1987). A study by DDB Needham Worldwide (Advertising Age, 1995) finds that negative publicity and the way company handles it are among the most important factors influencing consumers' buying decisions. However, information can provide positive effects when existing knowledge and attitudes of a target audience are taken into account when presenting a risk message (Hatfield, 1994). Information, when it appears to be objective and trusted, increased consumer receptivity of a risk message and results in more informed assessments of risk (Jungermann, Schutz & Thuring, 1988). In contrast, subjective and unverifiable information creates negative effect on consumer risk perception (Lofstedt & Renn, 1997).

By assessing the effects of factors of risk communication on consumers' perception and their psychological response and attitude, this research addresses the importance of risk communication and of negative publicity of the media in risk management of food products. The findings of this study provide important antecedents that determine consumers' response to food risk messages. This study takes advantage of the research conducted in 2011 on Chinese consumers' preference for risk messages, risk perception and attitude to risk associated with food purchasing intention. These surveys provide data concerning the state of Chinese consumers' perceived risk, attitude to risk messages, choice behavior for risky food products. By assessing how consumers' risk perception is connected to risk messages and leading to consumers' choice behavior, the findings provide guidelines for risk regulators and policy makers in establishing effective risk communication strategies.

Research Method. In this study, we developed a model of consumer attitude to food risk as derived from several previous studies. Overall model structure follows Song (2011)'s study, which has 4 constructs (Figure 1). Each of the constructs in Song's study was developed based on various previous studies (Wimmer & Dominic, 1994; Renn, 1991; Elliott, 2002). One of the most significant determinants in our research model is the construct of risk communication which is based on Wimmer & Dominick (1994)'s study. This construct measures the extent of consumers' trust toward risk messages regarding food products, which are publicized in mass media.

Mass media has a powerful influence on people's opinions on food risks and trust for risk management in public and private sectors. Consumers tend to discriminate between the sources of food safety information in terms of perceived trustworthiness (Frewer et al., 1996). Thus, the effectiveness of risk communication messages is

closely related to consumers' trust to risk messages (Chartier, 2001). Consumers' trust is a critical factor affecting their choice behavior for food (Frewer et al., 1996), therefore become crucial issues in a food supply chain (Grunert, 2002). Hence, it is likely that the way risk communication is carried out by corporations in the food industry will influence the extent of consumers' trust to the information, indirectly affecting the overall efficiency of a food supply chain.

