Business and Management PhD Programme

THESIS SUMMARY

Béla Kuslits

Consumer Value-preferences on a Sustainable Food Market

Ph.D. Thesis

Supervisor:

Tamás Kocsis Ph.D.
assistant professor

Budapest, 2019

Institute of Geography, Geoeconomy and Sustainable Development

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1 Methods

1.1 Theoretical framework

This doctoral thesis studies the complex decision-making situation of consumers on the sustainable food market. Superficially, consumers make their decisions in seconds, however, in the background, these simple actions are based on values, rely on information and take financial constraints into account. What makes someone choose a sustainable product? What makes them believe that a product is sustainable? What drives their decision-making in an imperfect situation in which the supply of the desired products, information and also their financial abilities are constrained? I have constructed my study around the framework of the three pillars of consumer decision-making: (1) information about the product, (2) values, and (3) financial constraints.

My research began with an extensive literature review that examined the various structures that aim to realize the ideal of a sustainable food market. I have identified two main types that exist both around the world and also in Hungary: solutions aiming to reduce *information asymmetry* (Gupta, 2010) between producers and consumers, and institutions that aim to re-structure supply chains in order to tap into the *embeddedness of socio-economic relations* (Callon, 1998a; Granovetter, 1985) to use them as an informal, self-organizing quality-control mechanism. These two approaches are intended to achieve the same goal: sustainable food production.

Sustainability is a theoretical concept that is operationalized in various ways across disciplines. In economics, *weak sustainability* and *strong sustainability* are the dominant frameworks. In my study following the definitions of Daly and Meadows et al. (Daly, 1996; Meadows et al., 2004) I use strong sustainability as a general framework.

My empirical research is built on two questionnaires that asked respondents about their values in relation to food consumption, their preferred sources, their knowledge of product prices and their judgements on how those prices reflect the real values of the products in the subjective sense. Thinking about price differences and willingness to pay (WTP) for more and less sustainable products can be analysed using the concept of *externalities*. While this concept is more often used in relation to weak sustainability, following Callon's definition (1998b), Princen's conceptual analysis (1997) and van den Bergh (2010; 2012), externalities can also be used in the paradigm of *ecological economics* and strong sustainability.

1.2 Categories of externalities and food labels

I have used four categories to distinguish between types of externalities, focussing on various subjects who have to bear the (sometimes unintended) negative consequences resulting from production processes. The subject in question is: the consumer themselves (HERE), someone far away, perhaps on another continent (FARTHER), future generations (LATER), and non-human beings (OTHER)

(Kocsis and Marjainé Szerényi, 2018). These categories (or combinations of them) cover the vast majority of possible externalities. This categorization is also useful in the sense that the groups correspond to product labelling schemes that are already in use, thus there is some existing scientific knowledge on how consumers relate to them, which offers a good basis for their comparison. Possible examples of labels that refer to the lack of externalities in particular cases are (1) GM free, (2) Fairtrade, (3) low-carbon and (4) animal-friendly food production in the respective order. There is a large body of scientific literature on each of these labels (and on labels in general), but their comparison in terms of consumer preferences and priorities is absent from the scientific literature, thus one of my goals was to examine how consumers rank the various externalities.

Such labels aim to decrease information asymmetry between producers and consumers by revealing some important information that is otherwise invisible to consumers. This strategy has a practical advantage in that it is not intended to restructure existing market relations, thus it is relatively easy to introduce. The first example of this type of label identified organic food production that started long before the emergence of the established movement for sustainability (Northbourne, 1940). This advantage enabled the development of a wide variety of labels in terms of their content and structure (Galarraga Gallastegui, 2002; Van Dam and De Jonge, 2015; Weinrich and Spiller, 2016). At the same time the easy applicability and relative clarity leads to the downsides of this method: despite the clear transparency of many of the certification schemes, consumers rarely

consult the background information on labels. Many of them just accept the claims or reject them without much consideration of their perceived lack of credibility. One reason for this is that large corporations in the food industry have begun to adopt these labels in their marketing strategies. Some consumers consider organic food produced by global companies to be *organic lite*, a type of food that may indeed be produced without synthetic chemicals, yet can never be truly sustainable due to the large scale of its production and the global network of its supply chains. In recent times this phenomenon has given an advantage to locally produced foods (Adams and Salois, 2010).

