CONSUMER KNOWLEDGE ABOUT FOOD LABELLING IN SLOVAKIA

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ABSTRACT

The presented paper deals with the food labelling from the consumers' point of view. Food labels play important role in the distribution chain. They help consumers to get information necessary for their deliberate food choice. On the other hand, food producers can promote and communicate basic information and specific characteristics of pre-packed food through the food labels. We conducted primary quantitative research by inquiry method via standardized online questionnaire that addressed three topics: (1) consumer interest, (2) consumer awareness and (3) consumer information and knowledge. In this paper we focus on evaluation of partial research results with the aim to find out an information and knowledge level of consumers about food labelling in Slovakia. The research results (published in Krnáčová, 2016) show us that 87% of consumers in Slovakia are interested in food labelling. Furthermore, over 95% of consumers read information stated on the food labels. In general, they do not know mandatory particulars that food producers have to label on food package in accordance with legislative requirements. The partial results in the presented paper show what information sources consumers use to learn about food quality and food safety. The results, among other facts, also reveal a lack of food labelling information in the market and misleading/deceptive labelling from consumers´ point of view. The paper is prepared within the scientific project VEGA No. 1/0134/14 entitled "Promoting innovation in distribution processes through implementing modern technologies and optimization of logistics activities with a focus on reducing the burden on the environment and improving the life quality".

KEY WORDS: food labelling, consumer behaviour, consumer knowledge.

1. INTRODUCTION

Free movement of goods within the European Union countries brings Slovak consumers a wide range of suitable product choices based on individual needs and preferences. However, these options require competencies that consumer should have to choose appropriate products. Consumers should have knowledge of the products ingredients and content, effects, assessment of external characteristics and conditions of use. Based on knowledge the consumer creates a personal value and product quality that evaluates when making purchasing decisions. All external and internal features and product characteristics affect consumer behaviour. Advertising and marketing of products also play an important role (Tomengová, 2012).

According to a Eurobarometer study published in 2011, less than 50% of EU consumers surveyed felt confident, knowledgeable and protected as consumers. Empowered consumers find it easy to identify the best offer, know their rights and seek redress when things go wrong. Vulnerable consumers find it hard to understand the choices they face, they don't know their rights, suffer more problems and are unwilling to act when things go wrong. Significant numbers of consumers have problems making everyday calculations, understanding key information and in recognizing illegal sales practices or knowing their rights. Worrying results indicate that a significant number of consumers are potentially vulnerable to frauds, scams, pressure selling, and do not know they can re-consider their choices and avoid unnecessary purchases. If consumers cannot easily make choices and avoid harm, not only do they suffer but so do the innovative, honest businesses which drive growth. To conclude, these results will have to be taken into account if we want to help consumers in an increasingly complex market and in the face of information overload (European Commission, 2015).

An essential concept of the modern theory of marketing, known as "4P", the marketing mix represents "all the controllable marketing tactical tools that the company combines in order to produce the desired reaction on the target market" (Kotler & Armstrong, 2008). A proof that the marketing mix must be combined in accordance with the marketing strategies is that the same type of items, namely packaging and labelling of the product, are found in the product policy (since the final presentation of the product involves rules on packaging and labelling of the

products, particularly food products with a determined shelf life), and within the price policy (the final price of the product also includes the price of the package, respectively the recycling price of the packaging), and also in the promotion policy, while the packaging and the information on the label represent the main communication channel between the producer / distributor and the consumer (Manea & Epuran, 2016).

The legislation adopted at EU level by the EU Regulation no.1169/2011 is currently the most accurate and comprehensive food labelling regulation that enables informed and interested consumers to be able to compare the food products and to choose the products according to their needs. In accordance with the regulation 'labelling' means any words, particulars, trademarks, brand name, pictorial matter or symbol relating to food and placed on any packaging, document, notice, label, ring or collar accompanying or referring to such food. Furthermore, the Article 2 defines food information such as information concerning food and made available to the final consumer by means of a label, other accompanying material, or any other means including modern technology tools or verbal communication.

In the context of food labelling, § 3 of Act no. 250/2007 Coll. on consumer protection as amended defines that the consumer has a right to goods and services of good quality, to health protection, safety and economic interests, but also to education and information. According to § 11 and 12, the seller is obligated to inform the consumer. It must ensure that the product sold by him/her is clearly marked.

At the national level Decree of the Ministry of Agriculture and Rural Development of the Slovak Republic No. 243/2015 Coll. on food labelling defines requirements of food labelling. Food is labelled on packaging intended for the final consumer. Labelling means written indication of information, trademark, pictures, pictogram or symbol relating to food, and are placed on the packaging, labels, or documents which accompany food.

There is a large amount of published studies describing consumer perception, interest, knowledge or awareness of food labelling (Ipsos & London Economics Consortium, 2013; Aday & Yener, 2014; Flabel, 2011). Most of them are dedicated to the selected aspect of labelling, especially to nutrition labelling (Grunert & Wills, 2007; Hall & Osses, 2013; Andrews et al., 2014; Bleich & Wolfson, 2015; Grunert, Wills, & Fernández-Celemín, 2010; Gregori et al., 2014), allergen labelling (Watson, 2013; Sakellariou et al., 2010), organic foods (Kozelová et al., 2011; Müller and Gaus, 2015; Eden, 2011), local foods or country of origin (Rutberg, 2008; Bryla, 2015), food quality mark recognition (Festila, Chrysochou & Krystallis, 2014), sustainability labels (Grunert, Hieke and Wills, 2013) or packaging (Ampuero & Vila, 2006).

