

German consumers' attitudes and preferences with regard to
organic food and food from different origins

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Declaration of originality

This dissertation contains three scientific articles written by me as the first author and Prof. Dr. Ulrich Hamm as co-author. All articles have been submitted to peer-reviewed journals, listed in Thomson Reuters Web of Science:

1. Feldmann, C. & Hamm, U. (2015), Consumers' perceptions and preferences for local food: A review. *Food Quality and Preference* 40 (2015), 152–164.
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The present dissertation is based on empirical research carried out within the project “Trade-off in food purchasing decisions – non-organic and local, organic and local, or organic and from far-away” funded by the Federal Office for Agriculture and Food (BLE) within the framework of the Federal Programme for Organic Agriculture and Other Forms of Sustainable Agriculture (BÖLN). Prof. Dr. Ulrich Hamm was the supervisor of the consumer study within this project. The research design and procedure of data collection and analysis were developed by me. The computer-assisted interviews and choice experiments were programmed by the company Bierwirth & Gabele SoftwareDesign. The market research company T.I.P Biehl & Partner collected the data for us. I analysed the data and wrote the raw manuscripts of the journal articles presented in this dissertation. Prof. Dr. Ulrich Hamm developed the project idea with me and provided advice and feedback at all steps of the research process.

Apart from the journal articles listed above, the following publications contain selected results presented in this dissertation:

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I declare that this dissertation is my own work. Information derived from the published and unpublished work of others has been acknowledged in the text. This work or parts thereof have not been submitted in any form for another degree at any university or other institute of tertiary education.

Hiermit versichere ich, dass ich die vorliegende Dissertation selbstständig, ohne unerlaubte Hilfe Dritter angefertigt und andere als die in der Dissertation angegebenen Hilfsmittel nicht benutzt habe. Alle Stellen, die wörtlich oder sinngemäß aus veröffentlichten oder unveröffentlichten Schriften entnommen sind, habe ich als solche kenntlich gemacht. Dritte waren an der inhaltlich-materiellen Erstellung der Dissertation nicht beteiligt; insbesondere habe ich hierfür nicht die Hilfe eines Promotionsberaters in Anspruch genommen. Kein Teil dieser Arbeit ist in einem anderen Promotions- oder Habilitationsverfahren verwendet worden.

Braunschweig, den 16.12.2015

Corinna Hempel

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List of abbreviations

ABC	Attitude-Behaviour-Context
ANOVA	Analysis of variance
BDM	Becker-DeGroot-Marschak
BLE	Bundesanstalt für Landwirtschaft und Ernährung (Federal Office for Agriculture and Food)
BÖLN	Bundesprogramm Ökologischer Landbau und andere Formen nachhaltiger Landwirtschaft (Federal Program For Organic Agriculture And Other Forms Of Sustainable Agriculture)
DLG	Deutsche Landwirtschafts-Gesellschaft (German Agricultural Society)
GEWISOLA	Gesellschaft für Wirtschafts- und Sozialwissenschaften des Landbaues e.V. (German Society of Economic and Social Sciences in Agriculture)
GfK	Gesellschaft für Konsum-, Markt- und Absatzforschung
MANOVA	Multivariate analysis of variance
MNL	Multinomial Logit
NOMC	Non-Organic-Minded Consumers
ÖGA	Österreichische Gesellschaft für Agrarökonomie (Austrian Society of Agricultural Economics)
OMC	Organic-Minded Consumers
RPL	Random Parameter Logit
RUT	Random Utility Theory
SOR	Stimulus-Organism-Response
SPSS	Statistical Package for the Social Sciences
VBN	Value-Belief-Norm
WTP	Willingness-to-pay

1 Introduction

1.1 Thematic overview on this research

The topic of this study has developed from the increasing interest of German consumers for the origin of food products, in particular for locally produced food (Gahmann and Antonoff, 2012; GfK Consumer Scan, 2013; Oekobarometer, 2013; Warschun et al., 2014). According to Warschun et al. (2014) more than 80% of German, Austrian and Swiss consumers purchase local food several times a month. About 80% of those consumers, who strongly identify with the region they live in, buy local food on a weekly basis. In contrast, only 22% of the Germans claim to buy organic food products very often or exclusively and 52% buy them from time to time (Oekobarometer, 2013). Interestingly, the Oekobarometer study (2013) reveals local food production as the most important reason for organic-minded consumers to purchase organic food (87%). Altogether, 92% of all respondents prefer local over organically produced food, while 77% favour a combination of local and organic food production (Oekobarometer, 2013). Similarly, the GfK Consumer Scan (2013) shows that almost half of the consumers evaluate local food production as very positive, mostly out of moral reasons; this share has increased by three percentage points since 2010. Likewise, organic as well as fairtrade food production has gained in importance, but remains at a comparatively low level with about one quarter of the consumers who value these attributes of food production (GfK Consumer Scan, 2013).

The two main reasons for the purchase of local food are taste and freshness (Warschun et al., 2013; Warschun et al., 2014), whereas for organic food purchases animal welfare and the avoidance of pesticide residues are of greater importance, closely followed by freshness and food quality in general. Results of Gahmann and Antonoff (2012), presented in the Nestlé study, reveal that an increasing amount of German consumers rather considers quality than price in food purchases compared to a few years ago. However, it seems questionable, if consumers are really able to correctly assess food product quality. It is assumed that consumers' demand for local food production has been growing, because it is used as a proxy for quality (Gahmann and Antonoff, 2012).

Consumer surveys on food report a growing competition between local and organic food in Germany (Oekobarometer, 2013; Warschun et al., 2014). Especially for fresh products (i.e. eggs, vegetables, fruits, and meat) as well as for bread and beer, consumers prefer local over organic alternatives (Warschun et al., 2014); nevertheless, these are the same product groups,

for which organic quality also plays an important role for German consumers (Oekobarometer, 2013). In addition, German consumers state that a larger amount of their food purchases is local as opposed to organically produced and that local food production is of greater importance to them. However, the willingness-to-pay (WTP) for local food varies considerably depending on consumers' price sensitivity and the particular product category (Warschun et al., 2013). About 75% of German consumers claim to be willing to pay more for products which are produced locally (Oekobarometer, 2013). Organic production, as well as sustainable food production in general, is mainly relevant to more organic-minded consumers, who regularly shop in organic food stores. Concerning food producers, consumers equally trust organic and conventional farmers, but they trust local producers more than national producers and those in turn more than producers from abroad (Warschun et al., 2013). Warschun et al. (2013) predict that food stores, respectively supermarkets, which do not meet the growing demand for locally produced food, will most likely lose part of their customers. Similarly, the GfK Consumer Scan (2013) concludes that food retailers, who combine locally produced food with food produced in other sustainable and value-oriented ways in their assortment, will successfully meet consumers' demands.

The situation in Germany, concerning consumers' preferences for locally produced food and the question on whether there is a growing competition between locally and organically produced food, can similarly be observed in other European countries and in North America. Various aspects of consumers' purchase behaviour with regard to organically produced food and locally produced food have been studied in these countries and published in scientific journals. However, there are some aspects that have not yet been investigated in Germany or need to be validated in the German context. The results from previous studies, shortly presented below, help to build a basis for the research objective pursued in this dissertation.

In the USA, state governments supported small-scale local farmers and the marketing of state-grown products. Moreover, they introduced farmers' markets to establish producer-consumer relationships and to draw consumers' attention to the places of food production. Hence, in its beginnings, local food production and consumption did not increase due to a growing demand by consumers, but rather because of governmental interest in the USA (Brown and Miller, 2008). While in the USA this development peaked in the 1990's, in Europe, the development of farmers' markets took place about ten years later (Vecchio, 2009). In Europe, the reason for the reintroduction of the farmers' markets was not the promotion of local food through governmental intervention, but rather the increasing consumer demand for traditional foods

and various food quality attributes associated with local food (Vecchio, 2009). Thus, in the USA and Europe alike, many consumers have reoriented themselves towards local food, i.e. food that has travelled only short distances or towards food that is marketed directly by the producer, because they have become insecure regarding their food choices (Watts et al., 2005; Holloway et al., 2007). The globalization of food production and supply chains as well as a number of food scandals has resulted in consumers who feel insecure regarding their food choices and ask for greater transparency and information on food origin (Adams and Salois, 2010). This has become recognizable through the increasing number of food retailers responding to the growing demand for locally produced food. Furthermore, the local food trend has recently been addressed in a number of scientific studies (James et al., 2009; Yue and Tong, 2009; Bernabéu et al., 2010; Wirth et al., 2011; Gracia et al., 2014; Meas et al., 2015). Likewise, demand for organic food has continuously been growing and numerous scientific studies have dealt with consumers' attitudes and preferences towards organic food (Hughner et al., 2007; Yue and Tong, 2009).

Consumers' motives for choosing local products and their attitudes towards locally produced food are as manifold as the definitions of the term 'local'. So far there has not been one single, uniform definition of the term 'local' and no governmental regulation. Hence, consumers and producers have very different perceptions of what 'local food' really implies. While some consumers purchase local food because they perceive it as being more environmental and climate friendly, other consumers view local food from a rather hedonistic viewpoint as fresher, safer and healthier than imported products (Pearson et al., 2011). Similar consumer attitudes are reported for organic food in a literature review by Aertsens et al. (2009). They revealed that consumers purchase and consume organic foods for reasons related to health, taste, and environmental consequences. Many consumers even think that organic food, per se, is local and vice versa. Hence, the motives for local food purchases and for organic food purchases often overlap as associations with both food systems tend to be similar (Aertsens et al., 2009). The big difference between both product attributes is that local food production remains a matter of consumers' personal definitions and interpretations, mostly referring to perceived better transparency and security, while organic food production is officially defined and regulated as well as subject to a certification process. Organic food production, however, became part of the globalization process as its demand has grown further and could not be met by local/national supply alone (cf. Willer and Lernoud, 2014), and hence has developed partly contrarily to what local food is appreciated for.

Based on this, arguments have been found concerning the question of whether these two trends - demand for local and demand for organic food - complement one another or compete against each other (Yue and Tong, 2009; Costanigro et al., 2014; Gracia et al., 2014; Meas et al., 2015). A number of studies has been conducted on preferences and WTP for locally produced food compared to other quality cues (e.g. organic production, nutritional information, etc.) or other origin attributes. These studies, however, vary in many aspects, e.g. the number and types of products, the number of attributes as well as the underlying definition of the attribute 'local'. Most studies, which compare the preferences for different production processes and/or product attributes, reveal a preference for local over other quality cues (Yue and Tong, 2009; Bernabéu et al., 2010; Costanigro et al., 2011; Costanigro et al., 2014; Gracia et al., 2014) and a preference for local products over those that have travelled longer distances or those without any clear declaration of origin (Nganje et al., 2011; Onken et al., 2011; Wirth et al., 2011; Gracia et al., 2012; Hersleth et al., 2012; Hu et al., 2012; Lim and Hu, 2012; Stanton et al., 2012; Zanolini et al., 2013; Grebitus et al., 2013; Illichmann and Abdulai, 2013; Denver and Jensen, 2014; Meas et al., 2015). Studies by James et al. (2009), Costanigro et al. (2011), Onken et al. (2011) and Wirth et al. (2011) identify stronger preferences for locally produced food in studies, in which preferences for locally and organically produced food are compared. Only a few of these studies have considered more than one product, but they all found product-specific differences (Nganje et al., 2011; Roosen et al., 2012; Grebitus et al., 2013; Illichmann and Abdulai, 2013).

It appears to be more difficult to correctly identify local food in stores than it is to identify organic food. German and Austrian consumers, for example, are more familiar with the organic logo than with any other food label referring to its production and processing (Warschun et al., 2013). Nevertheless, many recent studies show higher WTP values for local than for organic food (James et al., 2009; Costanigro et al., 2011; Onken et al., 2011; Wirth et al., 2011; Meas et al., 2015). These findings imply that consumers do not necessarily rely on labels and the corresponding standards when purchasing food, either because they do not trust them or because they do not understand their benefits and because they might be confused by the multitude of labels. Janssen and Hamm (2012) show that consumers' knowledge and perception of organic labels is mostly not built on objective facts. This might equally apply to local food, particularly since local food cannot be as clearly defined as organic food. Nevertheless, the demand for common standards and consistent labelling of locally produced food has recently become stronger.

In January 2014 a label for locally produced food – “regional window” – was introduced in Germany; it is characterised by consistent criteria that apply nationwide. These criteria include a clear definition of the region of origin (namely administrative district, definition of a distance from the place of production, federal state or natural boundary), a precise allocation of the ingredients to the region, and transparent control through a neutral, three-step inspection system. The evaluation of the ‘regional window’ in a test period, prior to its introduction, revealed that it generally meets the expectations of consumers towards a label for local food. While the ‘regional window’ solely aims at giving information on the origin of the most important product’s ingredients and the place of processing, consumers’ associations with local food (e.g. animal welfare, organic production, healthier food) are not ensured by the label (Hermanowski et al., 2014). In a consumer study with 2019 respondents during the test period, Hermanowski et al. (2014) revealed that altogether consumers positively valued the introduction of the ‘regional window’ and its comprehensibility. Furthermore, 75% agreed that it facilitates the identification of local food products and 63.4% of the consumers regarded the criteria selected for the ‘regional window’ as satisfactory.

Building on the findings of these national and international studies, the dissertation presents a holistic analysis of the topic in Germany by employing a thorough literature search, a survey, and a choice experiment, embedded in relevant theories and models. In the following subchapter the research objectives that make up the study’s primary aim are presented in more detail.

1.2 Research objectives

The primary aim is to get deeper insights into German consumers’ attitudes, preferences and WTP for organically produced food and food from different origins in order to investigate whether there is competition between locally and organically produced food as suggested by a number of German consumer studies. The dissertation deals with the following research objectives, which directly follow from the primary aim stated above:

1. Firstly, it is aimed at investigating consumers’ perceptions and attitudes towards organically and locally produced food, including the analysis of consumers’ sociodemographic data. This is done to:
 - a. understand consumers’ perceptions and associations with both food quality attributes,

- b. reveal differences and similarities in consumers' attitudes towards both food quality attributes,
 - c. identify sociodemographic factors that influence consumers' perceptions and attitudes.
2. Secondly, it is aimed at exploring consumers' preferences and WTP values for organic food and food from different origins. The purpose is to:
 - a. reveal consumers' preferences and WTP for product alternatives varying in product origin, production method, and price - depending on the type of product and consumers' places of origin,
 - b. compare consumers' preferences with their stated perceptions and attitudes and to reveal potential gaps between attitudes and behaviour in the choice experiment,
 - c. compare these results with findings from recent international studies.
3. Thirdly, it is aimed at drawing meaningful recommendations for retailers, marketers, and other researchers from the analyses mentioned under points 1 and 2.

1.3 Outline of the dissertation

After an introduction to the core idea of the dissertation, the theoretical framework of the study will be explained and put into the context of other theoretical models. As this study deals with the formation of consumer behaviour as well as with the more economic approach of decision-making in terms of WTP estimations, behavioural and economic consumer theories were applied. Following the chapter on the theoretical framework, the mix of methodologies and the reasons for choosing a choice experiment to elicit consumers' preferences as well as the different types of data analyses will be presented. Furthermore, the methodological part contains information on the design of the questionnaire and the experiment. The results section of this dissertation consists of three articles, of which one was published, one was accepted, and one was submitted to international scientific journals which are listed in the Thomson Reuters Web of Science (former ISI Web of Knowledge). In the final part, the study results are discussed in the context of national and international literature, merits and limitations of this contribution are presented, the theoretical and methodological approaches are examined, conclusions for politicians and scientists are drawn, and recommendations for producers and retailers are suggested. Key information on this study can be found in a summary at the end of the dissertation; one written in English and one in German.

As mentioned above, the dissertation's results section (Chapter 4) consists of the three journal articles. The first article "Consumers' perceptions and preferences for local food: A review", published in the *Journal of Food Quality and Preferences*, covers scientific literature dealing with consumers' attitudes towards local food and their purchase behaviour. The Alphabet Theory was applied to better structure the findings and put them into a coherent context (Alphabet Theory consists of Attitude-Behaviour-Context (ABC) Theory, Value-Belief-Norm (VBN) Theory, and additional factors influencing behavioural actions). Through its application, common results and recommendations as well as research gaps could be identified. Together with literature reviews on organic food (e.g. Aertsens et al., 2009; Shafie and Rennie, 2012) a basis for the development and refinement of research questions and the interpretation of results in the context of other recent research findings was built. The second article "Local and/or organic: A study on consumer preferences for organic food and food from different origins", submitted to the *International Journal of Consumer Studies*, deals with the investigation of consumers' preferences for organic food and food from different origins and the influence of attitudes and sociodemographic data on these preferences. The third article "How important is local food to organic-minded consumers?", accepted by the journal *Appetite*, ties up to the contents of the two previous articles, but addresses the preferences of organic-minded consumers and how these differ from 'non-organic' consumers. The findings are used to identify attitude-behaviour gaps for both segments and explain them in the context of other research results.

2 Theoretical framework

Theories in general are simplified models of reality; they are used to explain, predict, and understand processes and events. According to Imenda (2014) the main characteristic of a theory is that it creates testable predictions. The theoretical framework helps to build the basis for research and to define the research problem. Furthermore, it describes the variables and presents the relationships which are aimed to be analysed. After data collection and analysis the theoretical framework serves as a mirror and helps to detect and interpret discrepancies against the background of the previously determined assumptions (Imenda, 2014).

While economic theory, especially Random Utility Theory (RUT), views consumers as rational decision makers, who strive to maximize their utility, behavioural consumer theory considers a wider range of influences, which go beyond the mere decision-making process (Solomon et al., 2006; Bray, 2008). To make a rational decision according to RUT, consumers need to be aware of all their options and need to know the right choice for the optimal decision. However, past behavioural research has identified less rational influences on consumer choices, such as social relationships or values (Bray, 2008). Likewise, Armstrong and Kotler (2009) explain that consumers do not base their purchase decisions on only one attribute, but on several attributes varying in their individual importance. Thereby, it is more difficult to reliably predict consumers' choices. In addition, unexpected events might lead to actual purchase behaviour which is quite different from consumers' initial intentions. Hence, to frame consumers' purchase behaviour more realistically, it is important to build on both theoretical streams, behavioural and economic, because they complement each other.

Consumer behaviour is an interdisciplinary field of research, examining very complex relationships and thereby including many different perspectives in the same context (Solomon et al., 2006). A wide range of theories dealing with consumer behaviour has emerged and hence, there is no commonly used theoretical framework. Due to this complexity only those which are in line with the general approach followed in this study are explained in more detail. More information on the development of consumer behaviour theories as well as the application of theoretical approaches used in this study is given below.

2.1 Behavioural consumer theory

Solomon et al. (2006) describe consumer behaviour as “the study of the processes involved when individuals or groups select, purchase, use or dispose of products, services, ideas, or experiences to satisfy needs and desires” (Solomon et al., 2006: p.6). Likewise, Kotler and Armstrong (2011) define marketing as the exchange processes between producers and

consumers; it is regarded as a concept in which value is created and consumers' needs and demands are met. The aim of consumer behaviour research is to understand and explain the purchase behaviour of consumers and to translate this into recommendations for retailers and marketers, who use this information to influence consumers' purchase decisions (Kotler and Armstrong, 2011).

2.1.1 Consumer attitudes, behaviour and decision-making processes

Following the theoretical assumption that attitudes determine behaviour to a large extent, it is obvious that most often the focus of studies on consumer behaviour lies in the determination and interpretation of attitudes. As a consequence, many diverse definitions of attitudes have been developed. According to Solomon et al. (2006) and Armstrong and Kotler (2009), attitudes are internal dispositions (i.e. predispositions) of individuals to react in a consistently favourable or unfavourable way to a particular object.

Attitudes can help to explain purchase behaviour, although in some cases there might be quite a large gap between consumers' attitudes and the actual behaviour (Armstrong and Kotler, 2009). Conversely, attitudes can be influenced by behaviour through learning (i.e. gained experiences) (Armstrong and Kotler, 2009). Furthermore, additional factors like the attitudes of close friends or family members or perceived purchase barriers for particular products (e.g. lack of availability, lack of convenience, high prices) might also affect actual purchase behaviour. Hence, consumer behaviour results from a variety of factors, which interact with each other and do not necessarily come up in a consistently linear order. Consumer behaviour models are concepts that explain the behaviour as a response to these factors. Multi-attribute attitude models, for example, have been used in consumer research for many years, but they are limited in their applications, because knowledge of consumers' attitudes alone does not always correctly predict the actual behaviour. The Fishbein Model, a popular, basic multi-attribute model, has been revised and extended to improve its predictive validity (Solomon et al., 2006). Thereby, intentions to purchase a product have been introduced in consumer research as a close predecessor to behaviour, because it conveys information on consumers' ability or WTP for a product. Hence, the extended model (cf. Theory of Reasoned Action; Fishbein and Ajzen, 1975) takes account of the challenge to correctly predict actual behaviour (Aaker et al., 2011). Nevertheless, Armstrong and Kotler (2009) raise concern that even purchase intentions do not always result in expected purchases.

Food purchases are results of decision-making processes, which vary in their complexity depending on the situation and the type of product. The analytical approach determines the

type of model used, which helps to simplify the complexity of the process according to the research objective. However, these models often have to idealize the way in which consumers come to a decision, because of the large number of influences on purchase decisions that cannot be generalized (Kotler and Armstrong, 2011). A basic sequential decision-making process for a purchase decision consists of the following steps: need recognition, information search, evaluation of attributes of the alternatives, purchase decision (i.e. choice), and postpurchase behaviour. These steps do not necessarily have to occur in a strict order, but can also overlap, reoccur or interact. In more routine purchase decisions, consumers do not necessarily pass all steps presented above. The choice set is a subset of all existing alternatives from which one can choose; it includes those that are feasible and known to the decision-maker. Depending on the individual consumer and the specific purchase situation, the evaluation of the product alternatives will yield different results (Armstrong and Kotler, 2009).

The decision-maker can be an individual person, a group of persons (e.g. a household), or a firm/organisation. In this study, the focus is on the consumer market, which is defined as “all the individuals and households who buy or acquire goods and services for personal consumption” according to Armstrong and Kotler (2009; p.162). In most research studies, the focus of interest is on the aggregate demand of decision-makers rather than on individual choice outcomes, although the differences in individual characteristics and influences on choices need to be considered to cope with the complexity of consumers’ characteristics and preferences (Kotler and Armstrong, 2011).

The subject of this study is the choice between food products with varying attributes. The choice of food is a very habitual decision-making process, i.e. low-involvement decision-making, and does not involve as much effort as decisions of greater extent (Adamowicz and Swait, 2013). Low-involvement decisions are characterised by less time invested and less information used to make a choice than for high-involvement decisions (e.g. a new car). Hence, food purchase decisions do not even necessarily cover all steps of the decision-making process explained above, but mainly focus on the evaluation of the alternatives through previous experiences and the final choice decision (Kotler and Armstrong, 2011). In a choice experiment, however, decisions among food product alternatives are not considered low-involvement decision-making, because the products, varying in a number of attribute levels, are new to the consumers. In this context, the evaluation of alternatives and the product choice is not habitual and therefore demands stronger involvement.

2.1.2 *Stimulus-Organism-Response Model*

The well-known Stimulus-Organism-Response (SOR) Model originates from neo-behaviourism (Foscht and Swoboda, 2011). Neobehaviouristic models, as opposed to behaviouristic approaches, additionally focus on the unobservable processes that run internally, instead of just focusing on the observable stimuli and reactions (i.e. responses). Stimuli are for example the varying prices of product alternatives or the socio-economic background of the consumers, while the response reveals the actual choice of consumers. These internal (unobservable) processes are positioned in between the stimulus and the response part of the model and make up the organism in the SOR Model. The organism describes the attitude and preference formation within the consumers, which is initiated through stimuli and transformed into behaviour (Kotler and Armstrong, 2011). Based on this theoretical approach, consumer behaviour describes both, the observable “external” as well as the unobservable “internal” processes in purchase situations.

Kotler and Armstrong (2011) view the stimuli as the environment of a purchase situation, which includes the marketing stimuli product, price, place, and promotion as well as economic, technological, social and cultural factors. The responses are described as the purchase behaviour (what, when, where, and how much) and consumers’ relationships to brands or companies through postpurchase evaluation. Marketers are especially interested in how the stimuli are changed into responses; they want to understand the “whys” of consumers’ purchase behaviour, which are hidden in the so called black box, namely the organism (Kotler and Armstrong, 2011).

With the help of intervening variables, unobservable processes in the black box can be described theoretically. These variables are psychological factors including activating and cognitive processes. Activating processes are emotion, motivation and attitude, while cognitive processes include perception, learning and memory (Armstrong and Kotler, 2009; Kroeber-Riel et al., 2009). Ideally, each purchase decision can be attributed to either an activating or a cognitive intervening variable to precisely link processes in the organism with consumers’ purchase behaviour (Foscht and Swoboda, 2011).

As described in chapter 4.2.5 in more detail, a choice experiment was used in this study to explain the organism, in this case attitudes and preferences for local and organic food products in Germany. Thereby, the stimuli were the varying attributes of the product alternatives as well as the purchase environment, while the responses were the purchase decisions made by consumers in the experiment. Due to the application of a single-source

study design, implying the unique identification of consumers in both parts of the study, the results of the survey could be related to the results of the experiment to analyse the so-called black box.

2.2 Economic consumer theory

2.2.1 Framing choice experiments

Choice experiments were used in this study to investigate consumers' real purchase behaviour. Thereby, the response part of the SOR Model can be described to better evaluate all components and interactions. As choice experiments are applied to measure consumers' preferences and their WTP for product alternatives, respectively product attributes, they are also subject to economic consumer theory. Like other preference elicitation methods, choice experiments build on RUT and Lancaster's Theory of Consumer Demand. Both theoretical approaches are shortly presented in the following sub-chapters.

2.2.2 Random Utility Theory

Discrete choice models emerged from the assumption of a utility maximizing consumer and therefore are based on RUT, which was initially proposed by Thurstone in 1927 as a basis for preference elicitation between pairs of goods. The variation in consumers' choices was taken into account through the introduction of a random component in the utility function (Louviere et al., 2010). Thereby, each alternative in the choice set has a deterministic utility which is common for all consumers and a random utility. The random variables are drawn from a distribution which is common for all alternatives and all consumers (Andersson and Ubøe, 2010). From these assumptions it is usually not possible to reveal consumers' choices with certainty, but the probability of selecting a certain alternative from a choice set can be predicted (Hofacker, 2007). The individual-specific utility functions are not completely known. The utility (U) consists of an observable and an unobservable parameter (also called error term \mathcal{E}). If a consumer chooses one of the products (product i) and the observable utility is V_i , a basic form of the alternative-specific utility function is the following:

$$U_i = V_i + \mathcal{E}_i.$$

In the context of choice experiments, RUT implies that a person will choose the alternative with the highest utility from a choice set. In more mathematical terms, a consumer (n) will choose a product (i) from a set of product alternatives (C_n), if this alternative has the highest utility. The probability $P(i|C_n)$ that a consumer chooses the product alternative i from a choice

set C_n is greater than the probability that the same consumer chooses any other product alternative (j) from the same choice set:

$P(i|C_n) = P[(V_{in} + \epsilon_{in}) > \text{Max}(V_{jn} + \epsilon_{jn})]$, for all j options in choice set C_n (Louviere et al., 2010).

This basic form of the utility function is translated into a set of utility functions specified by the particular characteristics (i.e. varying product attributes) of the choice experiment in this study. More information on the utility functions can be found in Chapter 3.3.3, where the application of Random Parameter Logit (RPL) Models is described.

2.2.3 Lancaster's Theory of Consumer Demand

Lancaster's Theory of Consumer Demand (1966) was a new approach to consumer theory and has remained one of the most relevant economic theories in marketing for a long time (Bowbrick, 1994); its basic assumption of attribute based utility has been standardly used in demand literature to date (Keane, 2013). Before Lancaster devised his theory, the assumption that "all goods are consumed just because they are goods" prevailed (Lancaster, 1966). In the new approach the properties and characteristics of a good, from which consumers derive utility, were of importance (cf. attribute based utility). Lancaster (1966) assumed that preference orderings of products are rankings of characteristics, through which the actual products are ranked indirectly. However, products usually contain more than one characteristic and the same characteristics might be found in a variety of products, just in different combinations, making the ranking more complex. Lancaster's theory was based on the assumption that the characteristics of a product are the same for all consumers. Furthermore, the Theory of Consumer Demand relied on RUT, because it assumed that consumers will strive to maximize their utility. However, consumers have limited resources which they can allocate to the goods (i.e. bundles of product characteristics) which provide them with the highest utility. Based on the availability of resources, consumers have to decide on what product they will choose (Hensher and Collins, 2011).

Both approaches, RUT and Lancaster's Theory of Consumer Demand, form the theoretical basis for the application of choice experiments. The implementation of these theories into practice, i.e. preference elicitation through choice experiments, is presented in the following chapter (Chapter 3.3). However, it needs to be kept in mind that both economic theories alone cannot truly predict consumer behaviour. To get a holistic picture on consumers' decisions

behaviouristic theories have to be taken into account as well, because consumers do not behave rationally in most of the purchase situations.

3 Methodological approach

3.1 Literature analysis as an introductory approach

Prior to the collection of primary data in this study, a literature review on consumers' attitudes towards local food as well as on organic and local food purchase behaviour was carried out. This type of qualitative study was chosen in order to build a solid fundament for the subsequent quantitative study. Webster and Watson (2002) state that reviewing literature from a certain field of research helps to reveal those topics that have already been studied intensively as well as the research gaps that need to receive more attention. It is important that a literature review is centred around a concept, instead of merely being a summary on research findings. To sum up, review articles either help to select a topic or refine a broader research question (Cronin et al., 2008).

The focus was set on research covering consumers' attitudes and purchase behaviour with regard to locally produced food, because the case of organic food was already summarized and assessed in a number of review articles, probably due to the fact that research on organic food has been conducted for a longer time. The application of Alphabet Theory on the reviewed articles helped to put available research findings into a broader context and thereby to identify elements for further analysis (cf. Chapter 4.1.3). Comparative reviews on organic food consumers and their purchase behaviour were consulted (cf. Aertsens et al., 2009; Shafie and Rennie, 2012). Thereby, the status quo on research from this field was evaluated and a basis for further research was created. Additional information on how the literature search was carried out, which criteria were applied, and the theoretical framework is provided in Chapter 4.1.4.

3.2 Consumer survey

3.2.1 Data collection through consumer survey

Surveys are one of the most frequently used methods of researchers to collect primary data (Aaker et al., 2011). The main advantage is the possibility to systematically collect quantitative information from a relatively large sample (De Leeuw et al., 2008). In consumer research, attitudes are often the main focus of surveys. Since it is difficult to directly ask consumers about their attitudes, consumers are often approached with questions on their awareness, perception, and knowledge on various aspects concerning the core topic of the survey. In addition, attitudes can be revealed through consumers' evaluation, respectively rating, of statements, which describe different aspects of the study's objective (Aaker et al.,

2011). Moreover, questions on respondents' socio-economic and cultural background can be included to draw a better picture of the surveyed consumers and facilitate the interpretation of results.

There are different modes of surveys, ranging from self-administered (e.g. mail, internet, or interviewer-initiated and self-administered) over mixed-mode surveys to interview surveys (e.g. face-to-face or telephone) (De Leeuw et al., 2008). Trading off the benefits and limitations of different survey modes, an interviewer-initiated, computer-assisted, and self-administered survey was chosen, which was conducted directly at the places of purchase. This survey mode was used because it combines positive aspects of different modes. The main advantage is the reduction of the social desirability bias, which might occur due to the study's topic. Since the interviewers only address the respondents to screen them for participation and to give assistance in technical issues, the social desirability bias remains lower than in interviewer-administered surveys. Asking questions with long and complex response categories is also facilitated. Likewise, computer-assisted surveys make it possible to include batteries of similar questions or to ask respondents to evaluate statement batteries (Aaker et al., 2011). Furthermore, automatic randomisation of questions and response categories and automatic filters can be used. The data is immediately available in an electronic format and errors are less likely to occur than in manual data collection methods. In addition, the duration of interviews can be recorded and inconsistencies can more easily be detected. Limitations are that there might be few respondents who do not know how to use computers and interviewers are not able to exercise quality control immediately during the interview. In contrast to other survey modes, however, response rates of interviewer-initiated, computer-assisted, and self-administered surveys conducted onsite are expected to be higher than for mail or internet surveys (Aaker et al., 2011).