1.3 Transforming the structure of the food market

While consumer perceptions of local food do seem to be more credible, this form of alternative food production is not less controversial. How does one define 'local'? Is it a geographical attribute of food production? If yes, how large a territory can still be considered to be local (Hinrichs, 2003)? If not, what makes something part of a more complex, more socially embedded locality (Hinrichs, 2000; Westhoek et al., 2006; Winter, 2003)? Princen in theory (1997) and many other authors in practice argue for locality despite the difficulties in defining it—or in some senses because of them: locality is personal, it depends on experience, it is more than just a food distribution channel. People participate in such schemes not simply to purchase food, but for cultural reasons, for a gastronomical experience or to have fun while shopping for groceries (Balázs et al., 2016;

Balogh et al., 2016; Weatherell et al., 2003; Wolf et al., 2005). Locality can come in many forms including Community Supported Agriculture (CSA), internet box schemes, farmers' markets etc. In my dissertation, I have analysed farmers' markets among these as they are the most widespread in Hungary (NAK, 2018). These forms of food markets aim to distinguish themselves from the *mainstream* market as something *alternative*, different. This relative separation is the source of most of the significant questions about them. Since the global economy as a global network can hardly be changed by bottom-up initiatives, advocates for different market structures where different rules apply want to separate themselves by either creating new institutions of trade (CSA) or by self-imposing rules that select producers who follow certain principles. Separation leads to a reduction in size, to some extent intentionally, but this also raises questions about the financial viability of such structures. On the other hand, the question of how well the separation works, and of how much it is able to keep out those producers who while they might not completely internalize the guiding principles would like to sell to those consumers with a high WTP for such alternative products. Economies of scale, logistics, self-regulation and informality are the main areas where problems emerge when an alternative food source is being established (Balázs et al., 2016). Yet, there are successful examples both in Hungary and beyond for localized food distribution structures. Those who are successful are seen by many authors as the early examples of a new, sustainable food market (Dahlberg, 1994; Sundkvist et al., 2005; Verhaegen and Van Huylenbroeck,

2001). The informal nature of these structures makes the study of local food systems in comparison to labels that are formal and institutional somewhat challenging.

1.4 Surveys

I have used two surveys to study consumer choices and motivation on the sustainable food scene in Budapest.

The first questionnaire was filled in by 730 of the 1296 students of the Corvinus University who attended an elective *environmental economics* course in the academic years 2015/16 and 2016/17. The surveys were filled in electronically, respondents receiving two randomly selected questions out of four possible variations each referring to one of the above-mentioned externality scenarios (HERE, FARTHER, LATER, OTHER). The question briefly described two production methods for a basic food product where the main difference between the two was that one of the production methods had harmful side-effects, but was a 20% cheaper method of production. Respondents had to state what an acceptable consumer price would be for them for the second product compared to a base-price of the other option.

The second questionnaire was recorded at eight locations in Budapest. Two of them were supermarkets, two traditional markets, two farmers' markets and two organic markets. In all four categories there was one on the Buda side and one on the Pest side of the city, since there are significant socio-economic differences

between them. Altogether, 156 consumers responded, evenly distributed among the interview venues. The survey consisted of two main parts. First, respondents had to estimate the actual prices of three kinds of product at all the other locations ('other' compared to the location at which we met them) in order to understand how well they knew the prices of the alternative sources. They also were asked about their judgement of the price/value ratio of these places (whether products of a specific source are generally cheaper than their true value or more expensive). The term *real value* is intentionally ambiguous and unscientific, we used it to allow respondents to think about values using their own, subjective interpretation. The second part of the questionnaire asked about the habits and values of the respondents based on the questionnaire developed by Botonaki et al. (2006) for similar purposes. These questions covered topics in five categories: price, health, environment, convenience, exploration.

The two questionnaires together gave insights into the three main branches of my theoretical framework: value choices, information about products and affordability.

1.5 Hypotheses

H1.: Willingness to pay for products with various externalities is significantly different

WTP for various labels (that usually target one specific type of externality) has been studied extensively. In all such studies there were consumers who would

accept some price difference in order to avoid some environmental or social problem. I assume that despite having similar results with different externalities in the literature, different problems are judged differently by people. I assume that there is some preferential ranking lies behind consumer decisions.

H2: The estimates of respondents significantly exceed actual prices at producers' markets and organic markets in the product categories studied

This hypothesis is based on the literature (Larsen and Gilliland, 2009) as well as personal experience. If this hypothesis is true, it would represent a significant opportunity for organic and local producers to increase their sales with an information-campaign.