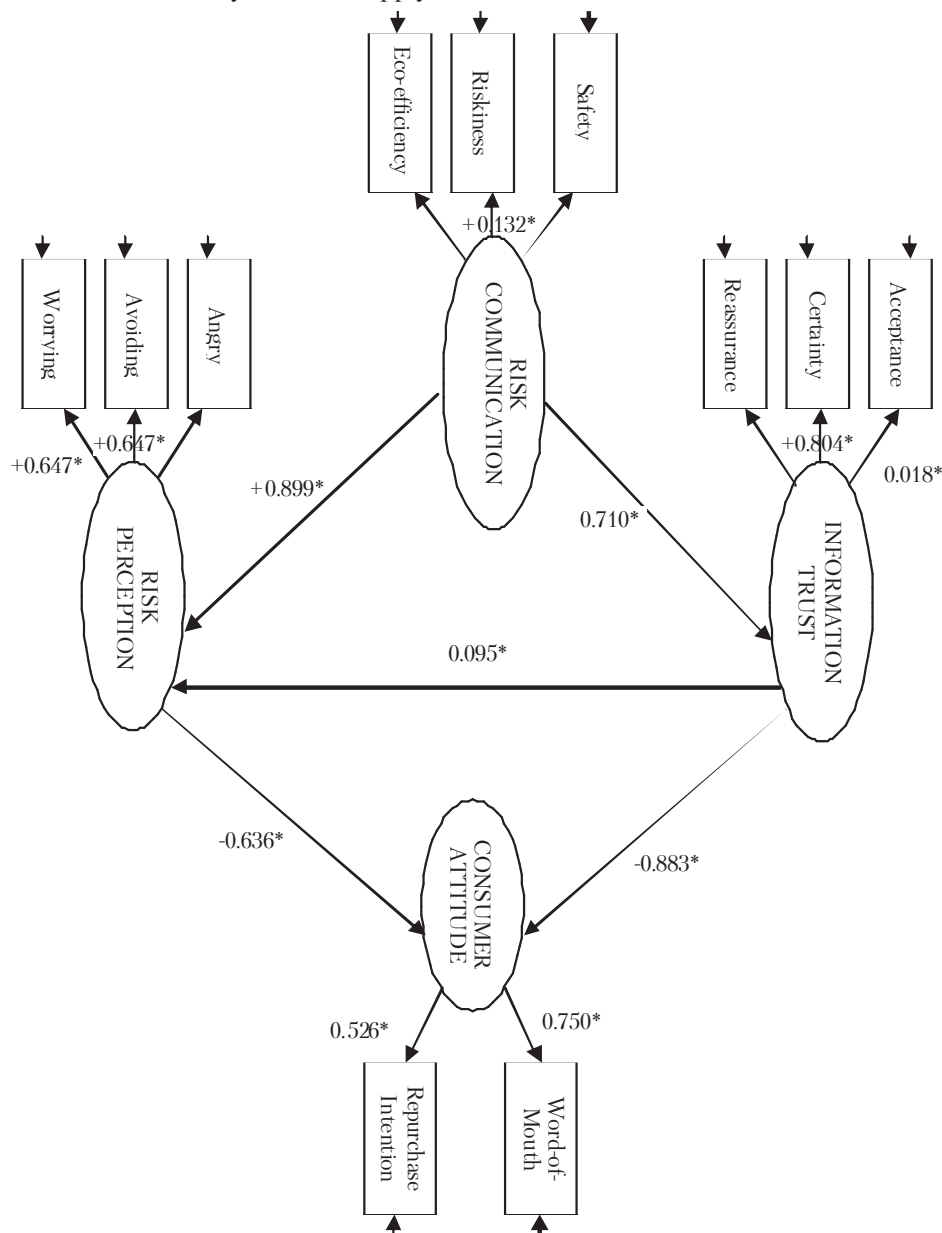


Figure 1. Structural Model of Consumers' Attitude to Food Risk Messages

Food risk messages in media raise consumers' awareness and knowledge of likelihood of food risks, thereby forming their perception of risk. Consumers' risk perception leads to self-efficacy for food safety and the adoption of safety-enhancing behavior by attempting to avoid risky food products (Gordon, 2003). Thus, consumers' risk perception may play a mediating role in their decision-making process of food choice.

Negative food risk messages not only lead to formation of risk perception, but also have substantial impact on the level of consumer trust to food safety and information. Consumer trust is an important factor determining their attitude to food risks and choice behavior since food safety has credence characteristics which is difficult for consumers to evaluate. Thus, consumers tend to rely on their trust in food producers, retailers and regulatory authorities to ensure that the foods are provided of good quality and the potential health risks coming from food consumption are minimized (Chen, 2008).

Consumer trust and its relationship to risk perception have been arguably related and overlapping to certain extent. Risk perception emphasizes the cognitive level of how people perceive and evaluate risks; trust is more closely connected to how people cope with such perceived or non-perceived risks by action and strategies or lack of such (Chen, 2008). Trust is regarded as a presumption in social interaction under uncertainty (Fischer et al., 2005) and a necessary means of reducing the complexity of the multitude of choices consumers face (Luhmann, 1988). In our study, we propose that consumers' trust of information may have impact on their formation of risk perception of risk messages.

Results and Discussion. The empirical model (i.e., path diagram) based on priori hypotheses was developed using the SAS 9.1 software and estimated using a maximum likelihood function. Overall fit statistics of the measurement model show that the proposed model has a reasonable fit of the variables in the model and the goodness fit index were statistically significant (Table 1).