3.2.2 Survey design

The design of a questionnaire depends on the type of study. If a researcher aims at collecting quantitative data to answer previously defined research questions and to conduct statistical data analyses – like in this study – a formal and standardised questionnaire is needed. Such a questionnaire is characterised by a predefined wording, a specified order of questions, consistent definitions and explanations, standardised interview guidelines, as well as comprehensive response formats for an easy and accurate completion of the questionnaire (De Leeuw, 2008). The standardization of the questionnaire is a very important aim which needs to be met in its design, otherwise it will be impossible to analyse and interpret the data,

especially for large samples (Brace, 2004). The table below presents the different steps which need to be taken to generate a questionnaire that succeeds in meeting the study's requirements (Table 1).

Table 1: Stepwise presentation of the survey design procedure, based on Brace (2004) and Aaker et al. (2011)

Steps in the survey design	Implementation in this study
Determine the objective	The research objective was developed through the analysis of recent literature. For more details on the research objective revisit chapter 1.2.
Define the target population	The survey was targeted at German consumers who were older than 18 years and at least occasionally purchased their food in supermarkets.
Choose sampling method (sample = subset of representative units from the target population)	The market research company selected supermarkets for this study (for requirements see Table 2). In each supermarket every third person entering the building was approached.
Choose data collection method	The respondents were screened by employees of the market research company. The survey was conducted computer-assisted and self-administered. A choice experiment was part of the survey (i.e. embedded in the questionnaire).
Decide on content that needs to be asked	Information on consumers general purchase behaviour, their perceptions on locally and organically produced food, their attitudes towards food from different origins as well as organic food production, and sociodemographic characteristics were asked for in the questionnaire.
Develop the wording of questions and responses	The wording of questions and responses was kept as short and simple as possible. Questions and responses were compared to those of similar studies and revised through a pretest.
Put questions into a meaningful order and format	Questions that were easy to answer (e.g. general purchase behaviour) were positioned at the beginning of the survey to allow for an easy start, followed by the choice experiment and statement batteries. The more sensitive questions on sociodemographic data were

	asked at the end.
Check the length of the questionnaire (balance between sufficient questions to meet the objective and respondents' fatigue)	The length of the questionnaire was checked through the pretest.
Pretest the questionnaire with a small sample	The questionnaire was pretested by a smaller convenience sample. The questionnaire was sent by e-mail to participants, who conducted the survey themselves and sent back the data file and an e-mail with feedback and suggestions.
Adjust the final questionnaire	The final questionnaire needed to be adjusted in that the statement battery had to be shortened and some statements had to be reformulated. Furthermore, some response categories needed to be changed, because they did not correctly reflect respondents' situations.

In the case of this study, the aim of the questionnaire was to get more information on consumers' attitudes towards local and organic food purchases, their general food purchase behaviour, and their sociodemographic characteristics. The target population were all adult consumers who purchase their food in general supermarkets. A sample consisting of 640 consumers was drawn according to a sampling scheme to meet the requirements of this study (Table 2).

Table 2: Sampling scheme of this study

	North Germany		East Germany		South Germany		West Germany	
Size of survey location (inhabitants)	>200.000	<30.000	>200.000	<30.000	>200.000	<30.000	>200.000	<30.000
Number of respondents	80	80	80	80	80	80	80	80

The aim of this study was to sample 80 respondents in each survey location. There were eight survey locations across Germany, two in the North, East, South, and West of Germany respectively. In each region the survey was carried out in a rather urban area (i.e. city with more than 200.000 inhabitants) and a rather rural area (i.e. city with less than 30.000 inhabitants). The reason behind the choice of survey locations in four different regions in Germany was the assumption that consumers may have varying perceptions of local food production and feel more or less bond with the region they live in depending on their places of residence. Consumers from East and South Germany, for example, are ascribed a higher preference for products which are produced very close to their home (Institut Fresenius,

2011). However, comparing consumers from Western and Eastern Germany, Heinze et al. (2014) could not find any significant differences in their preferences and purchase behaviour for locally produced food.

In the eight supermarkets, every third consumer entering the building was asked to participate in order to avoid a potential selection bias. To keep track on the distribution of gender and age, interviewers were requested to use a tally sheet to avoid a strong distortion of participants. The surveys were interviewer-initiated, computer-assisted and self-administered, because of the expected social desirability in a few questions concerning attitudes and food purchase behaviour (e.g. questions on the importance and purchase frequency of local and organic food products, evaluation of a statement battery including statements on products from different origins and organic food production, as well as assessment of personal trust in food products from different countries of origin). The pretest, however, was carried out in an online version to reach a sufficient number of participants in a relatively short time. The adjustments after the pretest mainly concentrated on the statement battery, which had to be shortened and some statements had to be reformulated in a more precise way.

3.2.3 *Data analysis*

The responses from the computer-assisted consumer survey, including the choice experiment, were automatically recorded in Excel. To clean and analyse the data set, it was imported in SPSS. At first, variables were named in a plausible way and responses were coded to allow for the classification of data. Coding stands for the assignment of numbers to individual responses for each survey question and helps the researcher to reduce the large number of responses to a few categories, containing all meaningful information (Hofacker, 2007). Subsequently, descriptive statistics, like arithmetic means and standard deviations, were applied to describe the sample and to get an idea of the general response behaviour of all consumers.

Techniques of data analysis can be divided in uni-, bi-, and multivariate methods with bi- and multivariate methods in one category (Hofacker, 2007; Aaker et al., 2011). The first step in data analysis usually is the application of univariate techniques, which are used to determine frequency distributions and means or percentages (i.e. summary statistics). The univariate methods vary depending on the type of response data (i.e. nonmetric vs. metric data) and on the number of samples included in the analysis (i.e. one sample or two or more samples). The univariate statistical techniques range from chi-square tests over t- and z-tests to paired t-tests.

Especially chi-square tests were applied in this study, as they can be applied to nonmetric data and for one or more samples. In a further step, data is analysed through crosstabulations to find out about any relations between two variables that are nominally scaled; crosstabulation therefore belongs to the bivariate techniques. Multivariate data analysis methods are used to assess relationships between two or more variables. These methods are classified into dependence and interdependence techniques. In dependence techniques one variable or a set of variables can be identified as being dependent, which is to be predicted by so called independent or explanatory variables. Interdependence techniques analyse relationships in a set of variables, which are not defined as being dependent or independent, and are used to reduce data. Dependence techniques include the analysis of variance (ANOVA), multiple regression analysis, discriminant analysis, conjoint analysis, and multivariate analysis of variance (MANOVA). Interdependence techniques cover factor analysis, cluster analysis, and multidimensional scaling (Aaker et al., 2011).

3.3 Choice of preference elicitation method

Measuring consumers' preferences and WTP for varying product attributes is a key element of marketing research. A number of methods and related theories have been developed and further adjusted to get insights into consumers' actual behaviour. WTP values give information about the maximum price consumers are willing to spend on a given amount of a product. Preference elicitation methods range from surveys and experiments over bidding procedures to real observations (Figure 1). As consumers' true WTP is not directly observable, all preference elicitation methods only represent approaches to approximate real values (Voelckner, 2006).

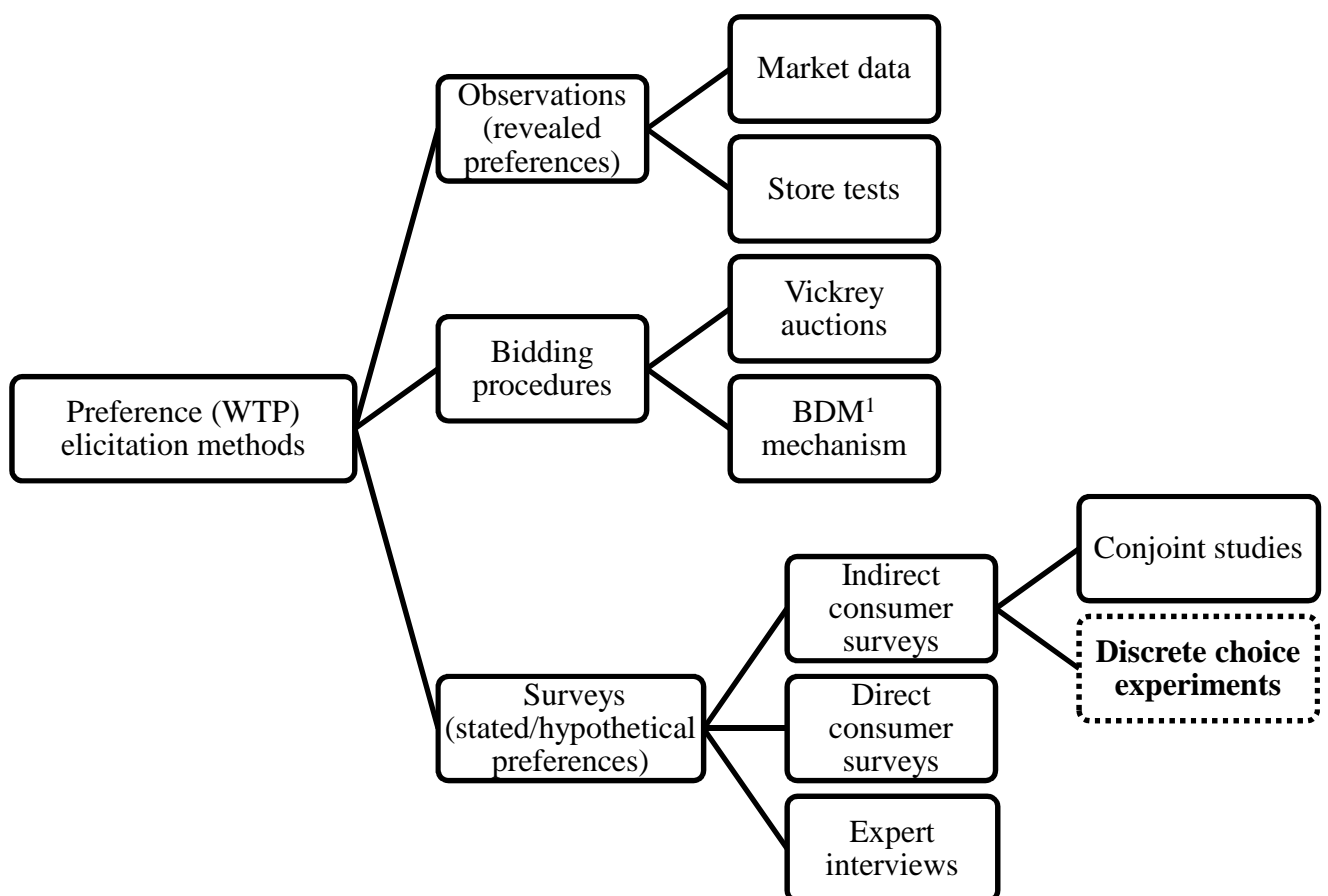


Figure 1: Overview on preference elicitation methods (Breidert et al., 2006; Voelckner, 2006) – adapted; ¹Becker-DeGroot-Marschak

Although revealed preference methods can elicit true preferences and realistic WTP values, they are usually not applied in scientific research, because they are very time-consuming and expensive (Breidert et al., 2006). Stated preference methods, especially those made up of an experiment, are predominantly used to estimate WTP values as close to reality as possible. Apart from time and budget constraints there are a variety of factors that influence the decision for the most appropriate method to deal with the proposed research objective.

Table 3 presents a list of the most important benefits and limitations for the preference elicitation methods illustrated in Figure 1. This list does not claim to be complete, but it summarises the most important aspects that were considered when choosing a method for this study.

Table 3: Benefits and limitations of preference elicitation methods¹

	Benefits	Limitations
Market data	<ul style="list-style-type: none"> • Real purchase data 	<ul style="list-style-type: none"> • Aggregated data • Expensive • Not feasible for new products
Price/store tests	<ul style="list-style-type: none"> • Real purchase behaviour • Test of marketing instruments 	<ul style="list-style-type: none"> • Time-consuming • Expensive • Difficult to control other parameters than price
Bidding procedures	<ul style="list-style-type: none"> • Incentive-compatible 	<ul style="list-style-type: none"> • Overbidding (over-estimation of WTP) → bias (through gambling) • Complex procedure • Unrealistic purchase situation
Conjoint studies	<ul style="list-style-type: none"> • No prior price knowledge of consumers necessary • Decomposition into preferences for attribute levels possible 	<ul style="list-style-type: none"> • Ranking or rating task → no choice is asked for • Assumption that participants are willing to purchase base product • Not incentive-compatible • No real purchase behaviour
Discrete choice experiments	<ul style="list-style-type: none"> • No prior price knowledge of consumers necessary • Decomposition into preferences for attribute levels possible • Test of new/unknown products 	<ul style="list-style-type: none"> • No real purchase behaviour • No WTP for an entire product (only for attributes) • Not incentive-compatible per se
Direct consumer surveys	<ul style="list-style-type: none"> • Time- and cost-efficient • Easy to conduct 	<ul style="list-style-type: none"> • Unnatural focus on price • No incentive to reveal true WTP (low involvement) • No real purchase situation • Limited price knowledge
Expert interviews	<ul style="list-style-type: none"> • Time- and cost-efficient • Easy to conduct 	<ul style="list-style-type: none"> • Based on personal opinions and experiences (low validity) • Only indirect consideration of consumers

¹ according to Breidert et al., 2006 and Voelckner, 2006.

Only real market data and data from store/price tests can elicit realistic WTP values and for this reason are superior to the other preference elicitation methods, which can only give proximate values and estimations. However, real market data are only available on a rather aggregated level and hence do not reveal preferences for individual attributes, and they are very expensive. Likewise, store tests are very expensive as well as time-consuming and make it difficult to control for other parameters than price (Voelckner, 2006). Therefore, these two methods did not come into consideration for this study.

Choice experiments differ from other conjoint studies (e.g. contingent valuation studies), because they ask participants to choose from a set of product alternatives instead of directly evaluating or ranking respectively rating them (Breidert et al., 2006). To participate in choice experiments consumers do not need to have any price knowledge. Since choice experiments do not yield real purchase behaviour, they belong to the so-called stated preference methods. However, compared to other stated preference methods, like any form of direct survey, choice experiments succeed in reducing the hypothetical bias, because consumers have to choose between product alternatives with varying attributes. Due to the complexity of the choice task, consumers' tendency to act in a socially desirable way and to overestimate their WTP can be reduced. Recently, incentive-aligned mechanisms have been more frequently used in choice experiments to introduce economic consequences for participants and hence reduce the overestimation of WTP values (Ding, 2007). In incentive-aligned approaches, consumers are informed that one of their choice decisions in the experiment will be binding and has to be purchased in the end. In addition, no-choice options have more frequently been included into the experimental design to create more realistic choice situations, as no-choice options provide the possibility for participants to decide against any of the product alternatives offered in the experiment.

Choice experiments are an often-used method to determine consumers' preferences and WTP values for alternative food products (Voelckner, 2006). In a literature review about the influence of organic prices on consumer behaviour, Roediger and Hamm (2015) revealed that choice experiments were applied in 43 out of 144 quantitative studies on WTP measurements. Only face-to-face interviews were carried out more often. Miller et al. (2011) compared different preference elicitation methods and found out that consumers in incentive-aligned approaches, i.e. approaches in which consumers are faced with real purchases after the experiment, are more price-sensitive and more frequently choose no-choice options than in

hypothetical approaches without any incentives. Furthermore, they showed that indirect (non-hypothetical) approaches are very useful for extensive decision processes.

Choice experiments appeared to be most suitable in dealing with this study's research objective. As explained in the chapter on the theoretical framework, they help to gain insights into consumers' purchase behaviour and thereby describe the response part of the SOR model. Due to their rootedness in RUT and Lancaster's Theory of Consumer Demand, choice experiments can elicit consumers' preferences for individual product attributes. If price is one of the systematically varied attributes, WTP values can be estimated (Voelckner, 2006). It is assumed that consumers make trade-offs between attributes in order to determine the alternative with the highest value. Thereby, individual attributes are weighted by their contribution to overall utility (Araña and León, 2009). These benefits are accompanied by the disadvantage that choice experiments are not able to give any information about consumers' preferences for the alternatives that are not chosen in the choice task, which could reveal further information on preferences and trade-offs. This issue, however, does not negatively affect the analysis, because the choice experiment reveals sufficient information to deal with this study's research questions.

3.4 Choice experiment

3.4.1 Experimental/choice design

The choice design is predetermined through the identification of relevant attributes and attribute levels according to the study's research objective. To answer the research questions, it was relevant to include the product's origin (local, from Germany, from a neighbouring country, from a non-EU country), the production method (organic vs. non-organic production), and the price (four price levels depending on the product) into the experimental design. The design of a choice experiment depends on the number of attributes (*here*: three; i.e. origin, production method, price) and attribute levels (*here*: four, two, four), the number of choice alternatives (*here*: three plus one "no-choice"-option) and choice tasks (*here*: four for each product) as well as the number of respondents (*here*: 640). The price levels and countries of origin are presented for all four products in Table 4 (Note: The origins 'local' and 'from Germany' are not listed, as they are the same across all products.). The countries of origin were chosen based on a study by Schaack et al. (2011), which deals with the imports of organic food from foreign countries to the German market. The study gives insight into the most important countries of origin for products on the German market, which are relevant for this experiment. Thereby, it could be guaranteed that the experimental set-up reflects reality.

Likewise, price ranges for all four products were determined through price checks in general supermarkets and organic food stores shortly before the realisation of the experiment to get realistic price levels for the choice tasks. Through the identification of minimum and maximum prices, four price levels could be individually calculated for each product.

Table 4: Prices (in €) and countries of origin for different products used in choice experiment

Attribute level	Apples (1kg)	Flour (1kg)	Butter (250g)	Steak (200g)
Price 1	2,49	0,69	1,29	3,49
Price 2	2,99	0,99	1,49	4,49
Price 3	3,49	1,29	1,69	5,49
Price 4	3,99	1,59	1,89	6,49
Neighbouring countries	Austria	Italy	Denmark	France
Non-EU countries	Argentina	Kazakistan	New Zealand	Australia

The combination of these attributes and attribute levels defines the possible choices which consumers face in the experiment. A ‘full’ or ‘complete’ factorial design includes all combinations. In the case of this study, a full factorial design would consist of 32 possible combinations for each product. However, in practical applications a full factorial design contains too many combinations, so that a smaller number of combinations has to be chosen to reduce participants’ burden (Carson and Louviere, 2010).

The experimental design was generated in Ngene, a software used to create stated choice experimental designs. The aim was to set up a design which is as efficient as possible; efficient in terms of greater expected reliability of estimated model parameters. For each of the four products one individual design was generated, because different parameter estimates were expected depending on the type of product. Prior information on the model parameters was collected in a pretest. Based on these β -estimates, d-optimal designs were created for the main experiment.

The probability that a consumer chooses one of the alternatives (product i) in a choice task is the probability P_{i0} (cf. Chapter 2.2.2). The β -estimates are determined by maximizing the log-likelihood function of the probability P based on the experiment’s parameters. Both, β -estimates as well as the respondents’ choice decisions are unknown when the first design is generated. While the asymptotic variance-covariance matrix (i.e. an approximation of the variance-covariance matrix) is independent of respondents’ choices, zero priors are used instead of β -estimates.

Carson and Louviere (2010) recommend using prior information when setting up the experiment's design. Through a pretest, parameter estimates (i.e. non-zero priors) can be generated to create a design, which identifies as many significant and meaningful effects as possible and helps to reduce it to a more efficient design with less non-meaningful effects (Carson and Louviere, 2010). Hence, researchers have to make a compromise between the full factorial design which is usually perfectly orthogonal in all main effects and interactions, and a smaller, but empirically feasible choice design. Efficient designs are usually non-orthogonal, but may produce lower standard errors for a given sample size (Puckett and Rose, 2009). D-optimal designs rely on a certain prior knowledge of the model parameters, which can be achieved by conducting a pretest; the d-optimal criterion is most often used in the construction of choice designs (Johnson et al., 2013). D-optimal designs are characterised through the maximisation of the determinant of the inverse of the variance-covariance matrix; they thereby ensure most efficient designs by maximising the d-score (Hensher et al., 2005).

3.4.2 Data analysis

In its beginnings, choice experiments were mainly analysed applying Binary Logit models and Multinomial Logit (MNL) models, whereas more recently, Random Parameter Logit (RPL) models have gained in importance (Hensher and Greene, 2001). MNL models are used to model relationships between discrete response and independent regressor variables. MNL models imply that the random error terms are independently and identically distributed across the alternatives. RPL models appear to be superior in most choice experiment applications because they can approximate any random utility model and because they allow for preference heterogeneity and correlation among unobservable parameters over time (Alfnes, 2004). In this study, results of RPL instead of MNL models were chosen for interpretation because they yielded better quality indicators for the model fit.

As described in the chapter on random utility theory (Chapter 2.2.2) the (relative) utility evaluated by an individual (n) and associated with each product alternative (i) in a choice situation (t) is represented in a discrete choice model by the following basic equation:

$$U_{nit} = \beta_n X_{nit} + \varepsilon_{nit}.$$

X_{nit} describes the explanatory variables that can be observed by the researcher and generally include attributes of the alternatives and socio-economic characteristics of the respondents. β_n and ε_{nit} are not observable and hence are treated as random influences (Hensher and Greene, 2001). The particular difference of RPL as compared to MNL models is that the unobserved

information, which is an important influence on each choice, can correlate across the alternatives in each choice situation and across all choice situations. In the error components approach, the unobserved information is treated as an individual error component in the random component of the utility function. Thereby, standard deviations of β -parameters are generated to accommodate the preference heterogeneity in the surveyed respondents (Hensher and Greene, 2001).

The box below shows the RPL model specification for the choice experiment conducted in this study.

RPL model – choosing between three product alternatives and a no-buy option:

$$U_1 = \beta_{\text{NPRICE}} * \text{NPRICE} + \beta_{\text{ORGANIC}} * \text{ORGANIC} + \beta_{\text{LOCAL}} * \text{LOCAL} + \beta_{\text{GERMAN}} * \text{GERMAN} + \beta_{\text{NEIGH}} * \text{NEIGH} + \epsilon_1$$

$$U_2 = \beta_{\text{NPRICE}} * \text{NPRICE} + \beta_{\text{ORGANIC}} * \text{ORGANIC} + \beta_{\text{LOCAL}} * \text{LOCAL} + \beta_{\text{GERMAN}} * \text{GERMAN} + \beta_{\text{NEIGH}} * \text{NEIGH} + \epsilon_2$$

$$U_3 = \beta_{\text{NPRICE}} * \text{NPRICE} + \beta_{\text{ORGANIC}} * \text{ORGANIC} + \beta_{\text{LOCAL}} * \text{LOCAL} + \beta_{\text{GERMAN}} * \text{GERMAN} + \beta_{\text{NEIGH}} * \text{NEIGH} + \epsilon_3$$

$$U_{\text{NoBuy}} = \text{ASC}_{\text{NoBuy}} + \epsilon_{\text{NoBuy}}$$

NPRICE: negative price parameter; lognormally distributed

ORGANIC: parameter for organic production (base: non-organic production); normally or non-randomly distributed

LOCAL, GERMAN, NEIGH: origin parameters (base: non-EU country); normally or non-randomly distributed

$\text{ASC}_{\text{NoBuy}}$: Alternative Specific Constant for the no-buy option

WTP values are usually defined as the maximum amount of money that a consumer would pay for a certain product or product attribute. As consumers' true WTP is not directly observable, it is difficult to measure it correctly. There are several approaches that are used to measure consumers' WTP, but they can only be regarded as approximations. The outcome of all different approaches depends on the type of preference elicitation method, e.g. differences between hypothetical and stated preferences (Voelckner, 2006).

For an easier comparison of consumer preferences with regard to the different attribute levels, WTP estimates were calculated for each product attribute (j) in the following way, because it shows the relation between the coefficients of the particular attribute level and the corresponding coefficient of price. Since price coefficients are usually negative, WTP values

have to be multiplied by the factor -1. The WTP estimates were generated using the following approach:

$$WTP_j = - \frac{\beta(\text{product attribute})_j}{\beta(\text{price})_j}$$

Furthermore, the attribute price was modelled using a lognormal distribution, because lognormal distributions guarantee positive WTP estimates. However, the specification of a random parameter with a lognormal distribution in a utility function might converge with very large mean estimates (i.e. unbounded WTP). To overcome this issue, price attributes were entered with a negative sign and reconverted after model estimation (Hensher and Greene, 2002).

3.5 Stepwise research procedure

The main part of this research was a quantitative consumer study combining a survey with a choice experiment. The chronological steps in the research process are presented below (Figure 2).

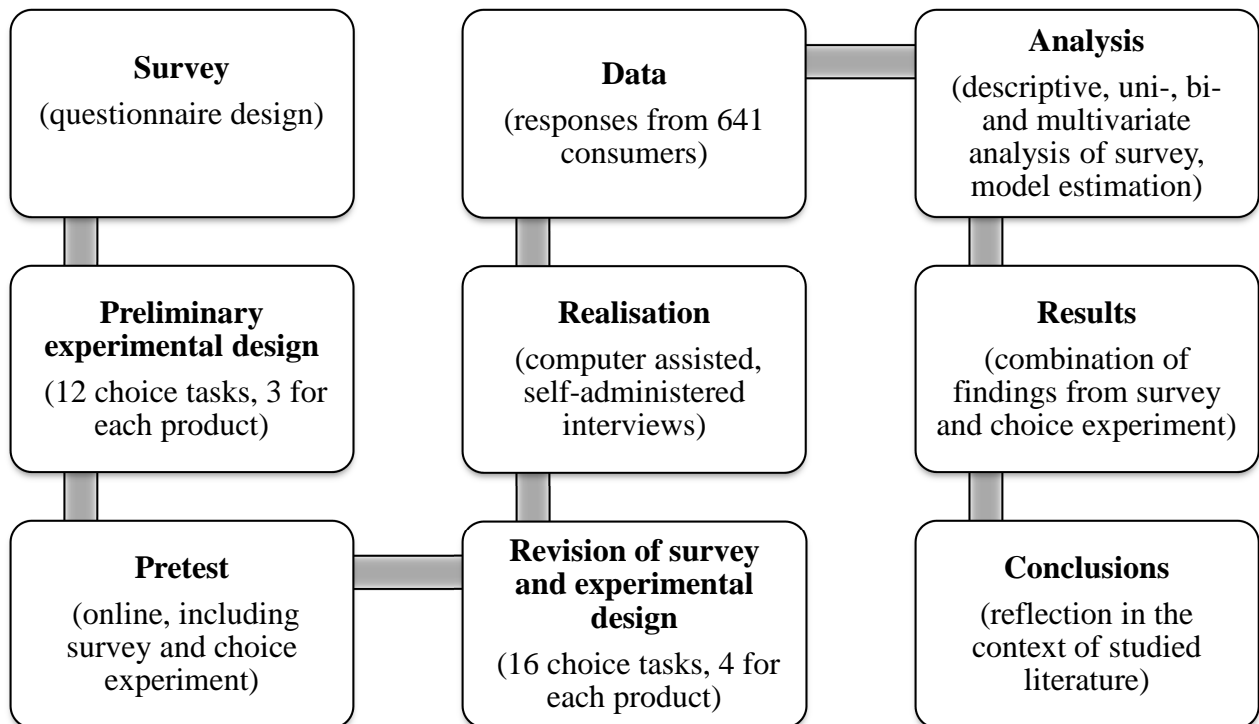


Figure 2: Description of the research process (own illustration)

The choice experiment was embedded in a survey consisting of several questions on consumers' purchase behaviour, consumers' attitudes towards local and organic food as well as questions of consumers' sociodemographic data. The purpose of the survey was to better characterise the respondents, to find reasons for their preferences elicited in the experiment,

and to discover interrelations between survey questions and findings from the experiment to better explain consumers' purchase behaviour. Hence, the survey and the experiment complement each other to draw a consistent picture of consumers' attitudes and preferences towards organic food and food from different origins. More information on the design of the questionnaire and the experiment are presented in the following two chapters.

After the development of the survey and the experiment, a pretest was conducted to reveal mistakes and inconsistencies in the survey and to find questions as well as response options that were difficult to understand for the participants. Furthermore, the pretest was used to determine parameters for the final experimental choice design. Through the use of more realistic parameters the efficiency of the design could be improved. Following the pretest, the survey questions and the experimental design were revised and improved, and the survey was newly programmed. The survey was carried out in November 2013; data from 641 respondents were collected. The set of total responses was cleaned to ensure the quality of the subsequent data analysis. Reasons for excluding data sets were inconsistent or inadequate responses, large numbers of non-responses, and respondents who finished their surveys in a relatively very short time. Three data sets were excluded from the set of survey responses due to the above-mentioned reasons and additional seven data sets were excluded due to inadequate responses in the choice experiments (cf. Chapter 4.3.7).

The final dataset, including 638 responses, was analysed using uni- and multivariate approaches, ranging from descriptive analysis of sociodemographic data over significance tests (e.g. t-tests and Chi-square tests) to crosstabulations. The data from the choice experiment, yielding 631 usable responses, were examined through MNL and RPL model estimations. Results of both analytical steps can be combined to compare the attitudes and the WTP estimates of consumer groups that differ in certain sociodemographic characteristics or to validate whether stated attitudes correspond to consumers' preferences derived from the choice experiment. Thereby, for example, attitude-behaviour gaps could be identified. Further conclusions were drawn from the results and finally compared to findings from other research studies. In addition, findings and conclusions could be related to the varying methodological approaches applied in different studies to find reasons for similarities and discrepancies.

4 Results

4.1 Consumers' perceptions and preferences for local food: A review

This chapter represents an article published by the author of this dissertation and Prof. Dr. Ulrich Hamm as a co-author. Any reference to this chapter should be cited as:

Feldmann, C. & Hamm, U. (2015), Consumers' perceptions and preferences for local food: A review. *Food Quality and Preference* 40 (2015), 152–164.

4.1.1 Abstract

This article reviews the scientific literature on local food from the consumer's perspective and analyses findings through the application of the Alphabet Theory – a newly developed theoretical framework for consumer behavior towards alternative food choices. As consumers' interest in local food has steadily increased in the past fifteen years, so has the number of research studies on consumers' attitudes and purchase behavior with regard to local food.

A literature search was carried out on three online catalogues using the search terms 'local', 'regional', 'food', and 'consumer'. Only articles published in English and from January 2000 until January 2014 were taken into account. In all, the literature search returned 550 scientific articles. This paper provides an overview of 73 relevant publications, summarizes the main results, and identifies research gaps in the context of the Alphabet Theory.

One major result was that, unlike organic food, local food is not perceived as expensive. Nevertheless, consumers are willing to pay a premium for local food. In mostly quantitative studies, consumer characteristics, attitudes, and purchase behaviors with regard to local food were assessed. Research gaps were identified in various areas: cross-national (cultural) comparisons, influence of different types of products (fresh vs. non-perishable, processed vs. non-processed, or plant vs. animal products), origin of foodstuffs used to produce local food as well as the influence of personal and social norms on the formation of attitudes towards local food. This contribution appears to be the first review of scientific articles from the field of local food consumption to present an overview on international research and to identify research gaps.

Keywords:

Literature review; local food; attitudes; willingness to pay; attitude-behavior gap; Alphabet Theory

4.1.2 Introduction

Consumers question food production practices and demand greater transparency in the supply chain because the distances between place of production and place of consumption have grown larger and become increasingly nontransparent (La Trobe & Acott, 2000). Many consumers have reoriented themselves towards local food, i.e. food that has travelled only short distances or towards food that is marketed directly by the producer (Watts et al., 2005; Holloway et al., 2007).

At the outset, the development of local food did not increase due to a growing demand by consumers, but rather because of government attempts to strengthen their local economies. Brown & Miller (2008) state that the primarily supply-led increase in local food marketing has been recognized and adopted by consumers as an option for the consumption of alternatively produced food. Especially in the USA, state governments introduced programs to support small-scale local farmers and the marketing of state-grown products. In addition, the implementation of farmers' markets was promoted to establish producer-consumer relationships and to raise consumers' awareness of food origin. While the development of local farmers' markets in the USA peaked in the 1990's, in Europe, this development took place approximately one decade later (Vecchio, 2009). In Europe, the reason behind the reintroduction of the farmers' markets was not the promotion of local commodities, but rather the demand for traditional foods and the manifest consumer interest in the various food quality attributes associated with local food (Vecchio, 2009).

In the USA and Europe alike, the globalization of food production and supply chains, the concentration of processes in food production and a number of food scandals have led to consumer demand for greater transparency and information on food origin. The increasing number of concerned consumers resulted in the development of more and more alternative food networks, e.g., Slowfood, Locavores, community supported agriculture (CSA), among others (Jones et al., 2004). In parallel, some supermarket chains in the USA and Europe have begun to market local foods to meet consumer demands.

