

Consumer purchase and consumption behaviour regarding organic food – Analysis of the state of the art - Final Report -

**Wissensstandsanalyse zum Verbraucher- und Ernährungsverhalten bei ökologischen
Lebensmitteln mit Einbezug der Außer-Hausverpflegung**

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Final report

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Remark

Das diesem Bericht zugrunde liegende Vorhaben wurde mit Mitteln des Bundesministeriums für Ernährung, Landwirtschaft und Verbraucherschutz im Rahmen des Bundesprogramms zur Förderung des Ökologischen Landbaus und anderer Formen der nachhaltigen Landwirtschaft gefördert. Die Verantwortung für den Inhalt dieser Veröffentlichung liegt bei den Autoren.

Witzenhausen, January 2012

Executive Summary

This study provides a detailed overview of national and international marketing research for organic food. The analysis of a total of 12 literature databases resulted in the identification of 562 publications edited between January 2000 and June 2011. These publications refer to 338 different studies - fulfilling scientific requirements - that were classified into seven subject areas, as illustrated in Table 1. The number of studies of all subject areas sums up to 507, which is greater than the total number of identified research studies, due to the fact that some studies treated more than one subject area.

Table 1: Number of identified studies for each subject area

Subject areas of consumer research	Number of identified studies
Determinants of consumer behavior	151
Consumer segmentation	24
Product policy	107
Price policy	118
Communication policy	29
Distribution policy	64
Out-of-home-consumption	16

Source: Own illustration

The studies treating 'determinants of organic consumption' identify clear and strong relationships with the socio-demographic variables sex (female), (high) income, (higher level of) education and origin (southern Germany). Intensive organic consumers overall are characterized by altruistic values, preferences for regional and healthy food as well as a higher food involvement.

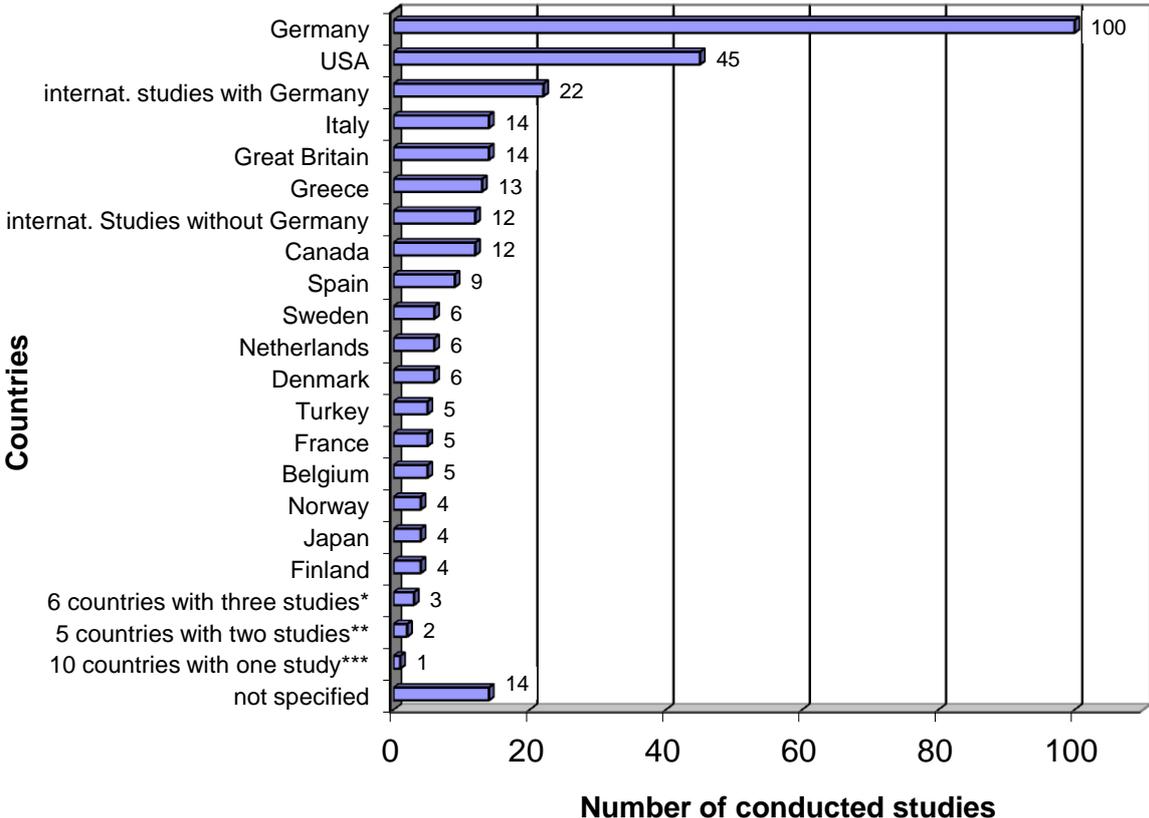
The second key aspect, 'product policy', primarily deals with issues concerning product design and product labeling. Studies analyzing product design focus on the quality aspects additional to ecological production, required for organic food. A trend towards the so called 'organic-plus' positioning can be perceived, with many consumers expecting an extensive orientation towards sustainability. The diversity of product labels features prominently in related studies. The demand for reliable information, as well as the low degree of awareness of many labels amongst consumers becomes clear in these studies.

Within 'price policy' studies, consumer willingness-to-pay features typically. Applying sophisticated methods, the studies analyze how large the price differences of comparable conventional products can be. Overall, a remarkably high willingness-to-pay can be observed, especially among intensive customers.

The present study is not a classic meta-analysis: due to the large number of studies and their heterogeneity, it is impossible to elaborate the main results of all research studies. The scope of this study is to identify research deficits. The overview of studies attached in the appendix offers extensive information regarding any kind of question regarding organic marketing.

With reference to the state of the art, it is worth noticing, that Germany – probably due to the federal program Ökolandbau – represents an important center of research. It has to be mentioned, though, that this perception might be biased since, in addition to English language publications, studies from Germany and grey literature in German were part of the analysis. Nevertheless, the scientific output in Germany is remarkable.

Figure 1: Countries involved in all studies (n=338) from January 2000 to June 2011

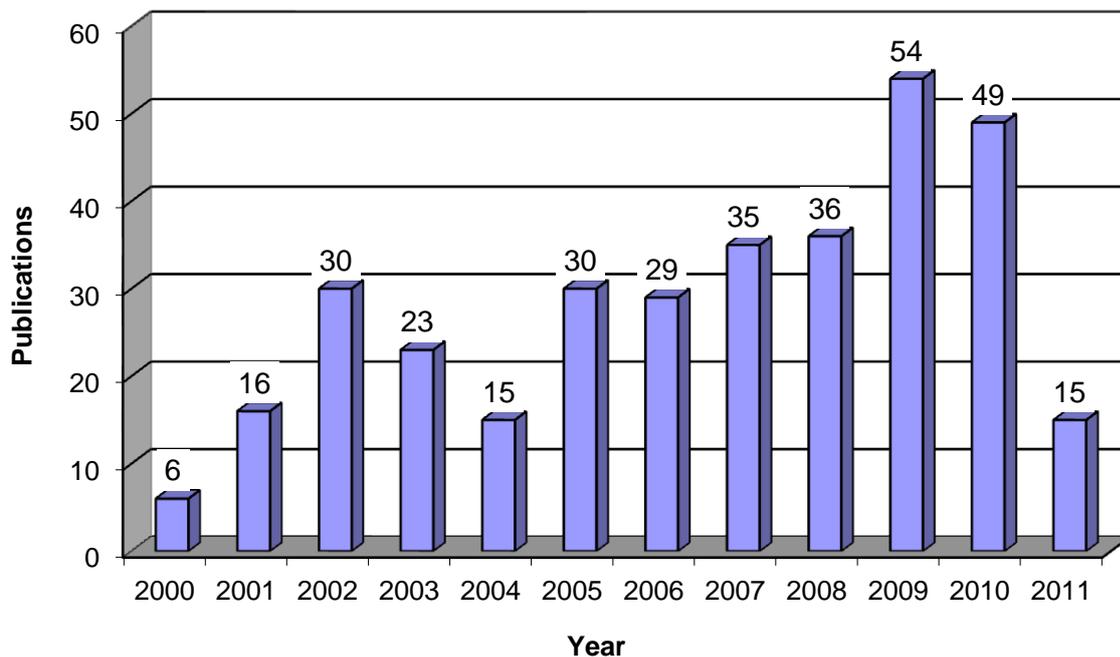


*Australia, Costa Rica, Iran, Croatia, Austria, Switzerland
 **China, England, Ireland, Nepal, Poland
 ***Estonia, Malaysia, Mexico, New Zealand, Slovenia, South Africa, South Korea, Taiwan, Thailand, Czech Republic

Source: Own illustration

Over time an increase in the number of articles, which develops parallel to market expenditure, can be evidenced. After the first phase of publishing as a consequence of the BSE-crisis, the number of studies has clearly risen since around 2005.

Figure 2: Total published studies (n=338) from January 2000 to June 2011



Source: Own illustration

In spite of the striking density of publications, there are still important aspects that haven't been dealt with so far. The major research deficits are:

- public relations and representation of organic food in the media
- adequate communication messages in advertisements for organic food
- Web 2.0 communication and social networks, also mobile marketing
- pharmacies and discount shops on the one hand, and farmers' markets on the other hand acting as distribution channels for organic food
- logistics for organic products, also known as climate friendly or cooperative logistics
- fast food and organic food
- product policy: environmentally friendly packaging and taste/sensory preferences of different consumer groups
- price policy: price awareness of consumers, price psychology (presentation of special offers and broken prices, etc.) and price differentiation
- the surprisingly few studies concerning communication: moreover, most of these studies are explorative and can hardly be generalized
- with respect to studies analyzing specific product categories there are relatively to the relevance of sales less studies with the focus on meat and milk; both of these product groups are also underdeveloped in the organic market

One main issue identified in both the expert-workshop and the company online survey, is the research demand for those aspects that, according to the literature analysis, have already been well covered. This implies that despite the considerable efforts of the BLE, there is still a need for extending research transfer activities. Therefore it is recommended to instruct pro-

professional scientific journalists to communicate short summaries of research results in relevant leading journals.

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Apps	=	Applications
BDM	=	Becker-DeGroot-Marschak
BLE	=	Bundesanstalt für Landwirtschaft und Ernährung
BMELV	=	Bundesministeriums für Ernährung, Landwirtschaft und Verbraucherschutz
BNN	=	Bundesverbandes Naturkost Naturwaren
BÖLN	=	Bundesprogramm ökologischer Landbau und andere Formen nachhaltiger Landwirtschaft
BSE	=	Bovine spongiform Encephalopathy
CAPI	=	Computer assisted personal interview
CATI	=	Computer assisted telephone interview
CMA	=	Centrale Marketing-Gesellschaft der deutschen Agrarwirtschaft mbH
CSA	=	Community supported Agriculture
CSR	=	Corporate-Social-Responsibility
EU	=	European Union
GfK	=	Gesellschaft für Konsumforschung
GMO	=	Genetically modified organisms
LOHAS	=	Lifestyle of Health and Sustainability
LOV	=	list of values
OHC	=	Out-of-home-consumption
POS	=	Point of sale
USA	=	United States of America
USDA	=	U.S. Department of Agriculture
WTP	=	Willingness-to-pay
ZMP	=	Zentrale Markt- und Preisberichtsstelle für Erzeugnisse der Land-, Forst- und Ernährungswirtschaft GmbH

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1 Introduction

1.1 *Research topic*

The object of the study is a comprehensive analysis of publications on the topic “marketing of organic food products with a focus on consumer behavior and food habits”. The analysis comprises German as well as international literature and is based on a structured analysis matrix. Recommendations for further research are made at the end of this paper.

1.2 *Aims and tasks of the project*

Various research and development projects have been funded within the framework of the „Bundesprogramm Ökologischer Landbau und andere Formen nachhaltiger Landwirtschaft“ (BÖLN), in order to “spread the organic farming system and to increase the market share of organic products while simultaneously assuring quality standards” in Germany (BLE 2010).

A special area of BÖLN promotes the marketing of organically produced products. Within this area, the field of consumer behavior is of high significance since research on consumer purchase and consumption behavior is the core of marketing sciences and delivers recommendations for marketing management (Trommsdorff 2009).

Various research findings regarding consumer behavior in the case of organic food consumption already exist at the international as well as national level. In order to bridge knowledge gaps in the mentioned area, a compilation of the state of knowledge and an overview on currently running research projects is necessary. Based on this compilation, knowledge gaps should be identified so as to derive research needs.

The following questions arise as a result of this task:

- Which international and national studies regarding consumer purchase and consumption behavior (including catering) exist? What is the focus of these studies?

How can the studies be rated with regard to:

- market coverage?
- external validity of the research design?
- drawing conclusions for practical and scientific purposes?
- what research gaps exist in consumer purchase and consumption behavior of organic food products (including catering)?
- the areas in which gaps exist?
- which gaps are especially problematic for practical purposes?
- the approaches that can bridge these gaps?

1.3 Design and course of the project

1.3.1 Matrix of the knowledge analysis

When conducting a knowledge analysis, the state of the art is to structure the field into separate topics. This study was structured according to the matrix of marketing (cp. Meffert et al. 2008). The marketing instruments (product policy, price policy, distribution policy and communication policy) served as a basis, complemented by the basic strategic marketing option of market segmentation as well as the overall determinants of consumer behavior with regard to organic food products. The field of catering was also included in order to cover all fields of the task (cp. Table 2).

Table 2: Examined topic on consumer research

Determinants of consumer behavior
Consumer segmentations
Product policy
Price policy
Communication policy
Distribution policy
Out-of-home consumption

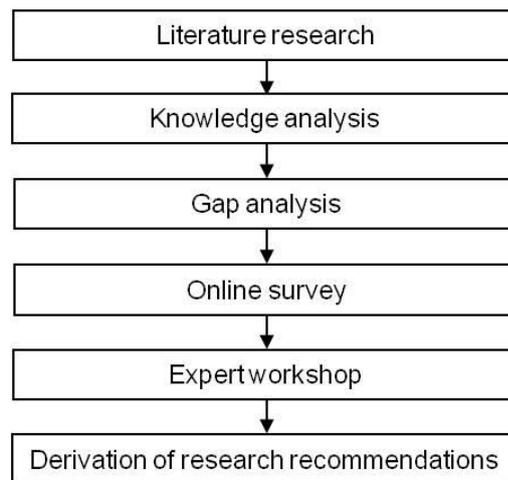
Source: Own illustration

1.3.2 Operating sequence

The completion of this project required an underlying literature research in order to process the current situation.

As demonstrated in Figure 3, the literature research is the first step. The next step involves the knowledge analysis: the identified literature is analyzed in the face of base data, method and theoretical background. Firstly, a quantitative depiction of how many publications were published in which countries was performed for each of the single topics. Secondly, the publications were reviewed by means of the explanatory power of their results and classified based on the integrity of the research design. Based on this knowledge analysis, a gap analysis - step 3 - was performed so as to identify areas where further research is needed.

Figure 3: Course of project steps



Source: Own illustration

Scientific information and information from praxis was obtained in order to judge the relevance of the identified gaps and to complement them. An online survey asked participants to identify research gaps in each field. Furthermore, the participants were asked to judge the research fields according to their relevance. The reviewed results of the knowledge analysis and the online survey were presented to selected experts from business and science in the frame of an expert workshop, where they were asked to judge and complement the identified gaps. In a final step, research recommendations were drawn from the knowledge gaps. The proceedings within the individual steps will be described in detail in the relevant chapters.

2 Preliminary remarks

Over the last few years, various studies focusing on single facets of organic consumption were published. Three distinct consumer segments related to the organic market emerged: the traditional core group of organic buyers with a preference for organic specialized trade; a second group, also with a high purchase intensity, which prefers common retail stores; and a third target group that seldom buys organic, but makes its purchases mostly in conventional retail stores. Additionally, a large group of non- or coincidence buyers exists.

This typology is based on two different approaches. One approach stems from the behavioral typology, emanating from the real shopping behavior at the point of sale. Here, data obtained from household and retail panels is used (e.g. Niessen 2008, ZMP 2001). Further variants of the behavioral typology are based on the expressed shopping behavior, or the food consumption behavior, of organic buyers or non organic buyers. An example of this approach was e.g. used in the “Nationale Verzehrsstudie II”, a study about German food consumption habits (Cordts et al. 2010). Other typologies are based on attitude related attributes, which depend on consumption preferences and motives (Lüth et al. 2005, Burda 2002). To date, a comprehensive overview over approaches and research focuses in the field of consumer and food consumption behavior does not exist. However, in cognate disciplines, smaller status quo analyses regarding aspects of consumer behavior in the case of organic food products, as well as analyses examining the current state of research, were performed.

A subdomain of consumer behavior is addressed in the study of Aertsens et al. (2009b). They display the status quo of research on personal determining factors in the case of the consumption of organic food products. Aertsens et al. structure their knowledge analysis with the help of a theoretical framework that was designed on an antecedent literature study (2009b). The results of the studies examined were presented in the frame of the single topics which were developed from a theoretical framework. A precise description of the methodology, or approach (e.g. sample), or a tabular depiction was not achieved.

Another example for the proceedings concerning a state of the art analysis exists in the case of behavioral pricing research: Homburg and Koschate (2005) identified the most important topics, followed by a literature research of each topic. The theoretical basis, database, variables and central findings of selected empirical studies were tabulated. This described the kind of survey (e.g. interview) and the kind and number of interviewed persons (e.g. 425 housewives). The comparison of studies led to a sound overview of the present state of research, as well as compact results. Thereof, one was able to “derive direct recommendations for business practice” (Homburg and Koschate 2005). Furthermore, the overall and individual knowledge gaps were discussed.

Usually, the state of the art within a specific topic or study is developed at the forefront of the data survey. Henseleit et al. (2007) created a tabular status quo of studies, where regression analyses regarding the topic “explaining factors for the preference of regional or national food products“ were conducted. In this study, generic topics were also identified with the help of relevant literature. Henseleit et al. (2007) state that a comparative confrontation of the results is difficult since the objects of investigation (region, product), as well as methodological aspects (operationalization and variables), vary (Henseleit et al. 2007). Therefore, the tables were supplemented by specific indicators and elements of the studies, such as the depen-

dent variable (along the lines of Homburg and Koschate 2005), the products and the region or the country. The overview of current research results enabled Henseleit et al. (2007) to resume the studies, to oppose them and to question them in a critical manner. For example, they discovered that “only single aspects and not the whole bandwidth of possible factors of influence were considered in the studies”.

3 Procedure of literature research

A comprehensive literature research was performed in order to identify the current situation. The procedure applied to the literature research, as well as the development of the database used for the knowledge analysis, is described. Only German and English publications dated between 2000 and June 2011 were selected so as to assure timeliness. Key literature (presentations, scientific reports etc.) was also considered, since the state of the knowledge for Germany is the focus of the project.

Table 3: Overview of applied databases for literature research

Number of databases	Language	Database
8	English	AgEcon, Cab Abstracts, EBSCO, EconPapers, Emerald Insights, NAL Catalog, Science Direct, Web of Science
4	German	BÖLN Database, Econis, Greenpilot, Organic Eprints

Source: Own illustration

The search terms for the single topics were selected using prevalent marketing literature. The complete list of search terms can be found in the annex of this paper. Table 4 shows an example of the search terms for the topic product policy:

Table 4: List of search terms using the example of product policy

	Subterm	German	English
Product Policy	Product design	Produkt Beschaffenheit	product character / consistency
		Produkt Qualität	product quality
	Packaging design	Produkt Verpackung	product packaging
		Produkt Styling	Package
		Produkt Style	product styling
		Produktdesign	product design, product color
	Product labeling	Verpackungsgröße	package size
		Marke	brand, product brand
		Kennzeichnung	label, labeling
	Product innovation, elimination- and -modification	Produkt / Innovation / Elimination / Modifikation	product innovation / elimination / modification
	Range design	Produkt Programm	product range
		Produkt Linie	product line
		Produkt Sortiment	product assortment
		Produkt Portfolio	
	Value added services	Produkt Garantie / Kundendienstleistungen	product guaranty / warranty /service

Source: Own illustration

The publications were, as far as possible, saved as PDF files and were categorized with the help of the citation program CITAVI. Publications that were not available online were borrowed from a library. Only a very small part of the identified studies was not available at all. These publications could not be included in the knowledge analysis.

In total, 562 studies were identified and subsequently assigned to the single topics. Some studies were not employed in the course of the analysis, since they did not fulfill the methodological requirements. Several studies comprised more than one topic. Table 5 shows the number of studies per topic and provides an overview of the key aspects of the research.

Table 5: Number of identified studies based on topic

Topic of consumer research	Number of identified studies
Determinants of consumer behavior	151
Consumer segmentations	24
Product policy	107
Price policy	116
Communication policy	29
Distribution policy	63
Out-of-home consumption	16

Source: Own illustration

4 Results of the knowledge analysis

Following the analysis of the literature dated between 2000 and June 2011, a separate knowledge analysis was conducted for every topic and the knowledge gaps were derived.

4.1 Procedure

Subtopics were also selected using prevalent marketing literature. The studies were then assigned to the relevant topic. This procedure provided an overview of the occupancy of topics. Table 6 shows all topics and subtopics:

Table 6: Topics and subtopics for the knowledge analysis

Determinants of consumer behavior	Socio-economic
	Psychographic
	Behavior related
	General
Consumer segmentations	Socio-economic
	Psychographic
	Behavior related
	Lifestyle oriented
Product policy	Product design
	Package design
	Product labeling
	Product innovation, -elimination and-modification
	Range design
	Value added services
Price policy	Price cognition
	Price political strategies
	Willingness to pay
Communication policy	General communication policy
	Communication instruments
	Communication messages
Distribution policy	General distribution
	Retail
	Direct marketing
	Health food shop
	Internet
	Artisanry
	Logistics
Out-of-home-consumption	Communal Food
	Individual Food
	Other

Source: Own illustration

The studies assigned to each subtopic were displayed in a table. The matrix of the table is shown in Table 7. Depending on the topic, this matrix was complemented by further columns¹.

In Table 7, the first row explains the content of the table word for word. The second row displays an example of one study.

Table 7: Tabular matrix to display studies

			Methodological approach				
			Survey method				
Source	Object of investigation	Survey location	Quantitative	Qualitative	Sampling method	Sample	Research recommendations of authors
Author (year)	Object which was investigated	Survey country (Survey place)	Method (amendments)	Method (amendments)	How was sampling performed?	Sample subjects	Recommendations for further studies by the authors
Bickel, Hamm (2010)	Several foodstuffs	Province (Niedersachsen, Bremen, Nordrhein-Westfalen, Hessen; Baden-Württemberg, Berlin-Brandenburg)	Storetest; Analysis of retail scanner data	-	Convenience	14 organic food stores; 7-10 products	Communication policy: Transfer of complex contents in a preferably simple and comprehensible style

Source: Own illustration

In the first column (source) the authors, with publication year in brackets, are displayed. The studies are listed by time, displaying the development of the publications over the last ten years. Since the organic market grew steadily within this time span, more and more research efforts were undertaken. A continuous increase in research work in single parts of the organic consumer research was anticipated.

The object of the investigation (column 2 in Table 7) explicitly describes what the focus of the studies was, e.g. apples. The third column describes the country of origin of the study, indicating the exact location of the survey in brackets. The location could be a region or town, depending on how precisely the study is described. Knowledge of the origin of the study allowed for the geographical coverage of the studies (especially in Germany) and the possible transfer of the study results to the whole of Germany to be analyzed. It should be noted that only German and English literature was researched. Furthermore, the focus is on Germany. Grey literature was also included. Therefore, it was to be expected that most of the studies stemmed from Germany.

The next part of the table describes the methodological approach of the authors. The survey method is separated into quantitative and qualitative approaches. The sampling method (column 6 in Table 7) describes how the sample was drawn (e.g. convenience sample, probability sample etc.). The next column explains in detail the extent and the object of the sample. In the example displayed in Table 7, 14 organic food stores and between seven and ten products per store were examined. If quantitative and qualitative surveys were performed, the "sampling method" and "sample" columns would contain a slash between the sampling me-

¹The tables can be found in the annex of the German report that can be downloaded here: <http://orgprints.org/20055/>

thod and the sample. The quantitative method was always explained in advance. Thereby, the sampling method and the sample always are clearly assignable to the type of method.

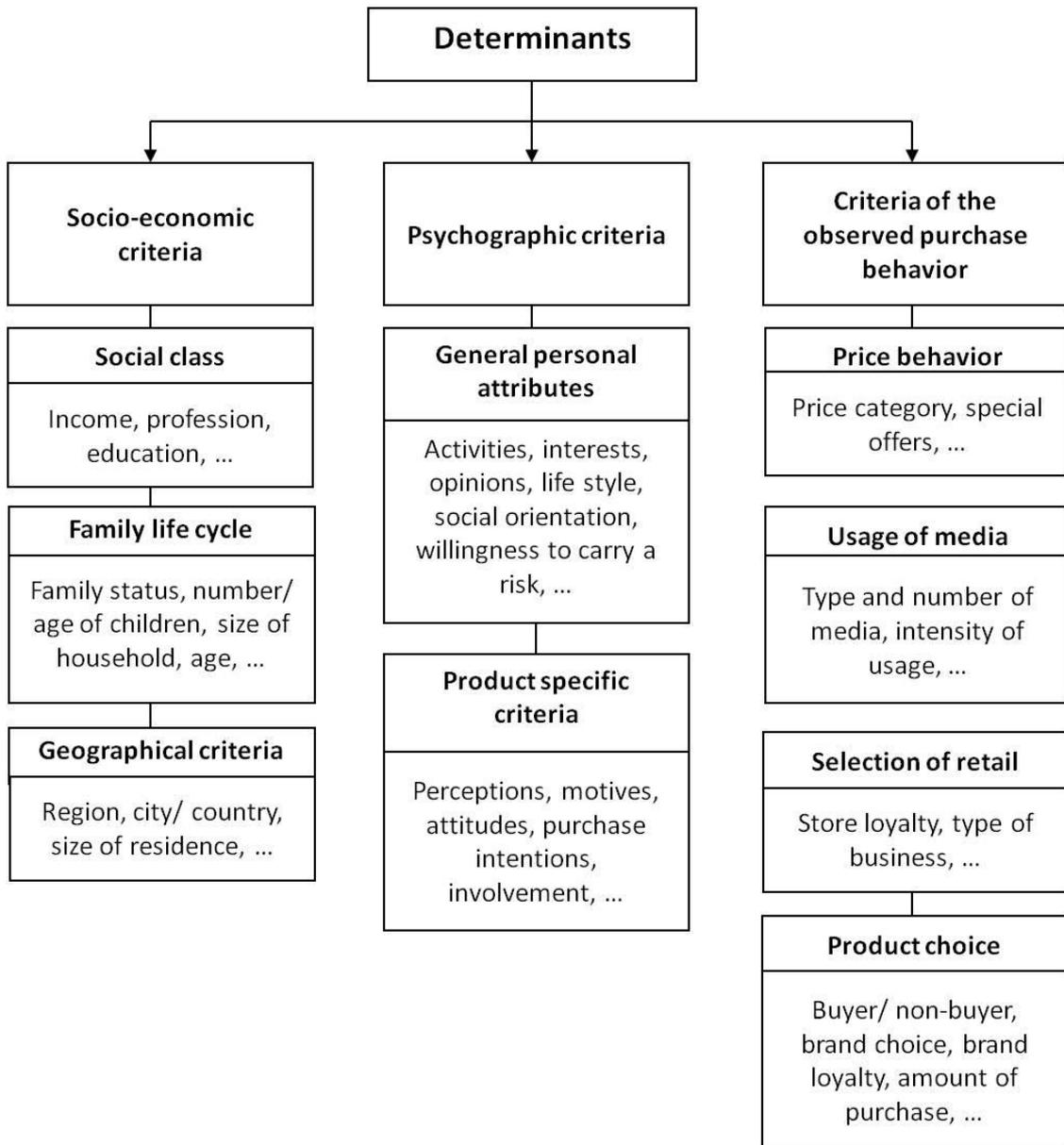
Taking a look at the methodological approach, one can draw conclusions to what extent the studies allow general statements regarding the German organic market and which methodological approaches should be recessed in future.