Based on the research results, the aim of the presented paper is to find out an information and knowledge level of consumers about food labelling in Slovakia and to suggest recommendations to improve the current state.

2. CONSUMER KNOWLEDGE ABOUT FOOD LABELLING

Educated consumer who knows his/her rights and responsibilities as well as rights and responsibilities of other subject of the market is able to protect himself/herself in cases when they are being broken, and take action accordingly. Consumer education provides an essential tool in increasing consumer protection.

Therefore, as part of conducted research, we have focused on consumer knowledge about food labelling. Even though we realize the consumer education should be part of curriculum and exist as an individual subject, or at least be included in various current subjects, we assume this would not provide sufficient room for consumer education. Mostly generation of older people, who did not undertake this kind of education, need to acquire the knowledge about consumer issues from other sources and via different channels. Making sure there is enough information available (through media or other sources) guarantees that consumer has adequate ideas about the mentioned issues and will enable him/her to choose the right product, how to behave, or just simply know what to avoid buying, when to be careful when buying a certain product or what to pay attention to when food shopping.

2.1. Methodology

Selection of scientific methods depends on the paper content focus and the paper aim. To elaborate theoretical knowledge, we primarily used theoretical scientific methods, including method of analysis and synthesis, method of induction and deduction, abstraction and concretization, but also the comparative method. As a method of collecting primary data we conducted research. We evaluated and interpreted the obtained quantitative data through statistical and graphical methods in the Statgraphics software and MS Excel.

The basis for the analysis of consumer knowledge on food labelling represents the results of primary research that we conducted by the inquiry method through the standardized online questionnaire in December 2015. Our research was focused on three topics: (1) consumer interest; (2) consumer awareness and (3) consumer knowledge about food labelling. However, this paper focuses on the analysis of partial results concerning the consumer knowledge. We set the following research questions:

What information sources do consumers use to obtain information about food labelling?

Do consumers suffer lack of information on food labelling?

Do consumers know what food information is mandatory on the labels of food?

What is the level of consumer knowledge about food labelling?

The questionnaire consisted of 26 closed-ended and open-ended questions (including 5 classification questions). The respondent´s answers were evaluated through frequency tables and cross tabulations, in some cases relevant descriptive statistics (e.g. average, standard deviation) were calculated.

After testing for complexity, accuracy, validity, reliability and consistency, we analysed 139 questionnaires. We can consider our results to be representative. We calculated the sample size of 126 respondents with confidence level 95%, margin of error 7% and standard of deviation (on the basis of pre-research) 0,4.

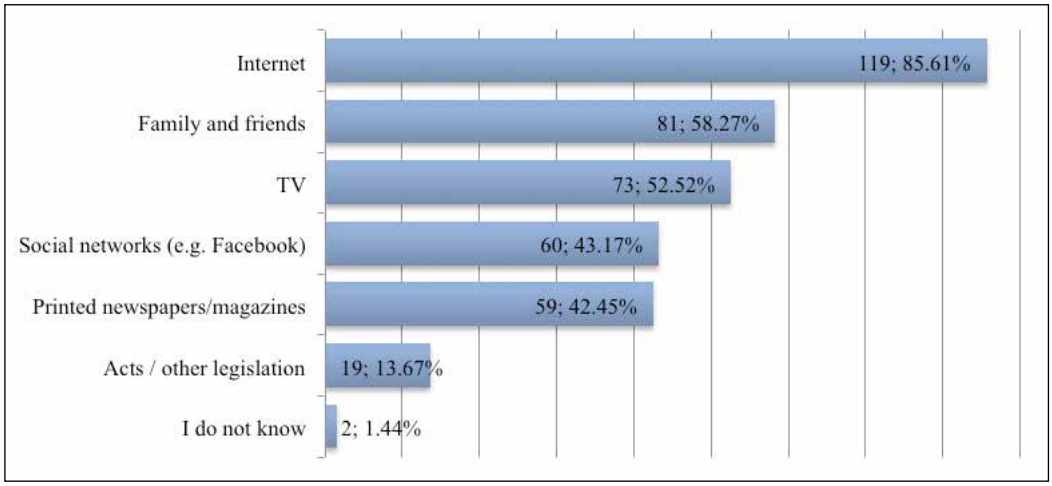
2.2. Results and Discussion

In this part of the paper, we present partial results of the research which provide us with answers to the research questions and also testify to consumer knowledge about food labelling.

A total of 139 consumers participated in the research, of which 83 (59.71%) were women and 56 (40.29%) men. In terms of age structure, there was the largest representation of consumers aged 18-30 years (76, i.e. 54.68%) and 31-40-year-olds (42, i.e. 30.22%). 51-60-year-olds were represented by 9 consumers (i.e. 6.47%), and two age groups (41-50-year- and more than 60-year-olds) by 6 (i.e. 4.32%).

The research results (published in Krnáčová, 2016) show us that 87% of consumers in Slovakia are interested in food labelling. We were concerned with the sources from which the consumers gain information about food labelling. As shown in Figure 1, the main information source is the Internet - 85.61% of consumers know food labelling from the Internet, more than half of consumers (58.27%) gets information through word of mouth from family and friends. Very important source can be considered TV. We would like to point out that results can be dangerous from the consumer´s point of view as the Internet and social networks represent the main source of information for large group of consumers. However, the accuracy and expertise of the information is oftentimes questionable. Therefore, in this part of our research we would like to pinpoint the need for educating the consumers not only in terms of food labelling, but also teaching them the skill of estimating the accuracy of their chosen information source.