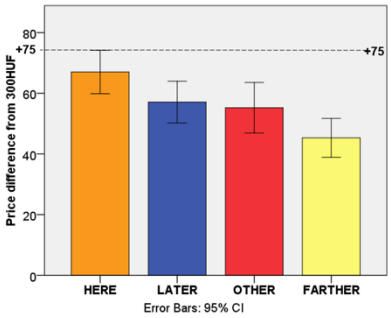
H3: Cluster analysis of the responses collected in the questionnaire will describe sociologically clearly identified groups

Even with non-representative samples, multiple different subgroups better describe participants of the market than any kind of average. By *sociologically clearly identified* I mean a description that is detailed and specific enough to understand a set of motivations, demographic character, etc. that would describe a consumer group. This characterization would also enable market organizers to identify some points of influence to involve future consumers.

2 Results

2.1 Difference between externalities in terms of WTP to avoid them

Responses in the first survey clearly showed that consumers would accept higher prices to avoid externalities, yet the average estimated price difference was significantly different between the four scenarios.



dimen-sions	HERE	LATER	OTHER	FARTHER
HERE				
LATER	9,94***			
OTHER	11,8***	1,86		
FARTHER	21,72***	11,78**	9,92*	

Figure 1: Acceptable price differences between the presence and absence of externalities. On the left side average estimates are shown with a 95% confidence interval, on the right-side differences between the average estimates are shown (* p < 0.01, ** p < 0.05, * p < 0.1).**

As shown in Figure 1, the HERE scenario is eminent among the types of externality. It is not surprising that for most consumers the highest WTP is to avoid some harm that would otherwise affect themselves. The lowest value was given to the harmful effect over great distances. Another interesting pattern can be spotted if we look at the histograms of the estimations in Figure 2. The distribution of the OTHER scenario shows that this issue is somewhat more controversial than other questions. While a sizeable section of the respondents

would fully accept the price difference to avoid harm caused to non-human beings, for others no such sacrifice is acceptable at all.

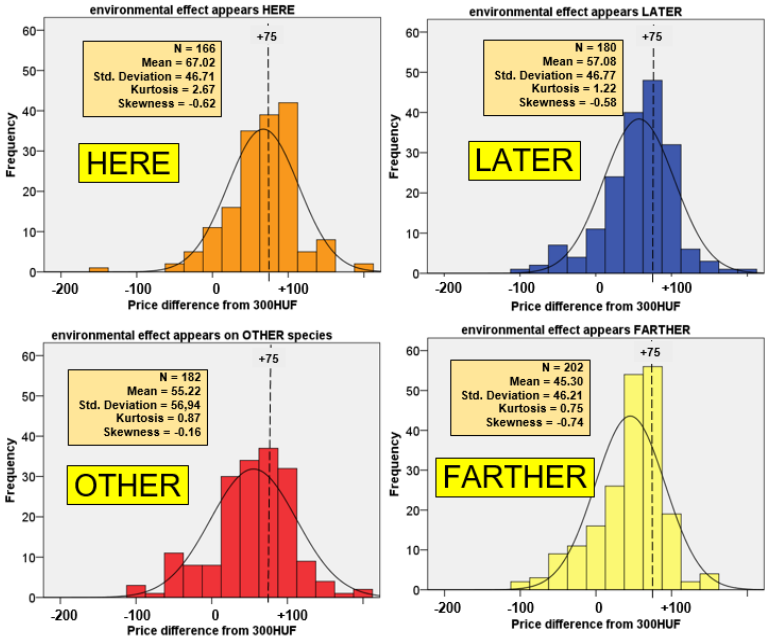


Figure 2: Distribution of price-difference estimates for the four scenarios. Avoiding the externality completely would theoretically mean +75 HUF. Note the higher deviation in the case of the OTHER scenario.

2.2 Price estimations for sustainable food sources

Contrary to my expectations, consumers did not overestimate the prices of sustainable food products on average. As shown in Table 1, the average respondent in fact overestimated the conventional supermarket and market prices and underestimated the sustainable sources. These results are, in most cases, highly significant differences and in some cases the difference between the estimated and the actual price is very high, close to 50% of the true price. While

the H2 hypothesis was false, we will see in the later results that looking at subgroups of consumers reveals that some consumers do overestimate prices and it is possible that they do not buy these products for precisely that reason, while other consumers know the sustainable market well. This result is possibly also a result of our sampling strategy (as we intentionally over-represented consumers of sustainable food sources in our sampling).