Some studies offer recommendations for future research activities. Those recommendations are displayed in the last column.

4.2 *Determinants of consumer behavior*

This chapter deals with the state of the art of determinants for the purchase of organically produced food. The analysis of factors that influence the purchase decision and predict consumer behavior, builds the basis of a target group specific marketing (Cordts et al. 2010). According to Spiller (2010) variables relevant to purchase behavior can be divided into socio-economic, psychographic and behavior related determinants. Figure 4 illustrates examples of such categorization.

Figure 4: Determinants of consumer behavior



Source: Adopted from Spiller (2010)

Socio-economic or socio-demographic aspects are the classical criteria for consumer description and consumer segmentation. Due to the trend observed of their declining explanatory power regarding consumer behavior when consuming organic food, they have partly lost their significance (Freter 2008; Aertsens et al. 2009a). Aspects of social class, educational background, income, family status and age are only some examples still commonly used for the description of a consumer's socio-demography (Cordts et al. 2010).

The category of psychographic criteria addresses general personal attributes as well as product specific attitudes (Spiller 2010). Examples of product specific attitudes are attitudes towards nutrition, environment protection and organic products, purchase motives, involvement and the perception of organic food (ibid.). Values, opinions and interests regarding sustainability and lifestyles, as well as social orientation, belong to general personal attributes

(ibid.). Homburg and Krohmer (2006) and Aertsens et al. (2009b) rate the relevance of behavior in psychographic approaches by trend higher than the relevance of behavior in socio-economic variables.

Price behavior, usage of the media and the choice of the POS respectively of the product belong to the aspects of the observable consumer behavior (Spiller 2010). The relevance of behavior in this category is by definition the highest (Homburg and Krohmer 2006). It has to be mentioned, though, that behavior related aspects can depend on socio-demographic and psychographic aspects and thus do not necessarily represent the source of the purchase decision (ibid.).

Studies that dealt with the drivers of organic consumption, but which primarily aimed at consumer segmentation by means of a cluster analysis, are considered in chapter 4.3 Segmentation. Articles regarding the subject areas price behavior and choice of the POS are examined in chapter 4.5 Price and chapter 4.7 Distribution respectively and are therefore not part of this chapter.

For the subject area determinants of organic consumption, 151 relevant studies were analyzed.

4.2.1 Subtopics of the identified studies on determinants

A combination of different types of variables is often used for the description of consumer groups (Spiller 2010; Homburg and Krohmer 2006). That is why single studies could not always be unambiguously assigned to different sub-themes.

The majority of publications (n=95) examined organic consumption by means of psychographic aspects. 17 of these studies were conducted in Germany. Almost one third of all studies (n=48) regarding determinants considered socio-economic aspects: four of these dealt with the organic consumer behavior of German buyers. Articles that analyzed behavior related approaches - 13 studies (one of them from Germany) - comprised the smallest part. One reason for this may be the relatively difficult measurement of behavioral attributes. The category 'determinants in general' summarizes all those studies that focused on customer profiles as well as the identification of determinants and/or the analysis of their relevance for the behavior of organic consumers. 39 publications (12 of them from Germany) were assigned to this category since the type of criterion could not be clearly defined. Table 8 gives an overview of the number of studies with the respective focal criteria.

Table 8: Identified studies on determinants divided into subtopics

Subtopic	Number of studies	Studies conducted in Germany
Socio-economic	48	4
Psychographic	95	17
Behavior related	13	1
General	39	12
Total*	195	34

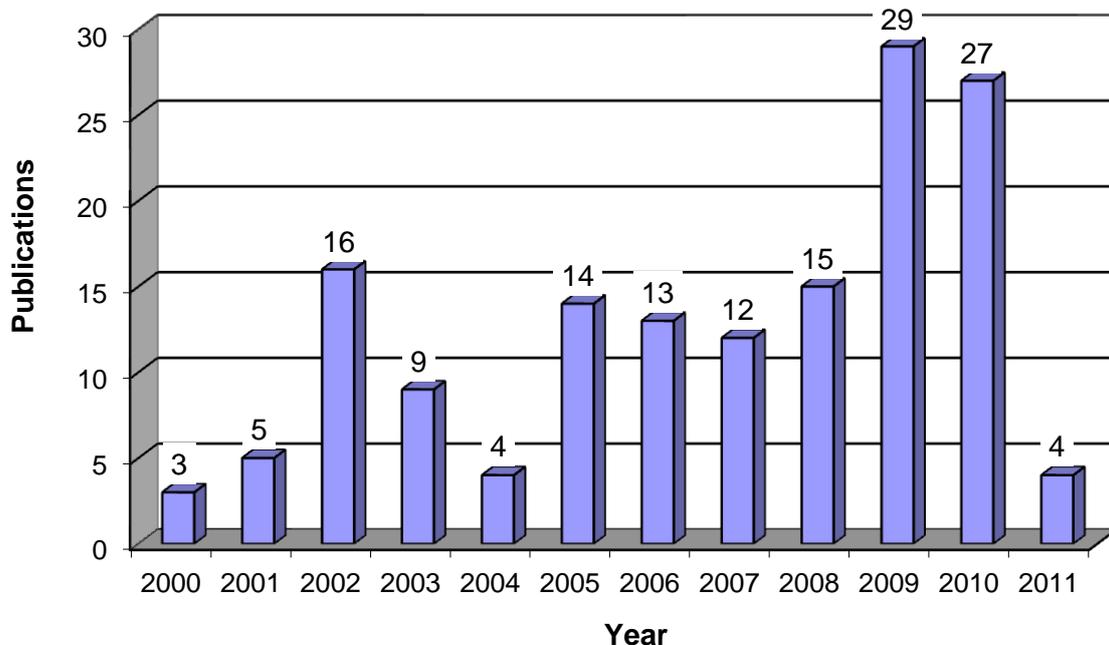
*Some studies deal with more than one sub-theme, therefore the number of elaborated sub-themes is higher than the total number of studies concerning determinants.

Source: Own illustration

4.2.2 Publications on determinants according to year and countries involved

Figure 5 illustrates the number of studies published in the last 11 years – from 2000 until June 2011. The peak with 29 studies represents 2009. The year 2000 had only three published articles. The development of the publication numbers reveals a tendency towards increased research intensity since 2005. Another evident peak is 2002, with 16 published studies.

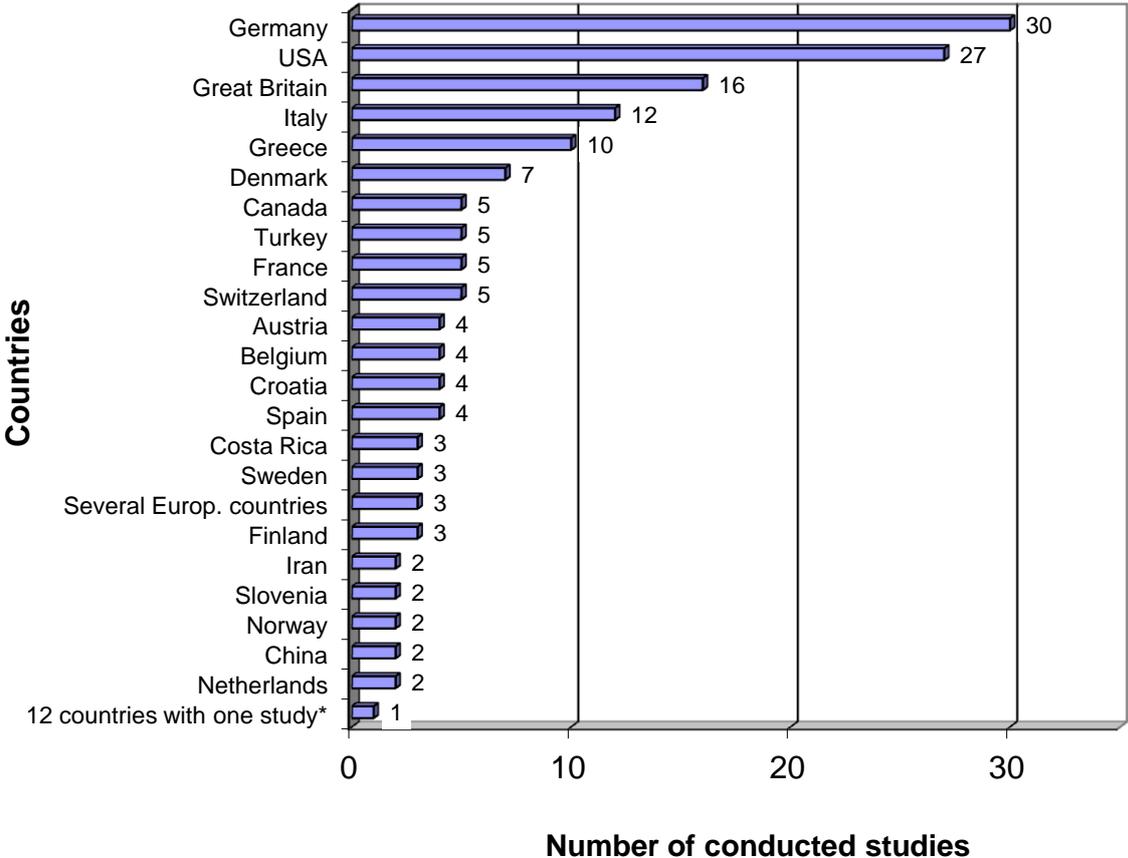
Figure 5: Publications on determinants (n=151) from January 2000 to June 2011



Source: Own illustration

Although the literature research was limited to German and English sources, relatively few studies regarding determinants originate from Germany, as shown in Figure 6, despite Germany producing 30 studies, the highest number, followed by 27 studies from the USA. Moreover, factors determining purchase behavior were intensively analyzed in Great Britain, Italy and Greece. Not only European but also Asian scientists (n=8) contribute increasingly to the research of determinants of organic consumption.

Figure 6: Involved countries of studies on determinants from January 2000 to June 2011



* South Korea, Nepal, Bosnia-Herzegovina, Taiwan, Japan, Poland, India, Ireland, New Zealand, Malaysia, Thailand, Australia

Source: Own illustration

4.2.3 Socio-economic determinants

Socio-economic aspects as determinants for the purchase of organic food were analyzed in 48 studies. Among these, 21 studies dealt with the different aspects of the decision process a consumer runs through while purchasing organically produced groceries. Not only the influence by socio-economic attributes on behavior related variables such as purchase frequency, purchase intensity, stated purchase behavior and purchase decision were analyzed, but also purchasing motives, perception and acceptance of organic food, as well as the knowledge of organic products. A relationship between the consumer’s socio-demography

and willingness-to-pay was postulated in 14 publications. Eight studies focused on specific product categories by elaborating the typical socio-economic characteristics of consumers of apples, wine, beef, milk, vegetables, bread, meat in organic quality and fresh organic food in general.

It is noteworthy that, with respect to the applied methods, only Štefanic et al. (2001) made use of a combination of methods composed of personal, quantitative interviews and qualitative guided interviews. Other qualitative survey methods were not adopted. Standardized telephone or personal interviews were used for the majority of surveys. Six empirical surveys were based on consumer panel data (Anders and Moeser 2008; Smith et al. 2009; Stevens-Garmon et al. 2007; Zhang 2008; Ngobo 2011; Zhang 2009), while choice-experiments were conducted in four studies (Loureiro et al. 2001; Managi et al. 2008; Mann et al. 2010; Hearne and Volcan 2005).

Sample sizes were on average between 200 and 400, in some cases (especially for panel data analyses) way more than 1000. In most surveys the samples were composed of consumers, namely organic buyers. Torjusen et al. (2010) interviewed tourists in Croatia interested in organic food, in order to describe their socio-demography. Welsch and Kuhling (2009) dealt with another target group: they analyzed the factors influencing the organic consumption intensity of users of alternative energies. Adolescents, as future potential organic consumers, were surveyed by Stobbelaar et al. (2007).

International comparisons taking into consideration socio-economic aspects were conducted in only two research studies (Mutlu 2007; Squires et al. 2001), between Turkey and Germany, as well as Denmark and New Zealand. The statistical analyses were mainly carried out by factor analyses and regressions (also Logit, Probit and Tobit models) as well as by cross-classified tables and variance analyses. In a few cases structure equation models (n=3), Conjoint-analyses (n=3) and Discrete-choice-analyses (n=3) were applied.

4.2.4 Psychographic determinants

With 95 studies in total, 17 of them from Germany, psychographic determinants were the most frequent subject of publications regarding determinants of organic consumption. 57 articles explained consumer behavior in terms of values, attitudes and consciousness. Altruistic attitudes towards a sustainable nutrition and organic food, health and environment consciousness, as well as moral and emotional values, appeared to be especially relevant. Attitudes towards price, production method, quality and country of origin were also ascribed a determining effect on organic consumption (n=20).

In 17 publications scientists dealt with the determinants involvement, degree of information and knowledge of environment, health, nutrition, production method, label and organic products in general. 12 studies focused on the identification of organic purchasing motives and their significance to the consumer. Aspects such as trust in organic food and risk perception regarding different production methods are also of relevance to the purchase decision and were elaborated in seven studies. Three articles made use of a lifestyle-oriented approach, in order to predict consumer behavior.

Organic consumption functioned most often (n=37) as a variable depending on psychographic determinants. In 21 cases it was operationalized by purchase frequency, namely purchase intensity, in nine cases by purchase decision and in seven cases by purchase intention.

The focus of twelve research papers on purchase behavior concerned product choice, nutritional habits and consumption behavior in general. In ten studies an attempt to quantify the influence of psychographic attributes on the willingness to pay for organic products was made. Three studies dealt with sensory preferences as the dependent variable. In eleven studies the effects of product specific psychographic attributes was analyzed. Consumer behavior when consuming isotonic beverages, roast chicken, pizza and wine, in addition to the common product categories of fruit, vegetables, meat and milk, was examined.

The majority of studies were based on quantitative methods. Only 16 analyses were of a qualitative nature. In four studies combinations of methods such as laddering, guided, as well as written and telephone interviews, were applied (Sehrer et al. 2005; McEachern and McClean 2002; Spiller et al. 2004; Thøgersen 2009). Besides the common quantitative survey methods, choice-experiments (n=7), auctions (n=2) and observations (n=1) were conducted. Most of the qualitative approaches were based on the laddering method (n=9). Focus group discussions and guided interviews were each used in five studies. Moreover Aertsens et al. (2009b) examined attitudes, personal norms, emotions as well as involvement and consumers' insecurity with regard to organic food within a literature analysis framework. The quantitative studies used sample sizes of 200 to 500 subjects on average. The number of survey participants for the qualitative studies was between 2 and 127 interviewees. Besides the basic univariate and bivariate analyses, regressions particularly and structural equation models, as well as further multivariate methods, were applied.

4.2.5 Behavior related determinants

Behavior related determinants were examined in only 13 studies and thus represent the smallest share. Nine of these 13 studies dealt with consumption behavior that embraces stated purchase behavior, purchasing habits and consumption patterns. Botonaki et al. (2006) quantified the influence of the consumer's information behavior on willingness-to-pay. Two articles focused on behavior when purchasing specific product categories: Aldanondo-Ochoa and Almansa-Sáez (2009) analyzed the relation between milk purchase behavior and willingness-to-pay; Annett et al. (2008) attempted to explain sensory preferences regarding organic bread in terms of consumers' bread consumption habits. Willingness-to-pay and general consumption behavior also functioned as dependent variables.

Quantitative methods were exclusively used in all studies concerning behavior related determinants. It is noteworthy that data was almost always collected by interview. In contrast, the method of observation was not applied. Besides several bivariate and multivariate analyses, relationships between behavior related determinants and the dependent variables were most frequently quantified by means of regressions.

4.2.6 Determinants in general

39 studies were assigned to the category determinants in general, which can be further divided into three sub-themes.

The first theme focuses on the identification of determinants for organic consumption without specifying the kind of criterion. 29 publications thus elaborated the different influencing factors on organic consumption, organic purchase decision, purchase frequency, purchase in-

tention, willingness-to-pay, attitudes, customer satisfaction: in brief, the entire purchasing process.

The research papers of the second sub-theme dealt with the development and description of consumer profiles. Spiller et al. (2004), Gotschi et al. (2010) and one study of the ZMP (2001) characterized the typical organic consumer. Stockebrand et al. (2009), however, focused on customers of an organic online delivery service, van Loo et al. (2010) on buyers of organic poultry.

Studies that consider the organic market and its development and potentials in general, such as Wier et al. (2008) and Bakula and Smoluk (2005), belong to the third sub-theme. Some of the studies distinguish themselves thematically from the others: the article by Chakrabarti (2010) emphasizes the importance of certain factors for the purchasing process from an expert's point of view; Perrini et al. (2010) examined the determinants for consumers' attitudes towards organic private brands, which have hardly been considered yet in the relevant literature; predictors of a positive attitude towards organic food in hospitals were analyzed by Schuster and Nübling (2006); Bruhn (2001b) observed organic consumer behavior and its influencing factors over time from 2000 to 2010. Another interesting approach was pursued by Hamm (2011), who identified the motives for the purchase of conventional food by organic consumers. Last but not least the study by Grønhøj (2006), in which the effect of family members on sustainable nutrition is elaborated, is worth a mention.

Six out of the 39 studies were based on qualitative approaches in which the data collection was conducted by focus group interviews, in-depth-interviews and guided interviews, and the data analysis was mostly content analysis. Chakrabarti (2010) and Stieß (2005) combined written interviews with group discussions in guided interviews. As in the case of the previous three subject areas, the common univariate, bivariate and multivariate methods were applied for data analysis.

4.2.7 Research recommendations of the authors

The recommendations by the authors of the identified studies regarding determinants for organic consumption are to be used to identify the research deficits in the framework of the present analysis of the state of the art. Table 9 summarizes a selection of comments and suggestions for future research work. In addition to the above elaborated aspects, a large number of scientists generally recommend surveys with larger sample sizes, the extension of analysis on further product categories and regions, as well as the inclusion of different countries. Moreover, a requirement for longitudinal studies is indicated.

Table 9: Research recommendations of the authors on determinants

Socio-economic aspects
-
Psychographic criteria
Analysis of the interaction between different product attributes
Analysis of taste image of wine
Relation between customer satisfaction and customer values
Examination of the time development of attitudes
Examination of the reason for which consumers, who actively protect the environment, consume little organic food
Analysis of normative aspects
Analysis of personal values in a product specific context
Query of the attitudes towards certain packaging methods
Analysis of the intensity of attitudes towards organic meat
Analysis of further value-trade-offs (e.g. regional and ecological food)
Comparative studies of organic and conventional consumers, in order to analyze the differences in attitude and risk perception
Analysis of real consumer behavior in trade-off-situations
Analysis of further influencing factors such as labels, packaging etc.
Analysis of emotional aspects (fear, guilt)
Analysis of the relation between health consciousness and animal welfare
Research in the fields of consumer attitude and purchasing motives for Eastern European countries
Consumers' attitudes towards different sales channels
Application on further contexts (regional, ecological, genetically modified food products etc.)
Consumer survey before and after sales promotion, in order to determine degree of brand awareness and values of sympathy
Behavior related criteria
Consumers' information behavior
Analysis of the influence of information behavior on the purchase probability
Consideration of further behavior variables (e.g. sensory skills)
In general
Analysis of how to increase involvement
Reaction to food crisis
Analysis of different consumer types
Analysis of occasional organic consumers
Continuative analysis of organic consumers
Analysis of (young) children

Source: Own illustration

4.2.8 Research gaps based on knowledge analysis

Within the analysis of the state of the art the category determinants of consumer behavior is the most intensively analyzed subject area (n=151). However, the relatively small share of studies from Germany is conspicuous. Nevertheless, the research area appears to be quite well covered, especially since a transfer of results into other regions or countries is guaranteed and thus future redundant conductions of studies with similar goals become unneces-

sary. This is particularly true for results in countries comparative to Germany, culturally and historically, which are characterized by a similar prevalence and availability of food. Characteristic of the subject area determinants is the large number of studies, which do not differ to a great extent in their basic objective, in their research subjects or in their study design. This explains the mass of identified studies over the last eleven years.

Nonetheless the literature analysis, which is based on German and English research, enabled the identification of research deficits. The identified deficits for the above mentioned four subject areas are here presented.

Socio-economic determinants: The relatively large number of studies regarding the influence of socio-economic aspects suggests intensive research efforts. Frequently analyzed variables are particularly gender, educational background, income level and geographic origin. It has been widely agreed that women, consumers with a high income and a good educational background, as well as southern Germans are intensive organic buyers. Many middle-aged people and households with young children fall within this category. A negative coherence exists between organic consumption and residence in eastern Germany. It is not clear, however, what effect profession and older children in the household might have on the purchase of organically produced food. Moreover, the difference in purchase behavior between the rural and the urban population has not yet been sufficiently analyzed.

Psychographic determinants: The influence of psychographic factors on organic consumption is the most frequent topic in the subject area determinants. The results of many studies reveal that attitudes based on altruistic and postmaterial values, consciousness for climate protection and animal welfare, as well as efforts that support the production and the sale of regional products, cohere positively with the consumption of organic food. Preference for convenience-foods is opposed to organic consumption. The complex constructs of health and nutrition consciousness, of food involvement, as well as perceived purchasing risk, seem to be only rudimentarily analyzed. Moreover, the issue of how knowledge of nutrition and health as well as trust, as well as the interaction between the two, affects organic purchasing behavior is still unresolved. Further research into product oriented attitudes and the effect of interacting product attributes, is required for product specific criteria. Approaches dealing with determinants of depth psychology, such as emotions and spirituality, do not yet exist in the relevant literature. There is also further demand for the analysis of value-trade-offs e.g. between regional and organic food, or between climate protection and organic food. The aspect of fair trade has more research potential. Longitudinal studies addressing the development of attitudes and values are missing, too.

Behavior related determinants: Organic purchasing behavior has only in very few cases been explained in terms of other behavior related variables. The coherence between organic consumption and low meat consumption, increased fruit and vegetable consumption, as well as preference for full grain products, seems to be confirmed. Moreover, it is already known that organic consumers prefer specialist shops and rather avoid shopping in discounters. Beyond that a relationship between the purchase of organic food and physical activity, as well as the abstinence of tobacco, has been established. The correlation between information behavior, i.e. searching/reading of product labeling regarding ingredients, fat content and nutritional values, and the purchase of organic food was analyzed in very few studies. Probably due to difficult measurement, cooking behavior and real observable purchasing behavior have not yet been examined. A need for explanation exists for the effect of advertisements and for the reaction to single marketing variables such as labels and product packaging, too.

Despite the steadily increasing number of food scandals, marketing research still lacks analyses of reactions to a crisis. Another research deficit can be found in the analyses of sensory skills and preferences of organic consumers, which represents a high research potential due to the fact that taste has become increasingly relevant to the motivation of purchasing organic food.

The consumption of organic food by children should be considered for future research, since youth represents a large potential for the organic branch. Keeping in mind the ongoing globalization, intercultural comparisons of the determinants for purchasing organic food should be conducted, too. Beyond that, research studies of long duration, which continuously analyze the development of all kinds of determinants, are required.

It can be concluded that determinants of organic consumption are the best covered research field. Overall, the large number of studies is of a high methodological standard. Since the extensive research work and results cannot be easily elaborated by practitioners, the need for science transfer, e. g. by research overviews and operational recommendations, is high. Nevertheless, the literature analysis has succeeded in identifying issues that have not yet been analyzed and leads to the conclusion that the subject area determinants offers interesting perspectives for future research.

4.3 Consumer segmentation

In order to operate a marketing campaign that concentrates on the target group of organic buyers, the identification and description of the consumers is required (Homburg and Krohmer 2006; Balderjahn and Scholderer 2007). The consumer segmentation serves this purpose and builds the key element of strategic marketing (Spiller 2010). A requirement for such a segmenting approach is the selection of adequate criteria, already extensively elaborated in chapter 4.2. The following contents are based on the classification made in Figure 4 in the preceding chapter. The segmentation aims at identifying consumer types by means of selected segmenting criteria. The built consumer groups should differ in their organic consumption behavior as much as possible, though within the groups there should exist a possibly high homogeneity (Freter 2008; Homburg and Krohmer 2006; Spiller 2010).

Only those studies in which such a consumer typology was developed by means of a cluster analysis were further analyzed in the framework of the knowledge analysis. Moreover, the focus was on English and German articles, which identified at least three consumer types and which presented conclusions for organic consumption. For more information regarding approaches to segmenting organic consumers please consult Cordts (2009).

A total of 24 studies was analyzed for the subject area of organic consumer segmentation.

4.3.1 Subtopics of the identified studies on segmentation

As presented in chapter 4.2, the identification of consumer segments can be affected by single variables or by a combination of different segmenting criteria (Spiller 2010; Homburg and Krohmer 2006). For this reason, some studies were assigned to more than one sub-theme

and thus the total number of studies as shown in Table 10 (n=31) is larger than the number of analyzed publications (n=24).

Almost one third of the identified studies dealt with segmentation approaches based on psychographic aspects, five of which originate in Germany. Segmentations based on behavior-related variables constitute a frequently analyzed field of research (twelve studies, of which eight are German), especially in Germany. Lifestyle-related consumer typologies count for psychographic approaches. Due to their increasing relevance (a total of seven studies, five from Germany) they will be treated as a single sub-theme. For the identification of consumer types by means of lifestyles, qualitative attributes (values and attitudes) are combined with classical “hard” parameters describing social class, such as educational background, profession and income (Balderjahn and Scholderer 2007; Sinus Sociovision 2006). Significantly, socio-economic criteria were not applied to consumer segmentations. Only Chinnici et al. (2002) made use of consumer socio-demography in combination with attitudes, purchasing motives and behavioral aspects as segmenting variables. Table 10 illustrates, how often different criteria were applied to segment consumers and how many of these approaches were analyzed in Germany.