Figure 1. Source of information about food labelling



Source: own results *n=139*

Within the same part of our research, we also focused on finding out if the amount of information available through media is considered to be sufficient from the consumer´s point of view. As seen in Table 1, 74.10% of consumers believe that the information about food labelling accessible through media is insufficient. We are convinced that it is necessary to change this state and improve the knowledge of consumers.

Table 1. Do you think there is a lack of information in the media?

1- Yes, certainly	2 - Yes, maybe	3- I do not know	4 - No, probably not	5 - No, certainly not	Average
21 15.11%	82 58.99%	19 13.67%	16 11.51%	1 0.72%	2,23

Source: own results *n=139*

In terms of what kind of information there should be accessible through media, and based on setting the average values for certain types of information, we have found out that consumers are lacking information about the food ingredients, meaning of quality and/or origin marks; mandatory particulars labelled on the food, basic information obligations of food business operators.

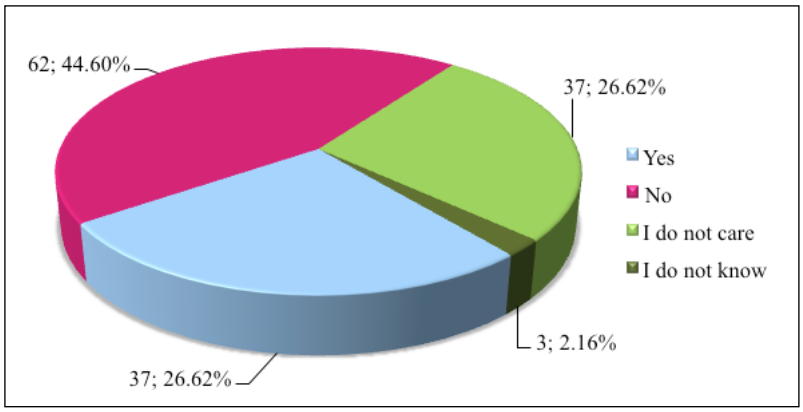
Table 2. More of which information should media provide to consumers?

Type of information	1 - Yes, certainly	2 - Yes, maybe	3 - I do not know	4 - No, probably not	5 - No, certainly not	Average/ Rank
Mandatory particulars labelled on the food	60 43.17%	57 41.01%	10 7.19%	11 7.91%	1 0.71%	1,82 3.
Possibilities and procedures for submitting suggestions and complaints about the food quality and safety	44 31.65%	63 45.32%	18 12.95%	13 9.35%	1 0.72%	2,02 5.
Difference between a 'best before' date and a 'use by' date	59 42.45%	44 31.65%	10 7.19%	24 17.27%	2 1.44%	2,03 6.
Meaning of quality and/or origin marks	66 27.48%	62 44.60%	6 4.32%	5 3.60%	0 0.00%	1,64 2.
Basic information obligations of producers/ distributors in relation with consumers	51 36.69%	68 48.92%	9 6.47%	11 7.91%	0 0.00%	1,85 4.
Explaining of nutrition labelling	49 35.25%	55 39.57%	13 9.35%	21 15.11%	1 0.72%	2,06 7.
List of ingredients	84 60.43%	47 33.81%	6 4.32%	2 1.44%	0 0.00%	1,47 1.

Source: own results *n=139*

The resulting lack of knowledge can be caused by the fact, that 44.60% of consumers think that food available on the market is not labelled sufficiently (see Figure 2). We cannot agree with this, as our legislation sets mandatory particulars that are labelled on the food packaging. The particulars are extensive enough to guide the consumer while shopping. At the same time, the results can explain that consumers do not possess enough knowledge about mandatory particulars and about food labelling (see Table 3). Furthermore, over 95% of consumers claim that they read information stated on the food labels (Krnáčová, 2016). This means they do not pay enough attention to the food labelling.

Figure 2. Is food on the market labelled adequately?



Source: own results *n=139*

Most consumers believe that the mandatory particulars are a list of ingredients (97.84%), a food name (95.68%), a date of durability - 'best before' date or a 'use by' date (94.96%) and a country of origin (86.33%). Consumers should choose the information that they deemed mandatory from the list which contains only one optional data – a bar code, which the majority of consumers (66.91%) considers mandatory. However, the truth is that certain information must be listed under defined conditions – e.g. if their omission would mislead the consumer (it applies for the country of origin, with the exception of specific commodities (meat, honey, etc.) or instructions for use and preparation). Nutrition labelling is mandatory from 1 December 2016, at present it is so only if the packaging has a nutrition claim. Based on the results of the research, we claim that consumers do not have sufficient knowledge about the mandatory particulars that must appear on food packaging (Krnáčová, 2016)

