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Food safety risk communication

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Introduction

In recent years, food safety has become a central concern in consumer confidence. The reason for this phenomenon can be traced back to several factors. Among these we might highlight the following issues:

1. By the development of information technology, health statistics and controlling systems over the past decade, it became evident that safety through the whole chain of food production can not fully be comprehensively guaranteed even in the most developed countries and that the introduction of quality management systems did not provide a final answer to the problem. The escalating structural and geographical detachment between food producers and consumers and increasing complexity of food chain have also significantly contributed to the problem, which resulted in a lower level of producer responsibility and accountability. The characteristic of globalized food trade, growing in size and leading to specialized competitive international corporations supplying several countries has caused a new particular problem - in many cases by the time the global producer can be traced back upon a positive inspection result it seems to be already late to prevent damages caused in form of economic loss or even human health consequences. These cases occasionally lead to a global crisis and put hundreds of thousands or millions of consumers at risk. The guar gum crisis in 2007 and the melamin crisis in 2008 provide examples of this phenomenon.
2. Food safety events are well known to a wider audience than before. Mass media and the rapid and free information flow on internet made consumers more aware of food consumption risks. The comfort sensation of consumers is being reduced further by the specific mechanism of media, which is interested in maximising numbers of clients (viewers, readers, users). The easiest way to increasing audience is to bring excitement to the basic, instinctive parts of the human psyche (in this case anxiety and fear).
3. Over the past decade, the sequence of food crisis outbreaks not only point out how serious the consequences for neglecting of food-hygienic conditions can be, but also draw attention to significant shortcomings in early detection of food safety risks, and problems caused by delay of appropriate measures. For this, the BSE crisis in Europe and the 2004 red paprika scandal in Hungary provide examples.

4. Food safety is more often and more effectively applied by national governments for market protection and securing market position. Agreements aiming liberalization of global trade are increasingly prohibiting the use of quotas and protective duties. However, the precautionary principle and priority of consumer health protection achieved by reference to establishment the so-called non-tariff protectionism.
5. Agricultural and food producer companies face increased competition with each other. One of the most important fields of the competition is the application of new technologies and product development. The intensifying competition in some cases leads to less care taken to verify safety of novel food products. However, new technologies may also raise consumer concerns even when safety is granted on a scientifically sound basis.
6. Consumer risk perception is significantly differing from the risk assessment of governmental and private sector professionals. Many also believe that consumers are unreasonably concerned in case of certain risks, while voluntarily undertake other, higher level and clearly perceivable risks. This results that risk communication driven by consumer interest and media attention does not focus on the most critical areas. In some cases, consumers also tend to get accustomed to continuously present risks and avoid medical visits. As a result, actual numbers food borne illnesses are not reflected in official statistics. Household and personal hygiene, while remains responsible for most illnesses are perfect examples for all of the above.

For safety of food consumption it is not sufficient to merely control objective factors that affect the condition of food products, but food safety related risk communication processes to improve efficiency are also needed. To improve the performance of the communication process and find the most optimal channels and formats we need to know the consumer's thinking and reactions (risk perception, risk acceptance, individual risk management or risk avoidance strategies). Identification and analysis of the subjective factors that play role in determining consumer behaviour have fundamental importance for scientific foundation of food related risk management and risk communication.

Risk and Society

In the first part of my PhD thesis I have explored the complex relationship between globalized food logistical systems and food safety based on academic literature and consultation with leading international and Hungarian experts of the field.

In the early part of the literature review in my dissertation I have given evidence that risk assessment and avoidance capability is essential for all living creatures for survival. This process has been assisted by the experience and lessons learned from previous events. This is the foundation of the adaptive behaviour that helps the individual - and ultimately the whole population – to survive.