		Estimate	Actual	Difference
CBA	Apple	259.3 Ft	259.0 Ft	0.3 Ft
	Milk	245.7 Ft	226.5 Ft	19.2 Ft **
	Bread	275.2 Ft	224.0 Ft	51.2 Ft ***
Market	Apple	260.6 Ft	220.0 Ft	40.6 Ft ***
	Milk	257.4 Ft	259.0 Ft	-1.6 Ft
	Bread	291.8 Ft	259.0 Ft	32.8 Ft **
Farmer	Apple	282.6 Ft	337.0 Ft	-54.4 Ft ***
	Milk	274.2 Ft	434.0 Ft	-159.8 Ft ***
	Bread	326.2 Ft	480.5 Ft	-154.3 Ft ***
Organic	Apple	401.4 Ft	425.0 Ft	-23.6 Ft **
	Milk	389.4 Ft	450.0 Ft	-60.7 Ft ***
	Bread	474.3 Ft	680.0 Ft	-205.7 Ft ***

Table 1: Retail price estimates of consumers, actual prices and the difference between them. Asterisks indicate the significance level of the one sample t-test (*: $p < 0.001$; **: $p < 0.01$). In the case of the green fields, consumers overestimated prices, while the orange fields show underestimated values.**

2.3 Price vs value comparison

The average respondent estimated the prices of the supermarket completely normal, the market and the farmers' market slightly over-priced and the organic market rather expensive in general. As Figure 3 shows these average results have a wide standard deviation, which suggests that segmenting respondents may reveal different subgroups depending on how they judge the various food sources.

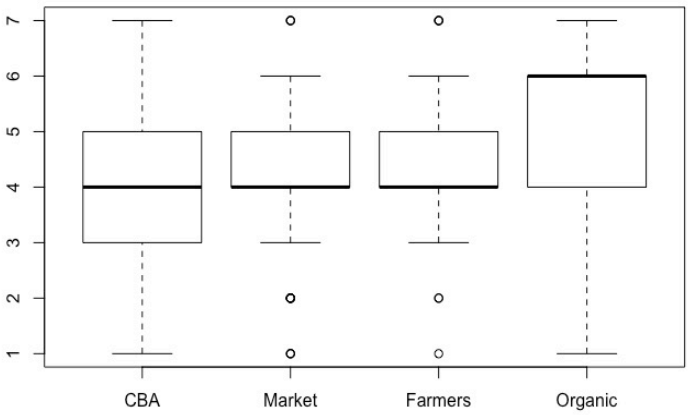


Figure 3: Price/value estimates for various food sources.

2.4 Is sustainable food overpriced?

Comparing the results from the last two points in a correlation matrix between price/value estimations and price estimations for produce, an interesting pattern emerges. There is no correlation between opinions about price/value rate in supermarkets, while in the more alternative sources such a connection is present (Table 2). This indicates that those who estimated sustainable food prices to be higher also thought that they are too expensive, while those who estimated them lower did not think so. This connection cannot be observed with the conventional sources. One possible explanation is that consumers are not aware of the phenomenon of externalities – namely that producing food in a more environment-friendly way is more expensive.

		CBA_apple	CBA_milk	CBA_bread	Market_apples	Market_milk	Market_bread	Farmers' _apples	Farmers' _milk	Farmers' _bread	Organic_apples	Organic_milk	Organic_bread
CBA price/value	Pearson Correlation	-.015	.026	-.034	.038	.017	-.038	-.111	-.043	.092	-.051	-.003	-.040
	Sig. (2-tailed)	.881	.792	.735	.708	.866	.709	.252	.665	.350	.619	.980	.698
	N	107	105	104	101	100	100	108	103	104	96	97	95
Market price/value	Pearson Correlation	.163	.170	.036	.281**	.160	.063	-.065	-.007	-.037	-.012	-.212*	-.202
	Sig. (2-tailed)	.102	.088	.720	.005	.113	.536	.508	.945	.711	.911	.039	.052
	N	102	101	99	100	99	99	105	100	101	94	95	93
Farmers price/value	Pearson Correlation	.209*	.067	.218*	.205*	.177	.209*	.314**	.092	.179	.281**	.220*	.115
	Sig. (2-tailed)	.035	.507	.030	.039	.076	.036	.001	.358	.070	.006	.032	.274
	N	102	101	100	102	101	101	108	102	103	94	95	93
Organic price/value	Pearson Correlation	.106	.134	.121	.019	.263**	.225*	.031	.145	.179	.210	.264*	.299**
	Sig. (2-tailed)	.323	.210	.253	.852	.010	.028	.767	.168	.089	.054	.014	.006
	N	89	90	91	96	95	95	95	92	92	85	86	84