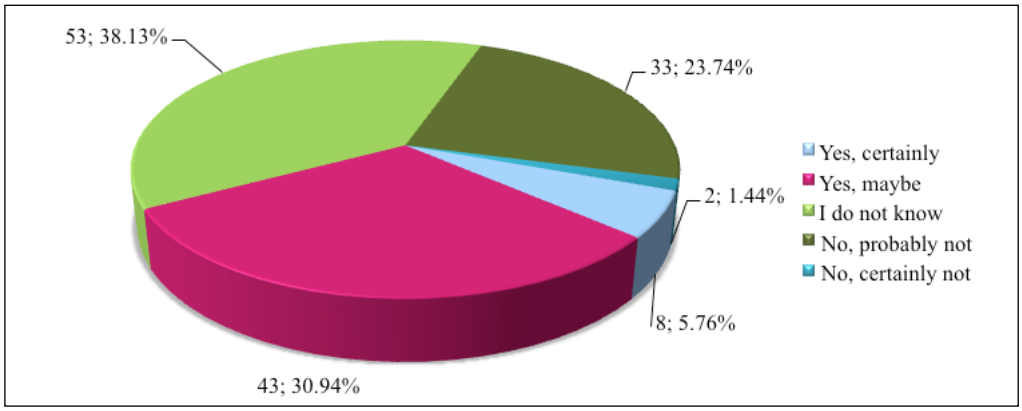
Table 3. Mandatory particulars in the view of consumers

Name	List of ingredients	Nutrition facts	Net quantity	Identification of lot	Barcode	Food business operator	Allergens
133	136	106	73	31	93	33	103
95,68%	97,84%	76,26%	52,52%	22,30%	66,91%	23,74%	74,10%
Country of origin	Date of durability	Instructions for use	Storage conditions	Nutrition or health claims	Actual alcoholic strength	In official language	
120	132	44	82	23	84	99	
86,33%	94,96%	31,65%	58,99%	16,55%	60,43%	71,22%	

Source: Krnáčová, 2016 *n=139*

Misleading/deceptive food labelling was the focus of the next part of our research. We have been witnessing number of cases of misleading/deceptive labels on the market, broadcasted by the media. It is alarming that more than quarter of consumers (51, e.g. 36.70% - Yes, certainly and/or Yes, maybe) consider the food labelling to be misleading/deceptive (see Figure 3). Another 38.13% of consumers were not able to express their own opinion, which also can be understood they lack information in this field.

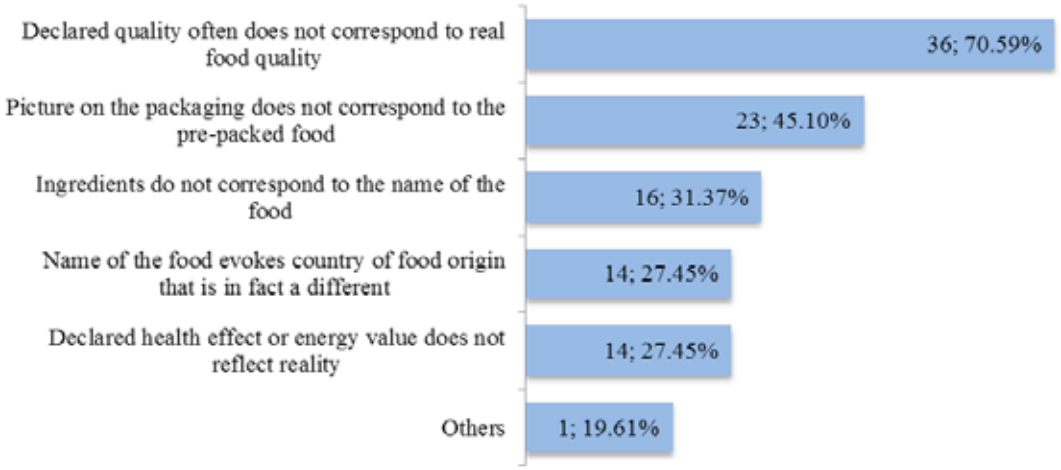
Figure 3. Is labelled information on the food misleading?



Source: own results *n=139*

The majority of consumers who view information as misleading believe the declared quality of food does not represent its true quality. A lot of consumers consider the pictures on food packaging to be misleading, because the real food looks different. In particular, we would like to pinpoint that 27.45% of consumers are convinced that, when the food producers name their product using the country of origin which is actually not the same as producing country, this is considered misleading (see Figure 4). In this case, we see the problem exactly in the fact that consumers do not pay sufficient attention to the information on the label. Because in accordance with the Act No. 152/1995 Coll. on food as amended the country of origin must be labelled on the packaging of foodstuff, whose name consists of a geographical indication. For example, Dutch cocoa produced in the Czech Republic shall be marked with the country of origin: Czech Republic. At the same time, it is applied for foods which are typical for certain countries. For example, Mozzarella as a typical Italian cheese that is produced in another country must be labelled with the country of origin.

Figure 4. Why do you think that information is misleading?