Research has been carried out to address the increasing consumer demand for locally produced food and to understand their attitudes and purchase decisions (Ilbery et al., 2005; Holloway et al., 2007). Over the past decade, the number of scientific journal articles on this topic has grown steadily, reflecting the relevance of this field of research (Watts et al., 2005). In particular, the identification of preferences and underlying food values is very important as it can help to improve food marketing, communication, and policy making. Numerous

scientific studies have been published on the concept of local food, consumer perceptions and their WTP for local food.

Consumers' reasons for choosing local products and their attitudes towards locally produced food are manifold. While some consumers criticize the increasing quantity of imports in the national food market and regard local food as a more environmentally and climate friendly alternative, other consumers view local food from a rather hedonistic viewpoint as fresher, safer and healthier than imported products. Since there is not one single, uniform definition of the term 'local' and no governmental regulation, consumers and producers have very different perceptions of what the description 'local food' implies. Depending on the interest of individual consumers, the seeking out of information and consumer knowledge of local food influences their attitudes and translates into purchase behavior. Likewise, demographics, contextual factors, and habits interact with consumers' food purchase behavior (cf. Zepeda & Deal, 2009).

We carried out a literature review to generate an overview of the most important and recurrent results and to reveal trends in local food research. To achieve a holistic picture of local food purchase behavior and consumers' attitudes, we adopted the Alphabet Theory from Zepeda & Deal (2009). In this way, we organized the key findings to identify the main factors and relations that influenced local food purchases. Furthermore, we aimed to reveal those areas of interest that have not been well documented yet.

This work is structured as follows: the next chapter addresses the theoretical model on which this contribution is based. The subsequent chapter gives details on the methodological approach used for the literature search, followed by an overview of the studies included in the review. The results section is divided into six parts following the main components of the Alphabet Theory. The first part deals with the varying definitions of 'local' in the context of food. The second part addresses the influence of demographics on attitude formation towards local food. The third part covers both information seeking and knowledge, as they are closely related in their influence on attitudes. The fourth component of the Alphabet Theory is context, which relates to attitudes as well as behavior. The fifth part is about attitudes, which are discussed with reference to the Value-Belief-Norm (VBN) Theory; VBN Theory is built on a causal link between values, beliefs, and norms. The last part then deals with actual consumer behavior resulting from all the components mentioned above. This review closes with conclusions drawn from the findings of these studies and the application of the

theoretical framework. Recommendations for further research are presented. Tables including all studies that are part of this review are shown in the annex (see Tables 5-7).

4.1.3 Theoretical model: Alphabet Theory

Alphabet Theory was chosen as a framework for this review because it includes elements and interactions which have been found to be essential in describing local food consumption. The interactions between the different elements of the Alphabet Theory reveal especially interesting insights which might otherwise have remained undiscovered. The theoretical model combined with the key findings from the literature review help to draw a consistent and detailed picture of local food consumption and its formation as well as the gap between consumers' attitudes and their purchase behavior.

Alphabet Theory combines the VBN Theory (Stern et al., 1999) and the ABC Theory (Guagnano et al., 1995) (Figure 3). Zepeda & Deal (2009) merged them and added knowledge (K), information seeking (IS), habit (H), and demographic data (D) in order to better understand consumer choices.

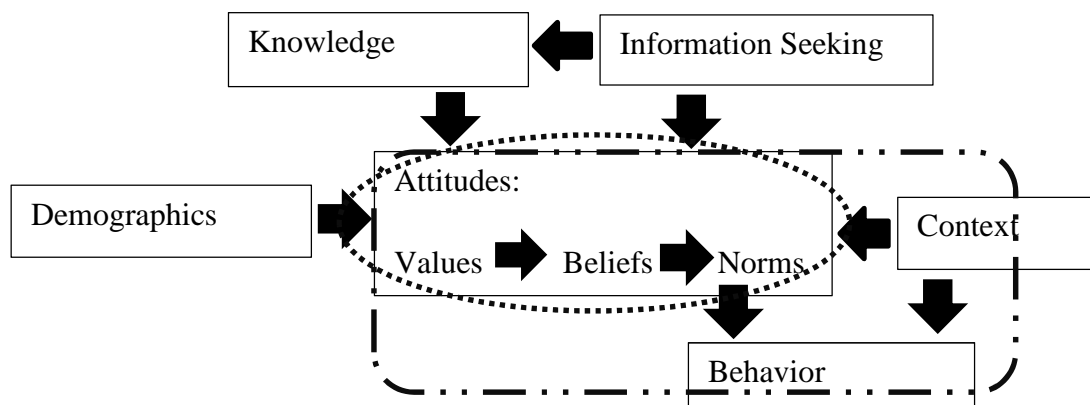


Figure 3: Alphabet Theory from Zepeda and Deal (2009), adapted
(..... VBN Theory, — · — ABC Theory)

Zepeda & Deal (2009) successfully applied the Alphabet Theory to determine consumer motivations for purchasing organic and local food and concluded that the combination of VBN Theory and ABC Theory is very valuable in predicting consumers' food purchasing behavior. They also found that the additional elements increased the predictive power of the theoretical model as they interact with the formation of attitudes and thus, directly and indirectly, influence behavior. The relations and interactions among all factors in the Alphabet Theory are presented in Figure 3. The interactions between the elements of the theoretical framework make the difference in the explanation of food purchase behavior as compared to

other models, since interactions influence the formation of behavior differently than individual elements.

Stern et al. (1999) developed the well-known VBN Theory that includes altruistic considerations as measures of predicting pro-environmental behavior. VBN Theory is based on three other theories which are all used for the prediction of environmentally significant behavior: Value Theory (Schwartz, 1994), the New Ecological Paradigm (Dunlap & Van Liere, 1978), and Norm-Activation Theory (Schwartz, 1977). The linkage of these theories results in a causal chain of five variables that help to explain behavior: personal values (PV), the New Ecological Paradigm (NEP), awareness of adverse consequences (AC), ascription of responsibility to self (AR), and personal norms (PN). VBN Theory can be used to explain how attitudes are formulated.

The ABC Theory (Guagnano et al., 1995) is based on a standard means-end approach, i.e. consumers act according to the functional and psychological gain that they expect from a given behavior (Eide & Toft, 2013). Hence, ABC Theory provides a framework for describing how attitudes can result in behavior (Zepeda & Deal, 2009). The main reason, why the use of this theoretical model as part of this reviews' theoretical framework is valuable, is the factor 'context'. This factor refers to external influences on food purchases, such as availability, personal relationships, and societal trends. These influences can be negative as well as positive.

Drawing on recent literature dealing with consumer behavior models, a direct relation between attitudes and behavior as well as between context and behavior was included (Moraes et al., 2012). The initial Alphabet Theory had to be adapted, in that habits were placed neither between attitudes and behavior, nor between context and behavior. The term 'habit' suggests something that a person does regularly or repeatedly, but does not apply to all food purchase situations. Hence, habits do not necessarily have to mediate between context and behavior. Through this adaptation, attitudes as well as context, can directly translate into behavior. Habits as one additional element of the original Alphabet Theory are not covered in this literature review and hence neither included in the visual presentation (Figure 1) nor in the application of the theory in the results section, because the influence of habits on local food consumption was not sufficiently explained by results of studies in this context.

Information seeking does not only influence knowledge and attitudes, but attitudes also have an impact on information seeking, e.g. dedicated organic food shoppers look for more

information on food products' quality. Consumers actively searching for additional information might develop stronger attitudes, which in turn facilitate behavior and possibly create habits. In the same context, conventional food buyers probably do not search for information on organic food and do not develop the same attitudes and behavior as organic food buyers (Zepeda & Deal, 2009). Knowledge, as a result of information seeking, also influences attitudes and thereby supports or prevents further information seeking.

Context (e.g. upbringing/childhood) acts as a mediator between attitudes and behavior, and can reinforce the formation of both, attitudes and behavior. Zepeda & Deal (2009) show that the point of time, when people learn to cook and shop for themselves, describes a contextual factor that mediates between attitudes and behavior related to food purchases. Moreover, context comprises barriers to food purchases, such as availability, price, complexity, and inconvenience (Sirieix et al., 2008). Stern (2000) established that contextual factors might have a stronger influence on the formation of behavior than attitudes. Additionally, behavior might also reinforce habits, e.g. local food purchases might create the habit of regularly visiting farmers' markets.

Through the negative or positive influence that contextual factors exert on attitudes, they also indirectly affect information seeking and knowledge, and hence might reinforce or weaken the development of attitudes. Similarly, demographic factors can influence information seeking and knowledge indirectly through attitudes, but they can also have a direct linkage to information seeking and knowledge as well as to contextual factors.

4.1.4 Methodology

We carried out an online literature search to identify all of the articles that appeared relevant to consumer perceptions and preferences for local food. We systematically reviewed the articles published from January 2000 up to January 2014, applying a two-step approach. First, we searched for scientific publications in online catalogues; then we supplemented the list by studying the reference lists of all of the previously identified articles. In the first step, we used three online catalogues (i.e. Science Direct, AgEcon Search, and Web of Science), which offer peer-reviewed, scientific articles from the field of interest. In each catalogue, we searched using the same keywords. To avoid an overflow of unsuitable articles, three key words, 'local' ('regional'), 'food', and 'consumer', had to appear in the abstract and/or the title of the respective publication.

In our search for internationally relevant local food research, we only chose peer-reviewed articles published in English and in scientific journals or that were contributions to scientific conferences. Further publications were identified from the reference lists; these papers also had to be published in scientific journals or had to be contributions to scientific conferences. Contributions to scientific conferences were only used, when they appeared in the online catalogue AgEcon.

The search in the above-mentioned catalogues yielded 550 articles, including double counts. We scanned all resulting articles and assessed them individually to determine their relevance for this literature review. For our review, it was necessary that the core of the article dealt with food origin and the consumer preferences and attitudes therewith. Hence, only publications that identified determinants of local food consumption and those that compared consumer preferences for local food with non-local food or other alternatively produced food products were considered. Furthermore, we excluded similar publications from the same groups of authors. In the end, 73 studies in our literature review were analyzed in detail. We allocated the key findings according to the elements of the theoretical framework to obtain an overview of the selected publications and to evaluate the performance of the Alphabet Theory in this context. This approach allowed us to highlight the interactions and linkages between the components of the Alphabet Theory and thereby obtain insights into the influences on local food purchase behavior and their performance.

Content analysis was used to examine the articles. Neuendorf (2002) defined content analysis as a “systematic, objective, and quantitative analysis of message characteristics”. Content analysis is a systematic, scientific method, which, however, is not limited to the types of variables that are to be measured. Furthermore, content analysis does not aim at analyzing messages in detail, but rather summarizes relevant content. To carry out this study, the content of each of the 73 articles was scanned and information regarding the research objective, methodology, sampling, and the key findings with regard to local food consumption were extracted. In addition, information on some characteristics of these studies, i.e. particular product, demographic characteristics, survey region/country of interest, were recorded, if applicable.

This approach allowed us to present a holistic picture of research in this field of study while adding to our knowledge of local food from the consumer’s perspective.

4.1.5 Overview of the selected studies

The number of publications per year which deal with local food from the consumer's perspective has been growing steadily since 2000. Fewer than five publications per year came out between 2000 and 2007 while 12 publications were found in 2013 (Figure 4).

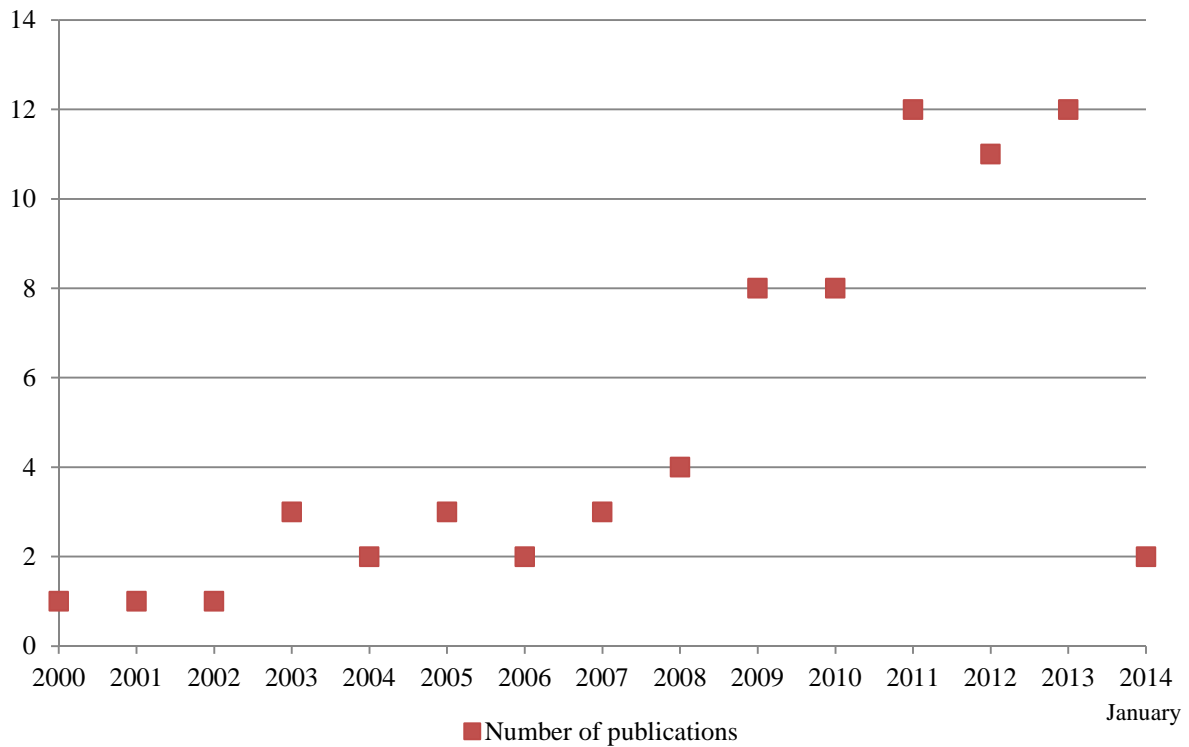


Figure 4: Number of publications from January 2000 to January 2014

Most research on local food was carried out in the USA, where 36 of the 73 articles were produced. The remaining articles were mainly written in Europe, most of them in the UK, Germany, or Italy. The distribution of articles is most likely biased due to the review's focus on English publications (Figure 5).

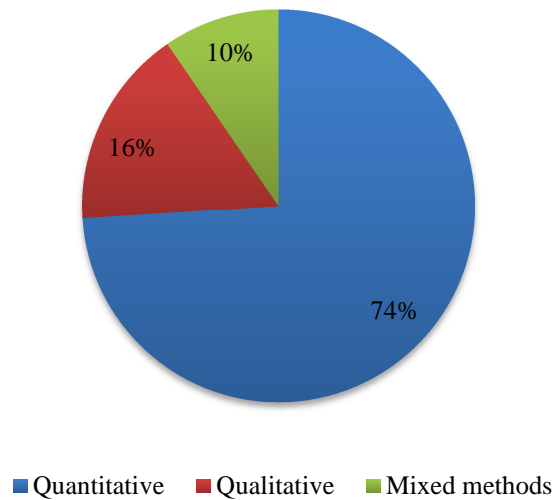


Figure 5: Percentages of different types of methodology in publication

If we look at the articles in chronological order, we can see that between 2000 and 2004, most of the research was carried out in the USA and the UK. The initial articles utilized qualitative or mixed research approaches, whereas later publications almost solely address quantitative studies. Because the qualitative and mixed methods studies are of a rather exploratory nature, they mainly focus on consumer preferences and local food in general. In 39 out of the 73 articles, no specific product was studied. The quantitative studies were more frequently based on specific products, such as apples, meat, or milk, to name the most important ones. Occasionally, researchers also focused on processed products (e.g., applesauce, preserves) or on multiple products to draw comparisons. Concerning the sample sizes, the number of respondents participating in the studies with mixed method approaches varied strongly, from 146 to 1218, because the sample size depends on the combination and type of methods applied. The number of respondents in qualitative studies did not exceed 100. The smallest sample was 23 respondents in a study comprising in-depth interviews. The sample sizes in the quantitative studies varied widely, ranging from only 47 to up to 9865 respondents.

In qualitative studies, in-depth interviews and focus group discussions were mainly used to explore local food purchase behavior and consumers' attitudes. The prevailing methods applied in quantitative studies were conjoint analyses, choice experiments, and auctions, because they are suited to estimating willingness-to-pay values. Results from these types of experiments are expected to better reproduce real purchase behavior, nevertheless they only produce 'stated' preferences as opposed to 'revealed' preferences. Experiments reflect real purchase situations better than direct questioning, but the results still have to be considered hypothetical, as they do not concern real transactions and consumers know that they are

participating in research. Results summarized in the chapter on behavior have to be taken into account in this context.

4.1.6 Results

4.1.6.1 Definitions of “local”

Many studies on local food have based their research on the issue of defining the term ‘local’. Due to the lack of an official definition and regulation through standardized labels, not only is it difficult for consumers to identify local products, but there is also no guarantee that products labelled as local also fulfil consumers’ expectations. The absence of one universal definition of ‘local’ makes it all but impossible to create a standardized label for local food. The definitions, explored in the articles reviewed, ranged from distances (i.e. miles or kilometers), political boundaries, and specialty criteria, to more holistic approaches that also included emotional and/or ethical dimensions such as personal relations with or within the region.

The most frequently found definition of local food referred to distances (i.e. miles or kilometers). The specifications ranged from 10 to 30 miles up to 100 miles (Chambers et al., 2007; Hu et al., 2010; Khan & Prior, 2010; Adams & Adams, 2011; Waegeli & Hamm, 2013) or were expressed in driving hours (Zepeda & Leviten-Reid, 2004; Khan & Prior, 2010). No relation between the country of origin and accepted travelling distance of local food could be found. There are further influences, which determined the accepted travelling distances, i.e. place of residence, time of residence in a place, type of product, and respective season (Martinez & Patterson, 2004; Waegeli & Hamm, 2013). Hence, the accepted travelling distances of local food appear to be affected by context. Likewise, definitions of local food based on emotional and social relations to the origin of food products are influenced by contextual factors. These definitions refer to products that were specified as homegrown as well as food produced by friends, relatives, or neighbors (Brown, 2003; Zepeda & Leviten-Reid, 2004; Selfa & Qazi, 2005; Waegeli & Hamm, 2013). Furthermore, political boundaries (e.g. states, provinces, countries) were also used to define the origin of local food products (Zepeda & Leviten-Reid, 2004; Selfa & Qazi, 2005; Waegeli & Hamm, 2013) and, moreover, definitions of local food were based on specialty criteria or brand names associated with a region (e.g. Parma ham) (Wilkins et al., 2000; Wawrzyniak et al., 2005). Geographical indications label local food with specialty criteria and are often mentioned in the context of local food and food related to localities. This review did not cover geographical indications of origin because they are clearly defined by the European Union and apply to certain region-

specific foods which are sold over larger distances as well. Hence, food carrying geographical indications is produced in a specified way that is officially regulated and checked, and therefore different from local food in general.

4.1.6.2 Demographics

In most studies on consumers' attitudes and purchasing behavior, the influence of demographic characteristics was used to better explain results and to identify the influence of personal characteristics on attitudes and behavior, although it was not necessarily the main focus of these studies. While some of the reviewed studies did not show any relation between demographics and attitudes (Zepeda & Li, 2006; Åsebø et al., 2007), others revealed significant influences through demographic variables. Most of them drew quite a consistent picture of older, wealthier people, living in rural areas, who held more supportive attitudes towards local food (Brown, 2003; Carpio & Isengildina-Massa, 2009; Khan & Prior, 2010; Megicks et al., 2012; Stanton et al., 2012; Miroso & Lawson, 2012; Cholette et al., 2013; Racine et al., 2013). Henseleit et al. (2007) explained that the preference of older people for local products was due to their deeper roots in their home region and was a reaction to the preference of younger consumers for processed convenience food. In a study by Pugliese et al. (2013), however, younger Lebanese consumers had a more positive attitude towards local food, as they were more socially and politically aware of their food choices. Others also identified a significant gender influence on the likelihood of purchasing local food, as women were more likely to purchase local food than men (Cholette et al., 2013; Loureiro and Umberger, 2003; Pelletier et al., 2013; Bellows et al., 2010). Illichmann and Abdulai (2013), however, found that men had a higher willingness-to-pay for local and organic food than women did. Concerning the influence of consumers' places of residence, Chambers et al. (2007) could not identify any differences in attitudes between urban and rural consumers.

4.1.6.3 Information seeking/knowledge

Zepeda and Deal (2009) illustrated that information seeking and knowledge had a strong influence on the formation of attitudes. Increased and deepening knowledge on food production reinforced already existing values, which then influenced beliefs and norms, which in turn supported sustainable (in this case, local) food purchase behavior. Usually, consumers who were in favor of alternative production methods (i.e. product methods which contain added value to consumers), as opposed to conventional practices, sought more information than conventional consumers did. Hence, the committed consumers reinforced their attitudes and increasingly developed alternative purchase behavior (Zepeda and Deal,

2009). In a study on the perception of sustainable food labels, Sirieix et al. (2013) also emphasized the importance of information and knowledge as a necessity in the development of attitudes and to the performance of correspondent behavior, i.e. consumers need to know about the advantages of local food production and believe in its relevance before they develop an intention to purchase it.

Likewise, several studies on local food examined the influence of information and knowledge on consumers' attitudes and purchasing behavior. The results of the studies by Brown (2003), Robinson-O'Brien et al. (2009) and Miroso & Lawson (2012) showed that respondents who held positive attitudes towards one of the alternative food production practices, i.e., locally grown, organic, non-genetically engineered, or non-processed, were also more likely in favor of the other production practices. This relation built on consumers' knowledge of food production practices' environmental impact, which had increased their awareness of the different alternatives. Moreover, Grebitus et al. (2011) indicated that consumers who were more knowledgeable about meat products rather used products' origin information in a purchase situation.

Stolzenbach et al. (2013) evaluated the impact of product information and repeated exposure on the attitude towards local apple juices in Denmark. The results showed that consumers perceived local apple juices as significantly more exclusive when they were informed about the products' characteristics. This finding underlined the influence of knowledge on the formation of attitudes. Attitudes, however, did not necessarily translate into behavior. Kemp et al. (2010), for example, showed in a revealed preference survey in the UK that information on a product's origin influenced the choice of very few consumers, even though the stated preference survey indicated a greater interest in products' country-of-origin information. Hence, the additional information influenced consumers' attitudes, but did not translate into behavior. Zander & Hamm (2010) presented a difference in the importance of the 'local production' attribute that was gained through direct inquiry and through the observation of information seeking behavior with an Information-Display-Matrix (IDM). While, in the IDM, 'local production' was the second most important attribute, this attribute received much less importance in the stated preference survey (Zander & Hamm, 2010). These results gave further evidence of the existence of an attitude-behavior gap, as consumers did not behave the way they suggested they would. The formation of attitudes and their transformation into behavior will be returned to in the chapter on attitudes.

4.1.6.4 Context

The role of context in the Alphabet Theory is accommodated through the incorporation of the ABC model, in which the role of context is defined as constraints or incentives. Thus, context serves as a mediator between consumers' attitudes and behavior, but can also reinforce attitude and behavior (Sirieix et al., 2013). If context is neutral or facilitating (e.g. local food is easy to identify and available), attitudes are more in line with behavior. On the one hand, attitudes outperform contextual factors whenever they are very strong (e.g. if consumers are very committed to local food, moderately higher prices will not stop them from buying it). On the other hand, contextual factors might outperform attitudes, if they are strongly negative or extremely positive (Guagnano et al., 1995). If, for example, local food is not available anywhere close to one's home, consumers will not buy it, even if they actually have very positive attitudes towards local food. Zepeda & Deal (2009) revealed that consumers viewed contextual factors (e.g. price and availability) as very important influences on their actual purchase behavior.

The contextual factors most frequently mentioned in studies on local food were availability, convenience, price, seasonal variety, and the influence of specific product types associated with local food. As described in the paragraph above, these contextual factors act as mediators between attitudes and behavior. Depending on their influence, they can affect the interaction between attitudes and behavior in a positive or a negative way. La Trobe (2001), Zepeda & Leviten-Reid (2004) and Conner et al. (2010) identified a lack of availability as one major purchase barrier, which consequently has a negative impact on local food consumption. This also included problems with the identification of local food that also hindered consumers from buying local products. In addition, Zepeda & Leviten-Reid (2004) identified inconvenience (i.e. time needed) as a factor that kept consumers from purchasing local food. Unlike other alternatively produced foods, local food was not perceived as being more expensive per se (Brown, 2003; Weatherell et al., 2003; Conner et al., 2010; Sirieix et al., 2011). This leads to more positive attitudes towards local food as compared to, for example, organically produced food. Nevertheless, consumers state that they are willing to pay premiums for products which have a clear indication of their local origin. In China, the price was the main benefit associated with non-organic, local products, because the high prices of organic products were shown to inhibit buying (Sirieix et al., 2011). In a study by Zepeda & Leviten-Reid (2004) the majority of participants, however, assumed that local food was more expensive in the USA.

Several studies identified specific product groups (e.g. vegetables and fruits, meat, dairy products, eggs, etc.) that consumers especially perceived as being locally grown or appreciated more when they were locally grown (Wilkins et al., 2000; Zepeda & Leviten-Reid, 2004; Chambers et al., 2007; Grebitus et al., 2013). Hence, products that were known to have been locally grown during the season positively mediated the interaction between attitudes and local food consumption. So far, very few studies have taken more than one product into account, but all of those that did, have found product-specific differences (Nganje et al., 2011; Roosen et al., 2012; Grebitus et al., 2013; Illichmann and Abdulai, 2013). These findings indicated that the preference and willingness-to-pay for locally produced food did not hold equal for all products. Likewise, in a US contingent valuation study, Carpio & Isengildina-Massa (2009) found that the mean willingness-to-pay for local plant products was slightly higher than the willingness-to-pay for local animal products as opposed to non-local alternatives. Furthermore, respondents appeared to be more sensitive to price changes in local plant products than to changes in prices for local animal products. Not only specific types of products influenced consumers' purchase behavior, but also the respective season had an influence on the perception of local food, as choice and variety change throughout the year (Chambers et al., 2007; Naspetti & Bodini, 2008; Brown et al., 2009; Bingen et al., 2011; Pearson et al., 2011; Waegeli & Hamm, 2013).

Moreover, the marginal willingness-to-pay for local food, measured against products without any clear indication of their origin (i.e. non-local products) as baselines, decreased with an increasing purchase volume. Tempesta & Vecchiato (2013) found a relationship between the amount of milk consumed and the willingness-to-pay in Italy; the smaller the quantity purchased, the higher the willingness-to-pay for the product. Hence, they suggested that the changes in the quantity consumed need to be taken into account when determining the willingness-to-pay for a premium product, e.g., local products.

4.1.6.5 Attitudes

VBN Theory is a prominent framework applied to predict the formation of attitudes, which are determined through values, beliefs, and norms. Values, beliefs, and norms shape consumers' attitudes towards certain types of food and motivate consumers to buy or not to buy them. The results of a study by Dentoni et al. (2009), for example, revealed that respondents' beliefs on the local origin of an apple and their familiarity with apples had a positive and significant impact on their attitudes towards apples. Attitudes, as well as their formation and interaction, were examined in many studies on local food. The most frequently

named attitudes that result in local food purchases were related to product quality (i.e. freshness and taste), consumers' personal health, food safety, care for the environment, and support of the local economy.

Better quality and taste were mentioned most often (Weatherell et al., 2003; Bond et al., 2008; Naspetti & Bodini, 2008; Yue & Tong, 2009; Zepeda & Deal, 2009; Conner et al., 2010; Onozaka & Mc Fadden, 2011; Adams & Adams, 2011; Bingen et al., 2011; Dunne et al., 2011; Cranfield et al., 2012; Campbell et al., 2013; Grebitus et al., 2013). The expected or perceived superior quality was frequently linked to freshness, healthiness, and wholesomeness (Loureiro & Hine, 2002; Wawrzyniak et al., 2005; Naspetti & Bodini, 2008; Onozaka & McFadden, 2011). Consumers also expressed greater trust in local food products, as local food was perceived as safer and easier to trace back (Burchardi et al., 2005; Darby et al., 2008; Yue & Tong, 2009; Nganje et al., 2011).

More altruistic attitudes towards local food dealt with support of the local economy and community through social relationships and/or close proximity (Burchardi et al., 2005; Roininen et al., 2006; Yue & Tong, 2009; Bean & Shar, 2011; Dunne et al., 2011), environmental friendliness of the production process and transportation (Burchardi et al., 2005; Brown et al., 2009; Yue & Tong, 2009), animal welfare (Zepeda & Deal, 2009; Onozaka & McFadden, 2011), and better conditions for farm workers (Zepeda & Deal, 2009). In China, altruistic motives for the purchase of local food products, i.e., support of local producers and environmental awareness, were only just emerging (Sirieix et al., 2011). Nevertheless, results of three research studies demonstrated that consumers did not generally prefer more small-scale definitions (Darby et al., 2008; Conner et al., 2010; Lim & Hu, 2012); this finding could also be explained by the influence of contextual factors on the formation of attitudes. Adams & Salois (2010) explored the parallel development of the organic and local food sector against the background of food products acting as substitutes or complements and found an increasing interest in and more favorable attitudes towards local food. While they could identify studies that identified the satisfaction of similar needs through the consumption of local and organic food, they also emphasized the industrialization of organic food production and developments towards 'organic lite', which unsettled alternative food consumers (Adams & Salois, 2010).

Berlin et al. (2009) found that consumers blended the concept of local food with other alternative food concepts, associating similar attitudes. In addition, Miroso & Lawson (2012) discovered that local food buyers highly valued family time and activities and put more effort

into shopping. Bellows et al. (2010), Cranfield et al. (2012) and Zepeda & Nie (2012) revealed that greater involvement with food preparation is a significant predictor of local food purchases, and Zepeda & Li (2006) showed that the enjoyment of cooking is another factor positively influencing consumers' choices for local food. Likewise, Megicks et al. (2012) emphasized the link between the act of shopping and the satisfaction of that experience as a strong motivation to buy local food. Families, who reported that their children ate more than five servings of fruits and vegetables a day in the USA, bought local produce more frequently (Racine et al., 2013). Pelletier et al. (2013) examined the attitudes of Minnesota students towards alternative food systems and found that vegetarians indicated a higher importance for these alternative production systems.

4.1.6.6 Behavior

All components of the Alphabet Theory, explained above, eventually determine local food purchase behavior. As many studies on consumer behavior regarding alternative food products have shown, attitudes do not always translate into behavior. To analyze consumers' purchase behavior and their preferences for certain product attributes, a large number of studies applies methods to elicit consumers' willingness-to-pay for varying products or product attributes. These willingness-to-pay values help understand consumers' choices, but also reveal gaps between their stated behavior according to their own perceptions (i.e. their intentions to purchase local food) and their behavior in real purchase situations.

Looking at the results of numerous studies on consumers' stated preferences and willingness-to-pay values, it was difficult, if not impossible, to infer consumers' actual behavior. Although most of the quantitative studies included some kind of experiment to draw conclusions on consumers' purchase behavior, the results were not necessarily 'revealed' preferences, because consumers were aware of the artificial choice situations. Nevertheless, the results indicated purchase intentions which are very close antecedents of purchase behavior. Willingness-to-pay values were most likely biased and overestimated because consumers often state that they would pay higher prices for certain product attributes than they actually do in real purchase situations. However, trends for the appreciation of local food as opposed to non-local or other alternative food products can be elicited from the results of preference and willingness-to-pay studies. The types of experiments identified in the present literature review include conjoint analyses, contingent valuations, choice experiments, auctions, and an Information-Display-Matrix. Willingness-to-pay values are not predominantly used to show real numbers for the price premiums that consumers are willing

to pay; indeed, they are more often used to compare different consumer segments, to assess consumer evaluations of different product groups and product characteristics and to predict general trends.

In almost all studies higher willingness-to-pay values were found for local food products as opposed to products with other characteristics and to products from further distances or without any clear indication of origin, except for the studies from Bond et al. (2008), Onken et al. (2011), Wirth et al. (2011), Lim & Hu (2012), and Stanton et al. (2012). In a study by Lim & Hu (2012), there was no significant difference between the preferences for locally produced beef and beef produced within 160 km. Costanigro et al. (2014) found higher willingness-to-pay values for organic apples as compared to locally grown apples. These varying results depended to a certain degree on the focus of each study and reflected the number and types of attribute levels applied in each research setting. There were numerous studies, comparing willingness-to-pay values of origin attributes that were either defined through different distances or through different scales of political boundaries (Darby et al., 2008; James et al., 2009; Nganje et al., 2011; Onken et al., 2011; Wirth et al., 2011; Gracia et al., 2012; Hersleth et al., 2012; Hu et al., 2012; Lim & Hu, 2012; Stanton et al., 2012; Zanolini et al., 2013; Grebitus et al., 2013; Illichmann & Abdulai, 2013; Denver & Jensen, 2014). A number of other studies compared willingness-to-pay values for local food products with other alternatively produced foods (Bond et al., 2008; Yue & Tong, 2009; Bernabéu et al., 2010; Costanigro et al., 2011; Roosen et al., 2012; Menapace & Raffaelli, 2013; Costanigro et al., 2014; Gracia et al., 2014).