Table 2: Correlation matrix between price-value estimations and price estimates. The cells of the table present the Pearson correlation between the variables of the rows and the columns (: p<0.01. *: p<0.05). In the case of CBA the estimates given for the prices of products do not correlate with the price/value estimations while in the other cases the correlation appears increasingly (CBA is a Hungarian food retail chain with a significant market share).**

Another possible explanation is that those who buy at the alternative locations do so for other than environmental reasons—for example, following gastronomic preferences. These people may not appreciate the higher prices for environment-friendly produce. A third explanation may be that supermarket prices are the most well-known, that is they are the default prices in some sense and that every other

location is compared to them as alternatives to the conventional—not just in terms of production method, but as a retail strategy.

2.5 Consumer subgroups

As I have mentioned above, some of the results are better interpreted if we cluster responses into subgroups. Since these were the most controversial results that needed a better understanding, I have clustered the responses according to binary variables created from the price estimates (for each product category and location there were 3 binary variables: underestimated, well-estimated and overestimated). I have carried out the cluster analysis with the Ward method and, after multiple attempts at running the analysis, settled with 5 subgroups that were realistic in their descriptions, comparable in their sizes and all had numerous enough members for further analysis. For clarity, I also gave short, descriptive names to these groups:

- **Traditional housewives (17.5%)**: most of whom were found on farmers' markets and traditional markets. Two thirds of them never go to organic markets, 86% think that organic food is overpriced. They read the product labels; they care about vitamin content. Most of them are females below 46 years, they think their income is average and they are dissatisfied with this.
- **Conscious youth (28.33%)**: half of whom were at farmers' markets, the others on organic or traditional markets. They underestimate

supermarket prices. They know prices at the markets well and care about 'green' packaging. They are mostly aged between 15 and 31, this group is balanced in terms of gender.

- **Wealthy (22.5%):** 66% of this group responded at an organic market, the others at other markets. The main source of their groceries is organic. Convenience is important for them, and they are satisfied with their financial status. They overestimate the prices of farmers' markets.
- **Elderly women (15%)**: about half of whom responded at a traditional market, the other half at a supermarket. All of them go with some regularity to the conventional market, but they never go to buy organic food. Good prices are important to them, also healthy food. 41% are above 64 years of age, 72% are female. They overestimate the prices of sustainable food sources.
- **Students (16.66%)**: 75% of this group responded at a supermarket. They do not select sustainable sources despite not thinking any of them were overpriced. They do not read labels and do not care much about the health effects or environmental aspects of the produce. Many of them are below 31 and 65% are male. They think their income is lower than average and they are discontented with that. They are aware of the supermarket prices and underestimate the other sources' prices.

In these clusters we find further answers to some points raised in 2.2 and 2.3. My H2 hypothesis was that consumers would overestimate the prices of sustainable

food sources. As shown in Table 1, for the general sample the opposite turned out to be the case. Consumers did think that markets, framers' markets and organic sources are increasingly more expensive than supermarkets (which is the case) but actually they underestimated the differences. This could be due to my sampling method, which intentionally over-represented consumers of the alternative markets—this sampling strategy may have countered an overestimation that might be present in a representative sample. In the groups identified using cluster analysis, I found that *traditional housewives* and the *wealthy* overestimated many prices while *students* underestimated most of them. Similarly, while the price/value ratio showed a rather balanced picture across the whole sample (see Figure 3) 43% of respondents say that farmers' markets are overpriced and 53% say the same for organic sources; among *traditional housewives* 86% said that organic food is overpriced. These results indicate that the segmentation of consumer groups is a relevant approach to this question and a similar analysis would be valuable with a representative sample in the future.

3 Summary of conclusions

3.1 A better understanding of Hungarian sustainable food consumption

Our research has contributed to the existing literature with new details on sustainable food consumption in Hungary. We have shown that consumers do differentiate between types of externalities, their main concern is the environmental effects on themselves, but other ethical questions are also highly

important for many of them (see: Figure 1). We postulate that in a different population perhaps an entirely different pattern would emerge.