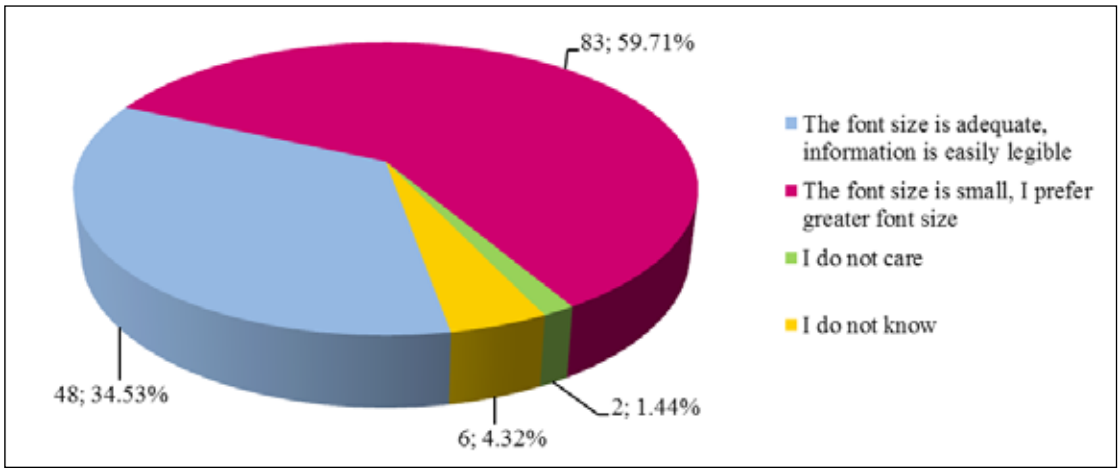


Source: own results

n=51

In the long term, consumers have declared problems with font size of information labelled on the packaging. Our results in Figure 5 show that 59.71% of consumers consider the font size small and they prefer greater font size. Based on the research conducted by European Commission, minimum font size was estimated. Regulation (EU) of the European parliament and of the Council No. 1169/2011 of 25 October 2011 on the provision of food information to consumers brought to the practice legibility of information - the x-height of the font size of mandatory information is equal to or greater than 1,2 mm, in case of packaging or containers the largest surface of which has an area of less than 80 cm2, the x-height of the font size has to be equal to or greater than 0,9.

Figure 5. Font size of information labelled on the packaging

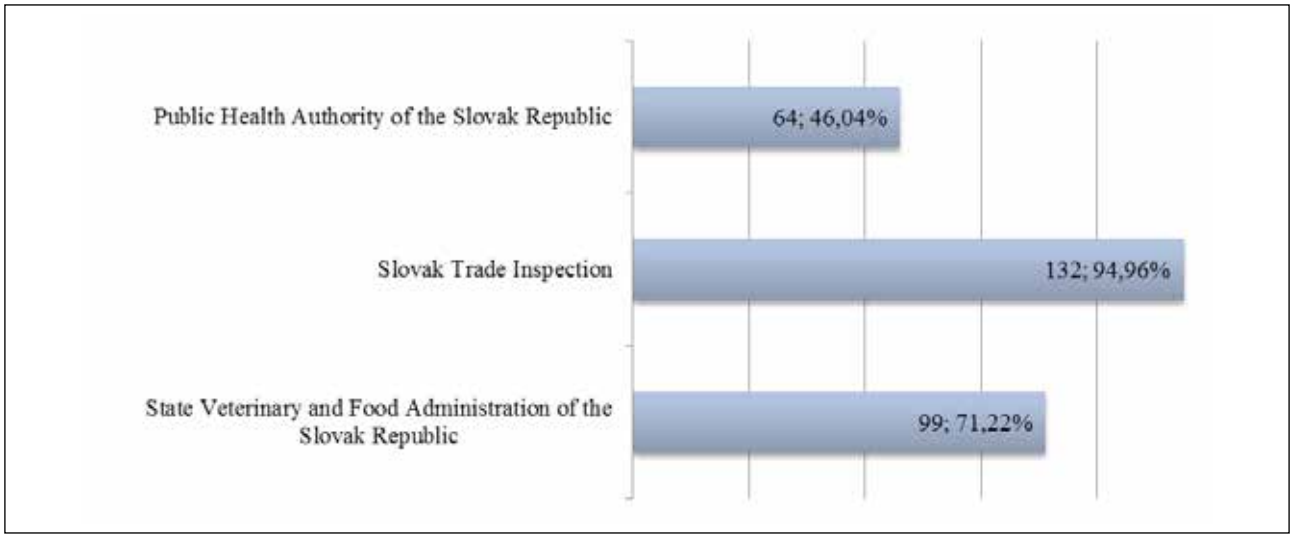


Source: own results

n=139

Considering various food scandals broadcasted in the media in the last period, we wondered if consumers know which institution they should contact in case of problems, questions or complaints relating to food products. According to the results we can conclude that consumers do not have the right information. The most of the consumers (94.96%) would contact the Slovak Trade Inspection which controls the quality and safety of selected non-food products. In Slovakia the state control authority for product quality and safety represents Slovak State Veterinary and Food Administration of the Slovak Republic (hereinafter SVFA) which 71.22% of consumers would contact. There is a scope for improving consumer knowledge. Despite the increased recent publicity of SVFA relating to various scandals, consumers do not perceive it as a control body for the food.