Table 1. Model Fitness Summary

CMIN/DF	GFI	AGFI	RMSEA	CFI
2.1690	0.9924	0.9429	0.0622	0.9909

Figure 1 shows the overall path diagram of the proposed structural model which entails 3 main determinants affecting consumers' attitude to food risk messages. Relative strength of the relationships between variables (i.e., path coefficients) in the model is reported in Table 2. The findings of the estimated coefficients show that both two mediating constructs of information trust and risk perception were found to be statistically significant and have negative impact on consumers' attitude to risk messages. The risk communication construct was found to have a greater impact on consumers' risk perception compared to information trust level. On the other hand, information trust had relatively weaker effect on risk perception of consumers.

Negativity of risk perception of Chinese consumers appears to play an important role in their response to food risk messages communicated by the corporations in China. In other words, this suggests that Chinese consumers are less likely to repurchase a product from a particular company if they have risk perception on this par-

ticular company. The way a company transfers its risk messages to consumers affect consumers' risk perception, thereby determining their response to such message by deciding not to repurchase. This suggests that companies need to communicate their food risk messages strategically and selectively emphasize certain aspects of the risk communication content. In particular, the results suggest that safety aspect of food risk communication plays the largest part in the dimension of risk communication compared to other two aspects. Chinese food companies may need to consider this in developing their communication strategies for consumers.

Table 2. Estimated Parameters for Structural Equation Model

Latent Dependand Variable		Major Constructs (Latent Variables)	Standardized Estimates
Consumers' Attitude	←	Information Trust	-0.883*
Consumers' Attitude	←	Risk perception	-0.636*
Observable Independent Variables		Latent Independent Variables	
Reassurance	←	Information Trust	0.483
Certainty	←	Information Trust	0.804*
Acceptance	←	Information Trust	0.018*
Angry	←	Risk perception	0.384
Avoiding	←	Risk perception	0.647*
Worrying	←	Risk perception	0.648*
Safety	←	Risk Communication	0.346
Riskiness	←	Risk Communication	0.132*
Eco-efficiency	←	Risk Communication	0.234*
Repurchase Intention	←	Consumers' Attitude	0.526*
Word-to-Mouth	←	Consumers' Attitude	0.750

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$

Likert scale used in the SEM model is: 1 = the lowest level and 5 = the highest level.

Consumers' trust to risk messages appears to play a significant role in their attitude to food risk issues. The estimated coefficients had negative sign as the questionnaire were stated in negative sentence, therefore, the more consumer trust the information of food risk messages, the more they are willing to repurchase a product.

Conclusion. A better understanding of the relationship between the determinants and consumer attitude to food risks may provide meaningful insight for public policy makers and marketers in terms of how to develop best practices in risk communication. The study results show the importance of the contents of risk communication, consumers' risk perception and trust to risk messages in developing their attitude and behavior in food choices. It should be noted that all the actors and institutions involved in a food supply chain are responsible for food safety and effective risk management and should take efforts to ensure that consumers can trust food they purchase, while decreasing their risk perception. Management and marketing food products based on credence dimension requires credibility-enhancing devices (Grunert, 2002). Ability to process information is a very important factor in the communication of credence quality dimensions. In this regards, legislative reinforcement by policy maker play a critical role as it can provide information to consumers. Consumers can be motivated to process such information and this may also increase their level of trust

towards information provided by regulators and private sector. Grunert (2002) also states that more information may not necessarily guarantee effective communication as it may increase the possibilities for misuse and misinterpretation of information. Communication on credence characteristics is increasingly done in alliances among various stakeholders – producers, public authorities, NGOs (Phillipsen & Andersen, 1998). The structure of an alliance of the stakeholders may have significant effect on the development of relationship between consumers and public authorities as well as the private sector. This may be an important aspect of food risk communication which may need further analysis.

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