The human society does not only adapt to the environment, but also significantly alters it. This activity while aiming to reduce existing risks, often brings forth new ones. This phenomenon leads us to the era of the „risk society”, where collective risk management plays gradually increasing role. Public participation in decision-making was initially included almost exclusively bottom-up initiatives (demonstrations, movements), while nowadays the focus begins to shift on the top-organized forms. Democratic principles play mandatory role in public administration and policy decision-making, while voluntary programs still have significant impact on governmental acts. Ultimately, public participatory decision-making is increasingly belonging to the fundamental standards. The most important requirements are:

1. Social actors must be provided opportunity to present different views and contexts.
2. Social actors should be given place to challenge the current position under consideration.
3. Communication of social actors should be real, at least pair wise two-way and shall be based on equity.
4. Each account must be examined, including their practical implications as well.
5. All social actors should be treated impartially, and shall ensure the consistency and the principle of equality in decision-making.
6. Policy makers must prove that how the results of the public participatory process had been considered during the decision making, and provide logical explanation behind the decision taken.

Food control is an activity that provides public good, and in which each participants have certain responsibilities. The chain's most powerful actor is the consumer, although hardly able to articulate and display its interests. The consumers therefore need protection and

empowerment by the means of public interventions that helps the integration to decision making. The development level and characteristics of the Hungarian civil society allow only a limited direct participation, however other means - such as polls and consumer studies – could be applied with a satisfactory efficiency. Therefore, these methods shall contribute to the design of an efficient risk communication process.

Research objectives

1. During my research I have analysed the consumer reactions and social effects of some of the food safety events that took place over the past ten years, and provided major media coverage.
2. I have analysed the possibilities and different strategies, tactics of the actors of these events.
3. I have analysed consumer and expert opinions towards genetically modified food using a combined methodology including expert interviews, media analysis and quantitative consumer studies.
4. I have examined the attitudes and behaviour of consumers in food safety decisions.
5. I have analysed the strategies, coordination mechanisms and risk communication procedures of different governmental agencies.

Methodology

I have used the broad scale of tools belonging to the modern consumer research methodology. Our research group has conducted many quantitative studies, accompanied by expert interviews and media analysis. We have developed a quality management system to acquire the most relevant data from surveys, covering activities from questionnaire design to data collection, data recording and error check. All questionnaire were tested in pilot studies (7<n<67) in advance of the extensive data collection procedure. Data collection was closely controlled to ensure relevant information on the research topic. A thorough error check was applied to indicate mistyping during data record. For data analysis I have used SPSS statistical software for its reliability and convertibility. The statistical methods used to deliver the results included descriptive and multivariate statistics also. In case of multivariate methods we have applied cross tabulations, significant difference checks and regression equitation.

Results

The BSE crisis and its consequences

I have given evidence that BSE (Bovine spongiform encephalopathy) has raised significant fear in Hungary, in spite that there were no ill animals in the country. A segment of Hungarian consumers believed that media broadcast illustration ill animals and hospital patients from the UK and France were actually recorded in Hungary. Also, many of the respondents were afraid because there was no clear indication by the Hungarian government about the probability of the citizens getting ill in relation of BSE. Our data illustrates the dramatic effects of the scare in Hungary: almost 48% of people have decreased the amount of beef consumed, while 14% of the respondents told that they stopped eating beef products because of the “mad cow disease”. The BSE case has given proof that a food scare may cause enormous economical loss even if the epidemiological and food safety core facts do not provide basis for it.

Avian influenza and politics

By analysing the avian flu scare, I was able to provide evidence that not only the media, but in some cases, politics also interested in utilizing the food safety issue to raise public awareness. In 2006, before the parliamentary election, the prime minister had distracted the communication tasks of the first animal victims of the avian flu. He had presented the picture and rhetoric of statesman whose duty is to protect the country at all cost against a catastrophe. While, in fact, there was no catastrophe for the time being and all experts tried to convince the public that the avian flu, according to latest scientific data, is limited to be an animal epidemiology, being far to express risk to the human population. After this contradictory strategy followed by politics and experts, the communication of the issue had been given back to the food control authority and the main focus shifted to animal health issues again. This helped to stabilize the public opinion and resulted in only a limited and temporary loss in poultry consumption in Hungary. During this case, we were also able to measure the performance of different communication channels available to the government to use. This indicate that educational background and age have to be considered in the communication design procedure, because these two factors produce the biggest variance and provide significant difference in terms of media usage.