Figure 6. Knowledge of state control authorities



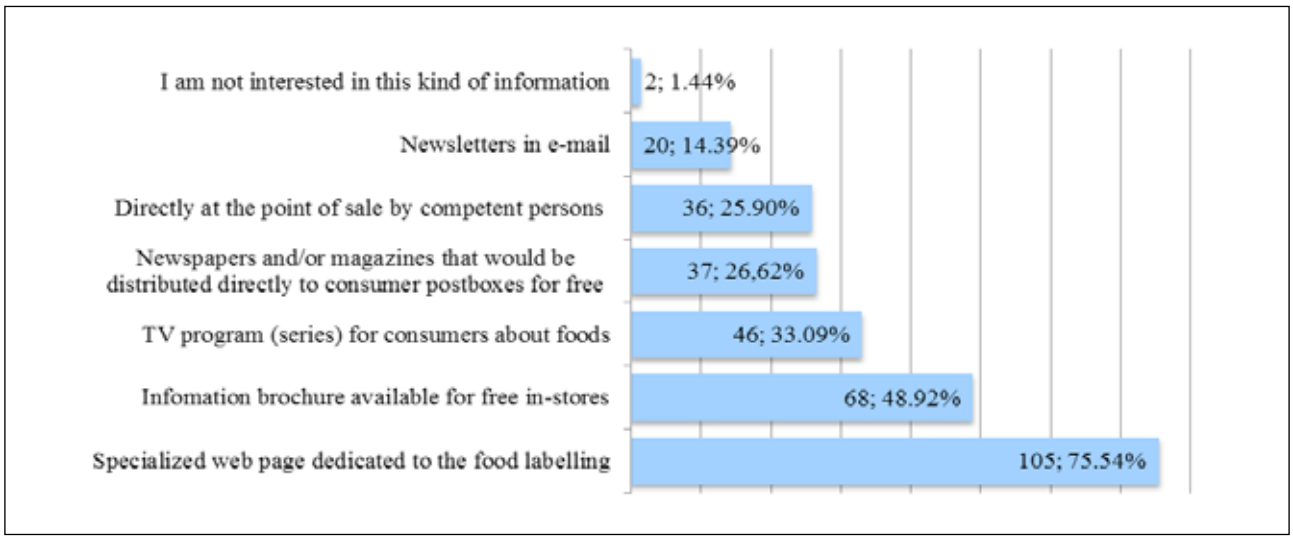
Source: own results

n=139

2.3. Suggestions and Recommendations

Based on the research results, we propose suggestions and recommendations designed to increase the level of consumer knowledge about food labelling. While their processing we took into account the views and suggestions of consumers

Figure 7: Consumer preferences of food labelling information sources



Source: own results

n=139

In terms of forms of providing information about food labelling (see Figure 7), consumers prefer the design of a specialized website (75.54%), information brochures available free of charge directly in stores (48.92%) or consumer TV program (33.09%).

We suggest some recommendations as follow:

- To establish Information centre for food safety – we lack this kind of organization in Slovakia. Existing consumer associations fail to cover such a wide area of consumer information and education, they lack sufficient personal and financial resources. Furthermore, there is no umbrella consumer association in Slovakia that would cover several small consumer associations or organizations. Therefore, we recommend to create such an entity (e.g. within organizational structure of the Ministry of Agriculture and Rural Development of the Slovak Republic), which would have different roles in consumer education and would improve consumer knowledge in the field of food quality and safety (including food labelling) by various forms: website, educational activities and lectures (training programs for pre-schoolers and pupils, lectures for students and teachers of secondary schools, colleges and also for adult consumers), organizing of events for consumers and/or publishing activities focused on electronic or printed publications, leaflets, manuals, which would be available for free.
- To design and create specialized webpage dedicated to the field of food products – the Internet currently represents the most powerful information medium.

As the research results show, 85.61% consumers get information about food labelling through the Internet. Many newspaper websites have a separated section that serves to inform about the food scandals arising at the market, to inform and explain information about food labels for consumers. All these activities are positive, but they are not sufficient in our view. The biggest advantage of the webpage - portal would be that the consumer has information "all under one roof ", obtains them from a credible source, does not have to seek information and decide whether it is credible. All important, relevant information and contacts would be easily found in one place.

- To produce information brochure/leaflet available directly in stores for free – the brochure should contain basic information about: (1) mandatory particulars labelled on the packaging with emphasis on that particulars to which consumer should pay attention to avoid misleading; (2) institutions responsible for food quality and safety control activities; (3) quality and/or origin marks – their characteristics, logos and meaning (e.g. Quality Mark SK, Quality of Our Regions, Protected Designation of Origin, organic mark, etc.). Almost half of the consumers (48.92%) claimed this form of information spreading would be appropriate for them.

- To create and broadcast consumer TV program focused on food products - 33.09% of consumers (see Figure 7) would accept this form of information sharing. Currently, the Test magazine such as TV program is broadcast, but it is not focused only on food.

- To broadcast more information on the issue of food labelling on TV - TV news, which is a television format with high ratings? According to the research results, 52.52% of consumers receive information through TV (see Figure 1). Therefore, we think that TV stations could broadcast more information of this kind. They needn´t only inform about the food scandals, deficiencies in the control activities, but can also create educational content about what to pay attention to on packaging, what to be aware of, what quality brands are used at the market, etc.

- To admin social networks actively - according to the research results, 43.17% of consumers (see Figure 1) obtain information on food labelling through social networks. Therefore, it is necessary to create a profile on Facebook (Facebook is the most used social network in Slovakia) addressing all relevant information concerning the food labelling as part of food safety and quality. At present, consumer associations use Facebook profiles, which are, however, mainly oriented to consumer rights with less or no focus on food issues. It is worth noting the Facebook profile of the Ministry of Agriculture and Rural Development of the Slovak Republic, where we can also find information on food labelling. On the other hand, for example the State Veterinary and Food Administration of the Slovak Republic as the state authority in the field of food quality and safety does not have a Facebook profile that could be used to effectively inform, but also to educate consumers. These facts reveal the possibilities for a more efficient use.

- To improve consumer sections in newspapers and magazines containing news, other informative articles dealing with the food labelling, food quality, results of food testing, etc.

- To train persons of the first contact to provide information related to food quality, food labelling directly at the point of sale – similar to best practices of some specialized stores (e.g. electro, cosmetics, footwear), in which the customer can ask competent employees when needing help.

- To teach consumer education at schools (primary, secondary schools and higher education institutions) - the consumer education should be part of curriculum and exist as an individual subject, or at least be included in various current subjects.