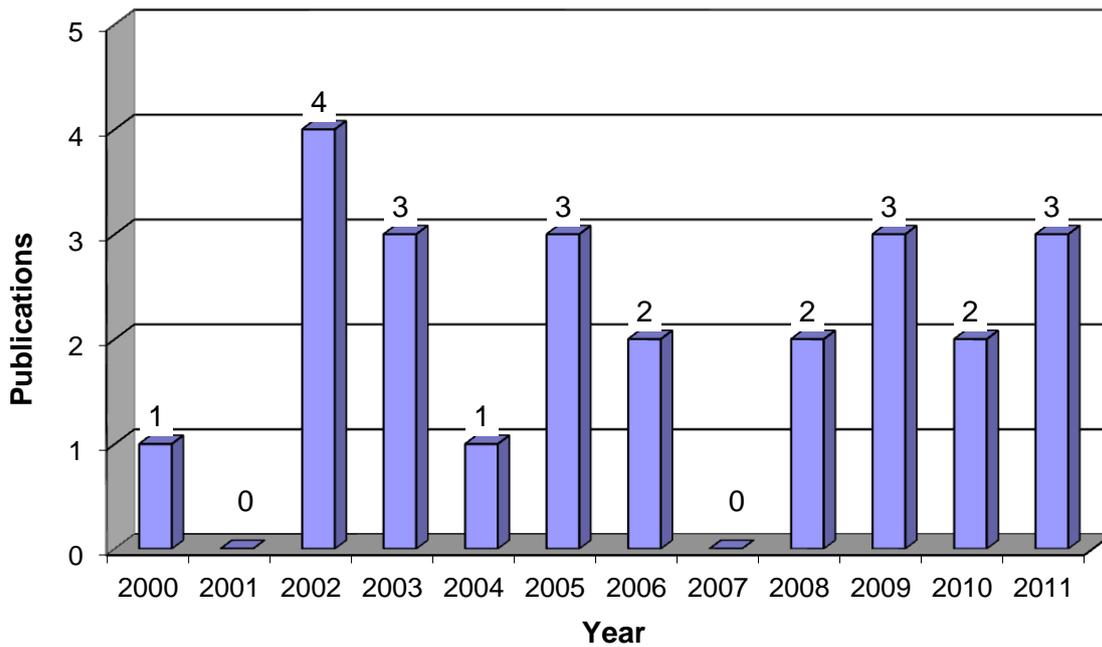
Table 10: Identified studies on segmentation divided into subtopics

Segmenting criteria	Number of studies	Studies conducted in Germany
Socio-economic	0	0
Psychographic	12	5
Behavior related	12	8
Lifestyle related	7	5
Total	31	18

Source: Own illustration

Figure 7 represents the timeline for the number of published studies between January 2000 and June 2011. The largest number of publications was produced in 2002. In 2001 and 2007 no relevant article regarding consumer segmentation was identified. Due to the relatively low number of studies, a trend cannot be predicted.

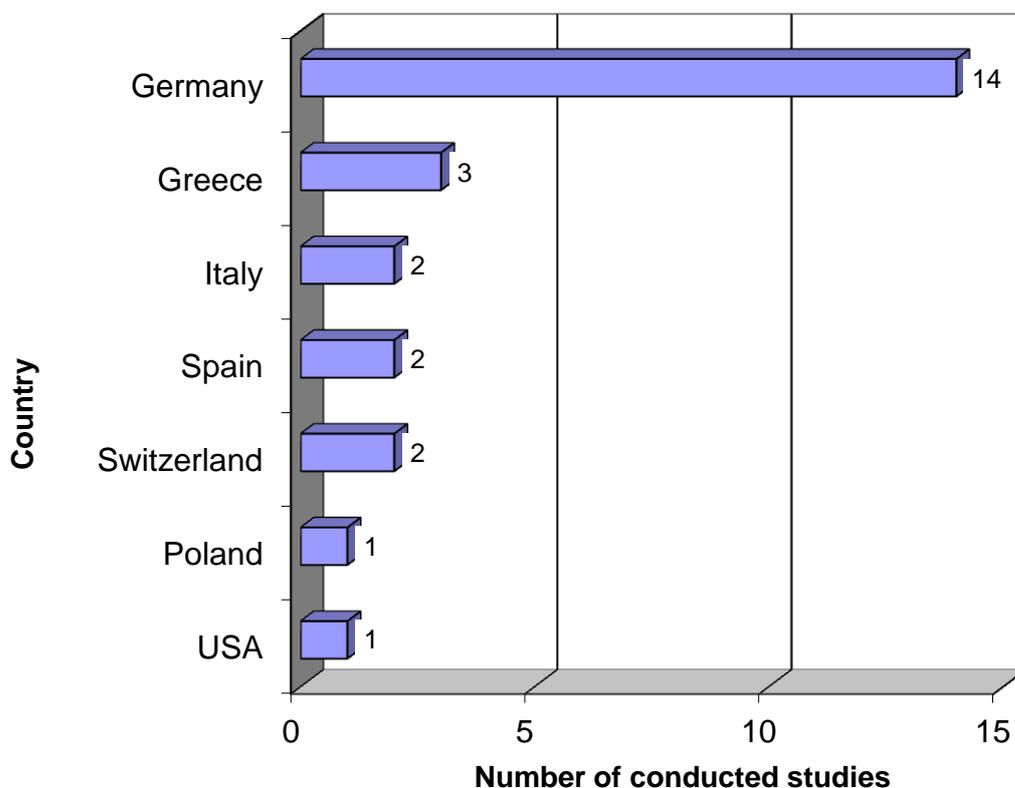
Figure 7: Identified studies on segmentation (n=24) from January 2000 to June 2011



Source: Own illustration

The high contribution of studies originating in Germany is striking, as Figure 8 illustrates. With 14 out of 25 publications, Germany has the highest research intensity in the subject area of consumer segmentation. As mentioned before, the literature research was limited exclusively to German and English sources, which may lead to a biased evaluation of the research intensity in other countries. Nevertheless, it is noteworthy that only one study is non-European.

Figure 8: Countries involved in studies on segmentation from January 2000 to June 2011



Source: Own illustration

4.3.2 Segmentation based on socio-economic criteria

Although socio-economic attributes represent the second most examined determinants for organic consumption, studies conducting consumer segmentation by means of consumer socio-demography, have not been found.

4.3.3 Segmentation based on psychographic criteria

In twelve studies, organic consumers were segmented by psychographic criteria, i.e. values, attitudes and/or purchasing motives.

Fotopoulos and Krystallis (2002) segmented organic consumers based on their purchasing motives for organic products. In order to describe the emerging consumer groups, factors such as nutritional values, naturalness or health values of food products, as well as socio-demographic attributes were used. Besides organic consumers, non-organic buyers were also interviewed. Additional to socio-economic and behavior-related attributes, Chinnici et al. (2002) made use of purchasing motives as segmenting variables, too.

Chrysohoidis and Krystallis (2005) segment organic buyers based on their values by applying the so called LOV-typology. The nine central values of LOV were initially summarized by three factors (self respect, belonging, joy), which were then used for a cluster analysis. The

identified clusters were characterized by attitudes towards nutrition and organic food, knowledge about environmental problems, aspects of eating and purchasing behavior, as well as demographic attributes. Fotopoulos et al. (2011) further built consumer groups based on values influencing the consumption of organic products and products with protected geographical indicators.

Saba and Messina (2003) conducted a consumer typology based on attitudes towards the consumption of organic fruit and organic vegetables. Nestlé Deutschland AG (2009) described its segmenting method only roughly. Thus it remains unclear, if in addition to attitudes towards nutrition and food purchasing behavior related attributes were used for its consumer segmentation.

In the remaining six studies, psychographic criteria – most often attitudes towards health, nutrition, organic consumption, environmental protection, etc. – in combination with variables describing purchase behavior of nutrition, were chosen as the basis of the segmentation.

The sample sizes differed from 130 (Fotopoulos and Krystallis 2002) to 3,848 interviewees (Nestlé Deutschland AG 2009). For the data survey Niessen and Hamm (2006) as well as Saba and Messina (2003) used panels of organic buyers representing all kinds of consumers. With the exception of these two studies, the majority of survey methods are characterized by interviews.

4.3.4 Segmentation based on behavior related criteria

In the studies regarding purchase behavior, consumers were segmented based on the frequency with which they purchased or consumed organic products, or on the monetary purchase intensity. Segmenting approaches, which focused on product specific consumer preferences, were also considered in this sub category. Gifford and Bernard (2008) built consumer groups on the basis of statements concerning the willingness-to-pay for organic food.

Hoffmann and Spiller (2010), Janssen et al. (2009) as well as Spiller et al. (2003) mainly segmented according to purchase and nutrition relevant variables. In these studies, choice-experiments simulated purchase situations and produced relatively real data.

Mesías et al. (2011) built consumer groups characterized by different preferences for diverse attributes of organic eggs. Stolz et al. (2010) segmented 293 occasional organic buyers by their preferences for organic, conventional and so called “conventional-plus” products. This study was the only one in which a latent class analysis was applied to typify consumers.

In the other six studies, behavioral aspects, in combination with consumer attitudes, functioned as segmenting variables. Sample sizes differed from 154 (Gifford and Bernard 2008) to 1,150 interviewees (Spiller et al. 2004) with one exception of 13,074 (Hoffmann and Spiller 2010).

4.3.5 Segmentation based on lifestyles

Almost all of the seven identified studies concerning the typology of consumers based on their lifestyles used standardized interviews of consumers in general. One study was based on a qualitative approach focusing on Sinus-Milieus as a lifestyle model. In this case the data survey was affected by creative group sessions (Wippermann et al. 2006). Schultz et al (2003) applied a combination of methods composed of quantitative personal interviews and explorative group discussions, respectively guided interviews. Organic and non-organic consumers were segmented by applying a socio-ecological lifestyle approach based on attitudes, motives as well as barriers to purchasing organic food. Additionally, within the framework of a quantitative study, Stieß and Hayn (2005) conducted a segmentation based on socio-ecological lifestyle dimensions.

The behavior related consumer segmentation by Gil et al. (2000) was based on health related lifestyle variables. However, the typology of Sinus Sociovision (2002), which aimed at the identification of nutrition types, was initially limited to attitudes and behavioral aspects regarding nutrition and environment. In a next step, the nutrition types were assigned to different social (Sinus-)Milieus, in order to develop an all-embracing picture of different lifestyle and nutrition styles. Other approaches to the identification of clusters based on nutrition related lifestyles were affected by Bruhn (2008) and Żakowska Biemans (2011). In these cases, segments were based on dimensions of the Food-Related-Lifestyles.

It is noteworthy that the share of representative studies is high and that the biggest part of the body of research was conducted in Germany.

4.3.6 Research recommendations of the authors on segmentation

The recommendations made by the authors of the identified studies, which refer to organic consumer segmentation, were used for the identification of research deficits in the framework of the knowledge analysis. Table 11 represents a selection of comments and suggestions for future research on consumer segmentation.

Table 11: Research recommendations of the authors on segmentation

Socio-economic aspects
Since the group of potential organic consumers represents a potential for the growth of the organic market, better knowledge of the socio-demography of this group is needed.
Psychographic criteria
Development of marketing strategies for the positioning of individual products by alternative distribution channels.
Analysis of the LOV-typology in connection with preferences for organic food.
Future typologies, which are supposed to explain consumer behavior concerning the quality segment of food, should contain not only values but also intermediary constructs such as attitudes or opinions.
Conducting comparative studies between organic and non-organic consumers in order to determine detailed differences in attitudes and test the relevance of risk perception for the behavior decision.
Behavior related criteria
Holistic analysis of behavior patterns in which the organic purchase behavior is embedded.
Analysis of behavioral patterns of generally sustainability-oriented consumers who, however, do not buy organic products.
Besides comparisons between organic intensive buyers and occasional buyers, analyses of differences between occasional consumers are needed.
Lifestyles
Analysis of the reason for the shifting of organic consumers into elderly consumer classes.
Demand for more knowledge regarding nutrition and lifestyle orientation and the consumption behavior of children and adolescents with respect to organic products.

Source: Own illustration

4.3.7 Research gaps based on knowledge analysis

The knowledge analysis revealed that there are surprisingly few cluster analyses on the subject area of market segmentation based on a target group typology. Studies, in which consumer groups were built by socio-economic criteria as segmenting variables, have not been found at all. A reason for this may be that the organic consumer's socio-demography is easy to measure, but not relevant enough for explaining behavior. For the majority of studies consumer segmentation was based on psychographic criteria: especially purchasing motives, personal values and attitudes towards organic food, nutrition, health consciousness and sustainability. The starting point for further segmentation was values in combination with preferences for organic products. Conducting comparative studies between organic and non-organic consumers should be considered too, in order to identify differences in attitudes in more detail. With respect to the categorization of consumers by their lifestyles, the focus of research to date has been on social-ecological and health and/or nutrition oriented lifestyle approaches. The consumption behavior of children and adolescents with regard to organic products has not been treated so far, even though there is clearly a need for more knowledge about nutrition and lifestyle orientation of the younger generation. Moreover, research about the reasons for a shift of organic buyers into elder consumer classes is missing, too.

Although the majority of the studies deals with behavior-related segmenting approaches, this subject area still offers potential for future research. So far variables describing the purchase

and nutrition behavior of organic consumers and preferences for products respectively product attributes, mainly served as segmenting criteria. Consumer segmentations based on sensory preferences represent a deficit in the behavior-oriented research, which leaves much space for innovative approaches. In general there is a demand for holistic analyses of consumer behavior patterns in which the organic purchase behavior is embedded. Moreover, comparisons between intensive organic consumers and occasional organic consumers should be affected, as should the differences between occasional organic consumers be analyzed in more detail. Since the group of non-organic consumers generally represents a potential for the growth of the organic market, better knowledge of this consumer group is important. As the evaluation of the methodologies of the identified studies shows, it is recommended that real purchase behavior data is used more intensely. This can be generated by applying customer cards and delivery data for online purchases. In line with this, projects dealing with both the theory and praxis are well suited.

4.4 Product policy

This chapter deals with the literature regarding product policy within the organic food industry seen from the consumer point of view (consumer and nutrition behavior). The product policy, which, according to Meffert et al. (2008), plays an important and central role in marketing political decisions, contains all decisions of a company on the arrangement of offered services. The product political decisions refer to those decisions regarding the product itself, as well as the program of supply (Olbrich 2006). Hence Meffert et al. (2008) use the term “product and program policy”. The product policy contains material products (real assets) as well as immaterial ones (services) (Meffert et al. 2008, Bruhn 2010). For the purpose of this report it shall refer to the characteristics of organic products.

In current marketing literature a product is defined as a bundle of characteristics of benefit to the consumer (Meffert et al. 2008). The value of the product can be subdivided into a basic value and an additional value. The basic value is understood to be the technical functional basic characteristics of a product (Meffert et al. 2008, Olbrich 2006). The additional value, however, provides the satisfaction of mental and intellectual desires (Hamm 1991). In the case of organic products the additional value, which goes beyond the actual nutritional value of products, can be regarded as an idealistic value since it deals with the ecological or ethical qualities of products. In order to design a product, the following fundamental decisions should be taken: definition of the beneficial product characteristics (product design); further design of the offered services (design of packaging, product labeling); decisions on product innovation, elimination and modification; setting of the range of services (range design); as well as decisions on value added services (guarantee, customer service) (Olbrich 2006, Meffert et al. 2008, Hamm 1991).

4.4.1 Subtopics of the identified studies on product policy

Overall 108 published studies are about product policy. As described in chapter 4.1, subtopics were formed on the basis of the appropriate marketing literature. They contain the most relevant fields of product policy, which are important in order to record consumer behavior and eating habits. The following table gives an overview of the subtopics and an explanation of the contents:

Table 12: Overview on the built subtopics on price policy and the number of identified studies

Topics	Contents	Number of studies
product design	consumer demands concerning an organic product	55
packaging design	consumer demands concerning packaging design	5
product labeling	consumer attitude and behavior towards labeling	50
product innovation, - elimination and - modification	consumer attitude towards new or changed products/ consumer behavior concerning product elimination	4
range design	range design in organic retail and consumer demands concerning range design	12
value added services	consumer attitudes towards value added services such as guarantee and customer service	0

Source: Own illustration

Most of the published studies (55) deal with the “core” of marketing (Meffert et al. 2008): the product design. An also large number of publications (50) deals with product labeling. However there are only few publications about “product innovation, elimination and modification” as well as “packaging design”. Published studies concerning “value added services” could not be found.

The majority of the analyzed publications treats the topic of “organic food” in general and does not focus on specific groups of products. 22 published studies explore some groups of products (meat, fish, vegetables, milk, bread, cakes and pastries, wine, olive oil and baby food). Some publications specifically examine regional products (n=8) or organic plus products (n=5). These products have, besides their characteristic as organic products, additionally immaterial characteristics (e.g. ethical values).

4.4.2 Objects of investigation of the identified studies on product policy

38% of the analyzed publications (41 of 108) do not refer to organic products in general but to specific products and foodstuffs with additional characteristics. Table 13 gives an overview of which products have been dealt with.

Table 13: Overview on the objects of investigation on price policy

Animal products	12	Milk	2
		Meat (lamb, pig, pork, poultry, general)	7
		Sausages	1
		Fish	2
Plant Products	10	Vegetables	2
		Potatoes	1
		Pepper	1
		Wine	3
		Olive oil	1
		Bread/Bakery products	2
		Noodles	1
Combined products		Baby-/Child food	2
Foodstuffs with product spanning characteristics *	19	Regionality/Origin	8
		Organic-Plus	5
		Health-Claims	1
		Functional Food	2
		Food Miles	1
Total	41		

*If a publication deals with specific products with additional characteristics (e.g. milk from that region) it was added to the category "foodstuffs with product spanning characteristics".

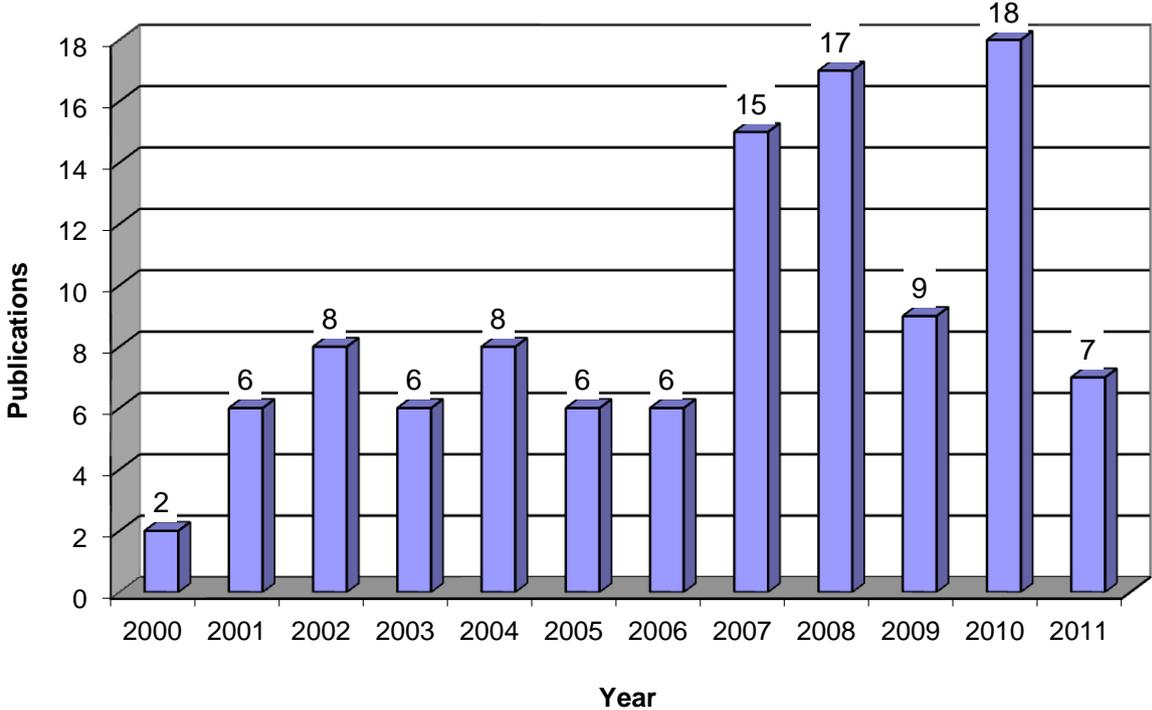
Source: Own illustration

Some of the publications refer to specific products or groups of products by means of examples within their study design, in order to later draw conclusions with regard to organic foodstuffs in general. The group of "products with product spanning characteristics" is an exception, since it includes publications that examine specific characteristics of organic products, e.g. regional products.

4.4.3 Publications on product policy according to year and countries involved

Figure 9 illustrates an increase in the number of publications between 2001 and 2011. This corresponds with the growth of the organic market. The majority of the publications (66) was published in the last five years. The large increase in publications since 2007 is evident.

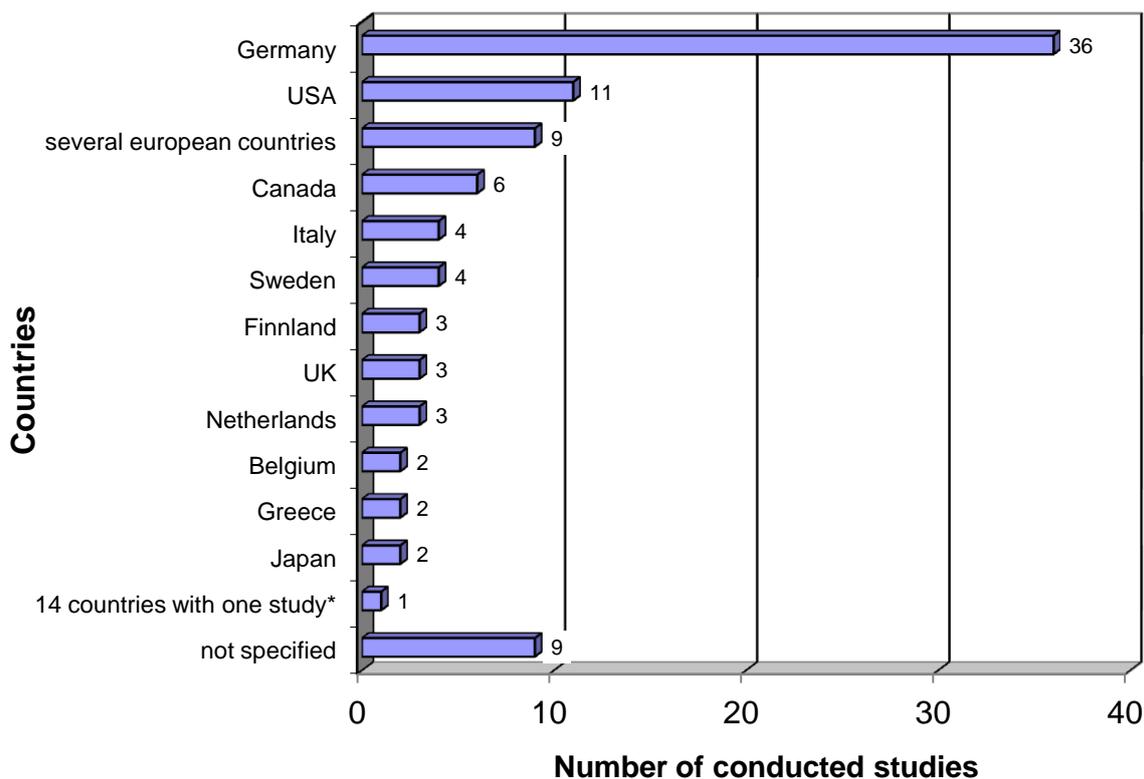
Figure 9: Published articles on product policy (n=108) from January 2000 till June 2011



Source: Own illustration

Figure 10 displays the countries of origin of the publications on product policy. With the exception of one publication (Hempfling 2004), all empirical publications identified where the research was conducted.

Figure 10: Countries involved in publications on product policy from January 2000 to June 2011



*Australia, Brazil, China, Denmark, Estonia, France, Iran, Croatia, international research association (Europe and the USA), New Zealand, Norway, Austria, Switzerland, South Africa

Source: Own illustration

The largest number of publications (36) comes from Germany², eleven from the USA, nine from European research associations and six from Canada. The remaining publications come from European countries and Japan. Beyond that, 14 publications come from countries which produced only one publication and therefore are here shown aggregated. Nine publications did not indicate the place of research (often literature studies). On the whole the research concerning the subject “product policy” concentrates on the European area (without Eastern Europe) and the USA. Table 14 gives an overview of the number of studies on each object of investigation that were carried out in Germany.

²There are seven more studies which have been carried out in Germany in cooperation with other European countries. In this context they belong to the category “several European countries”.

Table 14: Identified studies concerning product policy in Germany

Subtopic	Germany*	Other countries
Product design	25	30
Packaging design	1	4
Product labeling	16	34
Product innovation, elimination and modification	3	1
Range design	10	2
Value added services	0	0

*incl. international publications incl. Germany

Source: Own illustration

In Germany research in all subject areas except the topics “product elimination and – modification” and “value added services” has been done. Most of the German publications deal with product design, followed by publications on product labeling. There are also several German publications on range design. The other subject areas have so far not been particularly intensively studied. The specific topics will be elaborated in the following chapters.

4.4.4 Product design

Under the topic “product design” all publications dealing with consumer demands on the quality of organic products (n=55) were summarized. These studies deal with the material and immaterial characteristics consumers expect from organic products. Most of the publications refer to organic foodstuffs in general (n=32). 13 publications deal with specific groups of products, foodstuffs with product-spanning characteristics and consumer expectations of these products. Four of these specific publications refer to the regionality of organic products and three to organic plus products. Beyond that the topics “functional food” (n=2), “food miles” (n=1), as well as different groups of goods (meat, vine, etc.) featured. In Germany 25 publications concerning “product policy” were compiled. These publications mainly discuss organic products in general and expectations concerning their characteristics. Seven publications deal with the expectations of specific products (fish, meat, sausages, milk). Three publications discuss the expectations concerning regionality of organic products, while two publications discuss organic-plus products.

The subject “product design” is well published. 13 publications treat the subject exclusively with quantitative methods. Most publications (n=9) use interviews: face to face interviews, written interviews or computer-assisted personal or telephone interviews. Further association tests, experimental conjoint-analysis, store tests, sensory tests with Vickrey-auction and the information display matrix method have also been used. Eight of the 13 quantitative surveys have a sample size greater than 500 (565 – 2,229).