Analysis of the “paprika scandal”

The paprika case in 2004 may not be the greatest food scare in the last decade, it has still produced an international media coverage. Our study indicates that disintegration of the paprika industry cluster has inevitably lead to massive fluctuation in the raw material production. The producers balanced the shortages and cut the cross with imported paprika mixed in different ratios to Hungarian ground paprika, while mislead the consumers in regard of the origin of the product. After the case was investigated, indication was found that some of the producers had known of the high micotoxin content of the imported raw material used during this process, and made effort to mix it to keep the overall toxin content under the limit. We have found documents that provide evidence that the food control system received „soft signals” from the market indicating the nature of the formulating problem, but the reaction of the authority was delayed until the scandal broke out.

Nor the governmental authorities, neither the companies taking part in the case did not have clear communication strategies. Some of the governmental organizations even issued contradictory messages to the public that did not help avoiding the panic situation. Our consumer study was conducted during the scandal, and found that 1) consumers refer to food safety as an utterly important issue; 2) modern communication channels provide increased performance, but cover only a well definable share of the population; 3) media should be considered to be partner in risk communication; 4) there are significant differences in risk perception and risk acceptance of the certain consumer clusters that have to be considered during the planning of the communication process; 5) based on psychological profiling of consumer clusters, the personal risk avoidance strategies are predictable.

Social debate on GM food

Social debates on GM food do not represent any kind of food safety scares, even there are opinion groups that believe there is certain risk accompanied to consumption of GM organisms. By conducting a media analysis and a great number of interviews, I have defined interest groups on the base of their argumentative differences. From 2001 to 2008 we have repeated the survey three times in total that allows as to point out to the decreasing consumer acceptance of GM food. In contrast, we have found evidence that in cases the consumer perceives benefits from the technology, the level of rejection erodes quickly and heavily.

Food frauds and risk acceptance

The year of 2006 brought up a shocking food fraud scandal in its last months. A business group, which turned out to be supplier of most of the Hungarian retail chains, was investigated by the Hungarian food chain control authority and found to be guilty in extensive food fraud activity. As the investigation indicated, the company had imported preserved (or long lasting) food products from all over the world. Most of this food was over its expiry date thus regarded to be hazardous waste, therefore their previous owners were happy to get rid of the big quantities for basically free or a symbolical price. These products were relabelled and remarketed in Hungary. Conducting an extensive consumer study we have found that Hungarian consumers saw that in an international conspiracy Hungary had become the food waste dump of Europe and many of them used anti globalisationist arguments. The retail chains were often mentioned as active participants in the food fraud process. According to our data, one quarter of the consumers remembered buying from the accused products. Only 23% of them acted as conscious consumer and brought back the good to the place of purchase or reported the case to any kind of authority. 11% has even admitted to have consumed the dubious products. Only less than 2% made any kind of effort to make contact to any kind of governmental or civil organisations. This highlights the enormous contrast between our expectations (awareness of public and civil organizations) and our real life deeds as consumers.

Optimising governmental risk communication

In the terminal part of my dissertation I aim to design a viable structure for governmental risk communication taking the present institutional capabilities and their possibilities in consideration. While risk control is more polarized now in Hungary than before (after an institutional reform), it has still some areas where efficiency could be raised without consignment of a significantly increased monetary budget. I have found evidence that interpreting facts in regard of nutritional science, public health, food safety and consumer protection is a very complex task and consumer understanding of the relevant issues could be enhanced only with more focus on the message and less on the type of the institution. I have proposed the idea of an integrated food control authority that work independently from the present organizational integration and enjoy the benefit of a more developed risk assessment system provided by reformulation and fortification of the present scientific agency. I have pointed out to some collateral provisions in regard of further structural reorganizations and

measures the government has to take in order to provide a more transparent and efficient service to the consumers as the prerequisite of the desired partnership model.

New scientific results

1. I have found evidence to the role of governmental and media communication on social acceptance of food safety events. I have proven the importance of the profoundly planned risk communication and defined its main functions, basic directions and methods based on Hungarian and international experiences.
2. I have analysed the consumer reactions given to the food safety cases in the first decade of the 21st century. I have proven that there is a strong segmentation of consumers based on risk perception and risk acceptance.
3. I have developed a model for risk communication of the government in field of food safety. Some of the results of my work have already introduced to the Hungarian governmental policy, organizational structure and food law.

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