CONCLUSION

Based on the research results, the aim of the presented paper was to find out an information and knowledge level of consumers about food labelling in Slovakia and to suggest recommendations to improve the current state.

We conclude that consumer knowledge about food labelling issues is at low to moderate level, i.e. consumers have limited knowledge in this field. Research results reveal low level of knowledge about state control authorities in the field of food products. 94.96% of consumers consider the Slovak Trade Inspection as a control authority for the food. The truth is that food quality (including safety and compliance with the requirements of food labelling) is controlled by the State Veterinary and Food Administration of the Slovak Republic, which was identified by 71.22% of consumers. Furthermore, we have identified a lack of knowledge of consumers regarding the mandatory particulars on the pre-packed food labels. In terms of partial results that we present in this paper, we consider consumers' knowledge about the mandatory particulars which must be stated on the packaging of food to be insufficient. If we generalize the results, consumers consider the name of the product, the date of durability and the list of ingredients to be mandatory particulars. Moreover, the vast majority of consumers think that the country of origin and the nutrition labelling are mandatory as well.

According to the research results, we can also conclude that consumers get information from various sources that their relevance and amount is not sufficient. The vast majority of consumers use the Internet as an information source (85.61%), more than half of consumers TV (52.52%) and more than half of consumers (58.27%) get information through word of mouth from family and friends. Social

networks are used to gather information by 43.17% of consumers. At the same time majority of consumers feel that there is a lack of information on food labelling in the media.

Consumers lack information about the food ingredients (94.24%), meaning of quality and/or origin marks (92.08%); mandatory particulars labelled on the food (84.18%), basic information obligations of food business operators (85.61%). The resulting lack of knowledge can be caused by the fact that 44.60% of consumers think that food available on the market is not labelled sufficiently. Furthermore, it is alarming that more than quarter of consumers (36.70%) consider the food labelling to be misleading/deceptive. Another 38.13% of consumers were not able to express their own opinion, which can also be understood they do not have enough information in this field. The most consumers believe that the declared food quality does not correspond to their real quality (70.59%). 45.10% of consumers consider pictures on the food packaging to be misleading and 27.45% of them are misled by name of the food that evokes country of origin.

Based on the research results, we propose suggestions and recommendations that can increase the level of consumer information and knowledge about food labelling, as follow: (1) to establish an Information centre of food safety, (2) to design and create specialized web page; (3) to create and produce a brochure available in-store free of charge; (4) to create a consumer TV program on food; (5) a larger volume of information on the issue of food labelling in television news; (6) active use of social networks; (7) to improve consumer categories in magazines/newspapers; (8) training activities for employees directly at the point of sale; and (9) active teaching of consumer education in schools.

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OPENNESS AND DESIGN PRACTICES IN ACADEMIC LIBRARIES

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ABSTRACT

This paper explores openness and its role and relevance in creating an opportunity for sustained innovation through design thinking in organizations such as libraries. There is a growing recognition of design thinking as an effective approach to innovation. Many libraries, also academic ones, seem to have embraced the approach. However, to enable sustained, and not only short-term efforts to innovate, we believe that design thinking needs to be integrated with existing library practices. Furthermore, we consider that openness towards designerly ways of working is crucial in achieving that goal. In this paper, we discuss diverse ways in which openness plays a role in design thinking led innovation, including openness to learning new skills, question and explore, acquire new values, and continually integrate what is learned with existing practices. Two cases from our research on effects of design thinking on academic library practices are used to illustrate the importance of openness in this process.

KEY WORDS: openness, design thinking, designerly practices, innovation, library.

1. INTRODUCTION

The overarching goal of an academic library is to serve the academic community by helping to cultivate, manage, preserve and expand the body of knowledge. As an institution with a long and well-established tradition, the library, until relatively recently, had little need for radical innovation of its services. Rapid technological development over the past two decades has changed this situation. The traditional operational and organizational methods were developed around the old media, i.e. information in printed form (Arms, 2014). Although library automation processes started already in mid-seventies, the Internet, and the personal, mobile devices more generally, have profoundly changed this organization and its operation patterns. These new ubiquitous digital platforms, with ever-increasing availability and mobility of information, changed something else – the academic community and its work practices, its relation to information, and consequently, its relation to the library. The appearance of disruptive technologies, such as e-books first, and tablets and smartphones later, brought about significant changes in users' behavior. Within a short time, these technologies enabled users to have access to information, including books and academic papers, anywhere, anytime. Users could now easily store and curate a large amount of information on own devices and search dominant academic databases such as Google Scholar (Kesselman & Watstein, 2005), thus creating better conditions for academic work.

Simultaneously with these developments, funding for libraries often decreased, in some cases, forcing libraries to close (Haak, 2014). To continue serving today's and future academic community needs, in addition to defining own values and practices, the library should establish clear connections to larger institutional values, goals, and practices, also those related to the use of new technologies. In (Tenopir, 2011), Tenopir points out that in an era of decreasing resources and increasing choices, academic librarians are faced with finding the ways to capture the value of the library, and gathering evidence that helps libraries make the best choices about future directions. While the higher goals of the library remain nearly unchanged, its values have a more elusive character and are subject to societal and cultural perceptions, which in turn, are often influenced by the technological determinism. For example, the value of the library as a repository of knowledge has perhaps all too fast been diminished by the belief in the potential of digital media to take on that role, often without understanding the limited shelf life of digital technology (Haak, 2014). Already in 1996, Brand has seen the need, and value in a long term thinking, also regarding saving the recorded knowledge for the distant future (Brand, 1996).