Many of these publications use sound sampling methods, such as systematic samples, quota samples or random samplings. The sampling method is however unclear in some of these publications (n=8), or a convenience sample (n=2) was used. For example Buder and Hamm (2011), among other things, analyzed the attitudes of 817 organic consumers towards organic products. The survey was carried out nationwide by means of computerized personal interviews. In a study about regional products by Stockebrand (2010), 2,219 organic consum-

ers among others were interviewed about their satisfaction with different aspects of organic products. The survey was carried out nationwide in 26 different organic food stores. Three publications were compiled on the basis of quantitative as well as qualitative methods. The following method combinations were used: written interviews and guided interviews, sensory tests and group discussions, store tests and narrative interviews. Heid et al. (2011) in a study with a multi method approach (group discussion with Vickrey auction) analyzed consumers' attitudes (n=89 organic consumers) towards pork from non-castrated piglets.

Five of the publications about product design approached the subject qualitatively, mainly by group discussions. The group discussion method is very suitable to gain first insights into consumer expectations. For example the publication of Stolz et al. (2010), presenting the results of three previous studies, must be mentioned here. Stolz et al. (2010) carried out eleven focus group discussions about perception of quality with organic consumers in Germany and Switzerland. Five of these studies used nationwide collected data.

There are publications concerning product design in general, organic plus products, regional products, and meat, with specific reference to organic consumers. Furthermore there are two non-empirical studies on customer perception of the product quality of organic foodstuffs (Rahmann and Oppermann 2007; Oppermann 2008).

In summary it may be said that the customer perception of the quality of organic foodstuffs has been analyzed extensively, methodically and at a high level. The only field of research which has so far been exclusively approached in an explorative way is that of the fish market: where producers of aquaculture products rated the quality of organic fish.

On an international level, the product design of the specific products vegetables, olive oil and milk, as well as functional food products and products labeled with food miles are also analyzed in addition to the group of products examined in Germany (meat, fish and sausages). The transfer of publications concerning functional food and vegetables to the German market is not advisable since these publications come from countries with differently structured organic markets (Canada, Brazil, South Africa). The publications concerning product design of the groups of goods olive oil, food miles and organic milk come from central Europe. The results of Hill and Lynchhaun (2002) concerning organic milk, as well as of Sirieux et al. (2008b) concerning food miles, can be partially transferred to the German market. Both publications, however, are of an explorative nature.

4.4.5 Packaging design

Overall only five publications discuss the subject "packaging design" of organic products. Two of these publications come from Germany. While one of them is not empirical, the other (empirical) publication from Germany is of a qualitative nature. Lasner et al. (2010) carried out 66 phone interviews with marketing protagonists from all over Germany. They then extended the obtained results through 16 main thread interviews with experts from different sales levels in the field of organic aquaculture products. Actually the expectations of an ideal packaging design were analyzed from the retailer point of view as well as from the point of view of the downstream manufacturers. The results are more of an explorative kind and only concern the organic fish market.

The three international publications come from Finland, Great Britain and the USA. Two of these publications use qualitative methods while in the US-American publication of Gifford and Bernard (2008) the sampling method was not mentioned. Rocca's and Uusitalo's (2008) publication from Finland is a choice test based experiment which uses a representative sampling (n=330) from a panel. Because of the excellent data basis and a similar structure of the

organic market concerning consumer interest in “green” packaging, this study also gives possible answers to the German market. Hill’s and Lynchehaun’s (2002) qualitative publication concerns the British consumer perception of milk packaging. Four group discussions with female organic consumers between the age of 45 and 54 were carried out. The participants were chosen systematically. First findings about the design of organic milk packaging could be transferred to the German market, however with the reservation of age and gender.

4.4.6 Product labeling

Publications about product labeling deal with organic labels and special claims, as well as with manufacturer brands or retail brands and their perception by consumers. The following analysis makes a distinction between studies on labels and special claims and studies on the labeling via brands.

16 of altogether 50 publications come from Germany. Seven of the German publications on labels and special offerings deal with organic labels. The remaining publications explore the labeling of an organic product as an organic plus product (n=2). One publication deals with the labeling of the country of origin, the offering of a product with health claims, the regional product, and the labeling with association marks or with the offering of products produced “in accordance with nature conservation”. Another publication discusses the labeling of organic fish and vine. Seven publications use absolute quantitative methods, three of them use quantitative and qualitative methods, four use qualitative methods (including an additional literature review). Within the seven publications about organic labels in general there are quantitative approaches (face-to-face, written or phone interviews), qualitative approaches (main thread interviews), literature reviews and a multi-method-approach. The quantitative publications have a sample size between 400 and 2,000 participants who were chosen by help of quote, convenience or methodic sampling. Most of the studies collected data in several German cities. Two studies could be based on nationwide data (Schmidt-Tiedemann et al. 2003; Stobbelaar et al. 2007). Predominantly, exclusively organic consumers were interviewed. For example Bruhn (2003) carried out a study with 2,000 consumers, analyzing their level of familiarity with the German ecological seal. A new study by Janssen and Hamm (2011) investigates consumer perception and willingness to pay with regards to organic labels. Choice test based experiments and group discussions were held in five European countries (including Germany) with 2,840 participants, of which 218 were organic consumers. The publication of Linder et al. (2010), using a linguistic method, gives no information on the survey design. The qualitative publications are based on group discussions or main thread interviews and mainly use systematic methods of selection. Beyond that there is a qualitative study on the labeling of organic fish (Lasner et al. 2010). Schmidt-Tiedemann’s publication (2003) on organic vine analyses the sales argument “organically produced” from 271 vine dressers’ point of view and discusses their reasons for or against the ecological seal. Organic consumers themselves were not interviewed.

The few existing German publications give deep insights into organic labeling in general. The publications of Padel et al. (2010) and Janssen and Hamm (2011) deal with consumer perceptions and attitudes towards the obligatory ecological seal, however without being able to present the ecological seal graphically since these empirical publications were carried out before the graphic design became generally known. These studies are especially interesting because an obligatory EU-ecological seal came into effect in 2010. A German-wide controlled sampling of the BMELV, which deals with the awareness level towards the obligatory seal and with the consumers’ perception of the quality of the standard behind it among other

things, analyzed consumer reactions to the standard seal directly after its commercial launch (BMELV 2010). This study is unique, analyzing consumer reactions towards the new EU-ecological seal after the commercial launch. It is however rather superficial.

The number of publications in Germany that deal with the labeling of specific characteristics is very low. There is only one study on health claims, one on products with regional surplus value, one on association marks, one on the country of origin, one on products produced "in accordance with nature conservation" and two studies on organic plus products. All of these studies are predominantly methodical. Wirthgen's study (2005) about the image of organic seals (association marks) does not define the sampling method and number of samplings made. The study about labeling of the country of origin with 100 organic consumers (Klößner et al. 2010) also does not give details of the sampling. Most of the studies deal with organic consumers except for the publication on products produced "in accordance with nature conservation" (Wirthgen 2003).

Most of the publications analyze (organic) consumers. The retailer perspective is also considered: Maroscheck et al. (2008) e.g. besides consumers (n=210) also interviewed suppliers (n=11) as well as further experts (n=10) within the limitations of a pre-study on the effects of health statements upon buying patterns. Schäfer et al. (2010) analyzed the chances of profiling in the organic market by means of products with regional surplus value by carrying out store and sale tests in nine stores in Germany and Switzerland. 33 from the value added field were also interviewed qualitatively.

Apart from product labeling in general, other subjects are treated. Within the European area, the labeling of organic wine is treated, but the statements concerning the data basis are fragmentary. In the USA and Canada the subjects "labeling of organic milk" (Kiesel and Villas-Boas 2007) and "labeling of organic bread" (Annett et al. 2008) are thoroughly discussed empirically. The results could be partially transferred to the German market. Looking at the comparable developed European organic market one can say that here especially the labeling of the origin is focused. Pouta et al. (2010) analyze the importance of communication of the country of origin in a choice test based experiment with 1,312 Finnish consumers.

Brands as a form of product labeling and their perception by consumers are dealt with in a total of four publications. Hall (2008) published a literature study which discussed how a brand image might be built in the organic area. The three empirical studies all deal with consumer reactions to brands in the field of organic foodstuffs.

Two of the four publications originate from Germany. Baranek (2007) discusses the potential of organic trademarks. Face-to-face interviews with consumers (n=168) as well as group discussions (n=87) with organic consumers about brand perception were carried out. The strength of organic brands was identified. Wirthgen (2005) analyzed the image of retailer and manufacturer brands within the limitations of face-to-face interviews: consumer preference for organic noodle brands was specifically discussed. Information about the form of sampling was not provided.

On an international level, Westerlund Lind (2007) discusses the potential of organic trademarks for the Swedish market from a consumer point of view. She uses the qualitative method of laddering (n=127). Perrini et al. (2010) discuss consumer confidence in organic brands using written interviews (convenience sample; number of interviewed consumers is not mentioned).

This small number of publications gives an initial insight into the different aspects of brand policy (confidence in brands, potential of organic brands). These publications are also still capable of development with regard to methods. Furthermore only two publications (Baranek 2007 and Wirthgen 2005) refer to the German organic market.

4.4.7 Product innovation, elimination and modification

Only four publications deal with product innovation: three of them are German. Dienel and Reuter (2007) used a qualitative data survey with 41 food producers and 16 employees of chain stores. The deep-freeze field was the identified innovative field from a retail point of view. Rippin (2008) has worked on an analysis of literature that identified innovative products in the organic market. Hamm (2007 a) used store tests to identify consumer reactions to the introduction of nitrite curing salt-free sausages in three German states. All three publications refer to single products from either the retail or the consumer point of view. There are however no studies on the identification of innovative organic products from the (organic) consumer point of view.

No publications could be found on the subjects “product elimination and modification”.

4.4.8 Range design

Publications discuss “range design” in the context of organic foodstuffs retail, the significance of organic products in general retail and consumer reactions to the range of products. This subject is discussed from the retail as well as the consumer point of view. Twelve publications on range design were identified: six of which significantly include both perspectives (the retailer and consumer point of view).

Ten of the twelve publications are German: six refer to the organic range in general, two refer to specific products (fish and vegetables) and the other two refer to regional organic products. Methodology varied: one analysis of literature, three quantitative analyses, four qualitative analyses and three combined statistical analyses were carried out. The quantitative publications used different interviewing techniques (face-to-face interview, computer based personal interview, written interview, store checks and panel data). Buder and Hamm (2011) used computer based personal interviews in 16 points of sale with a total of 817 organic consumers. Gaps of range in different food retail shops in the organic field were identified specifically. Most of the qualitative publications used main thread interviews with 8 to 66 persons interviewed, using the laddering method in some cases, direct observation and a telephonic pre-survey. Dienel and Reuter (2007) carried out thematic interviews with 41 foodstuff producers and 16 chain stores, analyzing the development of range and strategies of advancement in the field of the organic range from the general retail point of view. A study (Stockebrand and Spiller 2009) in which store checks with 21 health food retailers were carried out, in addition to qualitative main thread interviews, analyzed the share and importance of regional goods within range design. The predominant part of the quantitative consumer interviews consisted of 260 to 300 interviewed consumers (panel survey: 33,000 interviewed persons). This could be considered a good data basis when combined with sampling methods such as controlled samplings, proportion samplings, layering and systematical selection. Three of the studies are based on data collected nationwide (Buder et al. 2010; Buder and Hamm 2011; Lasner et al. 2010). Consumers interviewed in most studies were organic consumers.

Despite the rather small number of publications, general statements about the German organic market can be made because of the diverse, often combined, methodologies used: in-depth interviews, panel data and the consideration of both the retail and consumer points of view on the market. Specific products however remain largely unexplored.

The publication of Buder and Hamm (2011) should be mentioned since it has uncovered gaps in the range. This study could be used as an example for the methodical planning of

further studies. Apart from the three German publications on fish, vegetables and regional products, there are no further product-specific publications on the international level.

4.4.9 Value added services

No studies about value added services– guarantee and customer service – could be found. This is surprising since these services could reverse a lack in demand (e.g. with a guarantee for the taste) and simplify or increase the comfort of use (e.g. by recipes, partial preparation or “chilled food”) of products.

4.4.10 Research recommendations of the authors

Only few recommendations made are valuable for future research projects within the field of product policy. Further research recommendations merely exist for the field of product design and product labeling.

Product design: It is recommended that quantitative and qualitative analyzes in other countries, as well as analyses with consumers of conventional products and with children and young persons are made. Trade-offs between the characteristics of organic foodstuffs, and consumer substitution of a product labeled as “naturally produced” (keeping of animals in their natural environment) for an organically produced animal product, should be analyzed.

Product labeling: It is recommended that further methodologies, e.g. based on a choice design or on a broader data basis respectively to carry out studies in other countries or at the point of sale, are used. It is suggested that comparisons concerning the labeling of conventional products are made, or to discuss the effect of accompanying communication measures on the probability of buying organic products with health claims. Moreover the transferability of results for the labeling of olive oil to other products should be studied.

Table 15: Authors' research recommendations on product policy

Product design
International publications
Quantitative publications to come
Further research with broader data basis
Further quantitative publications with persons having no experience with organic products
Children and young persons as data base
Further research on trade-offs of the characteristics of organic LM especially of native products or organic products
Clarification of the question how many persons substitute a product labeled as "naturally produced" (keeping of animals in their natural environment) for an organically produced product. Analyses of consumer knowledge about the fact that an organic production implies the keeping of animals in their natural environment.
Product labeling
Further research in order to acquire marketing recommendations
Research on a broader data basis
Further analyses with different choice design. Further research on the coherence between the choice of a product and the information which is given to a person.
Different countries, comparisons concerning the labeling of conventional products
Effects of accompanying communication measures upon the probability to buy organic products with health claims, analyses at the point of sale
Analysis of the transferability of results upon different products

Source: Own illustration

4.4.11 Research gaps based on knowledge analysis

A multitude of publications (n=108) could be assigned to the field of product policy. Based on the results of the knowledge analysis, the following gaps in research work were identified, subdivided into subtopics:

Product design: On the field of product design there are rather many publications especially referring to organic foodstuffs in general. As already shown, this subject was examined profoundly - also regarding the methods. Further research work should be on specific products. Here, the fields of regionality, organic plus, fish, meat and sausages have been discussed until now. There are two publications on the international level on specific products and foodstuffs with additional product characteristics. These publications deal with the subjects "milk" (Hill and Lynchhaun 2002) and "food miles" (Sirieix et al. 2008b). Both studies are however of a more explorative nature so that here further need of research needs to be stated.

Packaging design: On packaging design there is only a small number of publications amongst which there is only one empirical study (Lasner et al. 2010). Apart from results of explorative kind on the packaging of organic fish there are no results for Germany. There is no further research work on a broader data basis, also on organic foodstuffs in general. Transferable results from abroad exist on consumers' interest in "green" packaging (Rokka and Uusitalo 2008) as well as on the consumers' perception of milk packaging (Hill and Lynchhaun 2002) whereas this study is an explorative one and only refers to female consumers of the age between 45 and 54 years. All in all one can state that in the field of packaging design in fact some aspects on mainly specific products have been worked on but there still are considerable gaps in research.

Product labelling: On the subtopic “product labelling” especially studies about the labelling of organic products were identified. However there is a gap in research because there is only one study which deals with the obligatory EU organic seal since its introduction in 2010. An extensive discussion is missing about the question how consumers perceive the new EU organic seal in comparison to the German organic seal and association mark. Further, in how far displaying information concerning the country of origin makes sense or how the new seal is accepted by the consumers should be researched. Referring to specific products the labelling of organic fish (Lasner et al. 2010) and organic vine (Schmidt-Tiedemann 2003) was worked on. The former study is of a rather explorative nature and the second merely has treated the reasons for the labelling of organic vine on the part of the retail and has not discussed the consumers’ perception of the labelling of organic vine systematically. Concerning the labelling of specific characteristics the level of research is rather low. It was only worked on the product labelling of organic plus products, on information about the country of origin, on products with health claims, on products with the labelling “without nitrite curing salt” as well as on products with the labelling “produced in accordance with nature conservation”. Furthermore it must be stated that the study which dealt with the labelling “produced in accordance with nature conservation” (Wirthgen 2003) did not specifically analyse organic consumers. Moreover data are missing concerning the sampling of those studies which worked on the labelling of the country of origin so that a further analysis might be useful when thinking of representative results. International studies about the labelling of the origin as well as about the labelling of organic milk (Kiesel and Villas-Boas 2007) and organic bread (Annett 2008) could serve as pattern for similar studies about the German market. Especially the research on the labelling of the origin seems to be a gap in research. This subject has in fact been worked on at international level repeatedly (e.g. Pouta et al. 2010; Scarpa and Del Giudice 2004) but there are no results for the German market.

The field of brand policy as such presents a gap in research work, too. There are in fact several publications on the trust in retail brands and manufacturers’ brands (Wirthgen 2005) as well as on the trust in the potential of organic trade marks (Baranek 2007). Those publications however are methodically still capable of development. Viewed from the international level the potential of organic brands for the Swedish market has been examined (Westerlund and Lind 2007) as well as the consumers’ trust in organic retail brands (Perrini et al. 2010). Both studies however are only capable to give first insights into the mentioned aspects when looked at from the methodical point of view.

Product innovation, -elimination and modification: All in all there are only few studies on product innovation in the organic field. Particular aspects being discussed are “deep-freeze products” (Dienel and Reuter 2007) and “sausages without nitrite curing salt” (Hamm 2007a) but an analysis of real organic innovations is missing until now. An analysis how organic consumers generally respond to innovative products (variety seeking behaviour) is missing, too. The subjects “product elimination” and “product modification” have not yet been worked on. Here a gap in research work has to be stated.

Range design: The subject “range design” has been discussed methodical thoroughly and based on convincing data concerning the German market. Referring to specific products until now only the products fish, vegetables and regional products have been analysed. Concerning further specific products in the field of range design a research gap can be stated.

Value added services: The field of guarantee and customer service remains uncharted up to now. Here a research gap needs to be stated.

4.5 Price policy

Price policy comprises all decisions of an enterprise that aim at a goal-oriented design of the price-performance-ratio. Whereas the output comprises the sum of all useful components, the price comprises all costs or benefit equivalents, which the demander has to carry by accessing the output (Nieschlag et al. 2002). Price policy comprises, from a behavioral science point of view, the topics price perception, admission and processing of price information (or price knowledge) and price evaluation. From a business point of view, various areas of provision, comprising price positioning (high or low price strategy), price differentiation, price bundling and cognition policy, exist.

Both from the consumer point of view and from a business point of view, the pricing policy has an exceptional position: From the consumer perspective, the price is an immediate cost factor resulting from the purchasing action. From the business perspective, the price is the only component in the marketing mix which directly creates revenues (cp. Hamm 1991).

Table 16 shows the areas of decision in price policy from both points of view, including the contents which are relevant for the knowledge analysis:

Table 16: Overview on the built topics regarding price policy

Behavioral science insights on price policy	Consumer reactions on price policy strategies
Price cognition	Price positioning
Admission and processing of price information	Price differentiation
Price evaluation and willingness to pay	Price bundling
	Conditions

Source: Own illustration based on Meffert et al. (2008)

4.5.1 Subtopics of the identified studies on price policy

116 studies on the topic price policy were identified. Compared to other marketing instruments, a large number of studies was conducted in this field. As Table 17 shows, the number of studies allocated to the subtopics is irregular. For example, 24 studies deal with consumer perception of prices; the admission and processing of pricing information only comprises one study; and price evaluation and willingness to pay are treated in 97 publications. These 97 studies could, from the business point of view, also be attributed to price positioning. Only two studies deal with measurements of price differentiation, whereas no publication could be found on price bundling and conditions (discounts and terms of payment) in the field of organic food products.

Table 17: Overview on the built subtopics on price policy and the number of identified studies

Subtopic*	Number of studies
Behavioral science findings on price policy	
Price cognition	24
Admission and processing of price information	0
Price evaluation and willingness to pay	97
Consumer reaction on price policy strategies	
Price positioning	97
Price differentiation	2
Price bundling	0
Conditions	0

*Some publications treat several subtopics. Therefore, the number of publications per subtopic is higher than the total number of publications.

Source: Own illustration

The 97 studies of consumer price judgment, mainly about willingness to pay, were segmented according to the survey methods applied: observations, price requests and bid techniques. In 71.1 % (n=69) of the studies on willingness to pay, price requests were performed. The individual methods will be further explained in the section on willingness to pay.

This methodological segmentation enabled a better overview and facilitated their analysis according to their explanatory power for the German organic market. It also facilitated recommending future methodological approaches.

4.5.2 Objective of investigation of the identified studies on price policy

Besides the distribution into individual subtopics, the identified studies on price policy were analyzed according to their objects of investigation. Table 18 shows that 51 of 116 publications deal with organic food products in general: questions on organic food products or organic farming in general were analyzed rather than the price policy of a specific product.

Table 18: Overview on the objects of investigation on price policy

Animal products	37	Eggs	3
		Dairy products	15
		Meat	15
		Fish	4
Plant products	29	Vegetable	15
		Fruit	6
		Processed products from plant production	8
Other objects of investigation	16		
Total			82

Source: Own illustration

More than half the publications (66) dealt with specific food products: animal products (37); plant products (29). Nine studies dealt with more than one product. That is why they are registered more than once in the following tables.

16 further publications do not focus on a specific food product, but rather on specific product characteristics (e.g. functional food), or specific marketing channels (e.g. farmer's market), or customer segments (e.g. irregular buyers of organic food products). These studies are displayed in Table 19. Most often the origin (n=8) is addressed. Four publications concern regional organic food products.

Table 19: Overview over further objects of investigation on price policy

Origin of food products	8	Origin in general	4
		Regionality	4
Functional Food	1		
BabyFood	1		
Multi-IngredientProducts	1		
Fair food products	2		
Willingness to pay of rare or irregular buyers of organic food products	1		
Willingness to pay on farmers' markets	1		
Total	16		

Source: Own illustration

Table 20 shows the animal product objects of investigation. The least publications addressed the price policy of eggs (n=3) and fish (n=4). 15 publications addressed dairy products. In one case, the kind of dairy product analyzed could not be specified. Twelve publications focused on milk and two publications focused on yoghurt and cheese respectively.

Table 20: Publications on animal products in the field of price policy

Eggs	3		
Dairy products	15	Dairy products in general	1
		Milk	12
		Yoghurt	1
		Cheese	1
Meat	15	Meat in general	3
		Beef	4
		Pork	4
		Chicken	2
		Sausages	2
Fish	4	Aquaculture products in general	2
		Bass	1
		Salmon	1
Total	37		

Source: Own illustration

An equal number of studies about price policy addressed meat as did dairy products. Three of the 15 publications focused on the price policy of meat in general. Four authors or author groups treated the price policy of beef and pork. Chicken is however only discussed in two publications. The price policy for sausages has hardly been analyzed: it is only discussed in two studies. Two publications on fish, addressed a specific fish species (bass and salmon), while organic aquaculture products in general were treated twice.

Three distinct groups were identified in the publications on plant foods in the field of price policy: fruits, vegetables (including potatoes) and processed foods from plant production. Price policy in the case of vegetables was analyzed most frequently (n=15). Regarding fruits, six studies could be found. Most addressed organic vegetables in general (seven) rather than specific vegetables, three addressed potatoes, two addressed tomatoes and one study each addressed lettuce, carrots and spinach. Six studies addressed fruits: three addressed fruits in general, while the other three analyzed price policy for specific fruits (peaches, one, and apples, two). A further eight studies addressed the price policy for processed foods from plant production.

Table 21: Publications on plant food products in the field of price policy

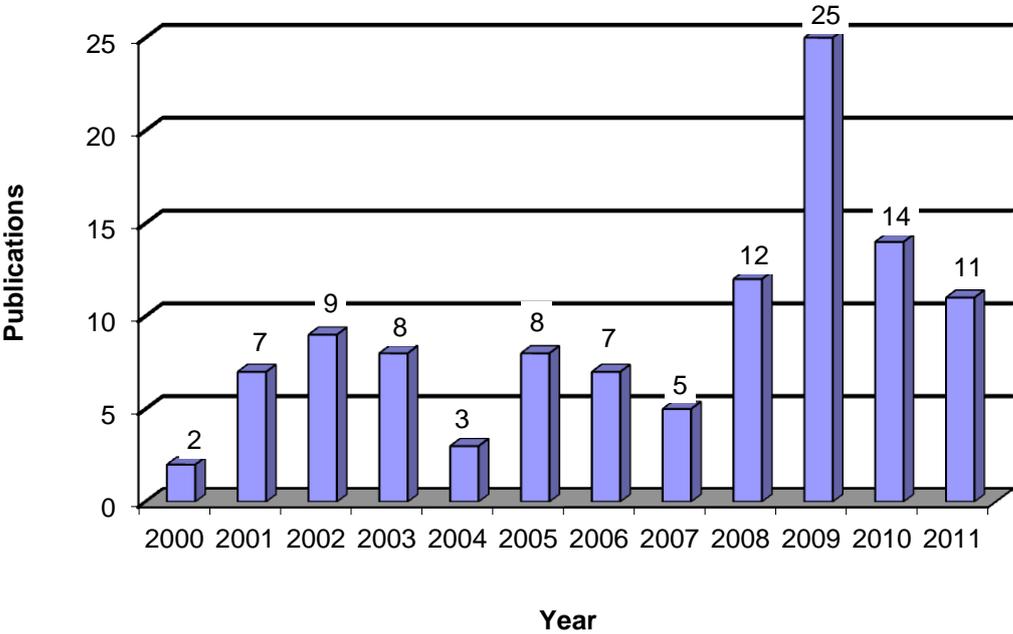
Vegetables	15	Vegetables in general	7
		Lettuce	1
		Tomatoes	2
		Carrots	1
		Spinach	1
		Potatoes	3
Fruits	6	Fruits in general	3
		Apples	2
		Peaches	1
Processed foods from plant production	8	Olive oil	2
		Wine	2
		Bread	3
		Apple sauce	1
Total	29		

Source: Own illustration

4.5.3 Publications on price policy according to year and countries involved

A major part of the 116 studies on price policy were only published in the last five years. This correlates with the development of the organic market and can be observed in the research fields of the other marketing instruments addressed here. Figure 11 illustrates the number of publications per year.