With regard to the frequently discussed attitude-behavior gap, results from focus group discussions in the UK demonstrated that although the interest of consumers in local food was quite high, the proportion of local foods purchased on a regular basis was very low (Chambers et al., 2007). Likewise, in a focus group study by Zepeda & Leviten-Reid (2004), US consumers were enthusiastic about the concept of local food production, but admitted that they were not willing to search for locally labelled products in a grocery store. Yue & Tong (2009) examined the attitude-behavior gap by comparing a hypothetical experiment with a non-hypothetical choice experiment. Their results showed, as expected, that non-hypothetical experiments helped to decrease the bias in willingness-to-pay estimations. For the local attribute, the hypothetical bias was approximately 9% of the premium received in the non-hypothetical experiment.

The results of the experiments from the above mentioned studies served as indications for consumers' purchase intentions with regard to local food, which are close approximations of consumers' actual purchasing behavior. These intentions follow from the different factors and interactions that affect the formation of attitudes and their translation into behavior as described in the Alphabet Theory. Due to the multitude of influences on consumers' actual purchase behavior, many studies identified gaps between consumers' stated attitudes and actual behavior. In addition, although strong positive attitudes led to intentions to purchase local food, true behavior might nevertheless deviate from these intentions.

4.1.7 Concluding discussion

Theoretical framework

The main findings in this contribution were constructed from a literature search according to the components of the Alphabet Theory. The Alphabet Theory has proven a very suitable framework in the context of local food purchasing behavior. The use of this theoretical framework made it easier to highlight interactions between the determinants on local food consumption. Thereby, a better understanding of the current state of knowledge and the existing gaps in research on local food consumption was achieved.

With regard to the Alphabet Theory, the inclusion of knowledge and contextual factors was very helpful in the explanation of the formation of attitudes towards local food and their interaction with local food purchasing behavior. Interesting information on consumers' search for information and the influence of knowledge on attitudes was revealed. The relationship between the level of knowledge and the strength of attitudes towards the search for even more information was an especially important finding. It indicates that consumers who think a lot about their food choices develop stronger attitudes, and thereby get more interested and search for more information on their food. Likewise, the inclusion of demographics in the model generated insight into some common characteristics of local food shoppers, i.e. usually older and wealthier people living in rural areas.

Moreover, the integration of the VBN Theory and the ABC Theory into one framework was valuable for the description of how attitudes are formed and influenced as well as their translation into purchase intentions and their link to actual behavior. Like in other studies on alternative food purchase behavior, evidence of a gap between attitudes and behavior was also found in the context of local food. While attitudes determine consumers' intentions to purchase local food, these intentions might deviate from actual behavior, as there is a

difference between consumers' stated behavior and their true behavior. These gaps can be identified through non-hypothetical purchase situations.

In the original Alphabet Theory, as proposed by Zepeda & Deal (2009), habits were interposed between attitudes and behavior and between context and behavior. From the experience of this contribution, a direct relation between attitudes and behavior has been implied, as not all attitudes translate into habits before behavior is carried out. The term 'habit' means that a person shows a certain behavior regularly or repeatedly, but that does not apply to all food purchasing situations, e.g. consumers might spontaneously purchase local strawberries at a roadside stand, although they usually do all their food shopping in one supermarket. As habits in food purchasing mostly imply some kind of behavior without any actual preceding decision process, they are considered as a special form of behavior in this review. Except for these minor points, the Alphabet Theory can be recommended as a theoretical framework for alternative food purchase behavior.

Recommendations

Attitudes were found to be an important predictor of local food purchase behavior. While recent studies have easily identified values and beliefs, social and personal norms were rarely addressed. One explanation for this finding could be that local food purchases are less socially desirable than the purchase of organic or fair trade products because they are more common across all social classes and are subject to individual definitions. Hence, the attitudes described in this review mainly involve values and beliefs.

The application of the theoretical framework resulted in some interesting findings for marketers offering local food. The predominant expectation or belief related to local food was that it is tastier and of higher quality in general. Hence, taste is the most important driver when purchasing food, while the local origin of a product is 'just' a premium. Altruistic as well as egoistic beliefs are linked with local food and need to be considered in marketing. Trust in the food supply chain and the belief that local food is healthier are important factors, which marketers have to take into account. To adapt marketing strategies for local food effectively, contextual factors and habits of potential local food consumers also need to be considered. In this review, for example, the lack of availability and challenge in identifying local products are recognized as major purchase barriers. Furthermore, factors like the enjoyment of cooking and the higher value of family time associated with local food shoppers can be a valuable indicator for local food marketing strategy development. In addition, the

attitudes towards local food, and hence purchase behavior, also strongly depend on the specific type of product, the respective season, and consumers' places of residences.

However, the validation of these contextual factors as well as the identification of further contextual factors associated with local food purchase behavior need to be addressed in future research studies to draw more meaningful conclusions. Moreover, further studies on local food including several products or product categories as well as studies across different countries are recommended as it can be hypothesized that a different socio-cultural background and other context related national framework conditions (economic background, degree of self-sufficiency, legislation, etc.) influence attitudes and behavior differently. Due to the fact that only English publications were taken into account, the review covered a large number of studies from the USA and the UK. Hence, there might be a bias in the key findings and the following recommendations, because articles published in other languages were not included.

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4.1.10 Annex

Table 5: Research articles based on a mixed methods approach (7)

Mixed methods approach						
Author	Year	Method (number of sessions)	Respondents	Product ¹	Country	Motivation
Weatherell et al.	2003	Focus group discussion (6) and face-to-face survey	734	X	UK	Investigate consumer perceptions of food and farming; consumer priorities when choosing food, food provisioning issues, and consumer interest in local foods; insights into the 'concerned consumer'.
Selfa and Qazi	2005	In depth interviews, producer survey, consumer survey	950	X	USA	Analysis of production and consumption networks; definition and conceptualisation of local food networks, analysis of social, spatial, and quality attributes for food choices.
Berlin et al.	2009	Focus groups (5), face-to-face survey, mail survey	47 + 27 + 372	X	USA	Focus on consumer behaviour and attitudes toward organic, small-scale and locally produced foods; identify relationships between organic food buying and consumers' views of the food system.
Kemp et al.	2010	Face-to-face surveys and semi-structured interviews	501 + 5 + 6	X	UK	Reveal the extent to which consumers have included product origin into their decision making when purchasing food.

¹ X=Food in general, A=Apples, ME=Meat

Pearson et al.	2011	Expert interviews and consumer face-to-face survey	146	X	UK	Profile the activities and consumers of a local food retail outlet; examine expectations in relation to local food.
Wirth et al.	2011	Focus group discussions (2) and online survey (including conjoint study)	1218	A	USA	Quantify the relative importance of, and trade-offs between, apple search and experience attributes, credence attributes, and purchase price when buying apples; examine purchase intention.
Hersleth et al.	2012	Focus group discussion (4) and online survey (including factorial survey)	34+ 292	ME	Norway and Italy	Evaluate the importance of geographic origin for buying lamb; reveal information about comparative advantages in food production.

Table 6: Research articles based on a qualitative approach (12)

Qualitative approach							
Author	Year	Method (number of sessions)	Respondents	Product ²	Country	Motivation	
Zepeda and Leviten-Reid	2004	Focus group discussion (4)	43	X	USA	Investigate shoppers' beliefs and behaviour regarding local food; comparison of organic and conventional food shoppers.	
Roininen et al.	2006	Laddering and word association	55	ME	Finland	Examine personal values, meanings and specific benefits consumers relate to local food products.	
Chambers et al.	2007	Focus group discussion (4)	33	X	UK	Identify views and behaviour of consumers towards local food; consumer preferences towards local, national, and imported foods.	
Naspetti and Bodini	2008	Focus group discussions (4)	33	XM	Italy	Identify consumer perceptions towards local and organic food; identify important purchase criteria and WTP; differentiate between animal and plant as well as processed and non-processed products; substitutional or complementary marketing strategies.	

² X=Food in general, ME=Meat, XM=Multiple products

Sirieux et al.	2008	Focus group discussions (2)	16	XM	France	Identify French consumers perceptions of food miles.
Zepeda and Deal	2009	Semi-structured interviews (content analysis)	25	X	USA	Understand why consumers buy organic and/or local foods; explain organic and local purchase behaviour.
Adams and Salois	2010	Literature review	-	X	-	Review to understand drivers of local food demand; focus on studies that allow comparisons between both organic and local characteristics.
Adams and Adams	2011	Face-to-face survey	97	X	USA	Gain a deeper understanding of consumers' perceptions about local foods and barriers to local food purchases; examine consumers' geographical and qualitative understanding of local foods for fresh produce.
Bingen et al.	2011	Focus group discussions (3)	3	X	USA	Examine the perceptions and consumer coping strategies of a small group of local food consumer 'activists'; reveal difficulties in implementing an innovation.
Dunne et al.	2011	Semi-structured interviews	27	X	USA	Identify food retailers' opinions on marketing of local food in grocery stores.

Table 7: Research articles based on a quantitative approach (54)

Quantitative approach							
Author	Year	Method (number of sessions)	Respondents	Product ³	Country	Motivation	
Wilkins et al.	2000	(Paper and pen) Survey	166	X	USA	Conceptualise the terms 'seasonal' and 'local' in relation to food (by university students).	
La Trobe	2001	Face-to-face survey	146	X	UK	Investigate consumers' reasons for attending farmers' markets and their attitudes towards food issues (GMO, local, seasonal).	
Loureiro and Hine	2002	Face-to-face survey, including CV (Contingent Valuation)	437	Veg	USA	Assess consumer preferences for local, organic, and GMO-free potatoes; compare the effects of different attributes on consumers' WTP.	
Brown	2003	Mail survey	544	X	USA	Analyse consumer preferences for locally grown food: attitudes towards local origin of food, local vs. non-local in consumers' minds, purchase motivations when shopping for fresh fruits and vegetables; WTP for local products.	

³ X=Food in general, ME=Meat, XM=Multiple products, MI=Milk, A=Apples, P=Processed, Veg=Vegetable

Loureiro and Umberger	2003	Face-to-face survey	243	ME	USA	Assess WTP for a mandatory country-of-origin labelling programme. Consumer preferences and price premiums for US-labelled beef.
Martinez and Patterson	2004	Face-to-face survey, including conjoint study	360	XM	USA	Evaluate effectiveness of the Arizona Grown brand: level of awareness, consumer preferences, and WTP for branded products.
Burchardi et al.	2005	CAPI (Computer Assisted Personal Interviews) including CV and experimental setting	361	MI	Germany	Examine consumers' WTP, underlying preferences for food from the own region and motives for food choice
Wawrzyniak et al.	2005	Written (self-administered) survey in Berlin and Telephone survey in Poznan	990	X	Germany and Poland	Investigate the presumed incompatibility of consumers' attitudes and their actual behaviour when purchasing regional products.
Zepeda and Li	2006	Mail and telephone survey	956	X	USA	Investigate characteristics of local food buyers and develop a definition of local food; examine factors that significantly increase the probability of purchasing local food.
Åsebø et al.	2007	Mail (producer) survey and face-to-face (consumer) survey	162 + 377	X	Norway	Examine attitudes towards local food and evaluate the potential of this newly developed marketing channel (farmers' markets) (producer and consumer survey).
Henseleit et al.	2007	Telephone survey	3000	X	Germany	Identify and quantify the determining factors of consumer preferences for local food.

Bond et al.	2008	Online survey as part of a nation-wide panel	1549	X	USA	Explore consumer preferences for fresh produce; determine cues that consumers use to make purchase decisions; and identify key market segments.
Darby et al.	2008	Face-to-face survey, including choice experiment	530	X	USA	Identify the geographical extent of 'local' and the value that consumers place on 'local' production.
Brown et al.	2009	Telephone and mail survey	182 + 88	X	UK and France	Identify the sociodemographic profiles, barriers, and motivations of local box scheme customers.
Carpio and Isengildina-Massa	2009	Telephone survey	500	X	USA	Examine consumers' WTP for 'locally grown' food and their sociodemographic characteristics.
Dentoni et al.	2009	Online survey, including an experiment	60	A	USA	Find reasons for consumer preferences for local products; assess direct and indirect effects of 'locally grown' on consumer preferences for locally grown products.
James et al.	2009	Mail survey	1521	P	USA	Analyse the WTP for selected product attributes in a processed fruit product; evaluate strategies for differentiating products made from Pennsylvania apples.
Robinson-O'Brien et al.	2009	Mail survey	2516	X	USA	Examine characteristics of adolescents preferring locally grown, organic, non-GMO, and/or non-processed food.

Yue and Tong	2009	Face-to-face survey including a hypothetical and a non-hypothetical experiment	365	Veg	USA	Investigate consumers' WTP for organically grown and locally grown fresh produce and the market segmentation of these two types of produce.
Bellows et al.	2010	Telephone survey	1201	X	USA	Compare attitudes towards organic, locally, US grown, and GM-free food attributes in relation to other general attitudes towards food and differentiated by gender.
Bernabéu et al.	2010	Survey, including choice experiment	420	P	Spain	Measure the influence of price, origin, type and production system on Spanish consumers' perception of and purchasing decisions for cheese.
Conner et al.	2010	Telephone survey	953	X	USA	Examine consumer perceptions and behaviours with regard to local foods and farmers' markets; identify opportunities and obstacles for local food.
Hu et al.	2010	Online survey	1013	X	USA	Answer two questions: what is the greatest distance food can travel and still be accepted as local, and is 'local' equally important across food categories?
Khan and Prior	2010	Face-to-face survey	148	X	UK	Explore consumer perceptions and trends regarding locally produced food; focus on urban attitudes and perceptions of local food.
Zander and Hamm	2010	Face-to-face survey, including IDM (Information Display Matrix)	1192	MI	Austria, Germany, Italy, Switzerland, UK	Examine the relevance of additional ethical attributes of organic food for consumers' purchase decisions.

Bean and Shar	2011	Mail survey	1960	X	USA	Examine the similarities and differences among consumers interested in organic or local food; assess the personal and social basis of the interest in these attributes.
Costanigro et al.	2011	Face-to-face survey, in-store experiment	320	A	USA	Disentangle the value consumers place on local and organic; elicit consumers' values and WTP.
Grebitus et al.	2011	Face-to-face survey, including a two-step questioning approach on use and knowledge of quality cues	752	ME	Germany	Investigate consumers' actual use of 'quality labels' and 'origin information' when shopping for pork.
Nganje et al.	2011	Written (self-administered) survey	315	XM	USA	Investigate consumer preferences for two locally grown products; examine product attributes for which consumers are willing to pay a premium and which state governments should promote in their marketing campaigns.
Onken et al.	2011	Mail survey, including choice experiment	1980	P	USA	Determine marginal WTP for the attributes organic, natural, locally grown, and state marketing promoted; examine the influence of point of sale on WTP.
Onozaka and Mc Fadden	2011	Online survey, including choice experiment	1268	XM	USA	Analyse the differential values and interactive effects of sustainable production claims; apply three levels of differentiation: local, domestic, and imported; and elicit consumers' purchase intentions.
Cranfield et al.	2012	Online survey as part of a nation-wide panel	1139	X	Canada	Explore the factors associated with consumers' purchase intentions for local food; understand the underlying consumer attitudes and purchase motivations.

Gracia et al.	2012	4th price auction (14)	155	ME	Spain	Assess consumers' WTP for local food; identify influence of social component on food choice; reveal differences between men and women.
Hu et al.	2012	Mail survey	1972	P	USA	Estimate consumer WTP for processed food, as differentiated according to local production and a series of other value-added claims; apply different product characteristics: store-branded, regionally branded or nationally branded; 100% organic, partially organic, or non-organic; produced on small family farm; and product carrying a nutritional label.
Lim and Hu	2012	Online survey, including choice experiment	1013	ME	Canada	Differentiate consumers' valuations of local food at different distances and geographical definitions; assess WTP for local food of various definitions and consumer preferences with regard to local beef.
Megicks et al.	2012	Focus group discussions and online survey	200 + 1223	X	England	Examine purchase intentions; identify drivers and barriers to local food buying.
Miroso and Lawson	2012	Mail survey	3556	X	New Zealand	Examine the characteristics of consumers who prefer to buy local food.
Roosen et al.	2012	Face-to-face interviews including choice experiment	180	XM	Germany	Explore consumer associations with local food and with organic food; evaluate the WTP.
Stanton et al.	2012	Online survey	1218	A	USA	Develop a behaviourally based definition of 'locavores'; contrast locavore vs. non-locavore consumer segment; and estimate impact of local over organic production.

Zanoli et al.	2013	Face-to-face survey including choice experiment	145	ME	Italy	Investigate consumer preferences for organic, conventional, and GM-fed beef; include intrinsic search cues and extrinsic credence cues.
Zepeda and Nie	2012	Online survey	956	X	USA	Examine growth in organic and local foods consumption; identify characteristics and motivations of food shoppers.
Campbell et al.	2013	Online survey	891	X	Canada	Investigate consumers' understanding and perception of local and organic food related to production processes; identify consumers' attitudes.
Cholette et al.	2013	Written (self-administered) survey	400	A	USA	Examine consumers' considerations of food purchases; identify WTP for food with lower ecological costs; and carry out segmentation based on purchasing preferences.
Denver and Jensen	2014	Online survey as part of a national household panel, including choice experiment	637	A	Denmark	Investigate the patterns in consumer perceptions of organic and locally produced foods; examine the role of such perception in consumer preferences for organic and local foods.
Gracia et al.	2014	Face-to-face survey, including choice experiment	800	Eggs	Spain	Analyse consumer preferences for local and organic labels; estimate consumers' WTP; and analyse whether local and organic labels are complementary or substitutional.
Grebitus et al.	2013	2nd price Vickrey auction (5)	47	XM	Germany	Quantify consumers' demand for local foods and understand the underlying reasons; investigate how consumers' WTP for food varies with the distance food travelled; and examine the impact of transportation distance on consumer preferences.

Illichmann and Abdulai	2013	Mail survey, including choice experiment	1182	XM	Germany	Examine preference heterogeneity among consumers and their WTP for organic food products; analyse gender differences.
Menapace and Raffaelli	2013	Natural Field Experiment	9865	Ice cream	Italy	Investigate whether information regarding locally grown fresh products affects consumer behaviour in several ice cream parlours.
Pelletier et al.	2013	Online survey	1201	X	USA	Examine characteristics and dietary behaviour of young adults and their associations with measures of dietary quality.
Pugliese et al.	2013	Face-to-face survey	146	X	Lebanon	Investigate interaction between organic and local/traditional food from the perspective of organic consumers.
Racine et al.	2013	Telephone survey	2932	X	USA	Examine individual characteristics associated with local purchases among North Carolina families with children; identify barriers of local food consumption.
Stolzenbach et al.	2013	Blind tasting and informed tasting	183	P	Denmark	Examine the impact of product information and repeated exposure of local apple juice on consumer liking, sensory perception and concept associations.
Tempesta and Vecchiato	2013	Face-to-face survey including choice experiment	400	MI	Italy	Investigate WTP, considering three attributes: origin, area of production, and rearing method.
Costanigro et al.	2014	Blind sensory evaluation and Vickrey auction	109	A	USA	Understand how two labels (organic and local) with distinct but potentially complementary characteristics interact.

4.2 Local and/or organic: A study on consumer preferences for organic food and food from different origins

4.2.1 Abstract

This paper gives a deeper insight into consumer preferences for different food products varying in their places of origin (i.e. local, Germany, neighboring country, non-EU country) and production practices (i.e. organic vs. non-organic). Consumer surveys combined with choice experiments were conducted with 641 consumers in eight regions in Germany. Mixed logit models were estimated to draw conclusions on consumers' preferences for different product attributes. The Stimulus-Organism-Response (SOR) model was applied to theoretically frame the key findings.

Results reveal that consumers prefer locally produced food to organic food. Conclusions on consumers' preferences, however, should not be generalized since they vary depending on product type and consumers' places of residence. When looking at the willingness-to-pay (WTP) estimates for 'organic' and 'local' while distinguishing between consumers from different regions of Germany, results indicate that consumers living in rural areas and consumers living in the Eastern part of Germany are less willing to pay a premium for organic products than urban consumers and consumers from other parts of Germany. Since preferences for origin attributes and organic production vary between different food products and in different regions of Germany, market actors should design marketing activities accordingly.

This study adds to the international research on consumers' preferences for organic and/or local food. The results provide better insights into preference structures, as more than one product has been included and surveys were conducted in different regions across Germany.

Keywords: product origin, organic food, local food, consumer preferences, choice experiment, willingness-to-pay

4.2.2 Introduction

Due to the globalization of food supply chains and recurrent food scandals, consumers have become increasingly doubtful regarding their food choices and ask for more transparency along the supply chain. Hence many consumers reorient themselves towards food from within their home regions; i.e. food that has travelled only short distances or food that is marketed directly by the producer (Watts et al., 2005; Holloway et al., 2007). Consumers' reasons for choosing local products and their associations with local food provisioning are manifold. On

the one hand, consumers criticize the decreasing transparency of the global food market and choose local food because it is seen as more environmental and climate friendly, on the other hand, consumers choose local food because they perceive it as fresher, safer and healthier than imported products. Aertsens et al. (2009) report similar consumer attitudes towards organic food in a literature review. They revealed that consumers associate health, taste, and environmental consequences with the purchase and consumption of organic food. Many consumers even think that organic food, per se, is local and vice versa. Hence, the motives for local food purchases and for organic food purchases often overlap as associations with both food systems tend to be similar.

Research has been carried out on the reasons for the development of local food systems as well as for the increasing consumer demand for locally produced food (Ilbery et al., 2005; Holloway et al., 2007) and for organic food (Aertsens et al., 2009; Hughner et al., 2007). The number of scientific journal articles on these topics has been growing steadily, reflecting the relevance of this field of research (Watts et al., 2005). The identification of consumers' preferences and purchase barriers is especially important, as it helps to improve food marketing, communication, and policy making (Grunert et al., 2014). That is why numerous scientific studies have been published on the concept of local as well as on the concept of organic food, consumer preferences and their WTP for local and organic food.

4.2.3 *Background*

Status-quo on consumer preferences and willingness-to-pay for organic and for local food

Recently, a number of scientific studies has been published – especially in Europe and the USA – which support the growing consumer trend towards local food purchases (James et al., 2009; Yue and Tong, 2009; Bernabéu et al., 2010; Wirth et al., 2011; Gracia et al., 2014). Likewise, the interest in organic food has been increasing and scientific studies have revealed consumer preferences and the willingness-to-pay price premiums for organic food (Hughner et al., 2007; Yue and Tong, 2009). During the past years, discussions have come up on the question of whether these two trends complement one another or compete against each other (Yue and Tong, 2009; Gracia et al., 2014).

The studies on preferences and willingness-to-pay for local food - compared to other quality cues (e.g. organic production, nutritional information, etc.) or other origin attributes - vary in many aspects- i.e. the number and types of products, the number of attributes as well as the underlying definition and extent of the attribute 'local'. Hence, comparisons and generalizations of the results need to be considered carefully. Nevertheless, a general trend

revealing a preference for local food over food with other quality cues can be seen. Only a few studies on consumer preferences for local food have considered more than one product, but all of them found product-specific differences (Nganje et al., 2011; Roosen et al., 2012; Grebitus et al., 2013; Illichmann and Abdulai, 2013). These findings indicate that preference and willingness-to-pay does not hold equally for all products. Nganje et al. (2011) found a small difference in the willingness-to-pay a price premium for local carrots and spinach. Roosen et al. (2012) revealed that consumers prefer the attribute 'locally produced' for bread, whereas for beer the attribute 'produced in Bavaria' is preferred over the attribute 'locally produced'. Grebitus et al. (2013) compared the preferences for different origin attributes based on distances for apples and wine; they found that consumers are willing to pay more for apples that travelled a shorter distance as opposed to wine.

Furthermore, the number and kind of attribute levels differ between studies on local food. While some studies compare different types of origin attributes (Darby et al., 2008; James et al., 2009; Nganje et al., 2011; Onken et al., 2011; Wirth et al., 2011; Gracia et al., 2012; Hersleth et al., 2012; Hu et al., 2012; Lim and Hu, 2012; Stanton et al., 2012; Zanolli et al., 2013; Grebitus et al., 2013; Illichmann and Abdulai, 2013; Denver and Jensen, 2014), other studies compare origin attributes with other quality cues (Bond et al., 2008; Yue and Tong, 2009; Bernabéu et al., 2010; Costanigro et al., 2011; Roosen et al., 2012; Menapace and Raffaelli, 2013; Costanigro et al., 2014; Gracia et al., 2014). Most studies reveal a preference for local over other quality cues and a preference for local products over those that have travelled longer distances or those without any clear declaration of origin. However, there are also a few studies that show different results, such as the above mentioned study by of Roosen et al. (2012) for Bavarian beer. Onken et al. (2011) revealed that locally produced strawberry preserves were only preferred over state grown variants in two out of five surveyed states. In a study by Lim and Hu (2012), there was no significant difference between the attributes 'locally produced' and 'produced within 160 km'.

Concerning comparisons of origin attributes with other quality cues, there are also some study results that contradict the trend towards stronger preferences for local food. Bond et al. (2008), for example, showed that consumers valued nutritional attributes higher than production-based attributes (incl. origin) when purchasing melons. Similarly, Stanton et al. (2012) revealed that quality, texture, and price had a stronger influence on consumers' purchase decisions for apples than the local origin of apples and Costanigro et al. (2014) found higher willingness-to-pay values for organic apples as compared to locally grown

apples. Moreover, Menapace and Raffaelli (2013) revealed a stronger preference for ice cream with reduced carbon emissions compared to ice cream made from locally produced ingredients.

Another question researchers have recently started to tackle is whether organic and local are two complementary trends or if they compete against each other. While Gracia et al. (2014) concluded in their study that both food quality attributes are substitutes, Costanigro et al. (2014) came to the exact opposite conclusion based on their results. Hence, there is need for further research.

4.2.4 Research objective and hypotheses

This contribution aims at getting a deeper insight into consumers' preferences for food from different origins and organically produced food. Via a consumer survey combined with a choice experiment, consumers' preferences and WTP estimates for the attributes 'origin' (local, Germany, neighboring country, Non-EU country), 'production process' (organic, non-organic), and 'price' (four different price levels) are determined. Based on the findings of recent studies on local food consumption, the following five hypotheses were developed:

Hypothesis 1: Consumers prefer local food to food from Germany, over food from a neighboring country, and over food from a non-EU country.

Based on findings from Darby et al. (2008), James et al. (2009), Nganje et al. (2011), Gracia et al. (2012), Hersleth et al. (2012), Hu et al. (2012), Zanolli et al. (2013), Grebitus et al. (2013), Denver and Jensen (2014).

Hypothesis 2: Consumers prefer local food to organic food.

Based on findings from James et al. (2009), Costanigro et al. (2011), Onken et al. (2011), Wirth et al. (2011).

Hypothesis 3: Consumers in different regions of Germany have varying preferences with regard to local and organic food.

Based on findings from Henseleit et al. (2007), Carpio and Isengildina-Massa (2009), Khan and Prior (2010), Megicks et al. (2012), Stanton et al. (2012), Miroso and Lawson (2012), Cholette et al. (2013), Waegeli and Hamm (2013).

Hypothesis 4: Urban consumers (cities with pop. more than 30,000) have a higher preference for organic food, while consumers living in rural areas (cities with pop. less than 30,000.) prefer local over organic food.

Based on findings from Brown (2003), Carpio and Isengildina-Massa (2009), Khan and Prior (2010), Megicks et al. (2012), Stanton et al. (2012), Miroso and Lawson (2012), Cholette et al. (2013), Pugliese et al. (2013), Waegeli and Hamm (2013).

Hypothesis 5: Consumer preferences for the food quality attributes 'local' and 'organic' depend on the product.

Based on findings from Carpio and Isengildina-Massa (2009), Njange et al. (2011), Roosen et al. (2012), Illichmann and Abdulai (2013).

4.2.5 *Theoretical framework*

Stimulus-Organism-Response (SOR) model of consumer behavior

The aim of this paper is to reveal preferences and purchase behavior for organically produced food and food from different origins. Structural models of consumer behavior are used to conceptualize purchase decisions by including internal psychic processes; the focus on internal psychic processes is a characteristic of neobehavioristic models as opposed to behavioristic models. These can be applied to all forms of observable purchases.

The SOR model is one structural model, which combines observable and unobservable variables. The observable variables are the stimuli and the responses; unobservable is what happens in the organism (Figure 6). These psychic processes are influenced by consumers' social and physical environments and influence stimulus perception and evaluation. They are used to explain consequences from stimuli and the resulting behavior. Since the processes are unobservable, indicators are needed to measure intervening variables of the organism. The quality of the measured indicators needs to be very high in terms of objectivity, reliability, and validity since they are used to draw conclusions on the reasons underlying consumers' purchase decisions (Foscht and Swoboda, 2011).

The SOR model is a valuable framework, because it ideally reproduces the idea underlying this study. The stimuli are, on the one hand, the attributes that are used to differentiate the products in the choice experiment and, on the other hand, the environmental factors influencing the individual consumers participating in the study, i.e. the socio-demographic factors measured in the consumer survey. The responses are reflected in the purchase decisions of the choice experiment. The choices in the experiment reveal the product

alternatives preferred by consumers and the prices they would pay for them. The decision process, activating and cognitive, remains unobservable and is described by the organism in the SOR model. For researchers it is difficult to measure these processes because they are internal and partly unstable. Activating processes are motivations, emotions, and attitudes, while cognitive processes are information perception, evaluation and learning, decision-making, and memorizing. These internal processes can be evaluated through direct or indirect questioning of the consumers. However, responses do not always have to reflect reality. As mentioned above, the quality of the survey questions and the way of posing them, determines the objectivity, reliability, and validity of the items measured (Foscht and Swoboda, 2011).

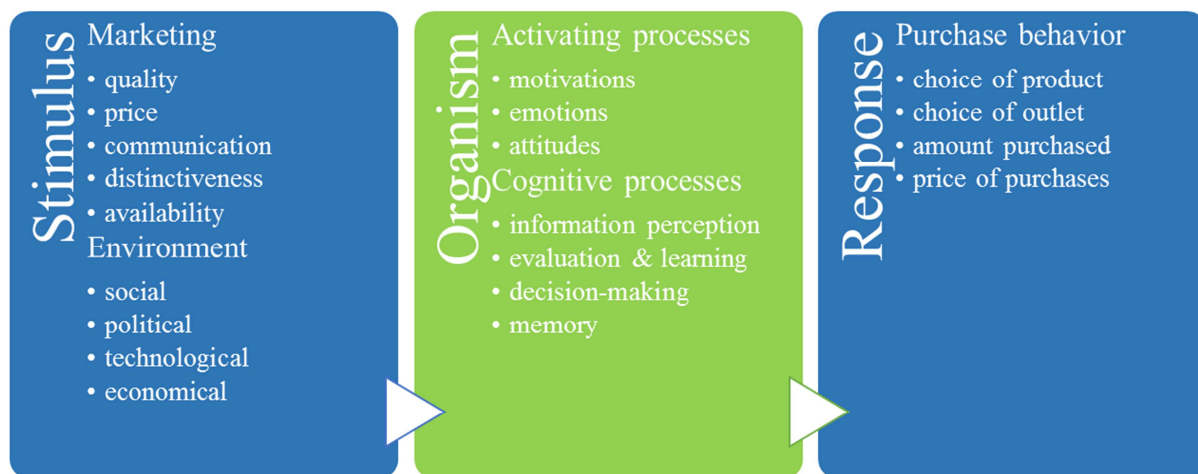


Figure 6: SOR model adopted from Foscht & Swoboda (2011)

4.2.6 Methodology

4.2.6.1 Methodological procedure

The choice experiment was embedded in a consumer survey and conducted through computer-assisted self-interviewing in supermarkets in North, East, South, and West Germany, in a small city (<25,000 inhabitants) and in a larger city (>200,000 inhabitants) in each region. Four products (apples, butter, flour, and steak) were included in the choice experiment. Each respondent was asked to evaluate 16 choice sets, four for each product. Altogether, 641 consumers took part in the survey. The participants were asked some screening questions for participation. Only consumers who were at least 18 years old and who bought all four food products of interest at least sometimes during a year were included in the study.