As a space that fosters communication within the academic community, with a goal of creating and making knowledge accessible, the library may also be seen as an extension of the learning space. As such, it needs to embody different ways and modes of learning, including collaborative (Gokhale, 1995), constructivist (Jonassen, 1999) and interactive modalities (Lundvall, 2010), all of which inspire better critical thinking and increased creativity and knowledge production and all of which often involve technology. Thus, how to best follow users and their technology use and knowledge

creation patterns, has become one of the challenges for many academic libraries. Clearly, this task invites libraries to re-think their role in the academic life, and their willingness to innovate.

Many libraries worldwide have used this opportunity to think differently. To tackle the challenges, more and more libraries choose to engage in innovative processes, where instead of responding to the challenges coming from outside, they strive to introduce innovation practices at the institutional level, as described, for example, in (Pandey, 2015), as well as innovation of services (A. Culén & Kriger, 2014; Massis, 2014; Moorefield-Lang, 2014) or products. In such libraries, the usage of the library has changed, both with regards to offerings and to the number of visitors (Freeman, 2014). These increases, states Freeman (ibid.), are particularly common at libraries and institutions that have worked with their architects and planners to anticipate the full impact of the integration of new information technologies throughout their facilities. He further offers some successful examples of changes, such as the University of Southern California, Emory University, and Dartmouth College Libraries.

What is often in the heart of these changes and how does one support innovative practices within academic libraries? Some see user-centered design approach, with user participation in creation of both physical and the digital services that are needed (Casey & Savastinuk, 2006) as a way they want to innovate. Others see the innovation opportunities in enhancing user experiences (UX) as the main focus (Mathews, 2012; Rundblad, 2011; Schmidt & Etches, 2012), end-user development (Culén & Gasparini, 2013), or innovation through design thinking in a broader sense (Korbey, 2014), (Olaisen, Løvhøiden, & Djupvik, 1995; Rundblad, 2011). Whatever approach an individual library decides to use while re-considering its role and function in the community, it is evident that ideas need to be tested and refined in the field (Arms, 2014). The primary challenge for such work is that the education and the experience within traditional academic libraries do not prepare librarians for this kind of work practices. In addition to an understanding of the field work, users' behaviors, technology patterns and so on, they also need to be able to identify the opportunities, act on them, implement changes and study their results in actual use. This description is more or less how interaction designers, design thinkers, and human-computer scientist would describe their practices as, and it may be far from how library employees see their work. One obvious solution to this lack is found in multidisciplinary work. A crucial issue then, related to such collaborative, multidisciplinary work, is to mutual learning and focus on educating, through hands-on empirical work, library employees who can sustain and further build on this approach in their everyday library practices.

In this paper, we discuss opportunities and challenges in relation to openness in such organizational orientation towards innovation and introduction of design practices with a focus on cooperation and teamwork that includes users, librarians, and other stakeholders. The design in the library context is understood as a problem-solving activity internally, within the library, as well as engagement in design opportunities arising within the larger academic community. The latter creates a possibility for the library to provide exploratory design spaces (labs, hubs and like) for multidisciplinary research. The discussion is based on the case of a design thinking practices development at the University of Oslo Library, over the past couple of years. We believe that positive lessons from that journey are easily transferable, and have a potential to make libraries less vulnerable to changes in technologies, perceptions around its values and its positioning at the heart of academic life. The approach we took evolved from user-centered innovation in the context of the library as a living lab (Culén & Gasparini, 2013). The living lab was at first understood as a conceptual construct but evolved into a physical space for multidisciplinary research interactions that are supported and guided by the library employees. Simultaneously, design efforts moved from user-driven innovation to a design thinking driven approach as a consequence of this work, and realization that design teams need a broader set of skills and knowledge about library practices than those that users have, in order to make changes with lasting impact. Design thinking and design interventions were then used as the primary approach to make room at the organizational level for proto practices (practices based on prototyping of new products and services, see (Pandey, 2015)), engaging designers, library employees and students and researchers in multidisciplinary collaborative designerly practices. As mentioned, the intention of making a long-term sustained innovation also implied that some library employees need to learn to use designerly ways of working, and be able to apply it in variety of projects that the library engages in. Diverse tools and techniques, such as divergent and convergent idea generation processes, co-creating empathy, working with customer journeys, visualization, cards, sensors and gamification, are part of the design skills that are learned. This new competence creates a realistic basis for design thinking based innovation to have the impact on the library as a whole. Design interventions represent practices that spread and gradually embed design thinking as a continued innovation approach. They serve as a sense-making, problem-solving, innovation sessions in multidisciplinary settings and include, as one of the outcomes, a set of sub-problems to be further worked on, a map of implementation trajectories in its most concrete form.

Our findings indicate that the success of innovation powered by design thinking is largely due to diverse facets of openness. We have, over the past several years, studied how design thinking was integrated with existing practices at the University of Oslo Library. Recently, in a new strategic document, the University of Oslo Library has (University of Oslo Library, 2016) highlighted quality of services, openness and availability as their top three, and most central values. We discuss here the role of openness and showcase two examples from our study that illustrate how design thinking was integrated, and ways in which openness was important.

The paper is structured as follows: in the next section, we explain what we the term openness implies with regards to work presented in this paper; followed by a section on design thinking. In the subsequent section, we describe how design interventions and design thinking have been used at the