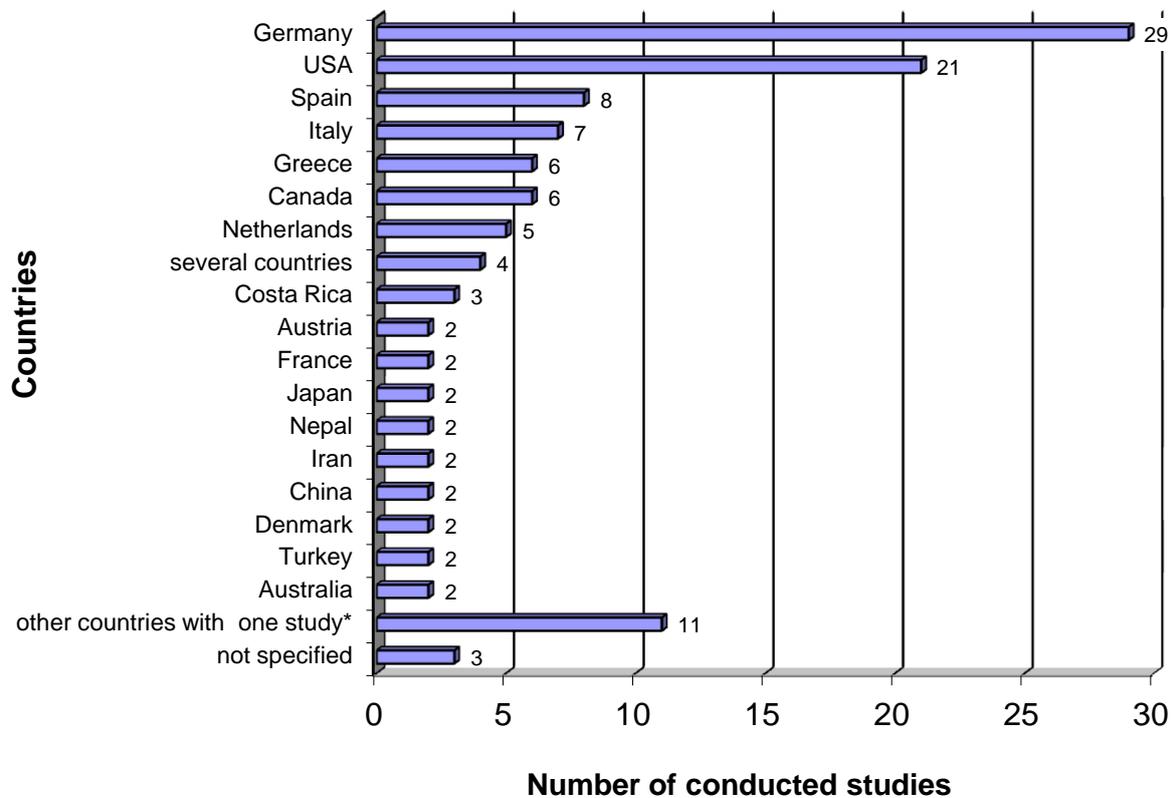
Figure 11: Published articles on price policy (n=116) from January 2000 to June 2011



Source: Own illustration

28 different countries carried out studies on price policy. Empirical data was collected from all continents and almost all regions of the world. This broad geographic distribution of publications illustrates the interest in price policy and mirrors the relevance of price policy problems for organic consumer research. Figure 12 depicts all countries where more than one study was conducted.

Figure 12: Countries involved in publications on price policy from January 2000 to June 2011



*Belgium, United Kingdom, Ireland, Croatia, Mexico, Nigeria, Norway, Sweden, Switzerland, South Korea, Czech Republic

Source: Own illustration

The countries with only one publication are summarized in the figure as “other countries with one study”. In four publications, data was collected from several European countries. Three publications, one of which a literature study, contained no information about the survey location.

In 29 studies on price policy, the data collection was performed in Germany, followed by 21 studies from the USA. The other countries are represented to a much lesser extent. This can be traced back to the fact that the focus of the literature research for this paper is on German and English literature. Eight studies were conducted in Spain and seven in Italy, both still respectable numbers of publications. Six studies each come from Greece and Canada, five in the Netherlands and three in Costa Rica. Two studies were carried out in nine other countries. Interestingly, countries as Costa Rica where the organic market is not yet well developed carried out multiple studies. This again reflects the actuality of the topic.

4.5.4 Price cognition

24 studies were identified in the field of price cognition, eight from Germany. The country of origin of two studies – one of them a literature study - is unknown. Two studies were each carried out in the USA and Denmark. The other ten studies all come from different countries.

Most of the German studies (n=5) treat price cognition of organic foods in general. Only one study examines price cognition of a specific product (fish: Lasner et al. 2010). 66 experts were interviewed, in quantitative telephone interviews, about consumer price cognition. In one of the five German studies treating the price cognition of organic foods in general (Hensche 2001), an extensive literature research was conducted and an unknown number of experts were interviewed. Due to the scarce information about the methodological approach no specification can be made about the validity of the results. All other studies performed empirical surveys based on quantitative methods. All authors or author groups chose a rather large sample of between 782 and 12,202 consumers. Two of these studies used simple random samples (Hoffmann and Spiller 2010; Sinus Sociovision 2002). Except for one study (Hoffmann and Spiller 2010), no distinction between organic and conventional buyers was made. Only Köhler (2008) restrained his data collection to a specific region (Bavaria), all other German studies were conducted nationwide. Due to the methodological approaches of the German studies, meaningful conclusions for the price cognition of organic foods in Germany can be made. 13 studies do not stem from Germany. In nine cases, only the price cognition of organic foods in general was analyzed.

Only those non German publications dealing with the price cognition of specific foods (n=5) shall be examined more closely.

In three of these studies, the authors deal with a specific product (milk: Hill and Lynchehaun 2002; chicken: van Loo et al. 2010; pork: Abrams et al. 2010). A further study examines the price cognition of milk, meat, potatoes and bread simultaneously (Magnusson et al. 2001), while the study of Sirieix (2011) analyzes the price cognition of organic foods from different origins.

Three studies used qualitative methods. For example, Abrams et al. (2010) and Hill and Lynchehaun (2002) selected focus group discussions as survey methods. Abrams et al. (2010) carried out the discussions with 30 participants in total. Hill and Lynchehaun (2002) do not mention the number of participants in the four discussions. Sirieix et al. (2011) interviewed 23 consumers in in-depth interviews with the help of a projective interview technique. All three studies have a rather explorative character in common, due to their methodological approach, which leads to little explanatory power especially for the German market.

The two remaining non German studies used quantitative methods. Van Loo et al. (2010) interviewed 976 consumers in the USA with the help of an online survey on price cognition of chicken. The participants were contacted via e-mail with the help of an already existing database that was not specified. Since the sampling method is not well explained and the US organic market is only restrictedly comparable with the German market, a transfer of the results to the German market would be questioned.

Magnusson et al. (2001) conducted a written questionnaire (analyzing price cognition of milk, meat, bread and potatoes), with a random sample of 1,154 consumers in Sweden. Although the Swedish market is comparable to the German, the conclusion of the study can only offer new insights for the German market with reservations, since the study is from 2001. The market has changed a lot since.

The analysis of studies on price cognition shows that only price cognition of organic foods in general is examined in depth. Only few studies were found on price cognition of specific products. Due to the methodological approaches of the foreign studies, only a very few up to date conclusions can be transferred to the German market.

4.5.5 Admission and processing of price information (price knowledge)

Only one study focused on price knowledge of organic consumers (Plassmann and Hamm 2009). 642 organic consumers in two central German cities, based on a convenience sample, were interviewed. No foreign studies could be found on price knowledge, which adds up to a major research gap. To date no insights on the important question of how price information is processed, in absolute terms or relative to comparable conventional food products, exists.

4.5.6 Price evaluation and willingness to pay

The registration of price evaluation was made as willingness to pay (WTP), which was investigated using different methods. 97 studies were attached to the subtopic willingness to pay, as illustrated in Table 22. They are divided by sample method and the associated survey method, which are separated into observation methods, price request and bid requests. The knowledge analysis on willingness to pay is conducted by means of these survey methods.

Table 22: Segmentation of the WTP publications into the survey methods

Observation methods	19	Experiment	2
		Market data	17
Price requests	69	Direct price request	47
		Indirect price request	22
Bid requests	9	Auctions	7
		Lotteries	2

Source: Own illustration

Either experiments or market data can be observed in the observation method. Real sales are noted, providing highly valid data, closest to reality, when compared to other survey methods. 19 studies used observation methods, 17 using market data.

Price queries have been used for the measurement of WTP in consumer research for the last 50 years. In fact the highest number of analyzed publications (n=69) used this method. Price request can be carried out directly or indirectly, though the best known method is direct price request. It is therefore not surprising that 47 out of 69 publications use direct price request methods, as opposed to indirect price request that was applied 22 times.

Bid requests, with auctions and lotteries, were used in nine of the analyzed studies, seven of which used auctions. Bid requests are often directly tied to an act of purchase, which is why they are pretty close to reality. However, not all auction types offer the incentive to declare the real WTP. This survey method leads to an increased price awareness that can skew results (Völckner 2006).

4.5.6.1 Enquiry of willingness to pay through observation methods

Basically, it is differentiated between observation of market data and experiments.

In experiments, the researcher changes certain parameters at the point of sale, such as product price or application of sales promotion activities, and measures the effect on sales volume or on consumer willingness to pay. Since real sale volumes are used in both experiments and observation of market data, the investigated willingness to pay is highly valid. In 19 of the identified publications, observation was used to identify willingness to pay.

Two of the 19 studies were experiments (Bunte et al. 2007; Hamm 2007a). Hamm (2007a) carried out studies at six points of sale in central Germany where the willingness to pay rose for sausages without curing salt. Sales volumes at points of sale where the product was newly introduced were used. Bunte et al. (2007) changed prices of several organic foods at ten points of sale in different regions of the Netherlands, observing the effect on shopping behavior. Because of the favorable methodological approaches, both studies can be used to make assumptions about the German organic market.

The other 17 studies – six of them from Germany -used market data. Except for the studies where only the willingness to pay for milk was analyzed (Jonas and Roosen 2008), the willingness to pay for several organic food products was analyzed. In von Hamm and Wild (2007), 45 points of sale in 16 cities were chosen via quota sampling. In the remaining five studies, panel data from bigger market research companies was used (e.g. GfK consumer panel, ACNielsen retail panel). All studies from Germany are rather up-to-date, being published between 2007 and 2010. These six German studies deliver data with high validity on the willingness to pay for organic foods.

Eight further studies based on observations of market data had already been conducted in the USA. Two other studies come from France, one from Canada and one compares data from the UK and Denmark. These eight studies primarily also used panel data. Surprisingly, the foreign studies more often deal with specific products than the German ones. Thus, market data on potatoes, baby food, beef and several times on milk and eggs was produced.

Because of the fact that the real willingness to pay is analyzable via observation of market data, this method is very well suited for the calculation of willingness to pay. A difficulty is that not all factors that influence shopping behavior are observable. This method of observation is also in future recommended to analyze real willingness to pay. The observation of specific products, food products or product groups in their competitive environment is necessary for the generation of concrete recommendations for price policy based on those analyses.

4.5.6.2 Enquiry of willingness to pay via price queries

The major part of studies on willingness to pay (n=69) was carried out via price queries, 47 of them direct price queries. The direct price query is a rather simple methodology, but the validity of willingness to pay is relatively small, since the method of direct price query often lies far away from the real purchase decision (Diller 2008). In the case of indirect queries, the willingness to pay is derived from preference and behavior data. Therefore, the validity of results strongly depends on the used estimation model (Völckner 2006). 22 studies were conducted using indirect price queries.

Ten studies on direct price queries originate from Germany. Three of these studies analyze the WTP for organic foods in general. Other authors focus on a specific product: twice, the

WTP for milk (Thiele and Burchardi 2006) and fair milk (Bickel et al. 2009) respectively, and once for pork (Kolanoski et al. 2003), was analyzed. The two remaining studies from Germany analyzed the WTP for regional organic foods (Richter 2003; Rämisch 2001).

Only the study of Bruhn (2001a) was based on a simple random sample. Bruhn questioned 2,000 consumers in Northern Germany on their WTP for organic food products. The studies of Richter et al. (2001) and Kuhnert et al. (2003) also used a high number of participants. Richter et al (2003) interviewed 2,593 consumers in southern Germany, northern France and the northwestern part of Switzerland, while Kuhnert et al. (2003) interviewed 2,000 consumers on WTP for regional organic foods all over Germany. General statements on the WTP for organic food products can be derived from these studies. These studies are already older publications so conclusions for actual WTP should be drawn carefully.

The conclusions from the study of Kolanski et al. (2003) don't hold for much since only 67 consumers and 11 meat processors around Stuttgart (a city in southern Germany) were interviewed in order to survey WTP for pork. Another study on WTP for organic foods was conducted by Plassmann and Hamm (2009) in two cities in Germany. A convenience sample of 642 organic buyers was used. Amongst the German studies, this is the only study examining exclusively organic consumers. After the interview, participants were also observed covertly. The manifested purchase behavior was checked against the earlier manifested WTP. Richter et al. (2003) and Rämisch et al. (2001) examined the WTP for regional organic foods. A rather small sample random sample of 300 consumers, restricted to one city, was chosen in the study of Rämisch et al. (2001). Therefore, only statements for this region can be concluded. Furthermore, the study is rather outdated (2001) and is not valid to draw conclusions about the present situation.

Two studies from Germany examined the willingness to pay for milk. Bickel et al. (2009) focused on fair milk and interviewed 565 organic consumers in northern Hesse and southern Lower Saxony. Thiele and Burchardi (2006) surveyed 800 consumers in Hesse. Since both studies were restricted to certain regions and no random samples were conducted, only constrained statements for the entire German market can be made.

As a result of the knowledge analysis of the German studies, it can be shown that studies with direct price queries on WTP of organic foods in general that can be used to derive statements for the entire German market, already exist. The data base for the studies should be partly critically reviewed critically due to the advanced age of the surveys.

Only foreign studies dealing with a specific product or food product are reviewed.

Ten of these studies treat the WTP for organic foods in general. The other 19 studies focus on a specific product. Direct price queries have so far been performed for various food products (fruits, vegetables, meat etc.). Studies from countries such as Nepal, Costa Rica, Iran, South Korea, Mexico, Nigeria and China are not contemplated since the consumption behavior, or the development of organic markets, is so different to Germany that derivations for the German market are not an option.

Some of the foreign studies on willingness to pay for specific foods or products are conspicuous by the small sample size and by the fact that the survey was limited to one place only: Batte et al. 2007; Budak et al. 2005; Charatsari and Tzimitra Kalogianni 2007). In the study of Budak et al. (2005) on WTP for bass in Turkey, 253 consumers were interviewed. Charatsari and Tzimitra Kalogianni (2007) limited their study on vegetables to 283 Greek consumers. A Greek study interviewed 268 consumers on WTP for meat (Krystallis et al. 2006b). Batte et

al. (2007) questioned 302 US consumers, based on a convenience sample, on their WTP for multi-ingredient food products with.

None of the other foreign studies which used direct price queries for specific food products used a simple random sample. Four studies are conspicuous in their comparably large sample sizes (Tranter et al. 2009; Weiss 2009; Canavari et al. 2005; Richter et al. 2002). Tranter et al. (2009) questioned 1,527 consumers in five European countries, based on a stratified sample, on WTP for chicken and carrots. The results of this study can be used for Germany. The study of Canavari et al. (2005) questioned 1,208 consumers in Bologna (IT) on their WTP for fruits. Despite the large sample size, the explanatory power of the results is limited since the sampling method is not known and data was collected in one city only. Weiss (2009) conducted an online survey with 727 wine consumers in Austria. The addresses for the survey were allocated via confederations and friends. Therefore, the sampling method is suspect. Richter et al. (2002) questioned 666 consumers in four organic food stores in different cities in Switzerland on their WTP for rangeland beef via a convenience sample. Since the study was performed in 2001, it is not too outdated to draw conclusions for the actual WTP. All other studies on specific foods were conducted with between 250 and 464 consumers. Three of these studies (Loureiro and Hine 2002; O'Donovan and McCarthy 2002; Boccaletti and Nardella 2000) were performed long enough ago for the results to be too outdated to make statements on present WTP.

Table 23 shows all studies with direct price queries on specific food products that are acceptable, with reservations, to make inferences on the German market. The studies displayed in Table 23 can be improved as regards the methodological approach. The table displays that of all the studies that can be used to make inferences on Germany, only wine, vegetables and fruits were studied more than once. Milk, wheat, bread, fish, carrots, chicken and milk products were dealt with in only one study.

Table 23: Meaningful foreign studies with direct price queries on specific food products

Source	Object of investigation	Place of survey	Sampling method	Nr. of participants
Aldanondo-Ochoa and Almansa-Sáez (2009)	Milk	Spain (Pamplona)	Stratified sample	400
Boxall et al. (2007)	Wheat bread	Canada (Edmonton, Red Deer, University of Alberta)	Convenience	390
Brugarolas Mollá-Bauzá et al. (2005)	Wine	Spain (Alicante)	Quota	400
Canavari et al. (2005)	Fruits	Italy (Bologna)	Not specified	1.308
Dagistan et al. (2009)	Fish	Turkey (Antakya)	Convenience	412
Haghiri et al. (2009)	Fruits, vegetables	Canada (Eastern New Brunswick)	Convenience	310
Kalogeras et al. (2009)	Olive oil	Netherlands (Amsterdam, Rotterdam, Utrecht, Groningen, Maastricht)	Not specified	290
Richter et al. (2002)	Rangeland beef	Switzerland (Eastern Switzerland)	Convenience	666
Tranter et al. (2009)	Carrot Chicken	UK, Ireland, Poland, Italy, Denmark	Stratified sample	1.527
Ureña et al. (2008)	Vegetables, dairy products	Spain (Castilla-La Mancha)	Stratified sample	464
Weiss (2009)	Wine	Austria	Convenience	727

Source: Own illustration

22 studies with indirect price queries were performed: six from Germany and one from Germany and Switzerland. Table 24 shows all studies carried out in Germany. Only one study deals with the WTP for organic foods in general (Seidenspinner 2008). The four other studies from Germany all treat different food products (sausages: Enneking 2003; dairy products: Stolz et al. 2010; apples: Stolz et al. 2010). Other authors did not focus on a specific food product, e.g. Wirthgen (2003) examined WTP for regional organic food products and Seidenspinner (2008) analyzed WTP of organic seldom and opportunity buyers. These studies show that to date only few indirect consumer interviews on specific foods were performed in Germany.

Table 24: In Germany conducted studies on indirect investigation of WTP

	Source	Object of investigation	Place of survey	Sampling method	Sampling
1	Enneking (2003)	Sausages	Germany (Bremen, Hannover, Göttingen, Leipzig, Halle, Ulm)	Convenience	1,304 consumers
2	Seidenspinner, Niemann (2008)	Organic Labels	Germany (Hamburg)	Convenience	100 consumers
3	Spiller et al. (2004)	WTP of organic seldom and opportunity shoppers	Germany (Six western and two eastern German cities)	Stratified sample	1,150 opportunity shoppers and seldom shoppers
4	Stolz et al. (2010)	Milk, apple, yogurt	Switzerland, Germany	Quota	293 opportunity shoppers
5	Wirthgen (2003)	Regional organic foods	Germany (Elbetal, Lüneburg, Hamburg)	Quota	600 consumers

Source: Own illustration

None of the authors used a simple random sample. Only Spiller et al. (2004) performed stratified sampling. In the study of Spiller et al. (2004), 1,150 organic seldom and opportunity buyers participated in a choice experiment in different regions in Germany. Despite the good geographical coverage, the results of the seven year old study can be extended to the entire German market only with restrictions, due to age. In the case of the study of Seidenspinner (2008), the small sample size of 100 consumers is comparably small for a conjoint analysis. Furthermore, data was raised in one city only. This methodological approach only allows for limited conclusions. In all other studies, the surveys took place in several German cities. Since there is a lack of studies on many relevant product groups, foreign studies using indirect investigation of WTP will be analyzed in detail.

The majority of foreign studies used indirect price queries to analyze specific foods. Three of the identified studies also dealt with the willingness to pay for organic food products in general. The WTP for organic vegetables and organic fruits was analyzed in four studies (tomatoes: Bhatta et al. 2010; lettuce: Bond et al. 2008; spinach: Sakagami et al. 2006; general vegetables: Mondelaers et al. 2009). The authors treat organic animal products in two studies (meat: Dransfield et al. 2005; eggs: Mesías et al. 2011). The rest of the studies examine the products bread, olive oil, salmon, applesauce, foods with different origins or functional food. With the help of the foreign studies, a couple of product groups are covered. The following foreign studies stand out due to their methodological approach and the transferability of their results to the German market.

Only one study used a simple random sample (Chang and Lusk 2009). Chang and Lusk (2009) conducted a choice experiment on the WTP for bread. Their sample of 207 US consumers is too small for a discrete choice experiment to make derivations for the general market. Two other studies used stratified sampling (Mesías et al. 2011; Krystallis et al. 2006a). The study of Krystallis et al. (2006a) interviewed 1,742 conventional and organic Greek con-

sumers on their WTP for organic food products in general. Since the development of the organic market in Greece lies far behind the German one, the conclusions can only be transferred with care. Mesías et al. (2011) questioned 361 consumers in Spain about WTP for eggs. All other studies using indirect surveys (N=18) applied convenience samples, quotas or did not declare the sampling method.

In most of the identified studies about indirect price queries, between 200 and 700 consumers were interviewed. Less than 200 consumers were interviewed in three studies (Bhatta et al. 2010, Olesen et al. 2010; Cranfield et al. 2009). Conclusions can be drawn only for a small part of reality from these results. Four studies used samples of more than 1,000 consumers (Bond et al. 2008; Dransfield et al. 2005; James et al. 2009; West et al. 2002). Dransfield (2005) surveyed WTP for pork in the UK, France, Denmark and Sweden. Due to this broad geographical coverage and the similarity of these markets to the German market, the results can certainly also hold for the German pork market. James et al. (2009) examined the willingness to pay of 1,521 consumers for applesauce. The study is limited to Pennsylvania (USA) and the sampling method was not specified, therefore conclusions for the German market should be drawn carefully. Bind et al. (2008) analyzed WTP of 1,542 US consumers for different labels of lettuce. Since the labels are very specific to the US market, conclusions for Germany can only be drawn with limitations. West et al. (2002) analyzed the WTP for functional food as opposed to other food precuts in Canada. Since functional food has meanwhile been established on the market, it is questionable whether the results from 2002 still hold today.

This overview of foreign studies using an indirect query of WTP shows that only a small part of the studies is applicable for the transfer of results to the German market.

4.5.6.3 Enquiry of willingness to pay via bid queries

In the identified studies on bid queries (n=9), seven publications used auctions, while two studies used lotteries. Connor and Christy (2004) examined the willingness to pay for certain US organic standards. The survey took place at a university, mainly with students, which makes it difficult to draw general conclusions. Furthermore the classical English Auction has the innate problem that the real WTP is ascertainable only for a small part of the bidders (Völckner 2006). The incentive compatibility of Vickrey Auctions, where the participant has an incentive to bid the true WTP value, makes them more valid than English Auctions.

Only one (Heid et al. 2011) of the six studies with Vickrey Auctions was held in Germany. Two each were held in the USA and Italy, and one was held in Spain. Only one study differentiates between organic consumers and conventional consumers (Heid et al. 2011). For this reason, Table 25 does not in detail describe the sample, since the samples in these studies are never described in detail. Almost all studies treat specific objects of investigation. Four studies analyzed the WTP for specific foods: organic chicken (Gifford and Bernard 2011), organic boar salami (Heid et al. 2011), organic Pecorino cheese (Napolitano et al. 2010b), and organic beef (Napolitano et al. 2010a). Gifford and Bernard (2008) analyzed the WTP for different methods of production (e.g. organic and GMO-foods). Soler et al. (2002) analyzed the willingness to pay more for organic foods with a specific origin. Since the study was published in 2002, the conclusions are to be perceived critically. Due to this strong specialization of studies, the results can only hold for the specific areas examined.

Table 25: Studies on WTP applying Vickrey Auctions

	Study	Place of origin	Sampling method	Nr. of participants
1	Gifford, Bernard (2008)	USA (Delaware, Pennsylvania, Maryland)	Convenience	154
2	Gifford, Bernard (2011)	USA (Delaware)	Quota	139
3	Heid et al. (2011)	Germany (Kassel, Göttingen, Stuttgart)	Quota	89
4	Napolitano et al. (2010a)	Italy (Potenza, Ancona, Udine)	Quota	150
5	Napolitano et al. (2010b)	Italy (Potenza, Ancona, Udine)	Quota	145
6	Soler et al. (2002)	Spain	Convenience	120

Source: Own illustration

Table 25 illustrates that four studies with Vickrey Auctions applied convenience sampling and two quota sampling. Furthermore, all authors asked between 89 and 154 consumers. Since the sample size of these Vickrey Auctions is small compared to other survey methods, whether these results hold for general statements is questionable. Heid et al. (2011) emphasize the explorative character of the Vickrey Auction, whereby the general explanatory power for the German market is small. Until now, no studies using random sampling exist. The study's small sample size can be attributed to the very sumptuous accomplishment of bid queries in general.

Only two studies used lotteries as the survey method (van Doorn and Verhoef 2011; Thiele and Burchardi 2006). Both studies applied the so called BDM (Becker–DeGroot–Marschak) method, which, like the Vickrey Auctions, is incentive compatible. The advantage of the BDM-method is that it can be conducted as a “natural” purchase decision in the common purchase environment (e.g. organic food stores). Both studies explored the WTP via a direct query in a first step and, in a second step, checked it via the BDM-method. Thiele and Burchardi (2006) analyzed the WTP for regional organic milk. They questioned 362 consumers in the German province of Hesse. The study of van Doorn and Verhoef (2011) analyzed the reasons for the non-existence of a willingness to pay more for organic foods in the Netherlands. 233 consumers were surveyed for the BDM-study. The advance, broader study questioned 709 consumers directly about their WTP, and was carried out by a GfK panel.

4.5.7 Price policy strategies

Especially interesting to the price political strategies of enterprises are price positioning and all already mentioned studies on price evaluation and willingness to pay. Only two German studies on price differentiation, i.e. price fixing for different or similar organic foods, exist. The study of Hamm and Wild (2004) analyzed basic claims data of a chain store company in organic food retail with regard to the interrelation between price positioning and sale quantity of similar or different products sold under different brand names. A further study of Hamm et al.

(2007) examined price settings of eleven selected organic products at 45 different food retail points of sale in four German regions, and compared them to conventional foods. This very broad study comprised 554 different articles and 469 article prices for organic products, as well as 2,312 article prices for conventional products. Since the empirical survey was performed in 2006, before the entrance of most discounters into the organic market, the data can be, from the current point of view, regarded as dated. No German or other studies are yet available on price bundling, i.e. on the combined offer of two or more products for a single price. Price conditions (discounts and terms of payment) have not been discussed in scientific studies in the organic sector. They play a role in business to business marketing rather than in consumer studies.

4.5.8 Research recommendations of the authors

The following table shows the research recommendations from the studies on price policy. Interestingly, research recommendations on price political strategies were made in three cases, although they were hardly supported until now. With regard to WTP, research recommendations were mostly made on the influencing factors on WTP.