Prior to the survey a pretest was carried out. The preliminary design for the choice experiment in the pretest was determined without the use of any priors in the software package NGene. In the pretest, the design for each product consisted of twelve choice sets; each design was

blocked into four times three choice sets. Hence, each participant had to respond to three choice sets per product, resulting in twelve choice sets per participant. To reduce the number of participants for the pretest, each participant was asked to take part in the choice experiment twice, i.e. to evaluate 24 choice sets. The pretest was also conducted through computer-assisted self-interviewing, but instead of approaching the participants in supermarkets, they were sent a link to the survey by e-mail. The results of the pretest were used to individually set up Bayesian, d-efficient designs for each of the four products in NGene.

In the main study, the designs were blocked as well- i.e. for each product, the design consisted of 16 choice sets, but each respondent got only one block of four choice sets per product. The experiment was unlabeled, Participants were asked to choose between three unlabeled alternatives and a 'no buy' option. The order of the products, the blocks, and the choice sets within each block were randomized throughout the surveys. Prior to the choice experiment, consumers were informed that one of their choice decisions was binding, i.e. that one of the products had to be purchased in the end. After having finished the choice experiments and the survey, participants were informed that they were part of an experiment in which it was not possible to offer all the product alternatives of the choice experiment, so the purchase was not possible. Altogether, the choice experiment yielded 631 usable responses. The data from the choice experiment were analyzed using Nlogit 4.0 for model estimations.

In addition to the choice experiment, questions on the general purchase behavior of consumers as well as on respondents' socio-demographic data were asked, and a statement battery, containing 25 statements on food-related issues, was included.

4.2.6.2 Set up of the choice experiment

The choice experiments were conducted with four different products, one processed and one unprocessed plant product (flour and apples) and one processed and one unprocessed animal product (butter and steak). These products were chosen, as they were regularly purchased by many consumers and as they were available both in local and in organic quality in all survey locations. Furthermore, all of these products are not only produced in Germany, but also imported to Germany. The different origins chosen for the products in this choice experiment are presented in Table 1. The prices were determined through price checks in discounters, supermarkets, and organic supermarkets prior to the finalization of the experimental setup to guarantee product prices close to market reality (Table 8).

Table 8: Prices and importing countries for different products used in choice experiment

Attribute level	Apples (1kg)	Flour (1kg)	Butter (250g)	Steak (200g)
Price 1	2,49	0,69	1,29	3,49
Price 2	2,99	0,99	1,49	4,49
Price 3	3,49	1,29	1,69	5,49
Price 4	3,99	1,59	1,89	6,49
Neighboring countries	Austria	Italy	Denmark	France
Non-EU countries	Argentina	Kazakstan	New Zealand	Australia

4.2.6.3 *Random Utility Theory and its application*

The analysis of the choice experiment is based on Random Utility Theory (RUT). Consumer utility (U) is assumed to be influenced by the attributes ‘price’, ‘production method’ and ‘product origin’. The consumers give insight into their preferences by choosing one alternative from a set of products with varying attribute level combinations. The individual-specific utility functions are not completely known; they consist of an observable and an unobservable part (also called error term ϵ). If a consumer chooses one of the products (product i) and the observable utility is V_i , a basic form of the utility function can be written as follows:

$$U_i = V_i + \epsilon_i$$

The model to estimate the choice coefficients consisted of four utility functions, one for each product alternative in the choice set. The fourth utility function included an alternative specific constant for the no-buy option. Based on these utility functions, random parameters logit models and WTP values were estimated.

4.2.7 *Results and discussion*

4.2.7.1 *Description of the sample*

Table 9 presents details on the dataset of the 631 consumers underlying this study. The sample is differentiated by survey region to give details on the differences among respondents arising from their places of residence (Table 9).

More female than male consumers took part in the choice experiment. It is known from other studies that women are more often responsible for grocery shopping than men in Germany (Buder et al., 2011; Plaßmann & Hamm, 2011). Hence, the predominance of female respondents was expected. The mean age of all respondents was 44.5 years and the median 45 years, which is slightly lower than the age median of the population in Germany (45.7 years).

The survey population was on average better educated than the overall German population. Almost one third of the surveyed consumers held a college/university degree, compared to 14% of the German population. Most consumers surveyed lived in a household with two persons; the average household size was 2.7 persons. This was higher than the German average of 2.01 persons. With regard to income, it must be kept in mind that 78 consumers did not want to give any information. Most surveyed consumers earned a net income between 1,200 and 3,000€ per month, which is similar to the total population in Germany. Only 19 consumers fell in the lowest income category and 25 in the highest income category. The differences in the socio-demographic information of consumers in the four German regions are reflected in official German statistics (Statistisches Bundesamt, 2013). Thus, for example, people from the East of Germany show a higher average age and a smaller average income. However, the varying proportions between male and female consumers in the four regions cannot be explained through German statistics.

Table 9: Description of the sample differentiated by survey region

		All	North	East	South	West
Gender	N	631	159	159	155	158
	Female (%)	65,6	59,1	64,8	66,5	72,2
	Male (%)	34,4	40,9	35,2	33,5	27,8
Age	N	630	158	159	155	158
	18-30 years (%)	19,4	20,9	8,8	21,9	24,1
	31-45 years (%)	31,4	25,3	33,3	34,2	32,3
	46-60 years (%)	36,3	33,5	43,4	36,1	31,6
	>60 years (%)	14,0	20,3	14,5	7,7	12,0
	Mean age (years)	44.5	45.65	47.44	42.35	42.37
Education	N	631	159	159	155	158
	No formal qualification (%)	0,3	1,3	0	0	0
	Secondary/Intermediate (%)	255	35,2	49,7	46,5	30,4
	College/University qualification (%)	174	29,6	19,5	26,5	34,8
	College/University degree (%)	200	34,0	30,8	27,1	34,8
Household size	N	631	159	159	155	158
	Mean	2.7	2.64	2.51	3.05	2.63
Household net income (monthly)	N	631	159	159	155	158
	< 600 € (%)	3,0	4,4	2,5	1,9	3,2
	600 € to < 1,200 € (%)	9,4	4,4	15,1	9,7	8,2
	1,200 € to < 1,800 € (%)	15,2	11,9	20,1	16,8	12,0
	1,800 € to < 2,400 € (%)	14,4	15,7	15,1	13,5	13,3
	2,400 € to < 3,000 € (%)	13,0	11,9	12,6	12,3	15,2
	3,000 € to < 3,600 € (%)	8,6	11,3	7,5	3,2	12,0
	3,600 € to < 4,200 € (%)	7,9	7,5	5,0	9,7	9,5
	4,200 € to < 4,800 € (%)	4,6	4,4	2,5	4,5	7,0
	4,800 € to < 5,400 € (%)	4,3	5,7	2,5	5,2	3,8
	5,400 € to < 6,000 € (%)	3,3	5,7	1,3	2,6	3,8
	6,000 € or more (%)	4,0	6,3	2,5	2,6	4,4
	No indication (%)	12,4	10,7	13,2	18,1	7,6

4.2.7.2 Results from Random Parameters Logit Models

RPL models (random parameters logit models) were estimated separately for all four products (apples, butter, flour, and steak) using Nlogit 4.0. All model estimations were carried out with Halton draws using 1,000 replications (Pts). The results of the models are shown in Table 10. All models are statistically significant, referring to the Chi-Square statistic at a 99.99% confidence level. Across all products, the RPL models lead to better model fits than the MNL models (multinomial logit models); hence, only RPL models are presented here. However, in the RPL models, a number of parameters had to be treated as fixed parameters (function

specification: non-stochastic = c); otherwise they generated insignificant standard deviations or insignificant standard errors for the mean parameter estimates. The fixed parameters were marked grey in the respective table (Table 10). For the attribute ‘price’ a lognormal distribution was used as it guarantees non-negative WTP estimates. Prior to model estimation, the sign of price was reversed to overcome very large parameter estimates known for those lognormally distributed parameters which are expected to produce negative mean estimates (Hensher and Greene, 2002). After model estimation, the parameter estimate of the negative price was reconverted to calculate WTP values.

The baseline for comparison of those coefficients referring to origin attributes is the attribute level ‘non-EU country’ while the coefficient referring to the production method is based on the attribute level ‘non-organic’. The RPL models estimated individually for all four products are presented in Table 10 to give an overview of the coefficients for all parameters. The impact of the attribute ‘organic’ was smaller than the impact of the origin attributes, but also positive. The three coefficients for the origin attributes reflected similar preference structures for all products; in each model ‘local’ was preferred over ‘from Germany’ and over ‘from a neighboring country’. In the model for apples, the coefficients for the origin attributes ‘local’ and ‘from Germany’ only showed a narrow difference, whereas in the model for steak there was a wider difference between these two coefficients. The difference between the coefficients for the origin attributes ‘from Germany’ and ‘from a neighboring country’, however, were wider in all models. The price coefficients were negative and significant across all models and were comparatively small with regard to the other coefficients in the models for apples and steak, but relatively large in the models for butter and flour.

Table 10: Coefficients, standard errors, and model quality factors of RPL models

	Apples		Butter		Flour		Steaks	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Local	4,10482	0,17341**	4,13639	0,16960**	5,20506	0,26037**	3,39085	0,13768**
Germany	3,70715	0,17477**	3,40516	0,15146**	4,54771	0,24058**	2,30531	0,11144**
Neighboring	1,14064	0,19312**	1,15575	0,18152**	1,2461	0,20435**	0,41366	0,11952**
Organic	0,22493	0,04827**	0,24221	0,09767*	0,2722	0,12483*	0,5754	0,07781**
Nprice	0,12943	0,06293*	1,41989	0,05740**	0,91069	0,11**	-0,59716	0,08844**
Price	-1,13818		-4,13667		-2,48604		-0,55037	
ASCNoBuy	-2,98711	0,26507**	-6,15291	0,34180**	-1,63969	0,28836**	-2,75299	0,19038**
Log likelihood function	-2203,086		-2114,763		-1714,749		-2198,489	
Pseudo R²	0,3704		0,3956		0,50993		0,3717	
Pts, Halton Draws	1000		1000		1000		1000	
Number of observations	2524		2524		2524		2524	

Statistical significance at level **<0.01, *<0.5

Fixed parameters are marked grey, random parameters are not marked.

4.2.7.3 Results related to hypotheses

The estimation of RPL models revealed insights into consumers' preferences for locally and organically produced food, depending on different types of products and consumers' places of residence. Following the findings of recent studies on the same or very similar topics, hypotheses were developed which are evaluated in this part of the results section. To better visualize these results, WTP values were calculated from the coefficients of the different models that were estimated to answer each of the previously explained hypotheses. WTP values illustrate each of the coefficients related to the parameter price. Since price coefficients are usually negative, WTP values have to be multiplied by the factor -1. In addition to WTP values, price premiums were calculated by relating the WTP values to the lowest price level of each product.

Hypothesis 1: Consumers prefer local food to food from Germany, over food from neighboring countries, and over food from non-EU countries.

Hypothesis 1 is accepted. The results reveal that for all different types of products, the local alternative is preferred to the alternative from Germany, which in turn is preferred to the alternatives from the neighboring and the non-EU countries (Figure 7).

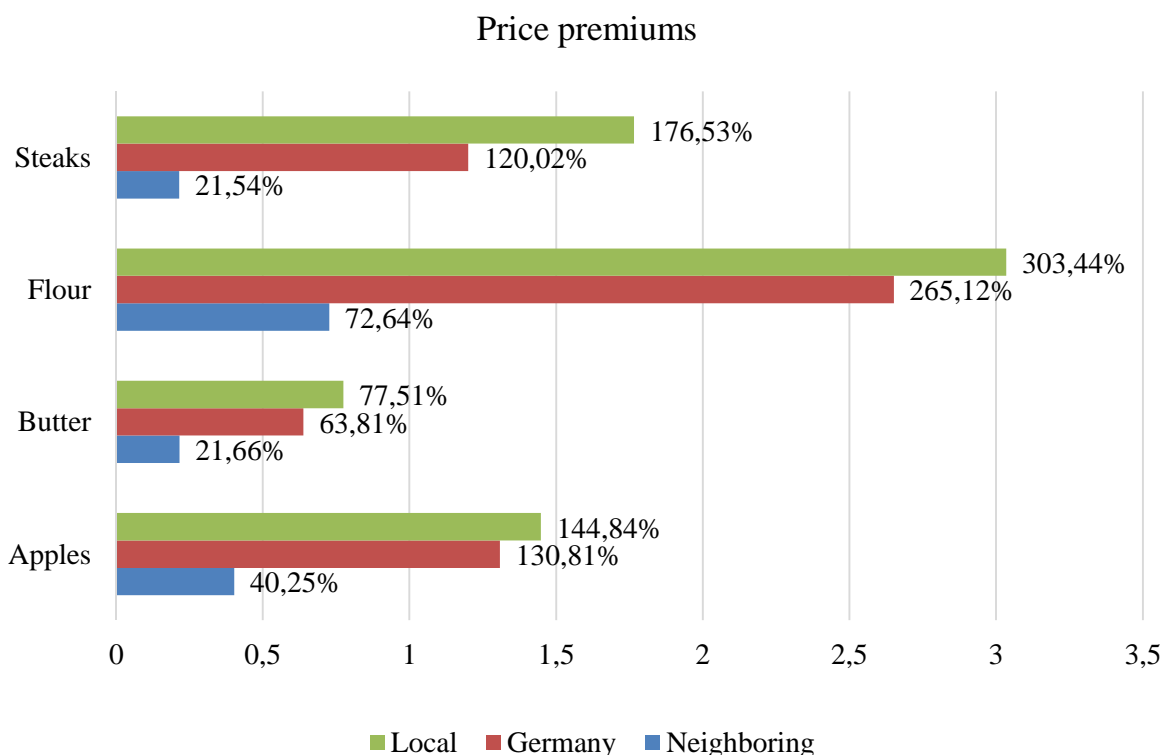


Figure 7: Price premiums for origin attributes (in %)

This result supports the findings of other studies dealing with consumers' preferences for local food, revealing that consumers, in general, prefer local food to food from farther away. This underlines the increasing demand for food which is produced close to one's home and is thereby associated with better quality and higher safety as well as more transparency. However, Nganje et al. (2011) revealed that consumers were willing to pay more for local products, but were not willing to pay a premium for the attribute 'traceability', which was also included in their experiment for both spinach and carrots. This result is a good example of an attitude-behavior gap, which is repeatedly found in research on consumer behavior.

Subsequently, research results will be presented that support the findings of this contribution.

Darby et al. (2008) revealed that US consumers at grocery stores were willing to pay \$0.64 more for locally grown strawberries (per 250 g carton) as opposed to strawberries labelled 'grown in Ohio,' while consumers at farmers' markets were willing to pay \$1.17 more for the 'locally grown' attribute. Likewise, Onken et al. (2011) examined the WTP for strawberry preserves including four product attributes (location, production method, purchasing venue, and price) with varying levels in the USA. Local and state-grown preserves were clearly preferred over the non-local alternative in all five states surveyed. Gracia et al. (2012) conducted a choice experiment revealing a WTP for local lamb meat in Spain of 13% above the non-labelled alternative. Hersleth et al. (2012) identified a strong preference for national lamb meat. Norwegian and Italian consumers would pay price premiums for domestic lamb as opposed to European lamb meat and for European lamb meat as opposed to lamb meat from New Zealand. Hu et al. (2012) found that state-grown blackberry jam yielded a premium of \$0.15/jar in the USA. The products with regional claims, however, were even more likely to be selected, with premiums ranging from \$0.25/jar to \$0.31/jar. Results of a study by Grebitus et al. (2013) in Germany revealed that the WTP for apples and wine fell with the distance travelled by the product and that the lowest WTP was attained from products without food-miles labels. Denver & Jensen (2014) carried out a similar choice experiment with apples in Denmark which revealed that consumers prefer locally grown apples, domestically grown apples, and apples coming from other EU countries over apples coming from outside the EU (in that order). Summing up, the findings of this contribution correspond with the results of previous studies. The closer products are produced to consumers' homes, the higher the willingness to pay a premium for them.

Hypothesis 2: Consumers prefer local food to organic food.

Hypothesis 2 is accepted. Consumers in this study prefer locally produced (local as opposed to German) to organically produced food, independent of the product type and consumers' places of residence (Figure 8).

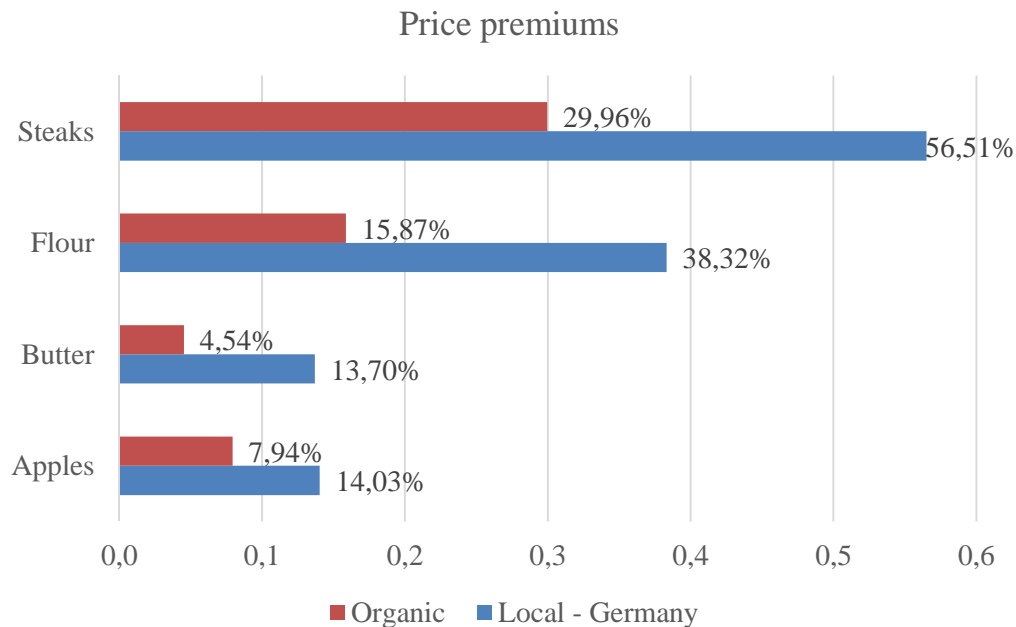


Figure 8: Price premiums for organic and local (in %)

This result can be explained by the fact that there is no clear, official definition of the term local. Hence, the definitions depend on consumers' individual associations and knowledge. That is why the concept of local food is easier to grasp for consumers and is related to attributes similar to those of other alternative, sustainable food products. With the exception of a few studies that achieved different results, most recent findings suggest that consumers prefer local food to organic food or food from other alternative production systems.

James et al. (2009) used a choice experiment to calculate WTP measures for a processed plant product, i.e., applesauce, as differentiated by consumer segments (non-local and non-organic, local and non-organic, non-local and organic, local and organic) and by product attributes (organic, local, no sugar added, low fat, price) in the USA. In all four segments, the attribute 'local' had the highest WTP estimates and was thus appreciated the most by all consumers. Costanigro et al. (2011) carried out an in-store experiment in the USA, including a choice situation to elicit consumer preferences and to estimate WTP values for apples with varying attributes (organic, local, cash gifts of different amounts). Their results revealed that the WTP estimates for the attribute 'local' were much higher than for the attribute 'organic'. The article

by Wirth et al. (2011) was based on the same study results from the USA. It showed that the production method (organic vs. conventional) had the least impact on consumer choices, while origin was more important for the decision, although not as important as the search and experience attributes ‘quality’, ‘texture’, and ‘price’ (Wirth et al., 2011). The above mentioned findings underline the results of this study and indicate that consumers prefer local products to other alternatively produced foods.

Hypothesis 3: Consumers in the different regions of Germany have varying preferences regarding local and organic food.

Hypothesis 3 is accepted. There are particular differences in the preferences of consumers living in the East of Germany for organically produced food for all products (Figure 4 only shows an example for butter, but the same result was found for apples, flour, and steaks). Compared to consumers from other parts of Germany, they are not willing to pay a premium for organically produced as opposed to non-organic food. Except for the attribute ‘organic’, the consumers from the East of Germany also reveal positive WTP values for the other attributes which differ in magnitude depending on the product, just like the WTP values from the other consumers (Figure 9).

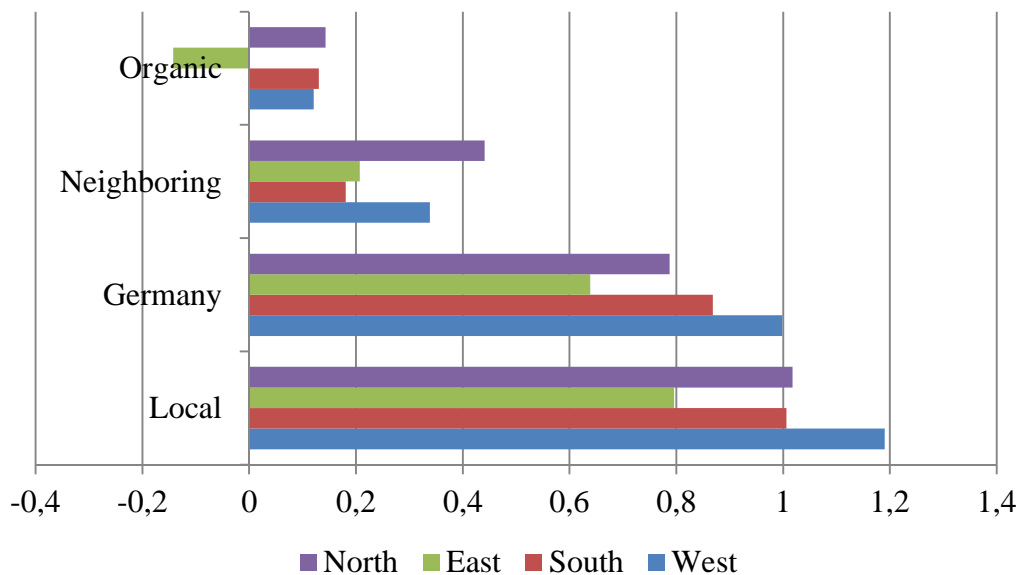


Figure 9: WTP estimates for all product attributes (in €) - Example for Butter

The differences in the WTP values for organically produced alternatives might result from the different levels of income and purchase power of consumers from these four regions. In the East of Germany purchase power is comparatively low- in the rural survey region even more than in the urban survey region. As purchase power is an index, the German average is set at

100. The purchase power of the survey region in the East of Germany is 90.4 for the urban and 85.7 for the rural location. The highest purchase power was found in the urban location in the West of Germany with 113.5. As mentioned above, organic food, as opposed to local food, is often expected to be more expensive. Hence, consumers with smaller budgets, like in these parts of the East of Germany, rather avoid buying organic foods.

Hypothesis 4: Urban consumers have a higher preference for organic food, while rural consumers prefer local food over organic food.

Hypothesis 4 is rejected, because the preferences for the surveyed product attributes differ between rural and urban consumers depending on the particular product (Figure 10).

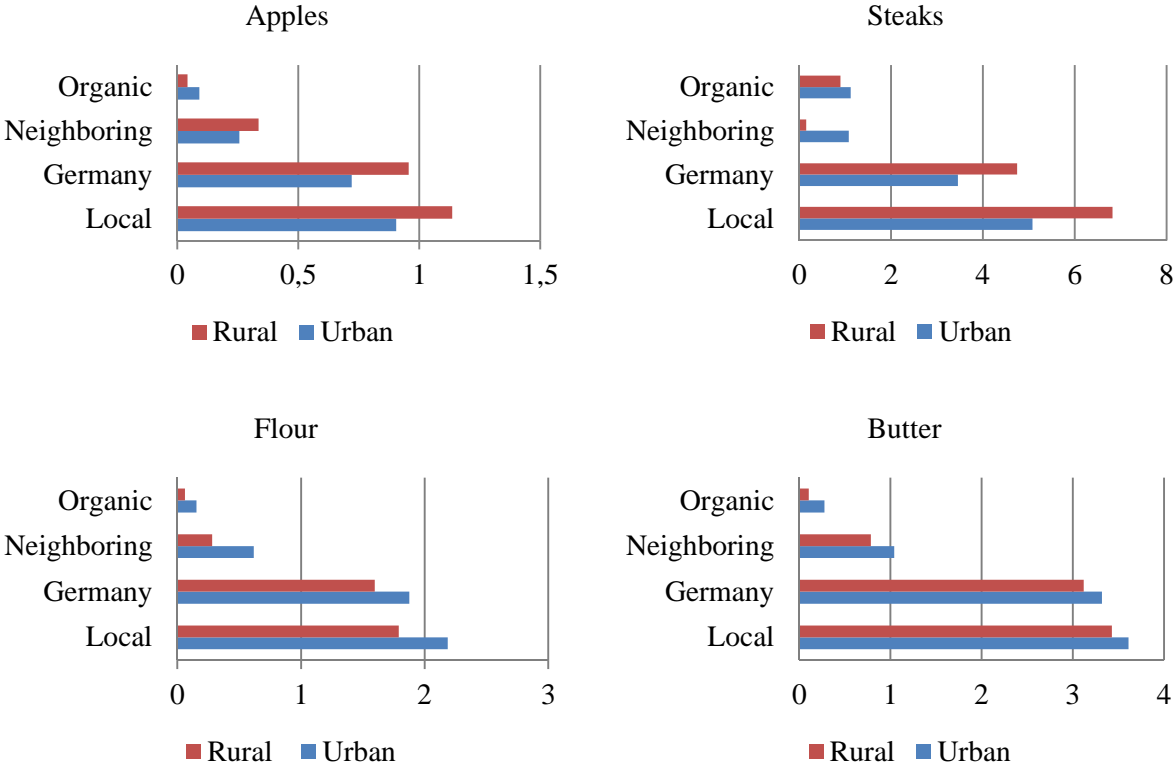


Figure 10: WTP estimates for apples, steaks, flour, and butter, differentiated by rural and urban residences of consumers

Both rural and urban consumers are willing to pay a higher premium for local food as compared to organic food. Urban consumers are willing to pay more for organically produced food than rural consumers. While local and German production is more strongly preferred for apples and steaks by rural consumers, urban consumers more strongly prefer local and German production for flour and butter as opposed to rural consumers (Figure 10). Apples and steaks are unprocessed products, while butter and flour are processed. In future studies, whether the degree of processing influences urban and rural consumers in different ways

should be examined. The results of this study suggest that there might be a relation. Except for apples, rural consumers prefer products from neighboring countries less than urban consumers.

The findings are only partly supported by the results of other recent studies. A number of UK and US studies identified a much greater interest in locally produced food by rural consumers (Brown, 2003; Carpio & Isengildina-Massa, 2009; Khan & Prior, 2010; Megicks et al., 2012; Stanton et al., 2012; Mirosa & Lawson, 2012; Cholette et al., 2013). The results of studies by Brown (2003), Burchardi et al. (2005) and Racine et al. (2013) also indicated that families from the USA and Germany living in rural areas bought local produce more frequently. However, no results were found that either suggested similar preferences amongst urban and rural consumers or differences between urban and rural consumers depending on the type of product examined.

Hypothesis 5 is accepted. Consumer preferences for the food quality attributes ‘local’ and ‘organic’ depend on the product. This hypothesis is explained by the results presented in the context of the previous hypotheses. All figures reveal that there are product-specific preferences for the food quality attributes examined in this study. On the one hand, this relation can be attributed to the seasonal variation, while on the other hand it can be explained by regional differences in plant and animal production. Furthermore, individuals might use local production as a quality indicator and therefore regard it as more important for certain products than for others. Results from this study are supported by findings from other studies, in which product-specific differences between consumer preferences for local products were found.

In a US contingent valuation study, Carpio & Isengildina-Massa (2009) compared the WTP for South Carolina-grown food. The mean WTP for local plant products (27.5%) was slightly higher than the WTP for local animal products (23%). Furthermore, they found that respondents were more sensitive to price changes in local plant products than to changes in prices for local animal products. While Carpio & Isengildina-Massa (2009) compared plant to animal products, Nganje et al. (2011) compared two plant products (spinach and carrots). Their results revealed that the WTP for locally grown spinach was higher than for locally grown carrots (\$0.18/lb to \$0.10/lb) in the USA. With regard to the attribute ‘traceability’, which was also included in this experiment, they showed that consumers were not willing to pay a premium for either spinach or carrots. Roosen et al. (2012) conducted a choice experiment with bread, milk, and beer in Germany, differentiated by organic and local

attributes, among others. The shares of consumers who bought local were higher than the shares of consumers who bought organic in each of the product categories. While the attribute 'local' carried the highest value in the purchase of bread, for beer, the attribute 'produced in Bavaria' was valued the highest (Roosen et al., 2012). The results of a Vickrey auction conducted by Grebitus et al. (2013) in Germany, considering the effect of distance on transportation for apples and wine (perishable vs. non-perishable), revealed that the WTP fell with the distance travelled by the product and that the WTP strongly depended on the type of product. Consumers were willing to pay a higher price premium for apples (€0.49), travelling 20 km instead of 1000 km compared to wine (€0.35) (Grebitus et al., 2013).

4.2.8 Conclusions and recommendations

Building on a literature study, hypotheses related to consumers' preferences for organic food and food from different origins was tested. The S-O-R model frames the study, specifically the choice experiment. This theoretical model proved valuable, in that through its application the results of the experiment allow for insights into the so called response part of the model, which can be traced back to the processes that take place in the organism. The S-O-R model served as a structure to describe the process leading to the final purchase decision. In the case of local and organic food purchase behavior, we focused on how stimuli, namely price, varying quality attributes, and the social and economic environment of consumers, influence activating and cognitive processes in the organism and eventually result in a particular product choice. The discussion of the hypotheses shows that the product attributes used in this choice experiment influenced consumer choices in different ways. Moreover, environmental factors (e.g. consumers' places of residence related to the purchase power in this region) affect purchase decision-making.

Except for one hypothesis, all hypotheses tested in this study proved to be true. We were able to confirm that consumers are generally willing to pay a price premium for organic production as well as for the origin attribute 'local' as opposed to 'from Germany', and 'from a neighboring country'. Furthermore, consumers preferred local food over organically produced food for all products and across all regions in Germany. In addition, we found differences in consumers' preferences depending on the type of product and consumers' places of residence. The hypothesis that urban consumers prefer organic food, while consumers from rural areas prefer local food, was rejected.

This contribution is unique in that it examines organic and local food perception for more than one product in different regions of Germany, including a differentiation between rural and

urban consumers. It would be of scientific interest to carry out further studies on the same issue with even more or other types of products. In addition, the varying places of residence of consumers and the characteristics of these regions need to be taken into account in further studies on organic and local food purchase behavior in other countries. Referring to the theoretical framework, it might also be valuable to focus on further environmental factors influencing consumers purchase behavior in future studies.

Based on the findings of this study, we recommend that marketers consider region-specific and product-specific differences to better market organic and local food products. The focus should be especially directed to the marketing of organic foods, as consumers have recently shown a stronger interest in locally produced food. Hence, marketers of organic products should also consider adding value to their products by focusing on local production. Since at the outset of organic food production, processing and marketing has taken place locally as well, marketers are recommended to reconsider these initial ideas and values of organic food production. Likewise, politicians should take the findings into account when introducing measures to support sustainable agriculture and the viability of local economies.

4.2.9 Acknowledgements

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4.3 How important is local food to organic-minded consumers?

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4.3.1 Abstract

The study deals with German consumers' attitudes towards organic food and local food, their food purchase behaviour and their personal characteristics. The purpose is to investigate the differences in attitudes and willingness-to-pay values between consumers who consider the organic production of food (very) important and those who consider it less important.

This study combines a consumer survey with an in-store, discrete choice experiment. In the analysis, findings from the consumer survey were related to the choices made by consumers in the experiment. Consumers' preferences and willingness-to-pay values were estimated through random parameter logit modelling.

Organic-minded consumers (i.e. those who regarded organic food production as (very) important in the survey) have stronger preferences and estimated willingness-to-pay values for organic as well as local products. Locally produced food, as opposed to food from neighbouring countries or non-EU countries, is preferred over organically produced food by both consumer groups which demonstrates that organic-minded consumers do not only consider organic food production as important, but also value local food production in a purchase situation. Hence, it can be assumed that local food production complements organic food production for the group of organic-minded consumers.

This contribution is the first study dealing with local and organic food purchase behaviour in Germany that examines four different products and is carried out in rural as well as urban locations in four different regions. Due to the application of a choice experiment including no-choice options and binding purchase decisions, the results are expected to be closer to real purchase situations than results of direct questioning and choice experiments in online applications.

4.3.2 Keywords

Consumer behaviour, choice experiment, organic production, food origin, attitude-behaviour gap, willingness-to-pay

4.3.3 Highlights

- Computer-assisted surveys were carried out in eight supermarkets across Germany.
- Choice experiment included no-choice option and binding purchase decision.
- Random parameter logit models elicit strong preferences for local food production.
- Organic-minded consumers also favour local food production.
- “Local” complements “organic” in purchase decisions of organic-minded consumers.