We have shown that on average consumer price-knowledge is relatively realistic (see Table 1), but great differences can be observed with a more detailed analysis (see 2.5). Also, consumers judgement on the *right price* for various products varies greatly (see Figure 3), another detail showing that many have opinions on ethical production, and accept the fact that different production techniques require different pricing. On the other hand, such a conscious approach to prices may not be the average just yet as a large subset of consumers do not know the actual prices of sustainable food very well (see Table 2). All these results were much better understood using cluster analysis that divided our respondents into subgroups based on their price knowledge (2.5).

3.2 Recommendation for a new labelling system

The externality scenarios developed for our first survey also offer an opportunity to develop a food labelling system that better reflects the complex reality of the environmental and social side-effects of food production, while also fitting consumer habits more closely. As de Jonge and his colleagues have shown, many consumers prefer the middle-ground between radically ethical and conventional products (de Jonge et al., 2015). Multi-level labelling is one proposition reflecting this phenomenon (Weinrich and Spiller, 2016).

In contemplation of our empirical results, we have recommended an extended form of multilevel labelling, where externality scenarios are shown separately and on multiple levels in order to illustrate a complex, but easy to understand description of the production conditions. This would allow consumers to face and reflect on the trade-offs between various environmental and social aspects of production and to better communicate claims for complex and more efficient policies toward *ethical production* in more general terms.

	HERE	LATER	OTHER	FARTHER
★				
★★	✓			
★★★		✓		✓
★★★★			✓	
★★★★★				

Table 3: Example for the multi-level and multi-dimensional labelling of a food product. In this example the product may have some negative effects on the consumer. It performs better in terms of its effects on future generations and people living farther away and has the best ranking in terms of its effect on non-humans, even though this latter is not perfect either. Four times five stars would mean the best possible performance.

3.3 A novel way to approach consumer decision-making

The research pursued contributes to an understanding of the consumer choice of food products in order to be able to help sustainable food production gain a greater market share. One of the important theoretical outcomes of my work is the analytical framework that was used to structure detailed results and to guide my possible future research. The decision on purchasing a product is only partly

conscious, and it is constrained by multiple factors and also has implications that may be unknown to the people involved in the transaction (Simonson, 2005; Young et al., 2009). Based on my research, there are three main influences on this decision: values, information and price sensitivity (see: Figure 4).

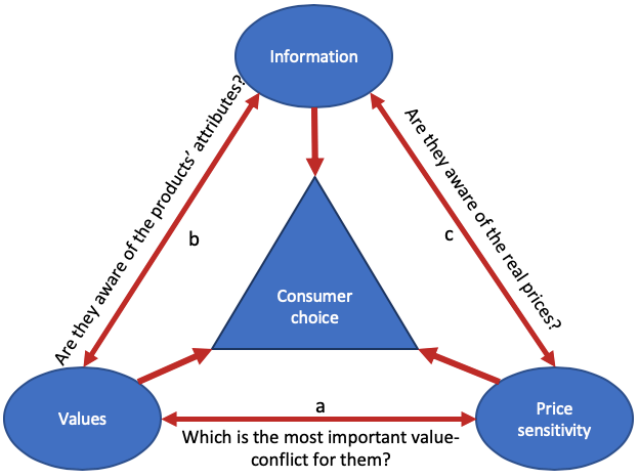


Figure 4: Analytical framework for consumer choice

In my dissertation I have cited a great deal of scientific literature on all three of these aspects, but the three different pillars of consumer choice have not been studied together—this could in part explain some of the results cited. This analytical framework enables the structuring of future research, making results more easily comparable across the populations studied and also helps businesses or NGOs in their efforts to sell sustainable food more efficiently. The three connections (marked a, b and c in Figure 4) are dimensions where a wide range of research questions could be asked and where mine are only examples of the possibilities. This structure allows a systematic explanation for the *attitude* -

behavioural intention gap (Vermeir and Verbeke, 2006) accounting for *information asymmetry* (Gupta, 2010) and offers elements for analyses of the struggling efforts to develop sustainable food markets (Berténi, 2016). Further research using this approach should build on results from other important research fields, such as *decision theory* that fell outside of the scope of my dissertation. With a larger representative sample more complex clustering and other statistical modelling tasks could be fulfilled using this theoretical framework.

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5 Own publications related to the study

Kocsis, T. & Kuslits, B., 2019, 'Multidimensional Labelling: Closing the Sustainability Information Gap between Producers, Consumers and Sustainability Science in the Food Sector', Periodica Polytechnica Social and Management Sciences, 27(1), 9–16.

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