Table 26: Research recommendations of the authors on price policy

Price cognition
Analysis if a minimum price reduction, in the case of products where consumers have good price knowledge, will lead to a change in perception of the whole organic assortment.
Analysis of the effect of “odd” prices of organic foods on consumption.
Price political strategies
Analysis of price strategies of retailers
Check if a better organic quality and a smaller price difference between organic and conventional products will raise the share of regular organic consumers.
Analysis of alternative distribution strategies and their influence on price.
Price acceptance
Analysis whether the WTP of consumers is determined by rational and private benefit or by the general welfare of consumption.
Analysis of consumer perception regarding factors which influence WTP with the help of higher developed measurement techniques, such as psychometric constructs
Analysis of whether a lower price level in conventional foods retail influences the WTP of consumers
Analysis of other factors of influence on WTP, such as labeling or packaging
Detection of factors of influence, such as price and availability, on the shopping behavior with regard to several product categories

Source: Own illustration

4.5.9 Research gaps based on knowledge analysis

As the knowledge analysis has shown, only few fields of price policy are covered by the identified studies, even though a comparably high total number of studies (n=116) was found. Clear research deficits exist on the uptake and processing of price information, as well as in the field of specific price political strategies such as price differentiation and price bundling.

A large number of studies that do not examine a specific product or food product were identified in all subtopics of price policy. Processed foods have been disregarded to date. Only a small number of studies (n=3) exists in the field of price policy of processed dairy products. Only a small number of studies (n=8) on processed products from plant foods also exists. Consequently, massive research is required. It can be concluded that either no, or very few, price policy studies on many specific products or food products exist. A rather remarkable number of studies were published on milk, only.

4.6 Communication policy

According to Meffert et al. (2008), communication policy is supposed to plan, design and control all communication measures of a company. Kotler and Biemel (2001) perceive communication policy as integrated marketing communication of the whole company, which goes beyond communication with just the end user. The course of communication policy measurements from planning to implementation will be drafted in the following. This course varies from author to author in the particular sub-steps, but the overall approach is the same in all prevalent marketing books (cp. Meffert et al. 2008; Homburg and Krohmer 2006; Kotler and Bliemel 2001).

Target groups are first investigated then communication aims determined, for the planning of communication measures. Fitting communication measures are designed after budgeting communication expenditures. The following instruments are applied for this purpose: above-the-line advertisement, online communication, public relations, promotion, trade fairs and exhibitions, event marketing, sponsoring and product placement (Meffert et al. 2008). The design of the communications measures in terms of content, the so called implementation of the communication message, is carried out next. The message has a formal component (the design using pictures, texts, colors or music) and a content component that displays the immediate statement regarding the advertised object. Each communication measure can be designed differently both in terms of content and formally. The communication measures can therefore vary. The effect of communication measures, the so called communication success, is checked after implementing the communication measures (Homburg and Krohmer 2006).

The following is an explanation of which of the single components of communication policy will be treated in the knowledge analysis. The literature on target group analysis was already discussed in chapter 3.4 on segmentation and won't be discussed here again. Furthermore, literature on budgeting is not analyzed here since this topic belongs to corporate policy decisions. Thus, in this chapter, only the topics *general communication policy*, *communication instruments* and *communication messages*, as well as their effects on the field of organic food production, will be treated. The sub-topic "general communication policy" includes studies which treat different areas of communication policy. Several or all communication in-

struments are covered and the authors predominantly give general communication recommendations on the marketing of organic foods. For this reason these studies could neither be assigned to a particular communication instrument nor to the communication messages since the studies cover several of the sub-parts of communication policy.

29 relevant studies on the marketing instrument communication were analyzed. Much fewer studies were found here than for all the other instruments.

4.6.1 Subtopics of the identified studies on communication policy

Communication policy was treated in general in most of the examined studies (n=12), as displayed in Table 27. The studies were within the sub-topic “general communication policy”, sorted according to their object of investigation, e.g. according to the examined product group. Four of the twelve studies treated specific product groups (e.g. fish) and three the communication for a specific distribution channel (e. g. direct marketing). General recommendations on the communication of organic foods or organic labels are made in five of the studies.

Table 27: Identified studies on the topic communication policy divided into sub-topics

Topics of the publications	Number of studies			
General communication policy	12	}	Specific product group	4
			Specific distribution channel	3
			Organic foods in general	5
Communication instruments	11	}	Public relations	4
			Online communication	3
			Sales promotion	4
			Above-the-line advertising	0
			Event marketing	0
Communication messages	6	}	Trade fairs and exhibitions	0
			Product Placement	0
			Sponsoring	0
Total	29			

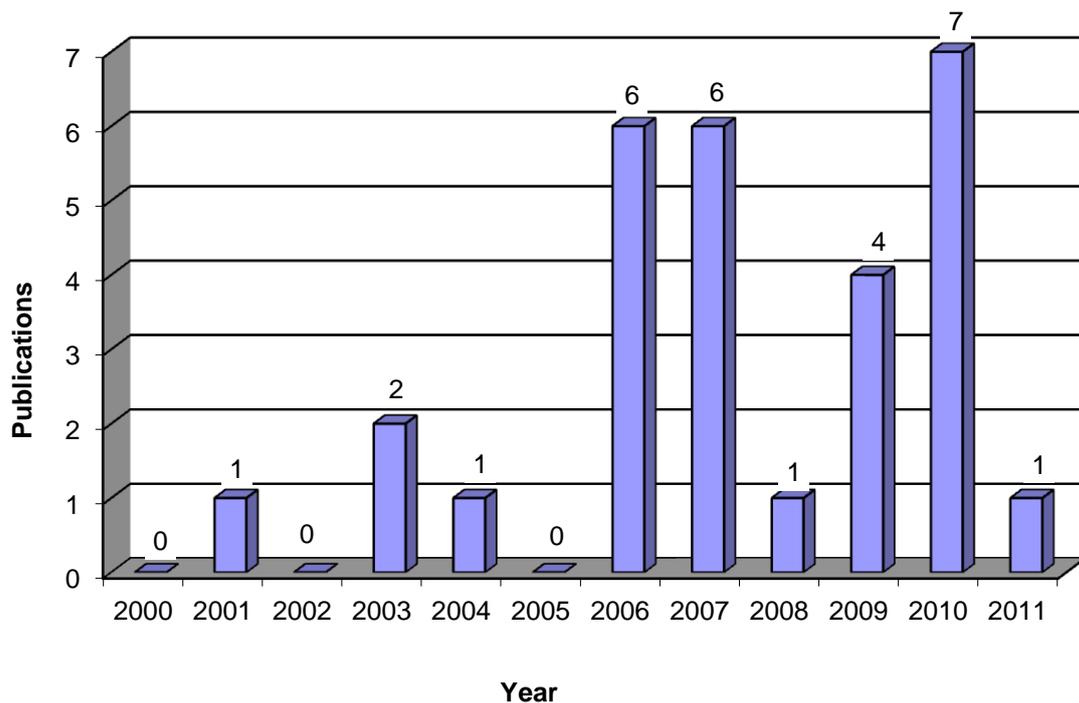
Source: Own illustration

Of all communication instruments, only online communication, public relations and sales promotion are treated in the studies. Four studies each deal with a question on public relations (Oppermann and Rahmann 2009; Jones et al. 2007b; Lockie 2006; Nieberg and Kuhner 2006) and on sales promotion (Bickel and Hamm 2010; Bunte et al. 2007; Hamm 2007a; Wild and Hamm 2006). Three studies analyze online communication (Stöwer 2010; Große-Lochtman et al. 2006; Spiller and Engelken 2003). Six studies deal with communication measures for organic foods.

4.6.2 Publications on communication policy according to year and countries involved

The largest number of studies, 26 out of 29, was published in the last five years, as displayed in Figure 13. The figure displays a growing tendency in the number of publications, which reflects the growth of the organic market. The deviation in the laps of time from zero to seven publications per year is remarkable.

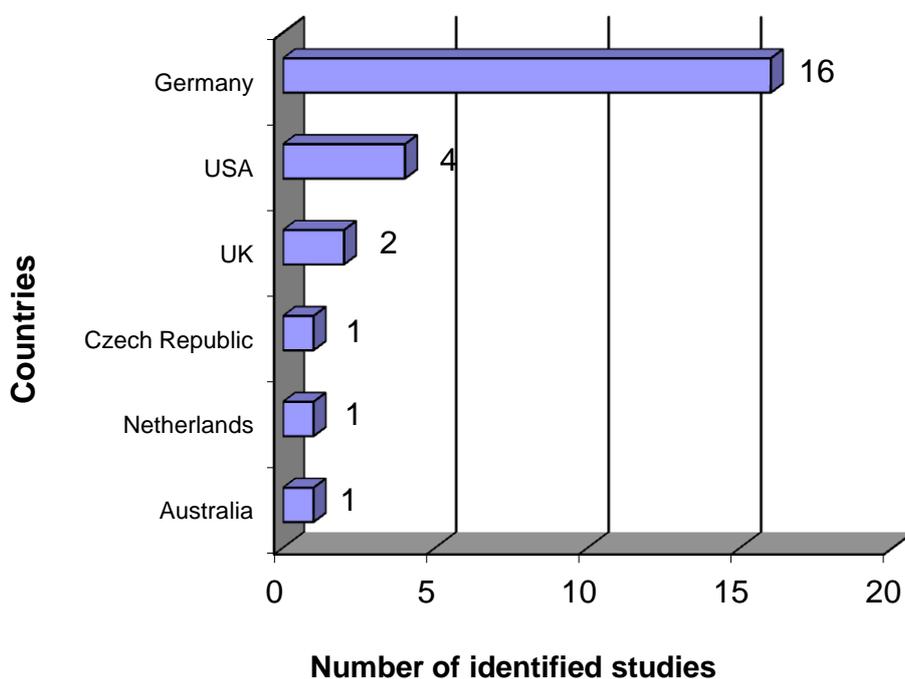
Figure 13: Publishes articles on communication policy (n=29) from January 2000 to June 2011



Source: Own illustration

Figure 14 displays the countries of origin of the studies on communication. Except for four literature studies (Oppermann and Rahmann 2009; Pearson and Henryks 2008; Raple 2006; Young 2001), all studies specify where the survey took place.

Figure 14: Countries involved in publications on communication policy from January 2000 to June 2011



Source: Own illustration

The majority (n=16) of the 25 empirical studies was carried out in Germany. Four studies were carried out in the USA, two in the UK and one each in Czechia, Australia and the Netherlands. The German studies examine each of all three identified sub-topics (see Table 28), though, remarkably, only one examines communication messages.

Table 28: Identified studies on communication policy in Germany

Sub-topic		Germany	Other countries
Communication policy	Communication policy in general	8	4
	Communication instruments	7	4
	Communication messages	1	5
Total		16	13

Source: Own illustration

4.6.3 General communication policy

The sub-topic “general communication policy” consists of twelve studies. Four discuss a specific product group, three treat a specific distribution channel, while the other studies treat the topic in a rather unspecific manner. Out of the nine empirical studies, eight originate from Germany and one from Czechia (Živělová and Jánký 2007). One of the literature studies is furthermore limited to German-language literature only (Räpple 2006).

In two studies, the focus is on communication policy of organic fish and aquaculture products. Young (2001) performed a literature study. Lasner et al. (2010) held 66 telephone interviews with market players from all over Germany and in order to deepen the results, 16 guided interviews with experts were carried out. Both studies contain valuable insights on communication policy for aquaculture products, both being of an explorative nature. Further studies in this field are recommended. Surprisingly, no studies on other specific products within communication policy were found.

Two further studies exclusively deal with the communication policy of regional organic products (Stockebrand 2010; Wannemacher and Kuhnert 2009). In both studies, surveys were held in several cities and regions of Germany. Stockebrand (2010) applied a multiple method approach (quantitative written questionnaires, store tests, quantitative observation, qualitative oral guided interviews) and surveyed a large number of organic consumers (n=2,229) in the quantitative part. Wannemacher and Kuhnert (2009) also used several methods (face-to-face interviews, store tests, oral guided interviews, observations). They limited their face-to-face interviews to 282 organic consumers. By means of a multiple method approach and the favorable market coverage, general conclusions for the German market for regional organic foods can be drawn from the results of these two studies.

The general communication policy of a specific distribution channel was the focus of three studies. Hasan (2010) and Heer (2007) researched direct marketing in Germany. Both studies applied a quantitative approach. Hasan (2010) used written questionnaires and Heer (2007) conducted face-to-face interviews and observations. In the study of Hasan (2010), only 29 direct marketers were interviewed, strongly reducing the explanatory power of the results. Heer (2007) interviewed 410 consumers and derived communication recommendations for direct marketing from the consumer point of view. Dienel and Reuter (2007) dealt with a research problem regarding communication policy in food retailing using qualitative guided interviews with 41 food producers and 16 store managers. However communication policy was the less relevant topic. Thus, only a small number of significant studies on communication policy of specific distribution channels exist.

Five studies deal very generally with communication policy. Živělová and Jánký (2007) examined the organic market in Czechia and analyzed the information behavior of consumers and the marketing activities of the retailers. In comparable studies (Živělová and Jánký 2006; Živělová 2005), the Czech organic market was highlighted from different perspectives. However, communication policy was only addressed marginally and predominantly described the status quo. Due to the low state of development of the Czech organic market, the study of Živělová and Jánký (2007) is not transferable to Germany.

Amongst the other four German studies are two literature studies. Pearson and Henryks (2008) examined all four marketing instruments of organic foods (price, communication, distribution and product) and analyzed herewith the repressive factors for the organic food purchase. Räpple (2006) predominantly used German literature in order to analyze the consumer behavior of organic buyers and the reasons for demanding organic food products. He de-

rived marketing recommendations from the results. The studies of Hofmann and Spiller (2009) and Hensche and Schleyer (2003) also fall into the area of general communication policy. In the data analysis of the comprehensive “Nationale Verzehrsstudie” (Hoffmann and Spiller 2010), marketing recommendations were derived from the target group definition. In order to define the consumer groups, 13,074 organic consumers that were chosen randomly were interviewed - in written form and computer assisted - in several parts of Germany. Hensche and Schleyer (2003) investigated factors of success for marketing initiatives by interviewing 28 representatives of successful initiatives via a guided questionnaire. In all four studies (Hoffmann und Spiller 2010; Pearson und Henryks 2008; Räßle 2006; Hensche und Schleyer 2003) communication policy played a minor role. Though the amount of gained information in the field of communication policy is of a rather general quality, studies were integrated into knowledge analysis on communication policy since their results offer a sound general overview of communication policy and describe the role of communication policy within the four marketing instruments.

4.6.4 Communication instruments

Only the three communication instruments (sales promotion, online communication and public relations) were addressed by studies.

Four studies, three from Germany (Bickel and Hamm 2010; Hamm 2007a; Wild and Hamm 2006) and one from the Netherlands (Bunte et al. 2007), were found on the topic sales promotion. All four studies used sales data in order to analyze the impact of sales promotion. The study of Bickel and Hamm (2010) is also part of the study of Schäfer et al. (2010). The study of Wild and Hamm (2006) appears in another study (Hamm and Wild 2007) for a second time. The studies handle research questions regarding different aspects of sales promotion. Bunte et al. (2007), for example, examined the impact of leaflets. Bickel and Hamm (2010) and Wild and Hamm (2006) on the other hand dealt with the different specifications of sales promotion. Hamm (2007a) analyzed the impact of several elements of sales promotion on the launch of an organic sausage without curing salt. He emphasized tasting actions, just like Bickel and Hamm (2010). Except for the study of Hamm (2007a), where sales promotion was conducted for only one specific product, the other studies emphasized several products, hereby achieving a certain general explanatory power. Bickel and Hamm (2010) nevertheless indicated in their conclusions that due to problems with the implementation of their experiment, the explanatory power of their results is limited.

All three studies on online communication (Große-Lochtmann et al. 2006; Stöwer 2010; Spiller and Engelken 2003) that were used in the analysis of this paper were conducted in Germany. The publication of Große-Lochtmann et al. (2006) is a trade journal article, where neither an empirical study nor a literature research is displayed. Furthermore, no sources are indicated in the text. Große-Lochtmann et al. (2006) used practical examples to explain which options exist for online communication. Spiller and Engelken (2003) analyzed, using two case studies, the implementation of virtual communities as an instrument for addressing target groups. The master thesis of Stöwer (2010) showed, using the example of an internet platform for Community Supported Agriculture (CSA)-organizations, how networking of consumers via internet is feasible. Information needs were prompted via guided questionnaires and a written questionnaire with 138 CSA-members. All three studies have an explorative character and are limited to displaying the implementation of online communication with the

help of examples. Quantitative consumer studies in this field are unknown. Findings on on-line communication are consequently still marginal.

Four literature research studies treat the topic public relations. Oppermann and Rahmann (2009) conducted a literature study on confidence building and confidence communication in organic farming. Jones et al. (2007b) showed, based on case examples, the status quo of the adoption of CSR communication instruments in the largest points of sale in the UK. Based on the sample data, a similar paper of Jones et al. (2007a) was published on this topic. Nieberg and Kuhnert (2006) conducted a status quo analysis on supportive measures in the field of organic farming as well as on consumer communication. A literature study was carried out, predominantly based on grey literature, for this purpose. The study covers several fields of communication policy, but focuses on public relations. Lockie (2006) analyzed, using content analysis, 9,000 newspaper articles, regarding the positioning of Australian organic farming in mass media. Consumer perception was however not analyzed in the article. The study is limited to a content analysis of the texts. Public relations as a topic is scarcely dealt with. Consumer studies on the impact of public relations have not been published to date.

4.6.5 Communication messages

Only six studies treat questions about communication messages. One each originates from Germany and the UK, while the other four originate from the USA. Three of these four studies come from the county Delaware.

Stockebrand and Spiller (2007) from Germany analyzed the effect of advertising texts for regional foods based on an experimental research design. The study was limited to the University of Göttingen with a comparably small sample of 120 students. No general statements on the effects of the examined communication measures can be made due to the experimental design of the study.

Two of the other studies used qualitative approaches. Abrams et al. (2010) conducted two group discussions with a total of 15 participants, strongly limiting the explanatory power of the study. Due to the narrow research question - the communication differences between organic labels and natural claim labels in the USA - the conclusions are hardly transferable to the European market. The second qualitative study of Cook et al. (2009), where consumer perception of communication messages was examined, comprised eight focus groups in two different cities in the UK.

The three other studies were conducted in Delaware and examine the effect of information with the help of quantitative methods. In an experimental auction with 139 consumers, the effect of information about the US organic label and the natural claim label on the willingness to pay for chicken was researched (Gifford and Bernard 2011). In the two other studies, written interviews with 337 (Gifford and Bernard 2006) and 401 (Gifford and Bernard 2004) organic and conventional consumers were performed. Both studies analyzed the effect of positive and negative information on the consumer behavior. None of the three studies applied random sampling.

Due to the geographical coverage and the methodological approaches, no studies on the topic communication messages exist that can serve as general sources.

4.6.6 Research recommendations of the authors

In the studies on communication policies, only a few pertinent research recommendations were made. Table 29 displays the research recommendations given. Some of these recommendations, for example the first two on public relations, rely very specifically on a certain topic from the USA and are thus not transferrable to Germany.

The research recommendations under the item “others” mainly concern comprehensive research problems, which go beyond the topic communication policy. Since communication policy should be perceived in relation to the overall marketing instruments, which are embedded in the corporate strategy of a company, such research recommendations are highly valuable.

The last three research recommendations are the only specific research recommendations and refer to studies on fish or aquaculture products. All other research recommendations can hold for different organic foods or organic foods in general.

Table 29: Research recommendations of the authors on communication policy

Public relations
Analysis of public relations of USDA (U.S. Department of Agriculture)
Analysis of the discussion on natural claim and organic standards in mass media
Effects of different (Corporate Social Responsibility) communication channels
Relation between CSR communication and consumer behavior
Sales promotion
Consumer surveys before and after sales promotion
Analysis of the effect of sales promotion measures outside of point of sale
Communication messages
Analysis of the effect of pictures in communication messages
Analysis of the effect of current communication messages on packages
Others
Analysis of communication channels in order to enhance consumer knowledge on organic foods
Analysis of the different impact between communication and price political measures
Analysis of the relation between marketing orientation and profit
Product specific communication
Consumer study in the field of organic aquaculture products
Analysis of species specific consumer communication of fish
Analysis of country specific consumer communication of fish

Source: Own illustration

4.6.7 Research gaps based on knowledge analysis

Only few studies (n=29) of the literature research could be assigned to the field of communication policy. The knowledge analysis clearly shows that massive gaps exist for communication policy research in Germany. To date the topic was mostly treated together with other topics. Therefore, studies with a specific focus on communication policy are rare. The identified research gaps based on the conducted knowledge analysis will be described for each subtopic of communication policy.

The topic communication is mostly handled unspecifically and many studies only offer “general” recommendations on communication policy of organic foods, as the literature research shows. Except for direct marketing, communication policy on specific distribution channels is widely unexplored. Similarly, little research was carried out on the communication of specific product groups. General statements on the German market can be only derived in the field of regional organic foods. Further studies could be designed based on the two explorative studies of communication policy of organic fish.

Very few studies on specific communications instruments in the organic foods sector were found. Few studies too dealt with the sub-topics (public relations, sales promotion and online communication). Only explorative studies have been so far carried out in the field of public relations and online communication. Though four studies on sales promotion exist, they only cover a small part of the existing instruments (e.g. three studies on tasting). A major research need exists for all fields of the communication instruments, especially the core topics online communication, public relations, sales promotion and above-the-line advertising, which are especially relevant for the organic food market.

Only one of the six studies on communication messages originates from Germany. The results of the foreign studies are only transferable to the German market with limitations. The influence of information or communication messages on consumption behavior in Germany was only tentatively researched in one study. A huge research gap exists in the field of communication messages. However, the studies from the USA could serve as a helpful draft for research attempts in Germany.

4.7 *Distribution policy*

This chapter provides a review of the literature and of the status of research concerning the distribution policy as a marketing instrument for consumer research in the sector of organic food. According to Spiller (2010), distribution policy ensures an adequate availability of offered goods to the consumer. The exact modality of a distribution policy is dependent on both internal and external conditions that have an effect on the company (Hamm 1991). Distribution is consistently subdivided into two main fields: acquisition and logistics. A principal question concerns the selection of the number of steps to the consumer and the selection of the appropriate distribution channel. Basically two perspectives on the distribution along the supply chain need to be identified: firstly, the producer’s point of view and secondly, the consumer’s point of view. Selection and availability of the distribution channel for both provider and customer affects success, as it pre-selects the opportunities of sales and request. Therefore issues concerning distribution policy have become more central to the context of marketing policy during the last years.

When discussing the number of steps to the consumer, several trade outlets can be identified. Direct sales are described as the sale of self produced goods via own sales channels without intermediaries. In the organic food sector, direct sales are common and generate 7 % of revenue. Around the turn of the millennium direct sales generated 17 % of revenue, a much larger part. Typically direct marketing takes place through weekly markets, farm shops and delivery services. Market share was stable until 2004, since when it has more than halved. This distribution channel is one of the losers of developments over the last years.

Single-stage and multi-stage sales channels describe the sale of products in retail, with a wholesaler as well as one or more resellers or processors in between. During the time range of this study (2000-2011) retail structures for the distribution of organic food changed. The food retail market was the distribution channel with the highest sales, standing at 33% in 2000, after starting to market organic food. Its volume increased to 56% until 2009. At the beginning of the time range of this study, distribution through natural food shops had a share of 28%: the second strongest channel. Organic shops and organic supermarkets regardless of their size make up this market type (Kennerknecht et al. 2007). Despite a relative loss of six percentage points they doubled the absolute turnover until 2009, with sales growing proportionally to the organic food sector growth since 2007. The handicrafts also lost market share, among them bakers, butchers, wine producers and cheese makers. Nevertheless the absolute revenue grew about 70%. As a distribution channel, health food shops were the loser of the last decade. Their absolute revenue as well as the relative share fell. At the moment the share of the health shops is at the 3% level.

Distribution of organic food by internet is a new marketing form. The number of stages to the consumer depends on the use and cannot be defined.

4.7.1 Subtopics of the identified studies on distribution policy

This chapter analyses scientific publications categorised according to the distribution channels described. There are 64 publications relevant to the marketing instrument distribution within the time range of this study.

33 publications give a general overview and a characterization of the distribution channels of organic food. Such studies commonly overlap with studies focusing on a special distribution channel. The motivation for the selection of a shopping location is attributed to the dependency of the consumer behavior on the preferred retailer. Although conclusions concerning the reasons for the selection of a distribution channel are drawn, there is no focus on the marketing instrument distribution policy. Recommendations on further research cannot be found in such studies.

A relatively large number of publications (n=13) concentrate on selling organic food in conventional food trade. The aim is often to make predictions for the further development of its position in market, or to compare conventional food trade with natural food shops, which dominated the distribution of organic food for a long period of time. Direct sales was also a frequent topic (n=12). Besides the "traditional" direct sales of self produced food on the weekly market or in farm shops, new ways were discussed. These were often combined with the use of internet, e.g. through delivery services of producer-consumer networks (Jahn 2003; Stöwer 2010; Clarke et al. 2008). Additionally the question of whether the Internet is suitable for the distribution of organic niche products was dealt with more than once (Schmidt-Tiedemann et al. 2003). Six studies concentrate on natural food shops. Typically they investigate the purchaser and the reasons behind the selection of the distribution channel. Use of the Internet for selling organic food was the focus of five studies. Consumer willingness to use the Internet to buy food and possible solutions for the implementation were superficially treated (Baourakis et al. 2002; Jahn 2003). Few publications deal with the handicraft (n=3) and health food shops (n=1) as a distribution channel for organic food.

Distribution through drugstores was not contemplated by any survey. An analysis of the state of knowledge about the logistical area of distribution can't proceed as no such study was published during the time range of this study.

Table 30: Identified studies concerning distribution policy split by subtopics

Key area of the publication		Number of studies	Carried out in Germany
Distribution in general	Selection of a retailer	7	2
	Other	26	12
Specific distribution channels	Conventional food trade	13	11
	Internet	6	5
	Direct sales	11	6
	Natural food shops	6	6
	Handicraft	4	4
	Health food shop	1	1
Total*		74	47

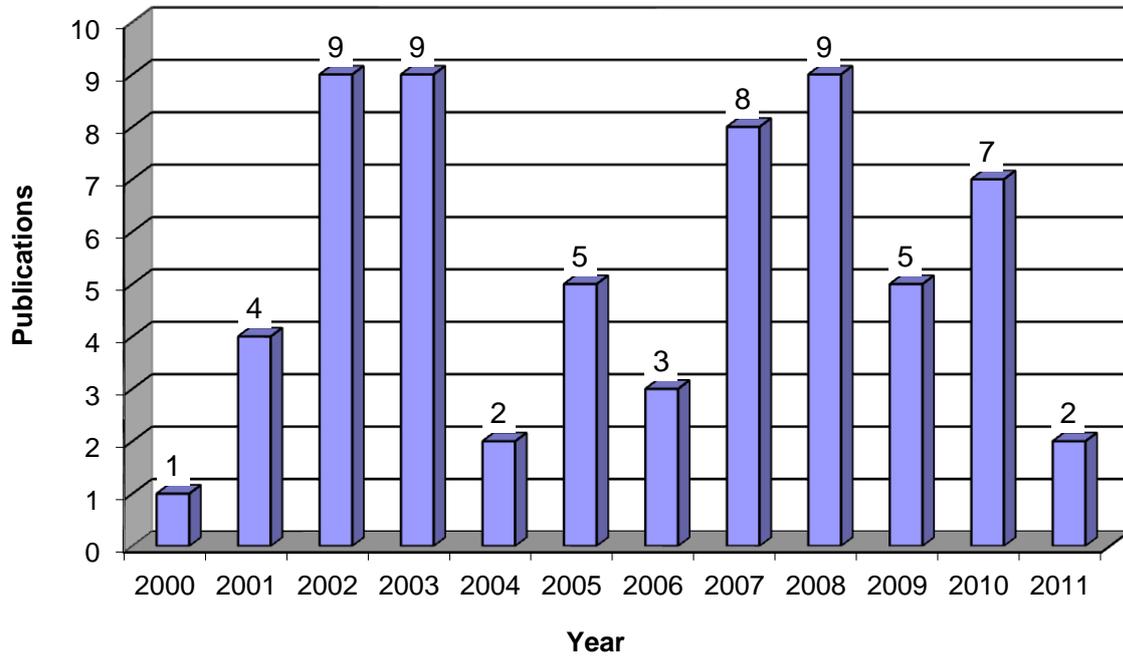
*As some publications deal with more than one subtopic, the cumulative number of the subtopics is larger than the total number of studies.