4.3.4 Introduction

Consumers’ growing interest in local, as well as organic, food production has come to light over the last decades. The demand for more transparency in food production has grown due to increasingly complex, globalised food chains and news stories about food scandals around the world (Adams & Salois, 2010). Adams and Salois (2010) showed that organic and local food production have received quite similar attention in previously conducted, quantitative as well as qualitative, studies on these food trends. Both product attributes are associated with better quality, taste, and freshness; they are considered healthy foods that also provide environmental benefits (Conner, Colasanti, Ross, & Smalley, 2010; Adams & Adams, 2011; Bingen, Sage, & Sirieix, 2011; Dunne, Chambers, Giombolini, & Schlegel, 2011; Onozaka & Mc Fadden, 2011; Cranfield, Henson, & Blandon, 2012; Shafie & Rennie, 2012; Stanton, Wiley, & Wirth, 2012; Campbell, Mhlanga, & Lesschaeve, 2013; Grebitus, Lusk, & Nayga, 2013). Organically produced food, however, became part of the globalisation process when demand increased further and could not be met by national supply alone, as, for example, in many European countries (Willer & Lernoud, 2014), whereas local food represents, per definition, an opposite trend, leading to more proximity in food production.

In Germany, Austria, and Switzerland, these days more than 80% of consumers purchase local food several times a month (Warschun et al., 2013). About 80% of consumers, who maintain to strongly identify with their home region, purchase locally produced food on a weekly basis (Oekobarometer, 2013). In contrast, only 22% of the Germans claim to buy organic food products very often or exclusively and 52% only buy them occasionally (Oekobarometer, 2013). Interestingly, the Oekobarometer study (2013) reveals local food production as the most important reason for organic-minded consumers, since 87% of the respondents maintain to purchase organic food for that reason in Germany. Altogether, 92% of all respondents prefer local over organically produced food, while 77% favour a combination of local and organic food production (Oekobarometer, 2013).

While organic food is labelled with national and/or international organic certification logos, there are no common regulations or certification standards for local food. Therefore, it is more difficult to correctly identify local food than it is to identify organic food (Stanton et al., 2012). Nevertheless, many recent preference elicitation studies, including organic and local as two important food product attributes, have shown higher willingness-to-pay values for local than for organic food (James, Rickard, & Rossman, 2009; Costanigro, Kroll, Mc Fadden, & Nurse, 2011; Onken, Bernard, & Pesek, 2011; Wirth, Stanton, & Wiley, 2011). These findings imply that consumers do not necessarily rely on labels in the purchase decision, either because they do not trust them or because they do not know the standards behind the labels and are confused by the multitude of labels as, for example, in the organic market.

Many recent scientific studies have compared consumer preferences for organically and locally produced food by analysing the differences in willingness-to-pay values depending on sociodemographic characteristics, types of products, and places of consumption. So far, there has not been any agreement on whether or not consumers prefer one of the two product attributes over the other (Costanigro, Kroll, Thilmany, & Bunning, 2014; Gracia, Barreiro-Hurlé, & López-Galán, 2014). Acting on the assumption that some consumers might consider both product attributes in purchase decisions, these consumers will occasionally face trade-offs, in which they have to decide for one of them. This study aims at examining organic-minded consumers' purchase decisions in Germany, when they face the choice between products varying in their origin, their method of production, and the price. Furthermore, the aim is to get deeper information on how consumers who take both product attributes (namely origin and production method) into consideration for decision-making might differ from consumers who clearly prefer the close origin of food products. Information on attitudes as well as purchase behaviour is examined to identify potential attitude-behaviour gaps and compare these between both consumer groups. To draw a quite general picture, the study is conducted in conventional supermarkets where consumers can purchase both, organic food of different origins and non-organic food of different origins.

4.3.5 Theoretical background

The growing consumption of organic food is not only supply-driven, but is also a result of the increasing availability of organic food in conventional food stores which has reduced the often stated inconvenience of organic food shopping. While availability and variety of organic products were two main purchase barriers identified in earlier, international studies (Padel & Foster, 2005; Adams & Salois, 2010; Shafie & Rennie, 2012), the globalisation, or

conventionalisation, of the organic food market is a relatively new topic, which has been increasingly covered in recent studies (Lund, Andersen, & O'Doherty Jensen, 2013). The wider availability of organic products and the growing number of importing options have characterised the organic sector development in past years (Adams & Salois, 2010). A second major trend that has been evolving in parallel is the demand for locally produced food (Wirth *et al.*, 2011; Gracia *et al.*, 2014). Local production has emerged as an important quality indicator for food. There is an ongoing debate on how these two trends affect consumers' willingness-to-pay for food products and whether these trends complement each other or compete with each other. To better understand the determinants for organic and local food purchases, Wirth *et al.* (2011) recommend to identify characteristics for the segmentation of consumer groups to better target marketing strategies. However, first of all, further research should address the question of whether there are two separate consumer groups or rather one consumer group, which is in favour of both food trends, but to different degrees.

So far, the vast majority of publications on organic consumers have found weak relations between sociodemographic data and organic food consumption. The only tendency that can be recognised is a relation between gender, age, income, education and organic food consumption, partly due to the positive relation between age and income as well as education and income (Shafie & Rennie, 2012). Female consumers are repeatedly identified as being in favour of alternative and healthy foods, showing a preference for organic food exceeding that of male consumers. Shafie and Rennie (2012) stated that especially women purchase organic food because of environmental reasons. However, price and quality considerations (mostly referring to taste and freshness) remain by far more important determinants for purchase decisions (Padel & Foster, 2005; Hemmerling, Hamm, & Spiller, 2015). Consumers trade off quality considerations and moral beliefs (e.g. those influencing the choice for organically produced food) against financial considerations. This is especially true of younger consumers with lower income who postpone organic food purchases to a later stage in life (Aschemann-Witzel & Niebuhr Aagard, 2014). Price is the main barrier identified in studies on organic food consumption (Padel & Foster, 2005; Shafie & Rennie, 2012). Only consumers who purchase organic food quite frequently tend to be less price-sensitive and buy organic products, even if they perceive them as more expensive (Padel & Foster, 2005; Stolz, Stolz, Hamm, Janssen, & Ruto, 2011). The before-mentioned quality considerations and purchase barriers influence the formation of attitude-behaviour gaps, depending on the intensity and outcome of the trade-off process.

As in the case of organically produced food, female as well as older consumers are also more likely to purchase locally produced food because they are more sensitive to healthy and sustainable food products (Bellows, Alcaraz, & Hallman, 2010; Gracia, deMagistris, & Nayga, 2012; Cholette, Ozluk, Ozsen, & Ungson, 2013; Pelletier, Laska, Neumark-Sztainer, & Story, 2013). Support of the local economy and community, as one aspect of sustainability, was found to be a determinant for local food purchases by Roininen, Arvola, and Lähteenmäki (2006) and Dunne et al. (2011). However, in most studies on local food, quality and taste of the product were identified as the most important purchasing reasons (Adams & Adams, 2011; Bingen *et al.*, 2011; Dunne *et al.*, 2011; Onozaka & Mc Fadden, 2011; Cranfield et al., 2012; Campbell *et al.*, 2013; Grebitus *et al.*, 2013). In contrast to organically produced food, local food is not expected to be more expensive than non-local/conventional (Conner *et al.*, 2010; Sirieix, Kledal, & Sulitang, 2011) and hence, the trade-off between quality considerations, moral beliefs and price, which is strongly affecting organic food choices, should be less distinct for local food.

Due to some overlap in the associations with organic and local food products and the determinants for organic and local food purchases (e.g. freshness, taste, healthiness, animal welfare, environmental friendliness, etc.), consumers who view one of both product attributes as important are more likely to also favour the other (Robinson-O'Brien, Larson, Neumark-Sztainer, Hannan, & Story, 2009; Miroso & Lawson, 2012). Nevertheless, most studies that recently dealt with the comparison of consumers' willingness-to-pay for organic and local food revealed stronger preferences for locally produced food (James *et al.*, 2009; Pouta, Heikkilä, Forsman-Hugg, Isoniemi, & Mäkelä, 2010; Costanigro *et al.*, 2011; Onken *et al.*, 2011; Wirth *et al.*, 2011). The formation of preferences depends on the type of product considered in the purchase situation (Njange, Hughner & Lee, 2011; Roosen, Köttl, & Hasselbach, 2012; Illichmann & Abdulai, 2013).

Based on these findings, it will be valuable to learn more on how organic-minded consumers perceive locally produced food, as they appear to be a consumer group that should also favour local food production.

4.3.6 Methodology

For the analysis of consumers' attitudes and purchase behaviour with regard to organic and local food consumption, a survey was carried out with 641 consumers in supermarkets in rural and urban settings in four regions of Germany (North, South, East, and West). The survey was computer-assisted and self-administered and consisted of a structured questionnaire and a

choice experiment. Consumers entering the supermarkets were screened concerning their age and the consumption of the four products which were part of the choice experiment i.e. only consumers who stated that they bought apples, butter, flour, and steaks at least sometimes were allowed to participate in the study. The product attributes, varying in this choice experiment, were the price level (i.e. four price levels, depending on the product), the production process (i.e. organic and non-organic), and the product's origin (i.e. local, from Germany, from a neighbouring country, and from a non-EU country). Since no official and consistent definition of the term "local" exists, "local" was defined as either being from within 50 km of one's home or from one's home federal state to give some guidance to the consumers in the choice experiment. In the experiment the local product alternatives were simply marked through the writing "locally produced" (i.e. from the region, in the German survey: "aus der Region").

The survey started with questions on consumers' general purchase behaviour. After that, participants received a short introduction on organic, local, and conventional/non-organic food and were asked to carry out the choice experiment which comprised sixteen choice tasks, each of which consisted of three product alternatives and one no-buy option. Prior to the choice experiment, consumers had been informed that one of their choice decisions was binding, i.e. that one of the products had to be purchased at the end of the survey. This experimental setting is important in order to avoid unrealistic over-estimations of consumers' willingness-to-pay values. As revealed by previous research, consumers tend to act differently in real purchase situations than they assume they would behave when asked directly; this phenomenon describes the so-called attitude-behaviour gap (cf. Padel & Foster, 2005). Following the choice task, the participants had to evaluate a statement-battery, consisting of 25 statements related to local and organic food purchasing. The survey ended with questions on consumers' socio-demographic characteristics. After having finished the choice experiments and the survey, participants were told that they were part of an experiment in which it was not possible to offer all the product alternatives presented in the choice experiment, so that consumers were not able to purchase any of the products presented in the experiment. All survey questions were asked in German language; questions and statements used for this publication were translated into English.

Out of the 641 responses from the consumer survey, 638 were analysed; three data sets had to be deleted due to non-meaningful answers. As for the analysis of the choice experiments, seven additional data sets were excluded because these respondents consistently chose the no-

choice option in all 16 choice tasks. Hence, 631 data sets were used to model the results from the choice experiment.

Consumers were divided into two groups according to their own assessment of the importance of purchasing organically produced food. Therefore, at the beginning of the survey, consumers were asked to assess the importance on a scale from one to ten. All consumers choosing eight, nine or ten were classified as being organic-minded consumers (*here*: OMC, respectively Group 1). This threshold was used, because it marked the upper quartile of all respondents. The other consumers (Group 2) are referred to as the group of non-organic-minded consumers (NOMC). The grouping of consumers according to this survey question, however, does not allow for any conclusions regarding their local food purchase behaviour. Hence, the survey responses as well as the choice tasks were examined to present the preferences for all varying product attributes based on this segmentation. The survey responses were analysed using significance tests (chi square and t-tests) in SPSS 20 and the choice experiment was analysed in NLogit 4.0.

4.3.6.1 Choice experiment – Random Parameter Logit (RPL) modelling

Four different products were used to analyse consumer preferences for different product attributes in this experiment; one unprocessed plant and one unprocessed animal product (apples and steaks) and one processed plant and one processed animal product (flour and butter). These products were selected because they are regularly bought by many consumers and because they are available both in local and in organic quality in all parts of Germany. Furthermore, all of these products are not only produced in Germany, but are also imported to Germany from other countries. The different countries of origin chosen for the products in this study are presented in Table 11. The prices were determined based on price checks at discounters, supermarkets, and organic supermarkets shortly before the start of the experiment so as to guarantee product prices that were close to real market prices at that time (Table 11). Table 11 does not include the product origins “locally produced” and “from Germany” as well as the production methods “organic” and “non-organic”, because they do not differ across the four selected products.

Table 11: Prices and countries of origin for different products used in choice experiment

Attribute level	Apples (1kg)	Flour (1kg)	Butter (250g)	Steak (200g)
Price 1	2,49	0,69	1,29	3,49
Price 2	2,99	0,99	1,49	4,49
Price 3	3,49	1,29	1,69	5,49
Price 4	3,99	1,59	1,89	6,49
Neighbouring countries	Austria	Italy	Denmark	France
Non-EU countries	Argentina	Kazakhstan	New Zealand	Australia

The analysis of the choice experiment utilises Random Utility Theory (RUT), which serves as a widely used theoretical framework for preference elicitation methods, e.g. “pick any” choices (Louviere, 2004). RUT is based on the assumption that each individual is a rational decision-maker who aims at maximising his/her utility through specific choices (Cascetta, 2009).

In this choice experiment, consumer utility (U) is assumed to be influenced by the attributes ‘price’, ‘production method’ and ‘product origin’. Consumers give insights into their preferences by choosing one alternative from a set of products with varying attribute level combinations. The individual-specific utility functions are not entirely known; they consist of an observable and an unobservable part (also called error term ϵ). If a consumer chooses one of the products (product i) and the observable utility is V_i , a basic form of the utility function can be written as follows:

$$U_i = V_i + \epsilon_i \text{ (Louviere, 2004).}$$

The model to estimate the choice parameters consisted of four utility functions - one for each product alternative in the choice set. The fourth utility function included an alternative specific constant for the no-buy option. Based on these utility functions, multinomial logit and RPL models as well as willingness-to-pay values were estimated. For further analysis and interpretation, the results of the RPL models were used, as they generated better model quality criteria (i.e. better model fits; R^2 adjusted; cf. Table 13 in annex) than the multinomial logit models.

For an easier comparison of consumer preferences with regard to the different attribute levels, willingness-to-pay estimates were calculated for each product (j), because they show the relation between the coefficients of the particular attribute level and the corresponding coefficient of price. The willingness-to-pay values were calculated as follows:

$$WTP_j = - \frac{\beta(\text{product attribute})_j}{\beta(\text{price})_j}$$

The negative sign is needed to obtain positive willingness-to-pay values, as price coefficients in choice experiments are generally negative. Furthermore, the attribute price was modelled using a lognormal distribution of the negative price (Table 13, annex), because lognormal distributions guarantee positive willingness-to-pay estimates. However, the specification of a random parameter with a lognormal distribution in a utility function might converge with very large mean estimates (i.e. unbounded willingness-to-pay). To overcome this issue, price attributes were entered with a negative sign and reconverted after model estimation (Hensher & Greene, 2002).

4.3.7 Results

4.3.7.1 Description of the sample

The group of respondents regarding organic food production as very important was comprised of 211 consumers (OMC). The remaining consumers make up the second group (NOMC), consisting of 427 consumers. Chi square tests revealed that some sociodemographic characteristics differ significantly between both groups; these are gender ($p \leq 0.01$), age ($p \leq 0.01$), residence in Eastern Germany ($p \leq 0.05$), and college/university degree ($p \leq 0.05$). OMC are significantly older and the share of women is significantly higher than for NOMC. In addition, OMC are more likely to hold a college or university degree and are less likely to live in Eastern Germany. Regarding the level of income and the size of the hometown, both groups do not significantly differ from each other (Table 12).

Table 12: Consumers' sociodemographic data (sociodemographic data with significant differences are framed)

	Total (%)	OMC	NOMC
Number of respondents	638	211	427
Gender			
Female	65.2	75.8	60.0
Male	34.8	24.2	40.0
Age			
18-30 years	19.2	11.8	22.7
31-45 years	31.1	30.3	31.4
46-60 years	35.9	39.8	34.0
>60 years	13.8	18.0	11.7
Average (years)	44.5	47.6	42.9
Education			
No formal qualification	0.3	0.5	0.2
Secondary/Intermediate	40.4	38.4	41.5
College/University qualification	27.7	24.2	29.5
College/University degree	31.5	37.0	28.8
Household net income (monthly)			
< 600 €	3.3	1.4	4.2
600 € to < 1,200 €	9.2	9.5	9.1
1,200 € to < 1,800 €	15.0	15.6	14.8
1,800 € to < 2,400 €	14.6	10.4	16.6
2,400 € to < 3,000 €	13.0	13.7	12.6
3,000 € to < 3,600 €	8.5	8.5	8.4
3,600 € to < 4,200 €	8.0	7.1	8.4
4,200 € to < 4,800 €	4.5	5.7	4.0
4,800 € to < 5,400 €	4.2	4.7	4.0
5,400 € to < 6,000 €	3.3	5.7	2.1
6,000 € and more	3.9	4.3	3.7
No comment	12.4	13.3	11.9
Size of residence			
< 30,000 inhabitants	53.0	50.2	54.3
> 30,000 inhabitants	47.0	49.8	45.7
Region			
North	25.2	28.9	23.4
East	24.9	19.9	27.4
South	24.6	26.5	23.7
West	25.2	24.6	25.5

4.3.7.2 Attitudes and purchase behaviour regarding organic and local food consumption

One aim of the segmentation described above, was to find out more about the attitude-behaviour gap of OMC as revealed by the discrepancies between their responses to the statement battery and questions on their food purchase behaviour and the results of the choice experiment. The preferences of the OMC for the different origin attributes were compared to the preferences for organically produced food and evaluated in comparison to the preferences and willingness-to-pay values of the other group of consumers. First of all, differences in the evaluation of the statement battery between both consumer groups are presented below.

The agreement with statements was rated on a scale from 1 to 5, i.e. from “I do not agree at all.” to “I totally agree.”. In 14 out of 25 statements, the respondents in both groups replied in a significantly different way ($p \leq 0.05$; statements 4, 6, 7, 8, 9, 11, 12, 13, 14, 18, 19, 20, 22, 23, and 24 (statements are framed); Figure 11).

OMC view organic as more important than local food production and also prefers locally produced food over food from far away. Furthermore, OMC would purchase more organic food as well as more local food, if the choice in food stores was better. NOMC do not care as much as OMC about whether the food comes from the EU or from the rest of the world and does not necessarily consider whether it was produced organically when purchasing it. OMC, however, would buy even more local food, if there were official and coherent standards for regulation. NOMC perceive that the price determines the choice between organically produced food without any indication of origin and non-organic food produced locally. In addition, NOMC more strongly agree with the statements that locally produced food and organically produced food seem too expensive. Furthermore, OMC view organic food as healthier and tastier than non-organic food compared to NOMC. Additionally, the social environment of OMC is more likely to purchase organically produced food as well and is thereby most likely influencing the purchase behaviour of OMC.

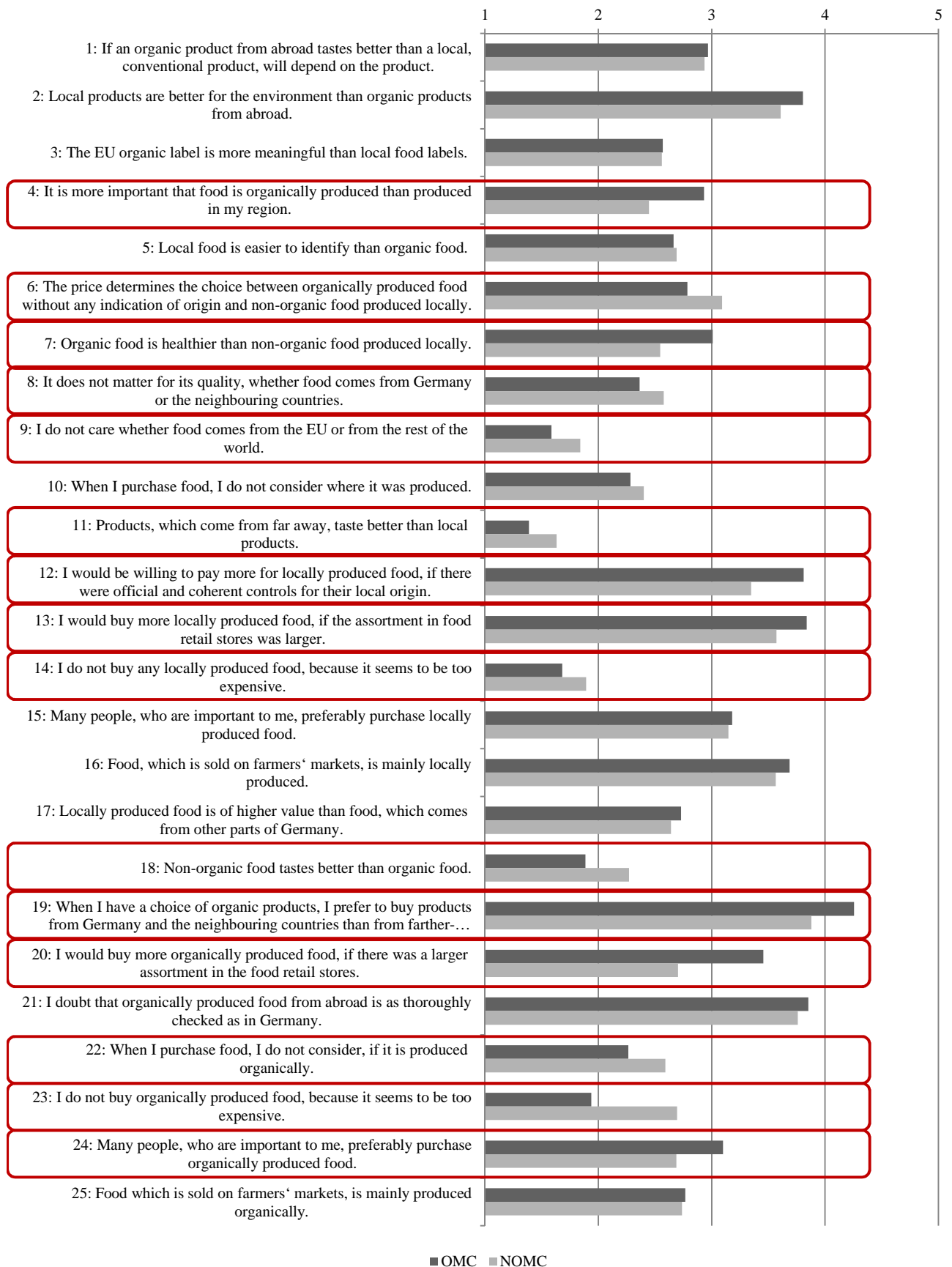


Figure 11: Arithmetic mean values of consumers' evaluation of statements on organic and local food purchase behaviour (scale 1 ("I do not agree at all.") to 5 ("I totally agree.")); statements with significant differences between both groups are framed ($p \leq 0.05$)

4.3.7.3 Consumers' confidence in products from different countries

In the survey, consumers were also asked about their confidence in food products from fifteen different countries on a scale from 1 (lowest level of confidence) to 7 (highest level of confidence); some of these countries were used as countries of origin (i.e. neighbouring countries and non-EU countries) in the choice experiment (cf. Table 11). Figure 12 reveals that OMC state that they are more distrustful of food produced in all countries tested in this survey as opposed to NOMC. For nine countries the two groups revealed significant differences in their confidence ($p \leq 0.05$). OMC trusted products from the Austria, France, the Netherlands, New Zealand, Italy, Spain, Argentina, the United States, and China less than NOMC (Figure 12). Generally, NOMC have more confidence in products from abroad than OMC. This is also reflected in the evaluation of the statement battery, which reveals that OMC have a stronger preference for products that are produced as close to where they live as possible. Interestingly, the confidence in food from New Zealand is ranked among the confidence in food from EU countries, while all other non-EU countries appear at the end of the ranking (Figure 12).

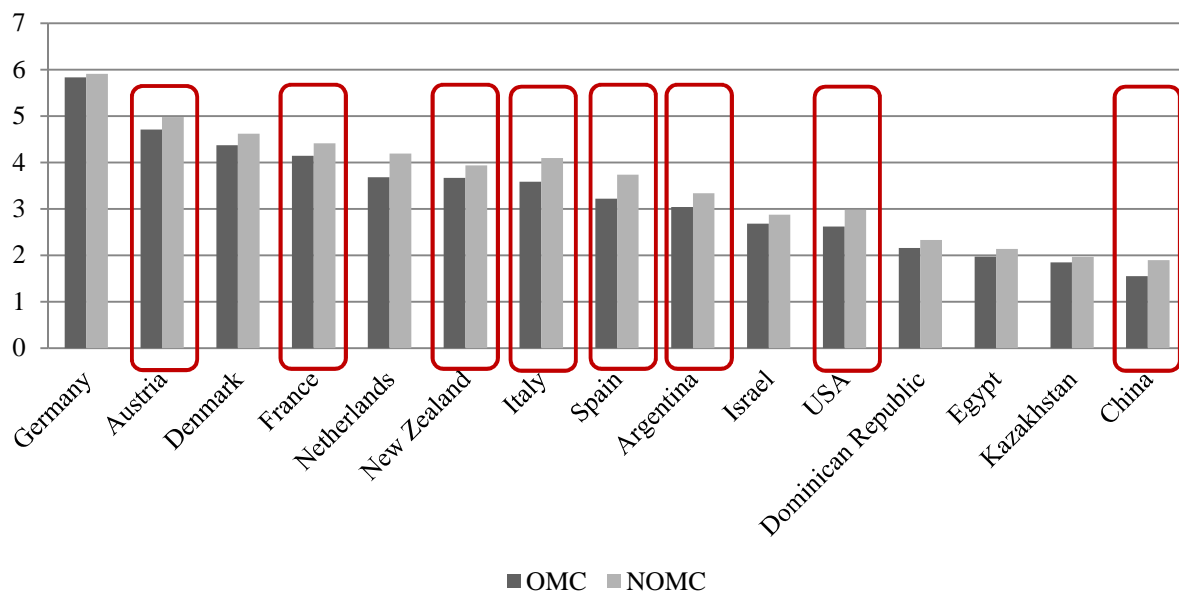


Figure 12: Consumers' confidence in food from different countries (scale 1 (lowest level of confidence) to 7 (highest level of confidence)); countries with significant differences between both groups are framed ($p \leq 0.05$).

4.3.7.4 Willingness-to-pay for organic and local products

To further analyse and validate the results from the survey based segmentation of consumers, RPL models were estimated (Table 13, annex). The models were generated separately for all products and both groups, revealing the preference structure of both groups for each product. Figure 13 presents the preferences of both groups for the different product attributes tested in

the choice experiment (namely product origin, production method, and price) by means of WTP values.

The results of the choice experiment show that OMC have consistently stronger preferences for the product attributes “origin” and “organic production” than NOMC which is reflected in higher willingness-to-pay estimates for all product attributes and products. For apples, butter, and flour, the willingness-to-pay estimates of NOMC for the organic product alternatives even yield negative figures, indicating the low interest in organic production of food by NOMC.

Steaks are the only product, for which both consumer groups value organic production comparably highly. NOMC prefer locally produced products over organically produced alternatives in all four cases, while OMC are willing to pay more for organically produced food than for locally produced food if the base alternative is ‘produced in Germany’, but less, if the base alternative is ‘produced in a neighbouring country’ (except for butter). Comparing the results of the consumer survey with the results of the experiment, the willingness-to-pay estimation reflects the stronger preference for organically produced food by OMC and the lower confidence of these consumers in food from foreign countries.

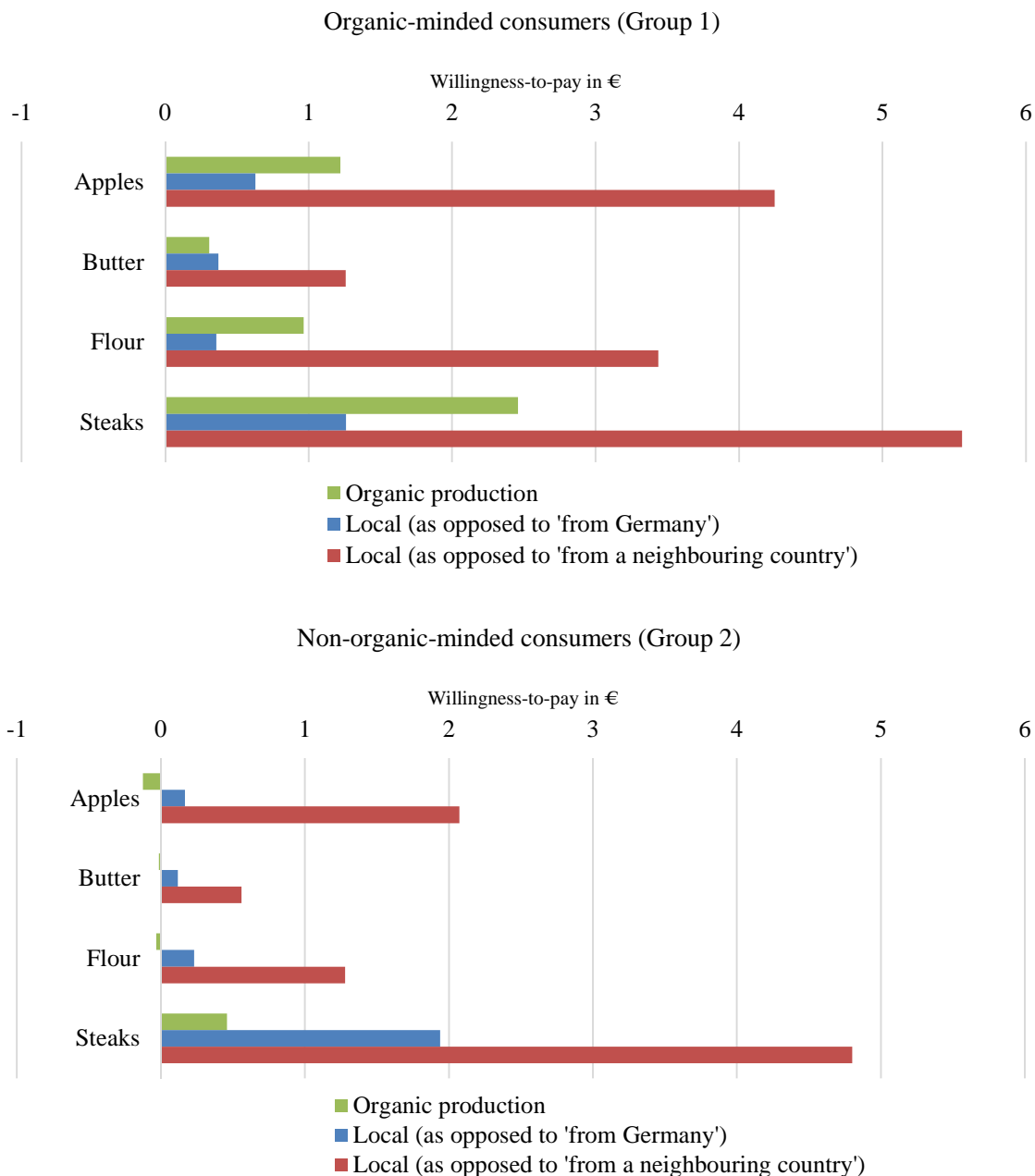


Figure 13: Willingness-to-pay estimates (in €) for apples, butter, flour, and steaks for both groups

Concerning the attitude-behaviour gap, a discrepancy in the attitudes of OMC towards organic food and their purchase behaviour is reflected in their willingness-to-pay elicited through RPL modelling. While OMC maintained that they view organic production as more important than local food production in the statement battery, this personal assessment is only partly reflected in their purchase decisions made in the choice experiment. Indeed, OMC values organically produced food more highly than locally produced food, but only if the alternative is produced in Germany. As soon as the alternative comes from farther away, these consumers prefer

locally over organically produced food. NOMC, however, express their stated preference for locally produced food equally in their purchase decisions in the experiment.