Source: Own illustration

4.7.2 Publications on distribution policy according to year and countries involved

No trend in the number of analyzed publications can be identified in Figure 15. In 2000 one survey was published, while 2002, 2003 and 2008 peak with nine publications each. A possible explanation might be the growing interest of discounters in the organic food market, and the change in marketing structures as a consequence. The introduction of the European organic label in 2000 also raised research interest in this area. A lower peak is in 2007 with eight publications. Throughout the rest of the time range, the number of published studies varies between two and seven. Between 2000 and 2011 an average of six studies were published annually.

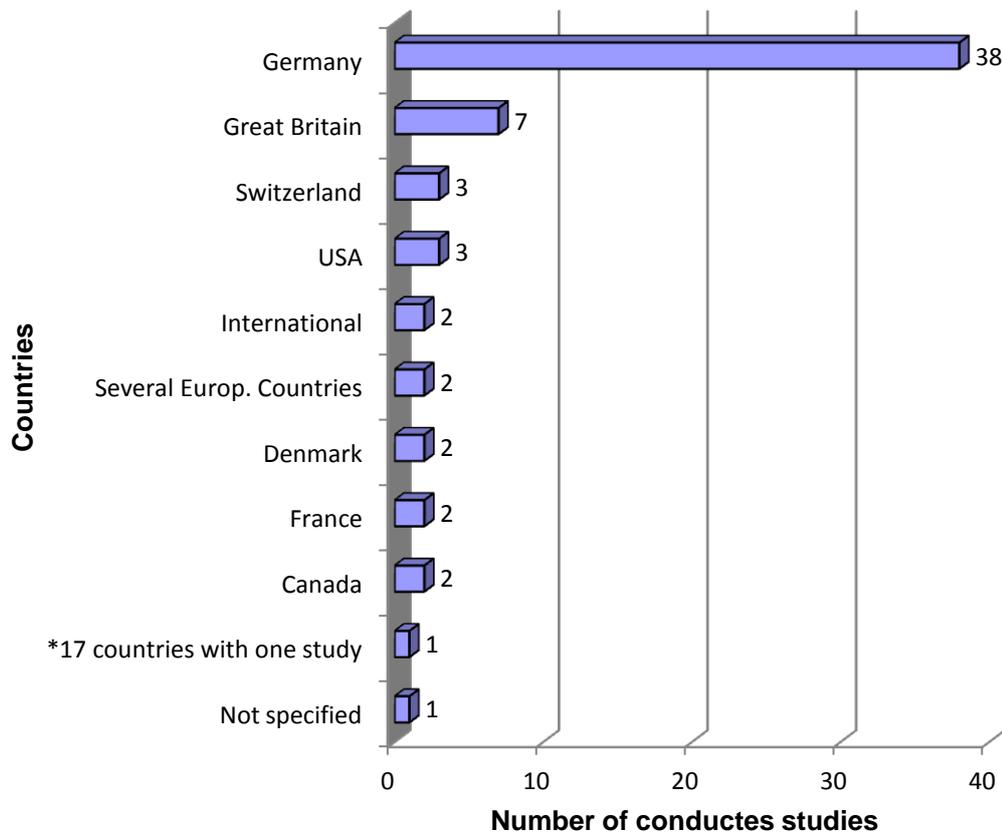
Figure 15: Number of publications on distribution policy (n=64) between January 2000 and June 2011



Source: Own illustration

Since the literature research was limited to German and English publications, studies concerning Germany dominated. Amongst the other countries, English language countries stand out from the rest. No further statement with regard to research intensity in distribution policy can be made by countries.

Figure 16: Countries of research on distribution policy from January to June 2011



*Egypt, Australia, Belgium, Bosnia-Herzegovina, Estonia, Greece, Iran, Ireland, Italy, Japan, Croatia, Austria, Sweden, Slovenia, Czechia, Turkey, Wales

Source: Own illustration

4.7.3 General distribution

33 studies deal with the distribution from the producer point of view and with the supply of organic food. The number of studies varies from an overview of the market (Jones et al. 2001; Padel/Midmore 2005; Wier/Calvery 2002) and the possible distribution channels (Kuhnert et al. 2011; Lüth 2003; Monotti 2008), to separate analyses of single products (Bahrdt et al. 2002c; Bahrdt et al. 2002b; Bahrdt et al. 2002a).

Padel and Midmore (2005) give a meaningful overview of the development of the European organic market. Using the Delphi method, which consists of questioning in multiple rounds that build up on the results of the previous round, they interviewed 129 experts from 18 countries.

Most frequent issues the studies deal with are consumer selection of retail (n=7), the analysis of existing distribution channels (n=6) and the analysis of several product groups (n=5). Only two of the seven selection of retail studies refer to the German organic market (Gerlach 2006; Mutlu 2007). Mutlu (2007) compares the German and Turkish market on the basis of a sample of 114 consumers. Gerlach (2006) works out three clusters based on the answers of

170 organic food consumers: discount-oriented, organic-food-shop-buyer and organic-supermarket-buyer. Surveys that did not originate from Germany were based on much smaller samples (n=34-36). One of the foreign studies deals with the Danish market (Wier/Calverey 2002). Wier et al. (2005) analyzed 2000 Danish households using panel data, and additionally evaluated 1,609 written interviews. This is a meaningful study. The rest of the foreign studies are about non-European markets (Akbari/Assadi 2008; Chang/Zependa 2005; Essousi/Zahaf 2009; Sirieix et al. 2008a).

All publications focusing on distribution channels from the processor view, analyze the German market. These overlap with studies that deal with the distribution of special products (Bahrtdt et al. 2002 a-c; Lasner et al. 2010, Monotti 2008). Bahrtdt et al. (2002) analyzed the value chain of organic pork, beef and food grain in three single studies. Since the results are based on literature analysis, qualitative interviews with experts and workshops using the Delphi method, they give a reliable overview of the market structures despite the small sample size (n=59-63). At the time (2002) the three markets had been little known and the structures had not yet been formed. Lasner et al. (2010) explored in a comparable study the market structures of organic aquaculture products, using 87 guided interviews with companies (production, processing and trading) and experts. Monotti (2008) analyzed the European chocolate market. Among Italy, Great Britain and France, Germany was one of the regions being studied. Monotti concluded a bigger panel would be necessary to be able to make inferences.

Kuhnert et al. (2001) made a public study that gives a comprehensive and detailed overview of the whole value chain (from production to sale) of organic food in Hamburg. 52 personal interviews with producers and owners of natural food shops, 140 written questionnaires by district offices and traders from hypermarkets and three Bachelor theses built up the basis. The sample size and the selection of the respondents provide a detailed overview of the market structures in the region from the marketer view.

None of the German studies concerning general distribution include farmers in their samples. To the contrary, Ilbery et al. (2010) led 61 in-depth interviews with farmers in Great Britain, Peetsman et al. (2009) questioned 313 farmers in Estonia and Živělová (2005) a not specified number in Czechia.

Chronologically the studies have two peaks. In 2002 five studies and 2006 six studies were published. None was published in 2004. In the rest of the years the number of studies is between one and four.

With regard to the countries, Germany takes the main focus (n=12), with 28 publications from the rest of Europe and eight surveys from outside Europe. 18 of the studies used qualitative survey methods, six publications used qualitative as well as quantitative methods and eight papers used quantitative methods. There was no information on the methods used in one publication (Lüth 2003).

4.7.4 Food retailing

13 of 64 studies on distribution policy regard the conventional food trade as a distribution channel for organic food. This is a new channel in a series of different possibilities, and is dominating the market quantitatively as well as in terms of turnover. After its entry in the

market in the 1980s and the increase in range in the early 2000s, organic market structures changed.

The 13 studies deal with very heterogeneous topics that can be split up roughly in eight subject areas. The largest group concerns demand (Budig et al. 2002; Gothe/Schöne 2002; Schaer 2001; Sehrer et al. 2005). All four studies originate from Germany. Budig et al. (2002) analyzed and compared 30 German, 33 French and 16 Swiss conventional and organic farms in order to explore the possibility of increasing the offer of regionally produced vegetables and fruits in the Upper Rhine area, particularly concentrating on distribution through conventional food retailing and the hypermarket. Gothe and Schöne also investigated the food retailer as a distribution possibility for organic food, based on 20 interviews with representatives from conventional food trade, producer associations and research experts. It was a qualitative survey without regional restrictions, which produced convincing results concerning the distribution of organic regional food. The general validity of the results is doubtful because of the small sample size. Schaer (2001) used the answers of 125 supermarket buyers and 616 Bavarian households to compare, within a quantitative survey, the potential of organic food in conventional food retail and in organic food shops. Since it refers to Bavaria, a general recommendation for Germany could be problematic, as Bavaria has a higher average income compared to the rest of the country, which might cause a distortion. Sehrer et al. (2005) analyzed the influence of the conventional retailer on the expansion of the distribution of organic food and the central barriers for not buying organic products based on 100 consumer surveys and 300 product reviews.

Three papers deal with marketing strategies (Aertsens et al. 2009a; Eichert 2003; Reuter 2002), three with determinants of buying organic food (Buder/Hamm 2011; Köhler 2008; Spiller et al. 2004) and two with labeling (Bruhn 2003; Reuter 2002). One large study was carried out by Aertsens et al (2009a) with a quantitative analysis of 3,529 households and consumers, and a qualitative analysis of interviews with traders in Belgium. The only German study which analyzes marketing strategies was made by Reuter in 2002 in the context of an analysis of eight plus-stores and the trademark BioBio. Eichert (2002) published a Master thesis based on a literature analysis and explores the potential of organic food in conventional food retail. Distribution structures in retail have however changed since then, so the study is considered outdated.

Determinants influencing buying organic food in conventional food trade are well investigated by existing, up to date research. The conclusion of Köhler (2008) was that consumption of organic food is not associated with a special lifestyle any longer and has become "normal". This conclusion resulted from the comparison of his survey results to those in 1992, 1998 and 2004. Buder and Hamm (2011) investigated the determinants of not buying organic products by organic consumers, using 400 conventional food retailer buyers and 400 organic food shop buyers. An important result was the exploration of still existing product line gaps despite an expansion in the range. In 2004 Spiller et al. analyzed the buying behavior of rare organic food buyer and occasional organic food buyer using a combination of personal interviews with 1,150 consumers and interviews and discussions with direct sellers, producers, experts and traders from conventional food retail and organic food shops.

Comparable to the general distribution, a peak in publications appears in 2002 (n=3). No study concerning distribution of organic food in conventional food trade was found in 2000, 2006 and 2007. Throughout the rest of the years, one or two publications were made each year. A tendency towards a rise in interest can be expected in the years following the introduction of the European organic label.

Germany (n=10) is the main focus of the publications on this topic. The remaining three studies deal with the distribution of organic food in other European countries, two of them neighboring Germany.

All 13 publications are based on empirical surveys: six only on quantitative methods, three only on qualitative methods, and four used a mixture of both.

4.7.5 Direct marketing

Eleven studies focusing on direct sales of organic food were identified. These deal with special sales channels (n=5), with the motives of buying food directly from the producer (n=4), with marketing strategies (n=1) or a special product (wine) (n=1).

Two sales channels are better scrutinized: the weekly market (n=3) and distribution with the use of internet (n=2). The three studies that focus on the weekly market originate from the USA (Crandall et al. 2010; Kremen et al. 2007) and Ireland (Moore 2006). The use of internet is the focus of two publications from Germany (Jahn 2003; Stöwer 2010). Jahn (2003) analyzed agricultural products in online trading by guided telephone interviews with firstly 13 scientists and representatives from the IT-sector, and afterwards eleven providers of organic delivery services. As the content of the interviews was evaluated qualitatively, generally valid results could be obtained from the 24 interviews. In her Master thesis, Stöwer (2010) focused on a very special form of food trade by internet – the Community Supported Agriculture (CSA) – using an online survey with 138 organic food consumers (users of the CSA) and an interview with an expert. As the statements and results were very specific, their value to direct sales in general is not very large. Because CSA is a niche, the author recommends further research on the topic.

Two of the four studies focusing on motives and customer satisfaction in direct sales were carried out in Germany (Hasan 2010; König et al. 2005), one in Croatia, Slovenia and Bosnia-Herzegovina (Cerjak et al. 2010) and one in Ireland (Moore 2006). A broad range is covered by the survey made by Hasan (2010), which includes 33 firms, 1,035 consumers and 505 organic food consumers who were asked about their satisfaction. Results showed the importance of direct sales to be declining, indicating a requirement for the correlation between marketing strategy and real success to be analyzed. A further recommendation would be to focus on the 50+ generation.

Heer (2007) analyzed marketing strategies in Germany, using data from 820 consumer and 20 farms. Schmidt-Tiedemann et al. (2003) analyzed the structures of the organic wine market, the trade channels and the possible capabilities, using 271 interviews with winemakers, three interviews with experts and 83 publications to describe the wine market structures.

There is no consistent publication timeline. No studies were published during five of the twelve years included in the study. The largest number was published in 2010 (n=3). Most studies concern Germany, nine of eleven deal with Europe and two with the USA. Four studies used qualitative methods and four quantitative methods, three used a mixture of both.

4.7.6 Natural food store

Six publications deal with the organic food shop as a distribution channel. Three consider the motives which lead to the selection of that kind of store (Buder/Hamm 2011; Gerlach 2006; Kennerknecht et al. 2007), one regards the change of sales influenced by the introduction of the organic label or the Nitrofen-scandal (Bruhn 2003), one analyzes the organic wholesale and one focuses on the selling of meat in organic food shops (Schulze et al. 2008).

Determinants influencing purchase in organic food shops were analyzed by two large studies (Buder/Hamm 2001; Kennerknecht et al. 2007). Buder and Hamm interviewed 100 consumers of conventional food retail and 100 organic food shop consumers, each in north, east, south and west Germany. The questions were posed openly and the given answers were categorized to make a quantitative analysis possible. Besides motives of both consumer groups to buy organic food, the authors focused on reasons of organic food shop buyers to buy conventional products, and on possible gaps in the range of organic products. Kennerknecht et al. (2007) questioned 1,873 consumers of organic food shops and analyzed operational data of 21 traders. Profiling factors were identified emphasizing the necessity of fitting marketing strategies for success. Gerlach (2006) gives an overview of the motives influencing the selection of the shopping location, factors influencing customer satisfaction and the degree of willingness to change to another shopping location. The study was based on data from 170 organic food consumers.

4.7.7 Internet

During the last two decades the Internet expanded and strengthened its role as a distribution channel for goods and services. It is still an atypical source where food is concerned, that could not gain currency in Germany (contrary to e.g. Great Britain). Within the literature research six studies dealing with the distribution of organic food (n=1), or of agricultural products in general (Jahn 2003) through the internet, were identified. The publications mainly analyze perspectives which this medium offers (Baourakis et al. 2002; Kolibiums 2001), or analyze existing offers (Dworak/Burdick 2003; Jahn 2003).

Stockebrand et al. (2009) studied the satisfaction of 596 consumers of existing delivery services. The samples of the two other publications that used quantitative methods were much smaller, with 118 consumers (Greece) and 138 consumers. The sample size of the qualitatively analyzed publications (n=4) varies between one and 13 experts. Apart from Baourakis et al. (2002) all publications refer to Germany. Because of the small number of studies no trend can be identified along the timeline. There were no studies between 2004 and 2008.

4.7.8 Artisanry

Four studies deal with handicraft – typically butchers, bakers, wine producers and cheese makers. Lindner et al. (2007) observed the sales from shelves offering organic food in conventional bakeries by analyzing the market data during a period of six months in 23 bakeries. The monetary value of the sold products was the parameter to measure success. Spiller and Zühlsdorf (2009b) observed the distribution of organic bakery products in conventional craft bakery. Using 178 questionnaires answered by single located and chain store companies, the structures of bakeries could be understood. 311 bakery customers were also interviewed

about their consumption behavior and their preferences concerning the goods (Spiller/Zühlsdorf 2009a).

Löser and Deereberg (2004) used quantitative and qualitative surveys to analyze tendencies on the organic pork market as well as distribution through butchers. Although the market volume of organic pork is tiny, the authors interviewed 300 experts, market actors and producers.

Schmidt-Tiedemann et al. (2003) observed the distribution structures and the potentials of the organic wine market using a literature analysis, a qualitative (n=3) survey and a quantitative (n=171) survey. All the studies concerned the German market.

4.7.9 Health food store

Though once an important distribution channel for organic food, health food shops lost this status and are no longer the focus of research. Only one of the analyzed studies concerns this form of distribution. In 2006 Gerlach analyzed the motives for the decision to buy in health food shops, consumer satisfaction and the willingness to change the retailer, using 170 online interviews with organic food consumers. Besides the health food shops, organic food shops were considered traditional ways of distribution of organic food.

4.7.10 Research recommendations of the authors

Few authors made research recommendations for distribution policy. These are summed up in Table 31 and listed according to the distribution channels. Recommendations not made for Germany can be recognized by the abbreviation of the county in brackets.

Table 31: Research recommendations of the authors on OHC

Overlapping
Enlarge sample size and research area
Optimize sampling methods, strive for representative results
In General
Analyze the motives and ethical settings of consumers in buying associations
Frequently and occasionally buying consumers as target group
Analyze motives for buying wine (GB)
Conventional food trade
Analyze further groups of organic products (fair trade, regional, premium and convenience products) (B)
More practically oriented research according to Swiss
Analysis of motives and settings of consumers (HR, SLO, BIH)
Direct sales
Analysis of motives and settings of consumers (HR, SLO, BIH)
Research on Generation 50+
Direct sales on weekly markets (USA, IR)
Creation of a centralized database for selling wine in combination with conventional data
Determinants for membership in the CSA (USA)
Internet
Analyze the effects of new distribution channels and the socioeconomic and ecological advantages and disadvantages
Can the CSA concept be transmitted to longer value chains?
Artisanry
Creation of a centralized database for selling wine in combination with conventional data

Source: Own illustration

No recommendations were made by the authors concerning organic and health food shops.

4.7.11 Research gaps based on knowledge analysis

Based on the analysis of the 64 studies concerning distribution policy and apart from the authors' recommendations, areas can be identified where little or no research has been made since 2000. These research gaps are: distribution channels, product groups, labeling and actors along the value chain.

Distribution channels that were not analyzed completely or analyzed using poor methods were drugstores, discounters, weekly markets and categories of organic food shops. Drugstores increased the assortment of organic food during the last few years, but none of the studies considered that distribution channel. Only Kuhnert et al. (2011) mentioned this distribution channel while looking at the structures of the organic market in Hamburg. The role of discounters for the distribution of organic food is poorly explored. Reuter (2002) looked at a discounter at the time and at the distribution of organic food using a trademark. Other studies mentioning discounters give a general overview of conventional food retailer. As discounters have particular peculiarities, that form of distribution form should be regarded separately. A

closer inspection is also worthwhile because the traditional target group of discounters is complementary to the traditional buyers of organic food. Weekly markets have not been analyzed in German studies. Two studies took place in the USA and one in Ireland. Organic food shops are generally well explored. But in the case of growing numbers of organic supermarkets the structure within organic food shops is changing and the individual forms should be regarded separately (organic food shops and organic supermarkets).

Complete analyses of single products are not feasible, in many cases they are also not meaningful. Analyses of product groups or of a single product representative of a group seem to be more useful. Several organic products are interesting to look at because of their product specific qualities and technical properties. This mainly refers to meat and other products made of animals, since organic consumption is often correlated with animal welfare and low meat consumption. None of the studies considered the market of organic cheese, or its production or distribution. Distribution structures of pork were examined by Barhdt et al. (2002b) and Löser and Deereberg (2004). The distribution structures of beef were also examined by Barhdt et al. (2002a). Schulze et al (2008) explored the pros and cons of the distribution of organic meat through organic food shops. An overlapping and updated study of organic meat is lacking. Pros and cons of several distribution channels should be looked at according to Schulze et al. (2008). Buder and Hamm (2011) concluded, using analyses of single product groups, that there are gaps in the distribution of organic meat and products made out of meat, and that conventional quality products are often bought by organic consumers.

The only study concerned with brands and labels was published by Reuter (2002): an analysis of the trademark BioBio by the discounter Plus. Comparable studies for further trademarks for organic food should be made. The distribution of traditional organic labels such as Demeter and Naturland in Germany was not considered in any study. Their distribution policy and the selection of distribution channels might be an interesting question, as the changes in distribution structures also occur to them. In practical business an exhaustive discussion about selective distribution policy is taking place and is not being reflected by research.

None of the 64 studies considers the logistical part of distribution. This topic should be explored as it is a critical to decisions in distribution policy.

4.8 *Out-of-home consumption (OHC)*

This chapter analyzes the field of out-of-home consumption of organic food. According to Steinel (2008) the notion of out-of-home catering refers to all acts of eating which take place outside one's own home without any food being brought from home.

The out-of-home industry may be divided into different sections which may be clearly differentiated by different properties, e.g. the degree of their concept configuration. To date catering at schools, cafeterias, staff restaurants and canteens, hospitals and individual gastronomy have been investigated scientifically.

Studies relevant to this research project were published between the year 2000 and spring of the year 2011 and deal with the offer of organic food in the above mentioned locations. One study was based purely on a literary review, which is why it was not included in the analysis. Overall, 16 studies were included in the investigation of research deficits in out-of-home catering.

4.8.1 Subtopics of identified studies on OHC

A major part of the studies (n=10) did not treat a specific area of out-of-home consumption but analyzed several catering possibilities as shown in Table 32. Spiller et al. (2003) dealt with catering in cafeterias, canteens as well as individual gastronomy. Gleirscher (2005), Kromka et al. (2004), Kuhnert et al. (2011), Nieberg and Kuhnert (2006), Nölting and Boeckmann (2005), and Schäfer et al. (2009) also analyzed several areas of out-of-home consumption.

Seven studies treat the inclusion of organic food school catering, making it the most frequently analyzed area of communal catering. However, it is remarkable that other child care institutions have so far only been studied once. Seven studies deal with individual gastronomy whereby six refer to the classical service gastronomy. Two studies included in the category “other” address the topic of sustainability in out-of-home consumption.

Table 32: Identified studies on OHC divided into subtopics

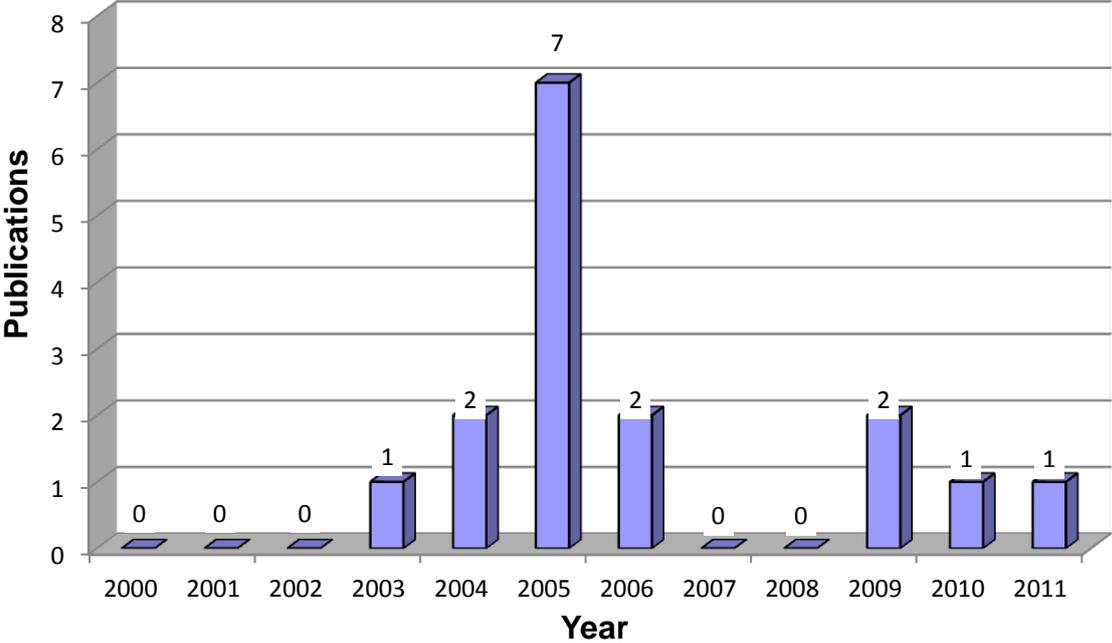
Focus of studies		Number of studies	Studies conducted in Germany
Communal Food	Old people's home	2	2
	Catering	1	1
	University cafeteria	4	4
	Prison	1	1
	Canteen	3	3
	Kindergarten	1	1
	Children's home	1	1
	Day-care center	1	1
	Hospital	4	4
	School cafeteria	7	6
Care center	1	1	
Individual Food	Service catering	6	5
	Event catering	0	0
	Retail gastronomy	0	0
	System catering	1	1
	Travel catering	0	0
Other	Communal food general	1	1
	Individual food general	0	0
	OHC general	2	2
	Other	2	2

Source: Own illustration

4.8.2 Publications on OHC according to year and involved countries

When considering the year of publication it is remarkable that no study relevant to the field of out-of-home consumption was published before 2003. Most studies concerning organic food in out-of-home consumption were published in 2005 (n=7). No studies were again published in 2007 and 2008. Only in 2009 have scientists resumed research on this topic. The most recent study is of 2011. Figure 17 shows that no trend in the number of studies can be identified.

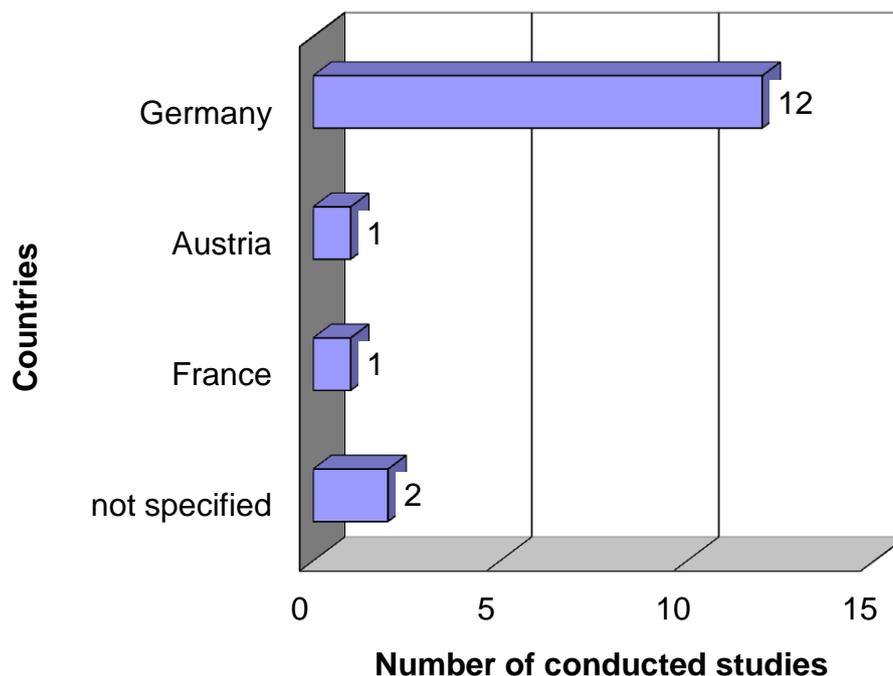
Figure 17: Publications on OHC (n=16) from January 2000 to June 2011



Source: Own illustration

When classifying the studies according to the country in which they were completed, it becomes obvious that Germany is the leading country when it comes to research in the area of out-of-home consumption (see Figure 18).

Figure 18: Countries involved in identified studies on OHC from January 2000 to June 2011



Source: Own illustration

Two studies treated out-of-home consumption with a regional focus. Nölting and Boeckmann (2005) only considered Brandenburg and Berlin. They analyzed threats to and opportunities for organic food. Kuhnert et al. (2011) investigated the gastronomy trade in Hamburg by interviewing catering companies and retail gastronomy, but did not furnish exact particulars as regards the overall number of interviews.

4.8.3 General OHC

The areas of out-of-home-consumption shown in Table 32 each refer to different target groups. In order to form segments which are as homogeneous as possible the studies will be differentiated according to the kind of out-of-home consumption they investigate. Those studies treating several distribution channels will be explained in detail in “other”.

The sub-theme “General out-of-home consumption” includes two studies which are limited to Germany. The factors influencing out-of-home consumption were analyzed by Nieberg and Kuhnert (2006). The authors explicitly investigated enhancing measures which were identified by using interviews, choice experiments, auctioning experiments and computer-based surcharge experiments. By using a convenience sample, the data of 178 consumers was collected and analyzed with the appropriate software and laddering maps. Nölting and Boeckmann (2005) also dealt with out-of-home consumption. However, it is not possible to exactly deduct from this study which sampling methods were used.

4.8.4 Communal food

Kromka et al. (2004) is the only study which considers board in residential homes for the elderly with regard to organic food in Germany. 123 systematically chosen rest homes provided the data within the framework of interviews. Factors influencing social and institutional food, also relevant for child care institutions, hospitals as well as other care and rehabilitation institutions, could thus be determined. The study by Gleirscher (2005) examined the field of public institutional catering in Austria. As survey and sampling methods were not explained in detail, the quality of this survey is difficult to evaluate.

To date there have not been any surveys regarding catering. Kuhnert et al. (2011) listed catering companies which were eco-certified, but did not examine them in detail or did not address the sampling methods in the study. Similarly, studies abroad that deal with organically oriented catering companies are missing.

None of the studies has so far exclusively explored company catering. But in three studies case examples were addressed. Spiller et al. (2003) analyzed Volkswagen AG and Bahlsen AG by using choice experiments and interviews. Rückert-John et al. (2010) also investigated the use of organic food in company catering, using exclusively interviews for which eight companies were selected through systematic stratification. Kromka et al. (2004) also considered company catering. . Using 147 canteens, this contribution includes the largest sample that allowed for the conducive and limiting factors for organic products in company catering to be worked out.

One out of four studies exclusively examined university cafeterias. Lüth et al. (2005) interviewed customers of six catering facilities and subsequently analyzed the answers by using conjoint analysis. The aim was to shed light on the positioning strategies of organic food in the cafeterias of the Studentenwerk in Göttingen and in Kassel. Kromka et al. (2004) examined 51 university cafeterias using interviews. As was the case with staff restaurants conducive and limiting factors for the use of organic food could be discerned. Kuhnert et al. (2011) also investigated university cafeterias but the methods used for the collection and analysis of the data remain unclear. On the other hand, a very extensive study was published by Rückert-John et al. (2010) in which university cafeterias were selected through systematic stratification and data collected by using interviews. Spiller et al. (2003) were the first to use a cluster analysis in order to cluster the guests of cafeterias who in a convenience interview had been asked to make choice experiments. It is remarkable that all studies published so far concern Germany.

There have not yet been any studies that have investigated organic board in prisons in some detail. However, using a written questionnaire which included 472 institutions, Kromka et al. (2004) among other things analyzed the use of organic food in 59 correctional facilities. The result was that no organic food was used.

124 kindergartens and 50 children's homes were selected by Kromka et al. (2004) via stratification for an interview and a guideline interview. Gleirscher (2005) also examined the field of child care but restricted his study to Austria.

Only one study examined the use of organic food in hospitals, i.e. Schuster and Nübling (2006), who questioned 1,500 patients in 26 hospitals on how they assessed conventional, compared to organic, food. Data was collected by systematically selecting the probands and analyzed by using scale patterns (Skalenbildung) and reliability analysis. Another two hospitals were analyzed by Rückert-John (2005) who used interviews. In addition 109 hospitals

were questioned by Kromka et al. (2004) who, as did Rückert-John (2005), collected by stratification (Schichtung) and a systematic selection. Gleirscher (2005) also dealt with hospital food on the basis of organic food but only included institutions in Austria.

To date only Heidebur (2010) and Nölting et al. (2009) have exclusively investigated catering at schools. Heidebur (2010) examined organic food at schools in Hesse and discussed inter alia conducive and limiting factors, as well as the status quo in Hesse. By using a convenience sample, 62 experts were selected and questioned afterwards. Nölting et al. (2009) also used expert interviews but failed to indicate their overall number. The study provides an overview of school catering in the whole of Germany with a focus on Berlin and North Rhine-Westphalia. In addition to conducive and limiting factors they also included political initiatives and campaigns in their research. The study could be considered as very comprehensive. Kromka et al. (2004) examined 51 all-day schools by using the same methods that were also used in other parts of Kromka et al. (2004). The survey method used by Kuhnert et al. (2011) for all-day schools is not clear. All these studies are confined to Germany. Only the study by Gleirscher (2005) analyzes the situation in Austria.

There are no national or international studies which extensively deal with the offer of organic food in care and rehabilitation institutions. Only Kromka et al. (2004) interviewed 65 German institutions from this industry inter alia in order to identify product focuses. As in previous parts of the study, the samples were identified on the basis of a layered and systematic selection.

4.8.5 Individual food

Lüth (2005) developed strategic groups and analyzed procurement channels in individual gastronomy. This research was based on interviews with 112 medium-sized restaurants in Germany. No information is provided as far as sampling methods are used. Spiller et al. (2003) investigated two cases of service restaurants. Another study on classical service gastronomy was done by Rückert-John (2010) in which companies were chosen systematically using layered selection methods and questioned in personal interviews in order to determine the factors which influence the offer of organic dishes. Kromka et al. (2004) evaluated the data of 48 service restaurants in the same manner. Callot (2004) questioned 108 consumers on French service restaurants in order to find out the potential of organic food in individual gastronomy.

So far Rückert-John et al. (2010) have published the only study which deals with the systems catering trade. The authors examined two companies whose assortment consisted to one hundred percent of organic food. Both offered take-away food and pursued the concept of fast cuisine. Although both were situated in big cities they failed in their efforts to expand.

No studies have yet been published so far in the areas of traffic, trade and experience gastronomy.

4.8.6 Other

Two studies focus on sustainability in out-of-home consumption. Strassner (2005) investigated the organic, economic and social perspectives of sustainability by analyzing several projects. Rückert-John (2005) analyzed the overall future potential of out-of-home consumption on a general basis by identifying food trends and food styles. In addition to that, sub-goals of a sustainable diet were shown using the three dimensions: ecology, economy, and sociology.

4.8.7 Research recommendation of the authors

The authors of the studies under consideration only gave few recommendations for further research as is shown in Table 33.

Table 33: Research recommendation of the authors on OHC

Factors that sensitize the responsibility
Further research on including organic products
Identifying structural gaps

Source: Own illustration

4.8.8 Research gaps based on knowledge analysis

Overall, only a small number of studies covered the topic organic food in out-of-home consumption. In Germany there is still a great need for research as hardly any representative research results have been published so far. However, the existing studies are methodologically demanding, e.g. by sophisticatedly using and combining methods. Moreover, several studies, i.e. Lüth (2005), Rückert-John (2005), Kromka et al. (2004) are based on large samples. Nevertheless, the current state of research with respect to organic food in the out-of-home market is unsatisfactory, especially considering the growing importance of this segment (according to estimates, approximately one third of the overall turnover). Whole areas such as the increasing range of snacks offered by artisanal food producers, i.e. bakeries, butchers, etc., are missing. Other important fields such as system gastronomy have only been investigated in a very marginal manner. Having said that, there is also a research deficit in the field of conventional out-of-home consumption. And what is more, after the ending of the activities of CMA³, reliable basic data of the market situation is missing, which makes an evaluation even more difficult. So far enormous research gaps exist because there have not been any representative international research works. Moreover, the identified studies are very heterogeneous which makes it impossible to compare them in order to gain an overall representative image.

In future the individual marketing channels of out-of-home consumption should be investigated separately as there are different groups of consumers who use the food offer in different situations.

³ Central marketing company of the German Agriculture with limited liability (Centrale Marketing-Gesellschaft der deutschen Agrarwirtschaft mbH)

5 Online survey and expert workshop

An online expert survey as well as an expert workshop was conducted as a completion of sighting and analyzing the relevant literature within the scope of the knowledge analysis. This chapter describes the two approaches and the resulting outcomes.

5.1 Online survey

5.1.1 Conduction of online survey

For the purpose of the online survey, a questionnaire with open ended and closed ended questions was designed. The closed ended questions, conducive to requesting general information about the company the interviewees were working for. Via open ended questions, the interviewees had the chance to indicate where in the field of price, product, communication, or distribution policy, as well as in the field of organic consumer behavior and out-of-home consumption, they perceived research need.

5.1.2 Participants of online survey

Survey participants were obtained via three approaches. Selected scientists and practitioners from the organics sector were contacted via e-mail and asked to participate in the online survey via clicking on an attached link. The BNN agreed to spread the survey link via its newsletter which addresses about 250 members (producers, retailers, importers and distributors of organic products) and its homepage. The link on the digital questionnaire was active from 19.08.2011 until 01.10.2011 and was clicked on by 124 internet users. 72 persons participated in the survey, whereof 25 persons completed the survey accurately. Therefore, the sample is limited to 25 persons.

Almost half of the participants stated that they were working in wholesale. Six participants were working for producers and four stated that they are operating for associations. Beyond that, two scientists and consultants as well as two employees in civil service participated. Agricultural holdings and retail dealers were not amongst the participants. The size of the organizations the participants were working for varied between 3 and 2,300 employees. Most of the subjects (n=9) indicated a number of employees of between 21 and 100, six stated that the number of employees was between 100 and 200. Seven of the interviewees stem from rather small companies whose number of employees does not exceed 20. The second largest company included around 460 employees.

18 respondents indicated that they deal with marketing. 14 stated that they are responsible for sales or advertisement of organic products. The largest part of respondents works in strategic or operational marketing of organic foods. Eleven participants were working in the field of quality management and four in the human resources department. 10 respondents were involved in the procurement of organic products, seven in production. Amongst the 25 interviewees, five were in management.

5.1.3 Results of online survey

The results of the online survey are summarized below.

The multitude and variety of answers to the question “Where do you perceive the concrete need to do further research around the organic consumer?” implies a persisting interest for organic consumers. Regarding the number of answers on specific aspects, the interest regarding young buyers which are potential organic consumers, seems to be considerable. The “organic socialization” of the nowadays 15-30-year-olds is mentioned, and a forecast into the future is demanded. The exploration of various trends is attached to this aspect. Thereby, the future role of LOHAS and the expectations of organic consumers towards products and companies in ten to 20 years are emphasized. A further gap that was identified with the help of the online survey is the examination of the influence of cultural change and education on organic consumption. This topic was until now only analyzed in conjunction with sustainability.

Furthermore, the question was posed, if an organic food product should actually differ from a conventional product as regards taste. Alongside, the classic topics as analysis of purchasing motives, especially regarding regional origin but also referring to the change in purchasing motives in the course of time are mentioned.

Many suggestions on the field of product policy were also given. Comments were made on the meaning of an artisan manufacturing quality also so as to demarcate from conventional products, the consumer interest in sustainable packaging and the question, in how far consumers differentiate between trademark and manufacturer’s brand and between association labels and EU organic label. Finally, the question was posed, if rather a single brand or a multiple brand strategy is successful for the organic market.

Regarding price policy, the price perception was discussed several times. The participants were interested in the price perceptions of organic consumers and which price knowledge they have. Some participants wanted to know how high the real, and not the stated, willingness to pay more for an organic product is. Price positioning of organic foods interested the participants especially compared to price positioning of other food products, like Fair Trade products or conventional products. Research gaps on price differentiation were only mentioned in connection with a two brand strategy as regards different distribution channels.

On communication policy, various suggestions for further research fields were given. The praxis was especially interested in how the added value of organic food products can be communicated to consumers, also in order to thereby justify the higher price. Further topics were the adequacy of different communication channels, especially online communication and the communication via social networks such as Facebook. Research results on inter-branch communication of organic foods were demanded, as well as exploring the question, how public relations can be designed in a credible manner and in how far education can be used as a communication tool. One participant asked concretely: How can cognitive and activating processes be used in order to raise knowledge and awareness as best possible?”

Furthermore, the question was raised several times, how the characteristics of organic plus products can be communicated in a successful manner, and generally, which communication messages organic consumers wish or expect. Research need was also perceived in the field of marketing effectiveness research.

Regarding the research questions on distribution policy, five participants stated that they wished for more information on logistics in the form of the utilization of distribution networks

and regarding the acquisition of organic foods. Another range of topics is about the topic regionality as well as about the ecologic assessment of distribution and transport of organic food products.

The low level of research in the field of out-of-home consumption as regards the use of organic food products is reflected in the various research demands of the participants. Those range from very basic questions, such as to what extent organic products are suited for the application of out-of-home-consumption, or if the concept of fast food is connectable with the consumption of organic food and if at all a demand exists to more specific questions of marketing. Several participants found that logistics of acquisition and distribution was the major weakness of using organic products in out-of-home consumption. They also found that questions of economic feasibility were questions that should be spotlighted.

5.2 Expert workshop

5.2.1 Conduction of expert workshop

After the literature analysis and online survey, the processed results were presented to ten experts from praxis and science within the framework of a workshop. The research gaps that were identified in knowledge analysis were discussed after the presentation of each topic. Furthermore, the workshop participants had the chance to name further research gaps. After each discussion round, the participants were asked to judge the relevance of all identified gaps as regards future research activities.

5.2.2 Participants of expert workshop

The workshop took place in Göttingen on the 11.10.2011. From 30 invited participants, nine scientists from diverse German research organizations and one representative from retail took part.

5.2.3 Results of expert workshop

The results of the expert workshop are summarized in the following.

As regards the general topic of consumer behavior, the question of whether it would make sense to examine the relevance of determinants for organic consumption in longitudinal analyses was mentioned. A corresponding examination of the organic intensive buyers and the organic occasional buyers would point out a change in consumption behavior at an early stage. A further point of discussion was the significance of egoistic purchase motives compared to altruistic values. The experts furthermore identified sociological criteria, especially the effects of networks on organic consumption, as potential determinants which were hardly noticed in past research.

The experts stated that a promising field, beyond international comparisons between determinants of consumption behavior, was further analysis of the aspects sustainability and regionality. The supply of organic foods in retail should be especially investigated. Further-

more, the participants found that a situational and very life-like analysis of consumer behavior was worth researching. Additionally, the experts saw potential in a more precise consumer segmentation since intensive buyers are in fact easy to identify, whereas occasional and infrequent buyers are difficult to detect. As the only new topic, it was encouraged to scientifically examine the topic of food wasting, which is currently strongly represented in media.

Regarding product policy, the package design was identified as the most important future research topic. As regards range policy, it was discussed whether the product range in the organic sector should vary from the conventional ones and if the same products (e.g. the same apple varieties) should be supplied. Furthermore, the standardization of organic products was mentioned. It was discussed, to what extent organic products could be standardized at all, if that was desired by organic trade and which role the retail plays here.

On price policy, several new topics were mentioned. Price oriented quality judgment was intensively discussed. Here, the experts wanted to know in the case of which food products a quality judgment takes place based on the price as is the case with wine, and to what extent.

As regards reception and processing of price information, the participants especially discussed price knowledge of consumers. During the discussion, it was several times mentioned that price knowledge often lacks and that the price is perceived as the major purchasing barrier because the prices are often estimated wrongly. Price positioning and price differentiation were also perceived as relevant topics. The experts rated the WTP for several product groups in comparison and the life cycle oriented price policy as a little less important.

With regard to communication policy, four themes were perceived as insufficiently explored: applicability of communication measures depending on communication messages, effects of advertisement concepts and campaigns, communication of the high price for organic food and effect of the variety of brands and labels. Furthermore, the meaning of the “noise floor” was discussed amongst the experts. For the experts, the “noise floor” was the communication of organic foods in media and the perception of organic foods in the population in general. The experts wanted to know what effect this noise floor has on purchasing behavior, especially when compared to the effect of the used communication measures. Although online communication was rated as less relevant compared to the already mentioned research topics, it was also identified as a research gap.

Besides these topics, the application of societal multipliers and the application of mobile scanners and of apps on smartphones were discussed by the experts. As regards distribution policy, the distribution via weekly farmers’ markets and the retail was rated as little explored, especially direct distribution from farmers to retail. As an example, the establishment of shelves that are supplied by regional providers were mentioned. Another aspect that was rated as little explored is the effect of the presentation of products at the POS. The difference between the perception of meat and meat products at self-service counters compared to serve-over counters were especially discussed. Research on the credibility of specific distribution channels as a way of marketing organic products was displayed as insufficient. The point of purchase choice of young consumers was rated as a promising research topic.

As to the topic out-of-home consumption, several basic questions were raised, which have so far not been clarified with the help of scientific approaches:

- Which significance in out-of-home consumption does the German gastronomic culture have?
- Should meals based on organic products be geared to conventional products as regards their characteristics?
- Is organic an added value that should only be reserved for meals of higher quality?
- Should organic products at all be employed in fast food or catering?

Furthermore, the influence of organic products in child care, schools and refectories on the later dietary habits of children and adolescents should be examined. Also the role of politics and the freedom of decision of the operators of public institutions regarding the application of organic foods were mentioned as being important.

6 Aggregation of the results

The following table gives a structured overview of conclusions drawn from the above presented results and gives proposals for new research approaches for the BÖLN.

Table 34: Priority topics for call for proposals by the BÖLN – research field marketing

Proposal	Further remarks on the topic	Evaluation of the state of the art	Reason for the topic's relevance
Determinants of organic consumption: Influence of network effects on organic consumption	<ul style="list-style-type: none"> • Marketing-sociological study • Survey of interaction effects between consumers 	<ul style="list-style-type: none"> • So far not treated • Strong influence of opinion leader processes on purchase behavior is expected, methodological complex 	<ul style="list-style-type: none"> • Identified research deficit • Very high relevance in workshop • Especially relevant for WEB 2.0 communication
Determinants of organic consumption: Cut set between organic purchasing motives and other sustainability motives	<ul style="list-style-type: none"> • Necessary of positioning of organic products • Should organic producers use other sustainability labels (climate, animal welfare etc.)? 	<ul style="list-style-type: none"> • So far only indirectly analyzed 	<ul style="list-style-type: none"> • Identified research deficit • Very high relevance in workshop • Important topic for development of BÖLN
Determinants of organic consumption: Longitudinal studies for organic purchasing motives	<ul style="list-style-type: none"> • Praxis is confused by diversity of results • Regular and comparable data needed • Enables trend analysis 	<ul style="list-style-type: none"> • No longitudinal study known (approach recognizable in Bruhn 2008) • Different study designs 	<ul style="list-style-type: none"> • Identified research deficit • Workshop result: trend research with very high relevance for companies

Market segmentation: Identification of consumer segments based on sensory preferences	<ul style="list-style-type: none"> • Taste expectations of different organic consumer types • Taste experiences • Sensory marketing recommendations 	<ul style="list-style-type: none"> • So far only one ongoing study 	<ul style="list-style-type: none"> • Identified research deficit • High relevance in workshop
Product policy/ Packaging design: Consumer interest in sustainable/ green packaging	<ul style="list-style-type: none"> • Ability to compete against conventional products, competitive advantage • Increase of demand by satisfaction of consumer needs 	<ul style="list-style-type: none"> • Central research deficit 	<ul style="list-style-type: none"> • Packaging has high effect on purchase behavior • Rated as highly relevant in workshop • Current market development
Product policy/ Labeling: Consumer perception of the obligatory EU organic label versus national labels and labels of associations	<ul style="list-style-type: none"> • Does the usage of more organic labels make sense? • Cognitive dissonances 	<ul style="list-style-type: none"> • Important research deficit, since only one study directly after introduction of new EU label, one study before introduction 	<ul style="list-style-type: none"> • Identified research deficit • Product labeling in general high relevance in workshop
Product policy/ Product innovations: Identification of innovative organic food	<ul style="list-style-type: none"> • Relevant concerning a stable an increasing organic demand • Guaranteeing and increasing competitiveness with innovative conventional products 	<ul style="list-style-type: none"> • So far real organic innovations not treated • Case of Bionade implies potential 	<ul style="list-style-type: none"> • Relevance in workshop • Identified research deficit • High market relevance
Price policy/ Price perception: Consumer perception and knowledge of prices for organic food	<ul style="list-style-type: none"> • Price is main barrier of organic food • Price psychological effects little analyzed 	<ul style="list-style-type: none"> • One study on price knowledge known so far 	<ul style="list-style-type: none"> • Mentioned in online survey • High relevance in workshop • Identified research deficit

Price policy/ Price differentiation: Possibilities to implement price differentiations based on different consumer segments	<ul style="list-style-type: none"> • Reach new consumers • “Price access“ (Discount) Organic products and branded products 	<ul style="list-style-type: none"> • So far not treated 	<ul style="list-style-type: none"> • High relevance in workshop • Identified re-search deficit
Communication policy/ Online communication: Usage of online communication as communication tool for organic food	<ul style="list-style-type: none"> • Online marketing more important for future • Offering of information regarding the extension of organic agriculture beyond organic consumers 	<ul style="list-style-type: none"> • Only three explorative studies known 	<ul style="list-style-type: none"> • Mentioned in online survey • Relevance in workshop • Identified re-search deficit • Current market relevance
Communication policy/ Communication messages: Design of messages of communication of higher prices for organic food	<ul style="list-style-type: none"> • Price is main barrier of organic food • Knowledge of consumers about organic agriculture very little 	<ul style="list-style-type: none"> • Effect of messages respectively information about organic agriculture so far not treated 	<ul style="list-style-type: none"> • Mentioned in online survey • High relevance in workshop
Communication policy/ Marketing effectiveness: Analysis of effect of different communication tools	<ul style="list-style-type: none"> • Very high significance for consumer acquisition and customer loyalty 	<ul style="list-style-type: none"> • Only few tools treated (sales promotion, online communication, public relations) • Implementation respectively measuring effect of other communication tools so far not treated 	<ul style="list-style-type: none"> • Mentioned in online survey • Very high relevance in workshop • Identified re-search deficit
Distribution/ Sales channel: Credibility of organic products in different sales channels	<ul style="list-style-type: none"> • Trust research • Identification of different consumer types • Survey of possible cognitive dissonances • Need for selective sales strategies 	<ul style="list-style-type: none"> • Organic in discounters so far not analyzed • Perceived island position attributes of natural food store is unclear 	<ul style="list-style-type: none"> • Identified re-search deficit • High relevance in workshop
Distribution/ Sales channel: Strengths and weaknesses of organic private labels in different distribution channels	<ul style="list-style-type: none"> • Survey of status quo • Analysis of structure of supplier • Positioning of private labels 	<ul style="list-style-type: none"> • Private labels of retailers have central sales relevance 	<ul style="list-style-type: none"> • Increasing relevance of private labels in all distribution channels • Brand policy so far stepmotherly treated

Out-of-home consumption: Analysis of status quo	<ul style="list-style-type: none"> • Rather small descriptive analysis of market and competition • For different segments of out-of-home market 	<ul style="list-style-type: none"> • No current overview of market 	<ul style="list-style-type: none"> • Differentiated market, little clear • Also for the conventional market hardly analyzed
Out-of-home consumption: Is organic adaptable to Fast-Food?	<ul style="list-style-type: none"> • Is there a consumer segment for "Good-Fast-Food" • Willingness-to-pay and product expectations 	<ul style="list-style-type: none"> • Organic fast food not analyzed 	<ul style="list-style-type: none"> • Central market segment • Fast market penetration possible by centralized provider (Franchising) • Large number of small enterprises without access to market research
Overall: Praxis transfer by scientific journalists	<ul style="list-style-type: none"> • Regular re-elaborating of new BÖLN-projects by scientific journalists • Short articles of 1 page for learned journals 	<ul style="list-style-type: none"> • Research transfer due to diversity of research results for practitioners unclear 	<ul style="list-style-type: none"> • Results of workshop

Source: Own illustration

7 Abstract

The present paper documents the methodology and results of the project Consumer purchase and consumption behavior regarding organic food – Analysis of the state of the art. After a short introduction where the goals and aims of the project as well as the approach, steps and the structure of the literature analysis are presented, the presentation of the results of the literature based knowledge analysis follows. The presentation of the results, which is the focus of the paper, takes place on a methodological as well as on a contextual level and is geared to the subtopics in which the single topics were divided. An overview of the chronological sequence and the countries of the single studies is put in front of each subtopic. The result chapters conclude with a listing and judgment of the research authors' recommendations. In the next step, the methodology and the results of the online interview and the workshop are shortly presented. An aggregation and discussion of the results with a view to future research is performed in chapter 6.

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