4.3.8 Discussion and conclusions

This contribution compares one group of organic-minded consumers (OMC) to a group of consumers that views organic food production as less important (NOMC). Consumers were divided into two groups according to their own assessment of the importance of purchasing organically produced food. Both groups significantly differ in age, gender, residence in Eastern Germany, and college/university degree. These findings correspond to results of former studies on organic food consumers (Hughner, McDonagh, Prothero, Shultz, & Stanton, 2007; Shafie & Rennie, 2012; Aschemann-Witzel & Niebuhr Aagard, 2014). Studies on local food consumers reveal similar results, in that these consumers tend to be female rather than male, slightly older, and better educated than comparison groups (cf. Bellows *et al.*, 2010; Gracia *et al.*, 2012; Cholette *et al.*, 2013; Pelletier *et al.*, 2013). Concerning the significantly lower share of consumers from Eastern Germany, an explanation can be found in the lower purchasing power of that region compared to other parts of Germany. NOMC are especially price-sensitive and expect organic products to be more expensive, it can be assumed that these consumers have rather negative connotations regarding organically produced food, similar to the results by Padel and Foster (2005) and Aschemann-Witzel and Niebuhr Aagard (2014), stating that conventional consumers tend to care more about prices. Furthermore, OMC maintain that people in their social environment are very likely to purchase local and organic food, which might put some additional pressure on these consumers to buy organic food as well.

Compared to NOMC, OMC are more likely to perceive organic food as healthier and tastier than non-organic food, confirming two important reasons for these consumers to favour organic food, which were also identified in studies on organic food consumers by Padel and Foster (2005) and in the literature review by Hemmerling *et al.* (2015). Hence, it is not surprising that OMC also attach higher importance to organically produced food than to local food. Nevertheless, OMC also have a higher preference for food produced as close to one's home as possible compared to NOMC. This finding is similarly reflected in the analysis of the question regarding consumers' confidence in products from different origins. OMC reveal consistently lower levels of confidence than NOMC. For nine out of 15 countries their confidence is significantly lower. The results of the choice experiment confirm the conclusions drawn from the consumer survey. OMC show higher willingness-to-pay values

for organically produced food than NOMC. This finding underlines the stronger preference for organically produced food by OMC as identified in the survey. Concerning the consideration of product origins, OMC are not willing to pay more for locally produced food as opposed to organically produced food when the alternative is a product coming from Germany (exception: butter), but they are willing to pay more for a local product than for organically produced apples, butter, flour or steaks, if the alternative is a product from a neighbouring or a non-EU country. This indicates that OMC take both product attributes into consideration and trade them off against each other, depending on the particular purchase situation, especially on the origin and production method of all available product alternatives (cf. Gracia et al., 2014). The gap between the attitudes and the purchase behaviour appears to be larger for OMC, because they assess the importance of organic food production as very high, but in the choice experiment might rather decide for a product, which is produced closer to their home than for an organic alternative, which is produced far away.

NOMC show consistently lower willingness-to-pay values for all product attributes; the willingness-to-pay values for organically produced apples, butter, and flour are even negative. Steaks are the only product for which these consumers are willing to pay a premium if they are produced organically. This potentially indicates the relevance of animal welfare in purchase decisions, which is frequently associated with organic production standards (cf. Zander & Hamm, 2010). It is obvious that NOMC prefer locally over organically produced food, independent of the origin of the product alternative (i.e. from Germany, from a neighbouring country, from a non-EU country) for apples, butter, flour, and steaks. In the light of perceived higher prices of organic food, this finding corresponds to previous research by Padel and Foster (2005) and Stolz et al. (2011), revealing that conventional consumers are more price-sensitive than organic consumers. These results imply that NOMC rather act according to their stated attitudes, in that they do not view organic food production as very important and likewise are not willing to pay more for organically produced food.

Evidently, willingness-to-pay estimates for butter and flour are consistently lower than those for apples and steaks. The main reason for this finding is that, as the price levels for butter and flour are quite low, lower willingness-to-pay values will consequently result. In addition, butter and flour are both processed products as opposed to apples and steaks, which are unprocessed. This might indicate that consumers are willing to pay more for locally produced products, if these products are unprocessed. Additional studies are needed to examine whether local production is really less preferred by consumers for processed food products. For

organic products, the relation between the willingness-to-pay and the level of processing did not turn out to be as distinct as for local products in this study.

Against the background of those studies that already dealt with the question on how the two food trends, local and organic production, affect each other, this contribution revealed that OMC most likely also favour local food production. In some cases OMC prefer locally produced food even more than organically produced food, indicating that both attributes complement each other for this consumer group. This contribution, therefore, agrees to the findings of Gracia et al. (2014), suggesting that there are a number of consumers who favour the combination of local and organic food production.

Thus, retailers of organic food products should also focus on sourcing food locally and clearly communicate that these products are local. Similarly, Zander and Hamm (2010) recommend to communicate additional ethical attributes, especially animal welfare and local production, as a promising strategy to differentiate products on the organic market. In their study animal welfare and local production turned out to be the most important attributes in consumers' decisions for organic food, even more important than price, revealing the willingness to purchase organic products with additional ethical values (Zander & Hamm, 2010). Likewise, the Oekobarometer study (2013) identified a great share of German consumers who would appreciate food products comprising both attributes. These findings lead to the conclusion that the combination of product attributes, especially of those that seem to complement one another, should be pursued more intensively in food products' marketing and communication.

Concerning the methodological approach, we decided not to use factor analysis to reduce the statements tested in this survey. The results of an explorative factor analysis were not satisfactory, as one third of the statements had to be excluded and the variance explained by those factors was very low. Furthermore, we restrained from applying a latent class approach as this study comprises individual designs and models for each product in the choice experiment. Hence, a latent class analysis would have yielded different consumer groups for each product. The aim of this research was to closer examine organic-minded consumers. Linking the survey results to the modelling of consumer choices for all four products turned out to be a suitable way to deeply analyse the differences in attitudes and purchase behaviour between two consumer groups. The combination of both methods helped to draw a consistent picture of organic and local food purchase behaviour of organic-minded consumers and reveal a gap between their attitudes and their behaviour during the choice decisions. The

identification of this gap reveals the advantage of additionally applying a choice experiment instead of only directly surveying consumers on their attitudes and preferences.

Further research is needed to find out more about differences in the preferences for local and organic, processed and unprocessed food products. Studies with comparable results could not be found. Likewise, this contribution shows that consumers' preferences and purchase behaviour might vary depending on the region of residence. Hence, to generalise findings for one country or to identify regional differences within one country, survey locations need to be as widely spread as possible to take regional characteristics into account.

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4.3.11 Appendix

Table 13: Coefficients (β -values), standard errors, and quality criteria of RPL-models for both groups and all four products

	Apples				Butter			
	OMC β	Std. error	NOMC β	Std. error	OMC β	Std. error	NOMC β	Std. error
Price	-0,7815		-1,5755		-2,6669		-4,9062	
Nprice (loglinear)	-0,2465	0,1604	0,4546	0,0675**	0,9809	0,1392**	1,5905	0,0617**
Local	4,746	0,3337**	4,2891	0,2205**	4,6815	0,2954**	3,8372	0,1959**
Germany	4,2544	0,3456**	4,025	0,2225**	3,6891	0,2511**	3,2549	0,1802**
Neighb. country	1,4259	0,3886**	1,0238	0,2443**	1,3243	0,3478**	1,0928	0,1878**
Organic	0,9551	0,1910**	-0,1981	0,1228	0,8214	0,1654**	-0,0667	0,1206
ASCNoBuy	-1,1023	0,4886*	-4,4323	0,3566**	-3,3859	0,5528**	-7,6251	0,4437**
No. of obs.	836		1688		836		1688	
LL function	-687,773		-1382,153		-680,173		-1409,521	
R ² adjusted	0,407		0,4094		0,413		0,3977	
Pts	1000		1000		1000		1000	
	Flour				Steaks			
Price	-1,3204		-3,0747		-0,5732		-0,5906	
Nprice (loglinear)	0,2779	0,344	1,1232	0,1184**	-0,5566	0,1986**	-0,5267	0,0968**
Local	6,2264	0,6761**	5,0972	0,3117**	4,1009	0,3245**	3,0813	0,1543**
Germany	5,7554	0,6871**	4,3854	0,2780**	3,378	0,3506**	1,9362	0,1233**
Neighb. country	1,6867	0,5319**	1,1627	0,2292**	0,9165	0,3245**	0,246	0,1347
Organic	1,276	0,2557**	-0,1021	0,5009	1,4099	0,2041**	0,2707	0,0860**
ASCNoBuy	1,463	0,7868	-2,7288	0,3478**	-1,4218	0,3277**	-3,4947	0,2501**
No. of obs.	836		1688		836		1688	
LL function	-510,844		-1167,266		-659,6		-1502,416	
R ² adjusted	0,559		0,5012		0,431		0,358	
Pts	1000		1000		1000		1000	

5 Discussion and conclusions

This chapter deals with the discussion of the study's results and the conclusions which can be drawn from these findings. The first subchapter (Chapter 5.1) discusses the present findings in a German context. Subsequently, the findings are discussed in a broader context: The results concerning consumer perceptions, attitudes, preferences and WTP regarding organically produced food and food from different origins are compared to previous, mostly international, studies. Thirdly, the merits and limitations of the research conducted, i.e. literature review, theoretical framework, methodological approach, experimental design, and data collection, are outlined. The second subchapter (Chapter 5.2) presents conclusions of the present findings, which are translated into recommendations for actors in the non-organic and organic food retail sector, politicians, as well as researchers.

5.1 Discussion

For the investigation of whether there really is a growing competition between locally and organically produced food as suggested by a number of German consumer studies, this dissertation dealt with the primary aim of getting deeper insights into German consumers' attitudes, preferences and WTP-values for organically produced food and food from different origins.

This first objective was achieved, in that consumers' perceptions and attitudes towards organically and locally produced food were examined, including the analysis of consumers' sociodemographic data. This was not only done on the basis of this study's survey, but also through the analysis of recent, scientific contributions on this topic. This research was a contribution to the multitude of international studies on local and organic food purchase behaviour, in that it presented the German perspective in detail, considering the influence of different products and consumers' places of residence. Thereby, this dissertation conveyed a better understanding of consumers' perceptions and associations and revealed differences and similarities in consumers' attitudes towards both food quality attributes. Based on the results, recommendations for communication and marketing were developed, revealing factors that need to be taken into account to more effectively address consumers who are interested in organically and locally produced food. The study's findings also indicated that additional explanation is necessary to successfully market processed products as "locally produced". Consumers would only be willing to pay a premium for these products, if they understood and trusted the production process and its standards.

The second aim, exploring consumers' preferences and WTP values for organic food and food from different origins, was achieved by conducting a choice experiment with alternatives varying in product origin, production method, and price. However, it turned out to be very difficult to compare the development of consumer preferences for organic and local food and how they affect each other. The purchase decision for organic as well as local food products is strongly influenced by various factors, i.e. decisions cannot be reduced to the choice between organically produced products and locally produced products, but there will always be a trade-off between a multitude of factors. Nevertheless, the results of this study indicated that local food purchases are more widespread across the whole population in Germany than organic food purchases. Furthermore, organic-minded consumers also favour locally produced food, sometimes even more than organically produced products. Hence, they rather consider both, the food product's origin and the type of production, and trade them off against each other in the purchase situation. Regional differences in German consumers' preferences can be explained by economic and cultural characteristics of the regions that were part of this study.

Consumers' preferences were compared with their stated perceptions and attitudes to reveal potential gaps between their attitudes and their choice behaviour in the experiment. Consumers, who stated that they did not perceive organic food production as very important, revealed a more positive attitude towards local than organic food purchases in this study. Organic-minded consumers, i.e. consumers, who perceived organic food production as very important, were not willing to pay a higher premium for organic food products than for local food products. Hence, less organic-minded consumers rather behave according to their attitudes in the choice experiment than organic-minded consumers.

In the following section, the findings of this dissertation are discussed according to the above-mentioned research objectives. The discussion is largely based on the comparison of this study's results with the results of other – national and international – studies.

5.1.1 Discussion of the results in a German context

Viewing this study's findings in the context of national consumer studies will add to the generation of a more holistic picture on organic and local food purchase behaviour as well as the perceived growing competition between both trends in Germany. While German consumer studies consistently report great shares of local food consumers and high amounts of local food purchases (Gahmann and Antonoff, 2012; GfK Consumer Scan, 2013; Oekobarometer, 2013; Warschun et al., 2014), the German organic market seems to grow on a

rather small scale (Oekobarometer, 2013). However, two aspects have to be kept in mind. Firstly, it is very difficult to realistically determine local food shares due to the heterogeneous definitions of local food and secondly, the organic food market is most of all influenced by a small share of intensive organic food buyers, who are responsible for the greatest share of the organic turnover. Buder (2011) revealed that 3% of German households belong to the group of intensive organic buyers, in which 39% of the total turnover of organic food is generated. The group of casual and non-buyers consists of 50% of all German households, but is only responsible for 4% of the organic turnover. Furthermore, intensive organic buyers state to buy organic food partly because they expect organic food to be locally produced (Buder, 2011; Oekobarometer, 2013). Hence, it is very difficult to compare the development of both trends and how they affect each other. Although the most frequently stated reasons for local and likewise for organic food purchases are taste and freshness, the purchase decision for organic as well as local food products is also strongly influenced by factors like the type of product, some sociodemographic characteristics, and price premiums. This was not only revealed through scientific, international studies, but also in this contribution as well as in recent German consumer studies (GfK Consumer Scan, 2013; Oekobarometer, 2013). Thus, in reality, decisions cannot be reduced to the choice between organically produced products and locally produced products, but there will always be a trade-off between a multitude of factors. Nevertheless, if German consumers are asked directly, most of them favour local over organic food production (GfK Consumer Scan, 2013; Oekobarometer, 2013; Warschun et al., 2014), corresponding to the findings of this dissertation. Results of the Nestlé study 2012 revealed that an increasing amount of German consumers considers quality rather than price in food purchases (Gahmann and Antonoff, 2012). However, the WTP for local food varies considerably depending on consumers' price sensitivity and the particular product category; in that aspect the situation in Germany is very similar to the situation in other countries. In addition, the AT Kearney consumer study on local food in Germany by Warschun et al., (2013) reveals that organic production, as well as sustainable food production in general, is mainly relevant to more organic-minded consumers, who regularly shop in organic food stores. Similarly, the results of this survey indicate that especially organic-minded consumers are not price-sensitive and rather care about the quality of food (in terms of local as well as organic food production), but conclusions on the development of the importance of quality as opposed to price for German consumers cannot be drawn from these results. Concerning the influence of the type of product on the differences in preferences, the choice experiment reveals results similar to those of German consumer studies. Thus, local as well as organic

food production is more strongly preferred for fresh, unprocessed food than for processed products in Germany (Oekobarometer, 2013; Warschun et al., 2014). This is an important finding for retailers and marketers, because it indicates that additional explanation is necessary to successfully market processed products as “locally produced”. Consumers will only be willing to pay a premium for these products, if they understand and trust the production process and its standards.

In order to improve consumers’ trust in locally produced food, unprocessed as well as processed, the “regional window” was introduced in Germany in January 2014 (Hermanowski et al., 2014). The common standards across Germany and the origin information for all main ingredients help interested consumers to easily assess why products are eligible to carry this label. In addition, the control through a neutral inspection system can satisfy German consumers’ demand for official certification logos; this can be expected based on a study by Janssen and Hamm (2012) for organic food products, in which consumers were willing to pay more for organic certification labels than for generic logos with the prefix organic. Product labelling through third party certification helps to overcome information asymmetry between producers and consumers, especially for products for which consumers cannot verify the promised standards. Those product labels that were known for their perceived strict standards and controls were most preferred by consumers. In Germany, for example, the highest WTP was recorded for the “Demeter” label (Janssen and Hamm, 2012). Nevertheless, the introduction of an official certification logo needs to be embedded in a thorough information campaign to increase consumers’ awareness and trust as well as their WTP. If consumers do not understand the underlying criteria, they might easily lose their trust in the certification system (Hermanowski et al., 2014).

5.1.2 Discussion of the results in the context of international studies

This dissertation is a contribution to the multitude of international studies on local and organic food purchase behaviour, in that it presents the German perspective in detail, considering the influence of different products and consumers’ places of residence. The present study aims at drawing a more holistic picture on these two recent food trends and how they affect each other.

Concerning local food production very heterogeneous definitions of “local” have emerged, leading to a vague concept of local food depending on individual factors and interpretations (Pearson et al., 2011), whereas organic food production is subject to clear standards and a certification system. The understanding of local food production depends on the region

consumers live in and on the product they want to purchase. Likewise, consumers' preferences and WTP for organically produced food are influenced by consumers' places of residence and the particular type of product (Aertsens et al., 2009; Carpio and Isengildina-Massa, 2009; Nganje et al., 2011; Roosen et al., 2012; Grebitus et al., 2013; Illichmann and Abdulai, 2013; Waegeli and Hamm, 2013). It was possible to confirm these findings concerning the product-specific differences in preferences in the quantitative part of the study, but with regard to the places of residence, only a negative relation between organic food purchases and consumers living in the Eastern part of Germany could be found. This relation is expected to originate from the lower economic purchase power in this region.

Taste, as one of the most frequently stated motives for food choices in general, is also relevant for local food purchases (Bond et al., 2008; Naspetti and Bodini, 2008; Yue and Tong, 2009; Zepeda and Deal, 2009; Conner et al., 2010; Onozaka and Mc Fadden, 2011; Adams and Adams, 2011; Bingen et al., 2011; Dunne et al., 2011; Cranfield, 2012; Campbell et al., 2013; Grebitus et al., 2013). The knowledge of the place of origin is a premium for consumers, but not decisive in cases in which a product is not expected to be tasty and of good quality. However, many consumers associate better taste, more healthiness and transparency with local food. Likewise, in a literature review on the personal determinants of organic food consumption, Aertsens et al. (2009) revealed that consumers associate better taste, healthiness, and environmental friendliness with organic food. Hence, these influencing factors need to be taken into account for effective marketing and communication of local as well as organic food products.

The literature review revealed a gap concerning research on habits (e.g. choice of purchase location, cooking and eating routines, etc.) which might influence local food purchase behaviour (cf. Chapter 4.1.6). Knowledge on these habits would further improve the understanding of local food consumers and potentially increase the general demand through the adaptation of marketing initiatives. More information can be found on contextual factors that reveal an impact on local food purchases in recent research. These include the major purchase barriers, which in the case of local food are the lack of availability and the challenge of correctly identifying truly local food products and understanding their underlying standards (Zepeda and Leviten-Reid, 2004; Chambers et al., 2007; Kemp et al., 2010). The introduction of a local label with consistent standards across Germany (namely "regional window") reduces this purchase barrier and enhances consumers' trust, because the transparency of local food production and processing increases. In addition, the label meets consumers' demand for

common and comprehensive standards as well as recognisability of local food (Hermanowski et al., 2014). However, further empirical testing of consumers' attitudes to a new local food label will be necessary.

Moreover, the literature review showed that contextual factors do not only include purchase barriers, but also positive influences towards behaviour. There is, for example, a positive interaction between the enjoyment of cooking or the higher appreciation of family time and local food purchases (Bellows et al., 2010; Cranfield et al. 2012; Miroso and Lawson, 2012; Zepeda and Nie, 2012). The validation of these findings as well as the determination of further influences (e.g. social pressure through family, friends, etc.) on local as well as organic food purchases should find attention in future studies. Moreover, similar research needs to be carried out in other countries and different regions within countries, as an influence of the socio-cultural background as well as of specific national or regional characteristics (e.g. purchase power, legislation, etc.) can be expected. The consideration of contextual factors and consumers' habits is very interesting for marketers as it helps to better respond to consumers' needs. The application of the Alphabet Theory (see chapter 4.1.3 for more details) on the literature gave interesting insights into the formation of local food purchase behaviour based on different influences and their interactions. This helped to identify important factors that need to be considered in marketing and communication of local food, e.g. the belief that local food is tastier and healthier than non-local food and the enjoyment of cooking that influences local food shopping. Furthermore, research areas were revealed which need further attention.

Concerning sociodemographic characteristics, the study identified a significant influence of age, gender, and college/university degree on consumers' WTP for organic food. This corresponds to findings from earlier studies, in that female and older consumers with higher education tend to purchase more organically produced food (Hughner et al., 2007; Shafie and Rennie, 2012; Aschemann-Witzel and Niebuhr Aagard, 2014). For locally produced food, however, relations between sociodemographic data and purchase behaviour are not as distinct. Some studies on local food consumers reveal results which are similar to those of organic food consumers, in that they tend to be female rather than male, slightly older, and better educated than comparison groups (Bellows et al., 2010; Gracia et al., 2012; Cholette et al., 2013; Pelletier et al., 2013). These findings, however, could not be confirmed by this study, indicating that local food purchases are more widespread across the whole population in Germany than organic food purchases. This corresponds to the finding of Buder (2011),

revealing that the greatest share of the organic turnover in Germany can be allocated to only a very small group of dedicated organic food buyers.

The choice experiment was carried out with apples, butter, flour, and steaks to analyse product-specific differences in consumers' preferences. A generally higher WTP for organic production was determined for steaks as compared to the other three products. For the local origin attribute, the WTP values for butter and flour were consistently lower than those for apples and steaks. One reason for this finding might be the lower price level of butter and flour in the choice experiment, consequently resulting in lower WTP estimates. Another reason might be the level of processing, which might affect consumers' WTP. While apples and steaks are both unprocessed, butter and flour are processed products; hence, this finding might indicate that local production is rather preferred for unprocessed food products than for processed food products (cf. Chapter 4.2). Chambers et al. (2007) reveal a similar relation; they concluded that consumers prefer local food production for products with a low level of processing. In contrast, Carpio and Isengildina-Massa (2009) showed that consumers are willing to pay more for local plant than for local animal products. Hence, the relation between the type of product as well as the level of processing and consumers' preferences needs more evidence in future research. For organic products, a relation between the level of processing and the WTP could not be found in this study and also needs further investigation (cf. Chapter 4.2.7).

As mentioned above – in the context of the literature review – consumers' preferences depend on the type of product, which can be seen in the stronger preferences for organically produced steaks as compared to the WTP for the other products in organic quality. In addition, there are regional differences in consumers' preferences, which can be explained by economic and cultural characteristics, which vary across Germany. However, no clear difference in the preferences of urban consumers and consumers from rural areas was observed, although the literature review suggested a stronger preference for local food by rural consumers (cf. Chapter 4.1.6).

This study revealed that organic-minded consumers also favour locally produced food, sometimes even more than organically produced products. Their choices strongly depend on the origin of the non-local alternatives (i.e. from Germany vs. from a neighbouring country vs. from a non-EU country); organic-minded consumers would rather buy local organic products than organic products from Germany, but they would rather buy local, non-organic products than organic products from far away (cf. Chapter 4.3.8). Other recent studies

revealed similar results, in that consumers prefer locally over organically produced food as well as food that is produced as locally as possible (James et al., 2009; Costanigro et al., 2011; Onken et al., 2011; Wirth et al., 2011). Moreover, this finding corresponds to the results of other studies on sustainable food purchase behaviour, showing that consumers who are in favour of one sustainable food product, more likely also prefer other sustainable food products (Robinson-O'Brien et al., 2009; Miroso and Lawson, 2012). The other way around, however, the results seem to be different in this study; consumers interested in local food do not necessarily view organic food production as important.

Often-stated barriers for the purchase of sustainable food products are price, availability, and convenience. In the context of organic food, price is identified as the main purchase barrier (Padel and Foster, 2005; Aertsens et al., 2009; Shafie and Rennie, 2012), while for local food availability and convenience as well as trust appear to be obstacles that are more important (Zepeda and Leviten-Reid, 2004; Chambers et al., 2007; Kemp et al., 2010; Hermanowski et al., 2014). It is assumed that due to the associated close proximity of local food and the reduction of food supply chains consumers do not expect local food to be more expensive (Brown, 2003; Conner et al., 2010; Sirieix et al., 2011). Interestingly, most of the consumers in this study were willing to pay more for local food than for organic food for all four products. One reason for this finding could be that the purchase barrier price is more strongly pronounced for organic than for local foods, as organic food is often associated with high prices by non-dedicated organic food buyers, while, apart from that, consumers associate similar characteristics with both food attributes. Hence, the attitude-behaviour gap for local food consumers appears to be reduced as the price does not hinder them from local food purchases. As these consumers stated that they do not perceive organic food production as very important and revealed a more positive attitude towards local food purchases in this study, they rather behave according to their attitudes than organic-minded consumers. Organic-minded food consumers, however, seem to be more likely to consider both product attributes and trade them off against each other, depending on the particular purchase situation (i.e. type of product, country of origin, product alternatives, and price) (cf. Chapter 4.3.9). This finding corresponds to previous research by Padel and Foster (2005) and Stolz et al. (2011), revealing the importance of price as a barrier for organic food purchases and indicating that conventional consumers are more price-sensitive than organic consumers.

The consumer survey revealed that organic-minded consumers have less confidence in food imported from foreign countries than the other consumers. This finding is confirmed by the

results of the choice experiment, as the organic-minded consumers are not willing to pay more for locally produced food as opposed to organically produced food if the alternative is a product coming from Germany (exception: butter), but they are willing to pay more for a local product than for organically produced apples, butter, flour or steaks, if the alternative is a product from a neighbouring or a non-EU country (cf. Chapter 4.3.8). Adams and Salois (2010) indicate that one reason for the increasing importance of local food supply chains, also for organic-minded consumers, are the growing imports in the organic food market (i.e. globalisation of the organic sector), which lead to reduced transparency and trust in organic food products.

5.1.3 Merits and limitations of the present research

The subsequent section presents the merits and limitations of this study. It covers the following issues: literature review, theoretical framework, methodological approach, experimental design, and data collection.

With regard to the literature review, it needs to be kept in mind that international studies, published in English, were taken into account. Hence, there might be a bias, because the UK and US perspectives were better documented than findings from other non-English speaking countries. Furthermore, only certain search terms and online catalogues were chosen to limit the search to meaningful results. A large number of studies was reviewed, but nevertheless it cannot be ensured that the search completely covered all relevant publications.

The SOR model was used to frame the quantitative part of the research, specifically the choice experiment. The theoretical approach proved valuable, because it helped to explain the so called response part of the model by including the unobservable processes that take place in the organism (Kotler and Armstrong, 2011). The model helped to structure and to illustrate the process leading to the final purchase decision, i.e. the behaviour of the consumer; thereby it was easier to understand and interpret the results. The varying product attributes tested in the choice experiment went into the model as stimuli, which were expected to influence the responses. However, not only the product attributes influenced the decision-making processes, also the social and economic circumstances of consumers needed to be considered. The variation of these factors and their individual examination revealed differences in consumer behaviour and allowed conclusions to be drawn on the unobservable processes in the organism and their effects on consumers' decision-making (Armstrong and Kotler, 2009). In this study, the open-mindedness towards organic food production as well as the trust in food products from foreign countries could be named as examples for unobservable factors

influencing the responses in terms of preferences. From the experiences of this study the SOR model proved to be a useful frame for studies that combine consumer surveys with choice experiments; its application is recommended for future research.

The use of RUT and Lancaster's Theory of Consumer Demand automatically arose from the decision for a choice experiment in this study, because both theories provide explanations for choice behaviour and traditionally frame discrete choice models. The theoretical background of choice experiments has been extended from Thurstone's original idea of pairwise comparisons to multiple comparisons during the last decades – parallel to the growing use of choice experiments in research on human behaviour and preferences (Louviere et al., 2010). The adaptation of the traditional theory to increasingly complex choice experiment applications proved necessary and valuable in the context of consumer behaviour research.

Choice experiments, in general, were limited in their potential to reveal realistic purchase decisions (cf. chapter 3.2), because consumers knew that they were part of an experiment, in which they were asked to decide for one product alternative. Hence, consumers tended to give socially desirable responses and to overstate their WTP to present themselves in a perceived positive way. Compared to direct surveying, choice experiments helped to reduce social desirability, but could not totally avoid it (Breidert et al., 2006; Voelckner, 2006). Binding purchase decisions (i.e. incentive-aligned mechanisms) were employed to further tackle the problem of social desirability. By introducing the fact that one of the product alternatives that was chosen during the experiment had to be purchased in the end, the researcher aimed at revealing more realistic purchase decisions (Voelckner, 2006). Thus, consumers had to choose according to their real preferences in each choice task, because the product alternative that had to be purchased was randomly drawn at the end, so that consumers did not know which one would be drawn. One problem related to the implementation of a binding purchase situation was an ethical one, as the participants were told that they would have to purchase a product which did not even exist. The researcher had to balance this ethical issue against the benefits of a binding purchase decision when planning the experiment. Another aspect which needed to be considered is the fact, that consumers received an expense allowance (namely, a 10 € gift certificate for the store, in which they were surveyed) for the participation in the survey. Hence, the consumers might have spent their money more easily as they would have done in a real purchase situation.

This study included four products in the choice experiment in order to cover an unprocessed plant and animal product as well as a processed plant and animal product. To confirm the

differences in WTP values between processed and unprocessed products, further studies with more and different products are needed. However, it has to be considered, that it is very time-consuming and expensive to conduct a choice experiment with a large number of products, because a minimal number of choice tasks is required to receive valid results for each product. As different preference structures can be expected for different products, it is recommended to generate individual experimental designs. Hence, the more products are tested, the more respondents have to be surveyed. To overcome the issue of overburdening consumers with too many choice tasks for one product (i.e. cognitive burden of decision-making, Scarpa et al., 2009), an experimental design can be divided into blocks; a design involving for example 24 choice tasks can be split into six blocks with four choice tasks each or into four blocks with six choice tasks each. Blocking experimental designs reduces the cognitive burden for each respondent, but makes it necessary to survey more consumers. The more blocks the researcher generates, the more respondents are needed to get sufficient responses for the analysis of the experiment. Altogether, the number of choice tasks per person may not exceed a certain limit, because respondents' concentration decreases with an increasing number of choice tasks (De Shazo and Fermo, 2002). To sum up, the researcher needs to trade off between the number of products, the number of choice tasks, and the number of respondents, while keeping the experiment's validity and reliability as well as time and financial budgets in mind.

The study's main strength lay in its combination of methodological approaches, i.e. a consumer survey to investigate consumers' attitudes, general purchase behaviour, and sociodemographic data with an experiment to get deeper insight into consumers' preferences. The choice of a single-source approach allowed for the interrelation of results from the survey and the experiment and thus provided, for example, information on the existence of attitude-behaviour gaps, especially for organic-minded consumers (cf. Chapter 4.3.9). The comparison of different preference elicitation methods resulted in the application of a choice experiment, including an incentive-compatible approach as well as a no-choice option to reduce the overstatement of consumers' WTP values and to increase the validity of the experiment. Therefore, it could be expected that the choice experiment yielded results that were quite close to real purchase behaviour. Thus, the methodological approach seemed to be a good choice to tackle the research objectives, as it yielded plausible results and harmonised well with the theoretical background of this study.

The survey was carried out in eight conventional supermarkets across Germany, because only in conventional stores consumers have the choice between organic food products, which are

either locally grown or produced further away as well as the respective non-organic alternatives. Due to the fact that most consumers in Germany purchase their food in supermarkets (EHI Retail Institute, 2012), they were chosen for the survey to cover “average” German consumers. Moreover, as most organic food purchases in Germany take place in conventional supermarkets, it was expected to also meet organic consumers in these survey locations (Buder, 2011; Oekobarometer, 2013). To evaluate the difference between organic-minded and non-organic food buyers, consumers were asked to assess how important they view organic food production. On this basis, two consumer groups were formed and compared. However, the frequency and amount of organic food purchases were no criteria for the screening of respondents in this survey. To get more detailed information on attitudes of organic consumers and their preferences for the product alternatives tested in this study, an additional survey with dedicated organic buyers could be of interest for further research; thereby this study’s topic would be examined from an additional perspective.

5.2 Conclusions and recommendations

In this chapter conclusions from the results of this dissertation and their discussion in the context of other national and international findings are drawn and recommendations are presented.

The literature review revealed that the two relatively parallel trends of the growing demand for organic and local food products lead to very similar associations through consumers (cf. Chapter 4.1). Nevertheless, locally produced food contains a strongly emotional component, because “local” is not officially defined and thereby leaves much space for individual associations and personal interpretations, whereas organic food production is subject to clear standards and hence provides a better basis for consistent labelling and communication. Thereby, organically produced food should enhance consumers’ trust and increase their demand and WTP. Nevertheless, many consumers do not have enough knowledge on organic standards to make informed choices. Due to its vagueness, the meaning of locally labelled food is easier to comprehend and does not require any special knowledge of standards or certification processes. In addition, it suggests transparency and proximity to the places of production – which is also of interest for organic consumers who strive for orientation in an increasingly globalized organic food market. Previous research by Padel and Foster (2005) and Stolz et al. (2011) reveals that conventional consumers are more price-sensitive than organic consumers. In addition, the more price-sensitive consumers state that they do not perceive organic food production as very important and show a more positive attitude towards

local food purchases in this study. The organic-minded consumers are more likely to consider both product attributes and trade them off against each other, depending on the particular purchase situation.

Consumers' increasing preferences and WTP for locally produced food, revealed in this dissertation and in many national and international studies, suggest a great potential for a growing local food market. Hence, producers and marketers of non-organic as well as organic food are advised to put more effort into sourcing food locally and establishing local food supply chains that meet consumers' demand for more transparency. Nevertheless, consumers' trust can only be gained and maintained through clear communication of the underlying characteristics of production and processing. Warschun et al. (2013), for example, predict that food stores, respectively supermarkets, in Germany which do not meet the growing demand for locally produced food will most likely lose part of their customers. Similarly, the GfK Consumer Scan (2013) concludes that food retailers, who combine locally produced food with food produced in other sustainable and value-oriented ways in their assortment and clearly communicate the benefits, will successfully meet consumers' demands. To enhance and maintain consumers' trust in locally produced food, the "regional window" was introduced in Germany in January 2014. It is a promising approach to cater to consumers' request for consistent standards and an official certification process across Germany. The findings from Janssen and Hamm (2012) in an international study on organic labels, indicating that consumers prefer certification labels rather than generic logos, might also be transferable to the local food context. Hence, the "regional window" could act as a role model for local food labelling in other countries.

However, for both the organic and the non-organic sector, it is unavoidable to import food products from far away. As especially organic-minded consumers trust food products coming from abroad less, organic production standards and their application through organic trade partners in exporting countries will have to be communicated more clearly to benefit the organic sector. Positive examples for the implementation and communication of organic food standards for food imported from abroad are 'Nature and More', a traceability system initiated by the international distributor of fresh organic fruits and vegetables 'Eosta', and 'Hand in Hand', a program created by the organic company 'Rapunzel'. Both initiatives inform consumers about the implementation and meaning of organic standards in the countries of origin and attempt to increase traceability and trust through extensive communication (e.g. telling stories about individual producers). It is necessary for organic food producers and

retailers to highlight those characteristics that distinguish organic food production from other alternative production processes to improve transparency in global organic food supply chains and increase its trustworthiness, independent of the exporting countries. Further studies on consumers' trust in food from abroad will help to identify consumers' concerns regarding imports and to improve the communication between producers, retailers, and consumers.

The multitude of aspects, consciously and unconsciously influencing consumers' purchase decisions, which have been presented in this study, leads to the conclusion that a general statement on how the trends for locally produced and organically food affect each other cannot be determined. While price, taste and quality play major roles in food purchase decisions, these decisions also depend on the type of product, contextual factors, habits, consumers' characteristics and their social environment as well as consumers' knowledge, among other aspects. Hence, there is a need for the adaptation of marketing and communication strategies to the specific context. Likewise, politicians should take region- and product-specific differences into account when introducing measures to support sustainable agriculture and the viability of local economies.

Researchers are advised to carry out similar studies in other countries and different regions within countries, as an influence of the socio-cultural background as well as of specific national or regional characteristics is expected. In addition, the relation between the type of product, especially the level of processing, and preferences for local and organic food purchases needs more evidence from research.

6 Summary

6.1 English summary

The interest of German consumers in the origin of food products, in particular for locally produced food, has grown rapidly and hence has been picked up as a central topic in many consumer studies as well as in newspaper and food journal articles in Germany. Frequently, consumers' increasing preferences for local food are presented as competition for the organic market. Consumer studies generally report higher purchase frequencies for locally produced food than for organically produced food in Germany. In addition, there are consumers who aim at purchasing products, which are both organically and locally produced, or consumers who perceive that organic food is produced locally per se. However, organic food purchases remain at a comparatively low level, although the turnover of the organic market has been growing steadily over the past decades. One particular characteristic of the organic market is that the greatest share of the turnover is generated by a very small group of dedicated organic food buyers, who are not very price-sensitive. Locally produced food, on the contrary, seems to appeal to a larger group of consumers, reaching across all social classes. Although local food production is not based on any clear standards and official certification processes like organic food production and processing, national and international consumer studies equally reveal that consumers are willing to pay more for locally than for organically produced food.

Hence, consumer surveys and press releases on food report growing competition between local and organic food purchases in Germany. The situation in Germany, concerning consumers' preferences for locally produced food and the question on whether there is a growing competition between locally and organically produced food, can similarly be observed in other European countries and in North America. Various aspects of consumers' purchase behaviour with regard to locally produced food and organically produced food have been studied in these countries and published in scientific journals. However, there are some aspects that have not yet been investigated in Germany or need to be validated in the German context. The results from previous studies have been used to build a basis for the research objective pursued in this study. The primary aim of this study is to get deeper insights into German consumers' attitudes, preferences and WTP for organically produced food and food from different origins in order to investigate whether there really is a growing competition between locally and organically produced food as suggested by a number of German consumer studies. Therefore, this dissertation deals with the two main research objectives: firstly, the investigation of consumers' perceptions and attitudes towards organically and

locally produced food, including the analysis of consumers' sociodemographic data, and secondly, the exploration of consumers' preferences and WTP values for organic food and food from different origins. Subsequently, it is aimed at translating the findings into implications for retailers, marketers, and other researchers.

To address the above-mentioned objective of this dissertation a choice experiment was carried out in combination with a survey consisting of several questions on consumers' purchase behaviour, consumers' attitudes towards local and organic food as well as questions on consumers' sociodemographic data. The aim of the survey was to better characterise the respondents and to identify interrelations between survey questions and findings from the experiment to better explain consumers' purchase behaviour. Hence, the survey and the experiment complemented each other to draw a consistent picture on German consumers' attitudes and preferences towards organic food and food from different origins. The target population of the study were all adult consumers who purchase their food in general supermarkets. The survey, including the choice experiment, was interviewer-initiated, self-administered, and computer-assisted; it was carried out by a market research company under supervision of the project staff. Thereby, the aim was to interview 80 respondents in each of the eight survey locations across Germany. The reason behind the choice of survey locations was the assumption that consumers across Germany have varying perceptions of local food production, different economic backgrounds, and feel more or less bond with the region they live in.

Choice experiments were chosen to deal with this study's research objective, because they can elicit consumers' preferences for individual product attributes. In addition, if price is one of the systematically varied attributes, WTP values can be estimated. The experiment's design was predetermined through the identification of the relevant attributes and attribute levels according to the study's research objective. To meet the research objective, it was relevant to include the product's origin (local, from Germany, from a neighbouring country, from a non-EU country), the production method (organic vs. non-organic production), and the price (four price levels depending on the product) into the experimental design. The choice experiment was analysed through RPL model estimations to reveal consumers' preferences for the tested product attributes and to calculate WTP values. The choice experiment was carried out with four different products (apples, butter, flour, and steaks) to analyse product-specific differences in consumers' preferences.

A generally higher WTP for organic production was determined for steaks as compared to the other three products, indicating that organic food production is rather associated with animal welfare than local food production. The WTP values for the local, processed products (i.e. butter and flour) were consistently lower than those for the local, unprocessed products (i.e. apples and steaks). However, the price levels for butter and flour were smaller than those for apples and steaks, which might distort the direct comparison. The findings suggest that there are product-specific differences in consumers' preferences for organic food production and food from different origins, but the relation between the type of product as well as the level of processing and consumers' preferences needs more evidence in future research. In addition, regional differences in consumers' preferences could be identified, which can be explained through varying economic and cultural characteristics across Germany. On the contrary, no clear difference in the preferences of urban consumers and consumers from rural areas was observed, although the literature review suggested a stronger preference for local food by rural consumers.

Concerning the question on whether the two trends of increasing organic and local food purchases affect each other, this dissertation revealed that organic-minded consumers also favour locally produced food, sometimes even more than organically produced products. Their choices strongly depended on the origin of the non-local alternatives (i.e. from Germany vs. from a neighbouring country vs. from a non-EU country); organic-minded consumers would rather buy local organic products than organic products from Germany, but they would rather buy local, non-organic products than organic products from far away. Other recent studies revealed similar results, in that consumers prefer locally over organically produced food as well as food that is produced as local as possible.

Consumers' increasing preferences and WTP for locally produced food suggest a great potential for a growing local food market. Hence, producers and marketers of non-organic as well as organic food are advised to put more effort into the development of local food supply chains. Nonetheless, consumers' trust can only be gained and maintained through clear communication of the underlying characteristics of production and processing. To meet consumers' demand for more transparency and enhance their trust in locally produced food, the "regional window" was introduced in Germany in January 2014. It is a promising approach to respond to consumers' needs and introduce consistent standards and an official certification process across Germany. Hence, the "regional window" could act as a role model for local food labelling in other countries.

The multitude of aspects, consciously and unconsciously influencing consumers' purchase decisions, which have been presented in this study, leads to the conclusion that a general statement on how the trends for locally and organically produced food affect each other cannot be determined. While price, taste and quality play major roles in food purchase decisions, these decisions also depend on the type of product, contextual factors, habits, consumers' characteristics and their social environment as well as consumers' knowledge, among other aspects. Hence, there is a need for the adaptation of marketing and communication strategies to each specific context. Likewise, politicians should take region- and product-specific differences into account when introducing measures to support sustainable agriculture and the viability of local economies.

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6.2 Zusammenfassung

Das Interesse der Konsumenten in Deutschland an der Herkunft von Lebensmitteln, insbesondere bei Lebensmitteln, die aus der Region stammen, wird zunehmend als Thema in Verbraucherstudien und Zeitschriftenartikeln aufgegriffen. Häufig werden die steigenden Präferenzen der Konsumenten als Konkurrenz für den Öko-Markt dargestellt. Denn Verbraucherstudien berichten einheitlich davon, dass regional produzierte Lebensmittel häufiger gekauft werden als ökologisch produzierte. Außerdem gibt es jene Konsumenten, die gerne Lebensmittel kaufen, die sowohl regional als auch ökologisch produziert worden sind, ebenso wie Konsumenten, die davon ausgehen, dass ökologisch produzierte Lebensmittel automatisch auch aus der Region stammen. Der Anteil von ökologischen Lebensmitteln macht jedoch nach wie vor nur einen geringen Teil am gesamten Lebensmittelmarkt aus, obwohl der Öko-Markt in den vergangenen Jahrzehnten kontinuierlich gestiegen ist. Eine Besonderheit am Öko-Markt ist, dass der größte Anteil des Umsatzes auf eine sehr kleine Gruppe der Öko-Intensivkäufer entfällt, die durch eine geringe Preissensibilität gekennzeichnet ist. Im Gegensatz dazu scheinen regionale Lebensmittel eine größere Gruppe von Konsumenten anzusprechen, die verschiedene soziale Schichten einschließt. Obwohl die regionale Herkunft von Lebensmitteln nicht offiziell und einheitlich geregelt ist und keiner Zertifizierung unterliegt wie die ökologische Produktion von Lebensmitteln, zeigen nationale und internationale Studien gleichermaßen, dass Konsumenten bereit sind, mehr für regionale als für ökologisch produzierte Lebensmittel zu bezahlen.

Dementsprechend berichten Verbraucherstudien und Medienbeiträge zu Lebensmittelpreferenzen von einem zunehmenden Wettbewerb zwischen regionalen und ökologischen Lebensmitteleinkäufen in Deutschland. Diese Situation zeigt sich auch in anderen europäischen Ländern und in Nordamerika. Verschiedene Aspekte des Konsumentenverhaltens im Zusammenhang mit dem Kauf von regionalen und ökologisch produzierten Lebensmitteln wurden bereits untersucht und in wissenschaftlichen Magazinen veröffentlicht. Einige dieser Aspekte wurden allerdings in Deutschland bisher noch nicht betrachtet und müssen diesbezüglich noch überprüft werden. Die Ergebnisse der bisherigen Studien wurden als Basis für die Erstellung des Forschungsziels dieser Studie genutzt.

In dieser Studie geht es darum, ein umfassendes Bild bezüglich der Konsumenteneinstellungen, Präferenzen und Zahlungsbereitschaften für ökologisch produzierte Lebensmittel und Lebensmittel verschiedener Herkünfte zu erhalten. Dabei soll der Frage nachgegangen werden, ob es tatsächlich eine wachsende Konkurrenz zwischen regionalen und ökologisch produzierten Lebensmitteln gibt, die in Verbraucherstudien in Deutschland immer wieder untersucht wird. Aus diesem Grunde beschäftigt sich die Dissertation mit den folgenden zwei Hauptforschungszielen: Erstens widmet sie sich der Erforschung der Assoziationen und Einstellungen der Konsumenten in Hinblick auf ökologisch produzierte und regionale Lebensmittel unter Einbezug von soziodemographischen Informationen. Zweitens werden Konsumentenpräferenzen und Zahlungsbereitschaften für ökologisch produzierte Lebensmittel und Lebensmittel unterschiedlicher regionaler Herkünfte untersucht. Im Anschluss werden aus den Ergebnissen beider Untersuchungsteile Schlussfolgerungen und Empfehlungen für Händler, Vermarkter und Wissenschaftler abgeleitet.

Um die obengenannten Forschungsziele dieser Dissertation zu erreichen, wurde ein Kaufexperiment in Kombination mit einer Konsumentenbefragung, bestehend aus Fragen zum generellen Einkaufsverhalten, zu Einstellungen gegenüber regionalen und ökologisch produzierten Lebensmitteln und zu soziodemographischen Informationen durchgeführt. Das Ziel der Befragung war es, die Konsumenten besser zu charakterisieren und Zusammenhänge zwischen den Ergebnissen aus der Befragung und den Ergebnissen aus dem Kaufexperiment darzulegen, um das Kaufverhalten der Konsumenten besser erklären zu können. Der Fragebogen und das Experiment ergänzen sich, so dass ein umfassendes Bild in Hinblick auf das Forschungsziel erstellt werden konnte.

Die Zielgruppe der Studie waren alle erwachsenen Konsumenten, die ihre Lebensmitteleinkäufe komplett oder teilweise in Supermärkten tätigen. Die Befragung, einschließlich des Experimentes, war durch Interviewer initiiert, computergestützt und von den Konsumenten selbständig zu erledigen; die Durchführung wurde von einem Marktforschungsunternehmen übernommen. Projektmitarbeiter haben die Datenerhebung überprüft. Das Ziel war es 80 Konsumenten in jedem der acht Befragungsorte in verschiedenen Regionen Deutschlands zu erreichen. Der Grund für diese Verteilung war die Erwartung, dass Konsumenten abhängig von ihrer Herkunft unterschiedliche Vorstellungen von regionalen Lebensmitteln und unterschiedliche ökonomische Hintergründe haben sowie verschieden starke Bindungen mit ihrer Heimat empfinden.

Kaufexperimente wurden ausgewählt, um Konsumentenpräferenzen für verschiedene Produktattribute zu ermitteln. Zudem können Zahlungsbereitschaften berechnet werden, wenn eines der systematisch variierenden Eigenschaften der Preis ist. Das Design des Experiments wurde durch die Wahl relevanter Eigenschaften und Eigenschaftsausprägungen entsprechend des Forschungsvorhabens vorbestimmt. Um die hier behandelte Forschungsfrage zu bearbeiten, wurden die Attribute Produktherkunft (regional, aus Deutschland, aus einem Nachbarland, aus einem außereuropäischen Land), Produktionsweise (ökologisch vs. konventionell) und Preis (vier Preislevel in Abhängigkeit vom Produkt) eingeschlossen. Zur Auswertung des Experiments wurden RPL-Modelle geschätzt, die die Konsumentenpräferenzen für die zu untersuchenden Produktattribute aufzeigen und die Berechnung von Zahlungsbereitschaften ermöglichen. Das Kaufexperiment wurde mit vier verschiedenen Produkten (Äpfel, Butter, Mehl und Steaks) durchgeführt, um zu prüfen, ob es produktspezifische Unterschiede gibt.

Für die Gesamtheit der Konsumenten war die regionale Herkunft von Lebensmitteln wichtiger als die ökologische Produktion. Eine generell höhere Zahlungsbereitschaft für die ökologische Produktionsweise wurde jedoch bei Steaks gefunden, verglichen mit den anderen drei Produkten. Das Ergebnis deutet daraufhin, dass die ökologische Produktion eher mit Tierwohl verbunden wird als die regionale Herkunft von Lebensmitteln. Zahlungsbereitschaften für die verarbeiteten Produkte (d.h. Butter und Mehl) waren grundsätzlich niedriger als die Zahlungsbereitschaften für die unverarbeiteten Produkte (d.h. Äpfel und Steaks). Dabei musste jedoch berücksichtigt werden, dass die Preisniveaus für Butter und Mehl generell niedriger waren als für Äpfel und Steaks, wodurch das Ergebnis gegebenenfalls verzerrt wurde. Insgesamt konnte jedoch gezeigt werden, dass sich die Konsumentenpräferenzen für

ökologisch produzierte Lebensmittel und Lebensmittel verschiedener Herkünfte in Abhängigkeit von dem Produkt unterscheiden. Der Einfluss der Produktverarbeitung sowie weiterer unterschiedlicher Produkte und Produktgruppen sollte durch weitere Studien abgesichert werden. Außerdem wurde festgestellt, dass es regionale Unterschiede zwischen den Präferenzen der Konsumenten gibt, die durch variierende wirtschaftliche und kulturelle Besonderheiten in Deutschland erklärt werden können. Im Gegensatz dazu hat die Studie aber keine eindeutigen Unterschiede zwischen Konsumenten aus ländlichen und Konsumenten aus städtischen Regionen identifizieren können, obwohl die Literaturstudie dies annehmen ließ.

Bezüglich der Frage, ob sich die zwei Trends hin zur wachsenden Bedeutung von ökologisch produzierten als auch regionalen Lebensmitteln gegenseitig beeinflussen, zeigte diese Dissertation, dass auch öko-affine Konsumenten Produkte aus der Region schätzen und manchmal sogar regionale Produkte ökologisch produzierten Lebensmitteln vorziehen. Die Wahlentscheidung hängt dabei stark von der Herkunft der weiteren Alternativen ab (z.B. aus Deutschland, aus einem Nachbarland, aus einem außereuropäischen Land); öko-affine Konsumenten würden tendenziell eher regionale, ökologische Produkte als ökologische Produkte aus Deutschland kaufen, aber sie würden auch eher regionale, konventionelle Produkte kaufen als Öko-Lebensmittel aus dem Ausland. Andere Studien zeigten ähnliche Ergebnisse und zwar, dass Konsumenten regionale Lebensmittel ökologisch produzierten Lebensmitteln vorziehen und dass sie Lebensmittel bevorzugen, die so regional wie möglich erzeugt wurden.

Die zunehmenden Präferenzen und Zahlungsbereitschaften der Konsumenten für regionale Lebensmittel deuteten sowohl in dieser Dissertation als auch in vielen anderen nationalen und internationalen Studien darauf hin, dass es ein großes Potential für einen regionalen Lebensmittelmarkt gibt. Folglich wird Produzenten und Vermarktern von ökologischen sowie konventionellen Produkten empfohlen, verstärkt in die Entwicklung von regionalen Versorgungsketten zu investieren. Nichtsdestotrotz kann das Vertrauen der Konsumenten nur durch die klare Kommunikation der zugrundeliegenden Produktions- und Prozesseigenschaften gewonnen und erhalten werden. Um dem Wunsch der Konsumenten nach mehr Transparenz nachzukommen und ihr Vertrauen in regionale Lebensmittel zu steigern, wurde in Deutschland im Januar 2014 das Regionalfenster eingeführt. Die Kennzeichnung regionaler Lebensmittel mit dem Regionalfenster ist ein vielversprechender Ansatz, indem einheitliche Standards und ein offizieller Zertifizierungsprozess in Deutschland eingeführt wurden, um den Bedürfnissen der Konsumenten nachzukommen. Das

Regionalfenster könnte als Vorbild für die Kennzeichnung von regionalen Lebensmitteln in anderen Ländern dienen.

Einige Aspekte, die die Entscheidungen der Konsumenten bewusst und unbewusst beeinflussen, wurden in dieser Studie dargestellt und führten zu dem Schluss, dass eine allgemeingültige Aussage zu der gegenseitigen Beeinflussung beider Trends, d.h. ökologische Produktion und regionale Herkunft von Lebensmitteln, nicht getroffen werden kann. Während der Preis, der Geschmack und die Qualität von Lebensmitteln die Entscheidungen von Konsumenten besonders stark beeinflussen, hängen die Kaufentscheidungen unter anderem auch von der Art des Produkts, kontextabhängigen Faktoren, Gewohnheiten, soziodemographischen Faktoren, der sozialen Umwelt sowie von dem Wissen der Konsumenten ab. Dementsprechend müssen Marketing- und Kommunikationsmaßnahmen möglichst genau auf den individuellen Kontext abgestimmt werden. Ebenso sollten politische Maßnahmen regions- und produktspezifische Unterschiede bei der Gestaltung und Einführung von Maßnahmen einbeziehen, um nachhaltige Landwirtschaft und die Wirtschaftlichkeit ländlicher Regionen zu fördern.

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Appendix

Consumer survey in German

Zunächst möchten wir Ihnen einige Begriffe im Fragebogen erläutern:

- **Regional** bezieht sich in dieser Befragung auf Lebensmittel, die entweder aus einem Umkreis von bis zu 50 Kilometer um den Einkaufsort oder aus dem jeweiligen Bundesland stammen.
- **Öko-Lebensmittel**, auch Bio-Lebensmittel genannt, sind Lebensmittel, die nach den offiziellen Standards zertifiziert sind und daher ein Öko-Siegel tragen.
- Im Gegensatz dazu beschreibt der Begriff **konventionell** diejenigen Lebensmittel, die keine Öko-Standards erfüllen.

Nun beginnt die Befragung. Lesen Sie sich alle Fragen in Ruhe durch und wenden sich an den Interviewer, wenn etwas unklar ist.

F1a. Wie wichtig ist Ihnen auf einer Skala von 1 bis 10, dass die Lebensmittel aus der Region stammen?

	1	2	3	4	5	6	7	8	9	10	Sehr wichtig
Unwichtig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

F1b. Wie häufig kaufen Sie regionale Lebensmittel?

- Nie
- Selten
- Häufig
- Immer

F2a. Wie wichtig ist es Ihnen auf einer Skala von 1 bis 10, dass Lebensmittel aus ökologischem Anbaustammen?

	1	2	3	4	5	6	7	8	9	10	Sehr wichtig
Unwichtig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

F2b. Wie häufig kaufen Sie Öko-Lebensmittel?

- Nie
- Selten
- Häufig
- Immer

F3. Kaufexperiment

Im Folgenden bieten wir Ihnen verschiedene Lebensmittel (Äpfel, Mehl, Butter, Rindfleisch) zum Kauf an und möchten Sie bitten, sich auf jeder Seite erneut zwischen den drei angebotenen Produkten zu entscheiden.

Es werden Ihnen also pro Kaufentscheidung drei verschiedene Produkte vorgelegt, von denen Sie ein Produkt auswählen dürfen. Für den Fall, dass Ihnen keines der angebotenen Produkte zusagt, können Sie auch auf den Kauf verzichten.

Eine Ihrer Kaufentscheidungen ist bindend, d.h. Sie müssen das Produkt am Ende des Experiments auch tatsächlich kaufen und mitnehmen. Der entsprechende Betrag wird von Ihrer Aufwandsentschädigung in Höhe von 10 € abgezogen.

Die Entscheidung, welche der sechzehn Kaufentscheidungen bindend ist, fällt am Ende der Befragung per Los.

Hier wird pro Produkt nur ein Choice Set als Beispiel dargestellt.

Kaufentscheidung 6

U N I K A S S E L

Für welches dieser drei hier angebotenen Produkte würden Sie sich entscheiden?



Preis: 1,49 €
 kaufen



Preis: 1,89 €
 kaufen



Preis: 1,69 €
 kaufen

Ich kaufe keines dieser Produkte!

Kaufentscheidung 11

U N I K A S S E L

Für welches dieser drei hier angebotenen Produkte würden Sie sich entscheiden?

Beim Rindfleisch können Sie sich auch 200g unverpacktes Hüftsteak (z.B. von der Frischetheke) vorstellen, wenn Sie das eher kaufen als vorverpacktes.



Preis: 3,49 €
 kaufen



Preis: 5,49 €
 kaufen



Preis: 6,49 €
 kaufen

Ich kaufe keines dieser Produkte!

Kaufentscheidung 1

U N I K A S S E L

Für welches dieser drei hier angebotenen Produkte würden Sie sich entscheiden?



Preis: 1,59 € kaufen

Preis: 1,29 € kaufen

Preis: 0,99 € kaufen

Ich kaufe keines dieser Produkte!

Kaufentscheidung 16

U N I K A S S E L

Für welches dieser drei hier angebotenen Produkte würden Sie sich entscheiden?



Preis: 3,99 € kaufen

Preis: 3,99 € kaufen

Preis: 2,49 € kaufen

Ich kaufe keines dieser Produkte!

F4. Wie häufig kaufen Sie regionale Lebensmittel in folgenden Einkaufsstätten?

	Nie	Selten	Häufig	Immer
a. Im Discounter (wie Aldi, Lidl, Penny, Netto oder Norma)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Im Supermarkt (z.B. Edeka, Rewe, Tengelmann, real, Kaufland, Globus, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Im Bio-Supermarkt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Im Naturkostladen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Auf dem Wochenmarkt oder Bauernmarkt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Im Fachgeschäft (wie Fleischerei, Bäckerei oder Obst- u. Gemüsehändler)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Direkt beim Erzeuger oder Bauern	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. In einer anderen Einkaufsstätte	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bitte nennen: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F5. Wie häufig kaufen Sie ökologische Lebensmittel in den folgenden Einkaufsstätten?

	Nie	Selten	Häufig	Immer
a. Im Discounter (wie Aldi, Lidl, Penny, Netto oder Norma)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Im Supermarkt (z.B. Edeka, Rewe, Tengelmann, real, Kaufland, Globus, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Im Bio-Supermarkt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Im Naturkostladen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Im Drogeriemarkt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Auf dem Wochenmarkt oder Bauernmarkt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Im Fachgeschäft (wie Fleischerei, Bäckerei oder Obst- u. Gemüsehändler)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Direkt beim Erzeuger oder Bauern	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. In einer anderen Einkaufsstätte Bitte nennen: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F6. Bei welchen Produkten/Produktgruppen ist Ihnen die regionale Herkunft besonders wichtig? Nennen Sie bitte maximal drei!

F7. Bei welchen Produkten/Produktgruppen ist Ihnen die ökologische Produktionsweise besonders wichtig? Nennen Sie bitte maximal drei!

F8. Bitte schätzen Sie ungefähr, welcher Anteil ihrer Lebensmittel auf regionale Lebensmittel entfällt. Verwenden Sie dafür bitte diese Antwortkategorien.

0% 1-10% 11-20% 21-30% 31-40% 41-50% mehr als 50%

F9. Bitte schätzen Sie ungefähr, welcher Anteil ihrer Lebensmittel auf ökologische Lebensmittel entfällt. Verwenden Sie dafür bitte diese Antwortkategorien.

0% 1-10% 11-20% 21-30% 31-40% 41-50% mehr als 50%

F10. Jetzt möchten wir Sie bitten, bei den folgenden Aussagen zu überlegen, inwieweit Sie diesen zustimmen. Sie haben dabei 5 Abstufungen von „trifft überhaupt nicht zu“ bis „trifft voll und ganz zu“. Die folgenden Statements werden in der Befragung randomisiert dargestellt.

Block 1	Stimme überhaupt nicht zu!				Stimme voll und ganz zu!
	1	2	3	4	5
1. Das EU-Öko-Siegel ist aussagekräftiger als regionale Lebensmittelkennzeichen.					
2. Es ist mir gleich, ob Lebensmittel aus der EU oder aus dem Rest der Welt kommen.					
3. Für die Qualität von Lebensmitteln macht es keinen Unterschied, ob sie aus Deutschland oder den Nachbarländern kommen.					
4. Es ist wichtiger, dass Lebensmittel ökologisch produziert werden, als dass sie aus meiner Region kommen.					
5. Regionale Lebensmittel sind einfacher zu erkennen als Öko-Lebensmittel.					
6. Regionale Produkte sind besser für die Umwelt als Öko-Lebensmittel aus dem Ausland.					
7. Öko-Lebensmittel sind gesünder als konventionelle Lebensmittel aus der Region.					
8. Ob ein Öko-Lebensmittel aus dem Ausland besser schmeckt als ein konventionelles Lebensmittel aus der Region, hängt von dem Produkt ab.					
9. Der Preis ist entscheidend bei der Wahl zwischen einem Öko-Lebensmittel ohne Herkunftsangabe und einem konventionellen Lebensmittel aus der Region.					

Block 2	Stimme überhaupt nicht zu!				Stimme voll und ganz zu!
	1	2	3	4	5
10. Ich würde mehr regionale Lebensmittel kaufen, wenn deren Angebot in den Lebensmittelgeschäften größer wäre.					
11. Ich kaufe keine regionalen Lebensmittel , weil sie mir zu teuer sind.					
12. Lebensmittel, die auf dem Wochenmarkt verkauft werden, kommen zum weitaus größten Teil aus der Region .					
13. Ich wäre bereit, mehr für regionale Lebensmittel zu bezahlen, wenn es offizielle und einheitliche Kontrollen für die regionale Herkunft geben würde.					
14. Viele Personen, die mir wichtig sind, kaufen bevorzugt regionale Lebensmittel .					
15. Wenn ich Lebensmittel einkaufe, achte ich nicht darauf, wo sie herkommen.					
16. Lebensmittel, die von weit weg kommen, schmecken besser als regionale Lebensmittel .					
17. Regionale Lebensmittel sind hochwertiger als Lebensmittel, die aus anderen Teilen Deutschlands kommen.					

Block 3	Stimme überhaupt nicht zu!				Stimme voll und ganz zu!
	1	2	3	4	5
18. Wenn ich bei Öko-Lebensmitteln die Wahl habe, kaufe ich lieber Produkte aus Deutschland und den Nachbarländern als aus entfernteren Ländern.					
19. Ich kaufe keine Öko-Lebensmittel , weil sie mir zu teuer sind.					
20. Bei Öko-Lebensmitteln aus dem Ausland habe ich Zweifel, ob diese genauso scharf kontrolliert werden wie in Deutschland.					
21. Beim Einkauf achte ich nicht darauf, ob die Lebensmittel aus ökologischem Landbau stammen.					
22. Konventionelle Lebensmittel schmecken besser als Öko-Lebensmittel .					
23. Viele Personen, die mir wichtig sind, kaufen bevorzugt Öko-Lebensmittel .					
24. Ich würde mehr Öko-Lebensmittel kaufen, wenn deren Angebot in den Lebensmittelgeschäften größer wäre.					
25. Lebensmittel, die auf dem Wochenmarkt verkauft werden, stammen zum weitaus größten Teil aus ökologischem Landbau .					

F11. Wie hoch ist Ihr Vertrauen in die Qualität der Lebensmittel aus folgenden Ländern?

	1	2	3	4	5	6	7
	sehr gering						sehr hoch
USA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dänemark	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deutschland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ägypten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Israel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Argentinien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Österreich	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Niederlande	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
China	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spanien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dominikanische Republik	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Italien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kasachstan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Neuseeland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frankreich	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Zum Abschluss haben wir noch einige Fragen zu Ihrer Person.

F12. Seit wann leben Sie schon hier in der Region? Bitte nennen Sie das Jahr (z.B. 2005).

Jahr: _____

F13. Wie groß ist der Ort, in dem Sie leben?

- Wohnort mit mehr als 100.000 Einwohnern
- Wohnort mit 30.000 - 100.000 Einwohnern
- Wohnort mit 5.000 - 30.000 Einwohnern
- Wohnort mit weniger als 5.000 Einwohnern

F14. Welche Region betrachten Sie als Ihre Heimatregion?

F15. Bitte geben Sie Ihren höchsten Bildungsabschluss an.

- kein Schulabschluss
- Hauptschul- oder Realschulabschluss
- Fachhochschulreife, Abitur
- Universitäts- oder Fachhochschulabschluss

F16. In welchem Jahr sind Sie geboren?

Jahr: _____

F17. Ihr Geschlecht: weiblich männlich**F18. Wie viele Personen (einschließlich Ihnen) leben in Ihrem Haushalt?**

F19. Wie hoch ist Ihr Netto-Haushaltseinkommen? Das ist der Geldbetrag, der allen Haushaltsmitgliedern insgesamt im Monat zur Verfügung steht, also inklusive Gehalt, Rente, Pension, Kindergeld, Zinseinnahmen u.ä. Alle Ihre Angaben werden streng vertraulich und anonym behandelt.

- unter 600€
- 600 bis unter 1200€
- 1200 bis unter 1800€
- 1800 bis unter 2400€
- 2400 bis unter 3000€
- 3000 bis unter 3600€
- 3600 bis unter 4200€
- 4200 bis unter 4800€
- 4800 bis unter 5400€
- 5400 bis unter 6000€
- über 6000€
- Ich möchte keine Auskunft geben.