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Mature and emerging organic markets: Modelling consumer attitude and behaviour with Partial Least Square Approach

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Abstract

Although the organic food sector has been the subject of research for around 20 years, little is known about consumer behaviour when comparing developed and emerging organic food markets using causal research models. Thus, by developing a behavioural model based on the Theory of Planned Behaviour (TPB), the aim of this research article is to investigate the main determinants of organic food consumption in a mature (Germany) and an emerging (Chile) organic market. Subjects aged 18 or above were consulted about their attitudes towards, intention to consume, and stated consumption behaviour of organic food via an online survey in both countries. Items related to social norms and perceived behaviour control (PBC) were also included in the assessments. Exploratory factor analysis was used to identify key constructs in the proposed research model. Afterwards, a partial least squares (PLS) approach was used to assess causal relationships, and significant differences between countries were also tested. The proposed behavioural model was suitable for predicting individuals' behaviour in Chile and Germany. Nevertheless, the findings indicate that the model was able to explain more variance in Germany than in Chile. In line with the TPB, intention to buy organic food is a good predictor of behaviour. In addition, both altruistic and egoistic arguments are significant drivers of attitude towards and intention to buy organic food in Germany. In Chile, only altruistic motives have a significant impact on consumer attitude and intentions. The results of this study have implications for marketers and policy-makers in both countries. The use of altruistic arguments in organic food marketing is a key aspect that should be considered in communication campaigns to increase organic food demand in both countries. However, along with the evolution of the organic market in Chile, egoistic aspects related to organic consumption might also gain importance in determining consumer behaviour, as is already the case in Germany. In both countries, information should be comprehensive and communicated by a credible source to enable growing consumer trust in the organic food sector as a sustainable alternative to conventional food supply. The barriers that deter organic food consumption have to be addressed by marketers and policy-makers with great attention; these include not only information but also the lack of availability, especially in Chile, and scepticism about organic food in Germany.

K**eywords**: *Organic food; Consumer behaviour; Partial least squares; Germany; Chile*
JEL-classifications: *Q 13; Q18*
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1. Introduction

In the contemporary food industry, consumer choice behaviour is driven by a number of complex lifestyle factors. These include convenience aspects, nutritional- and health-related motives, product sensory attributes and price, but also environmental and ethical aspects [1-3]. The focus of consumers on these aspects has encouraged competition within the food industry, and consequently the differentiation of products and processes along the food supply chain as a marketing strategy to preserve or increase market share. As a result, numerous 'non-conventional' food alternatives have been released in the market, supported by claims such as organic farming, fair trade or animal welfare. Among these novel food product attributes, the organic industry has grown notably since the late 1980's. The term 'organic food' is based on the definition of organic agriculture by the International Federation of Organic Agriculture Movements (IFOAM) and the European Union (EU) organic regulation (EC) No 834/2007. In this sense organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Official statistics indicate that sales of organic food and drinks around the world reached 63 billion US dollars in 2011, with demand highly concentrated in North America and Western Europe [4].

The increasing demand for organic food has motivated scholars to investigate the reasons behind consumer behaviour. Although the number of studies modelling consumer behaviour in the organic market is considerable [5, 6], the debate on determinants of organic food consumption provides conflicting evidence. In this context, two main aspects have characterised research concerning organic food consumption: (i) investigations focus mainly on analysing consumer behaviour in mature organic markets and studies considering emerging organic markets are limited mostly to Asian countries [7-13]; and (ii) cross-country studies comparing mature and emerging organic markets are quite rare [14, 15].

Studies have revealed that most consumers have a positive attitude towards organic food, but the share of people purchasing organic food regularly is still low [16]. The demand in mature markets (e.g. Germany, UK, Denmark) is today dominated by occasional consumers who are not only motivated by altruistic aspects of organic food consumption, but to a maybe even greater extent by egoistic aspects such as the perceived greater healthiness, nutritional performance and better taste of organic products [17-19]. On the contrary, the pioneers among the organic consumers with their rather altruistic motivation remain a stable but smaller segment in mature organic markets [16].

Against this background, some questions arise: Is there a difference in consumer behaviour and motivation of organic food consumption when comparing mature and emerging organic markets? Are organic consumers in mature organic markets today more motivated by egoistic aspects of organic food, and organic consumers in emerging markets more motivated by altruistic aspects? Which factors can help to explain the potential differences?

Using the Theory of Planned Behaviour (TPB) [20, 21] as theoretical background, and consumer survey data, this study aims to contrast consumer behaviour and determinants of organic food consumption in a Western Europe mature organic market (Germany) and an

emerging organic market in Latin America (Chile). Partial least squares analysis (PLS) is used to estimate the proposed theoretical model. Based on the empirical findings, this investigation intends to provide guidelines for retailers, marketers and policy makers to define suitable strategies in each market. Furthermore, this research contributes to the on-going discussion about determinants of organic food consumption.

2. General trends in the organic food market

The global market for organic food is continuously growing, despite the slowdown of the global economy during the past few years. Official statistics estimate that sales of organic food and drinks around the world reached 63 billion US dollars in 2011 [4], which means a 6.4% increase compared to 2010. Demand is highly concentrated in North America and Europe (96% of sales), while in Asia, Latin America and Africa, organic production is mainly export-oriented [4]. The US has the largest organic food and drink market in the world. In Europe, Germany has the largest market, whereas Denmark, Austria and Switzerland have the highest market shares. With per capita expenditures of 177 Euros per year, the Swiss led the world in organic purchases in 2011 [22].

2.1 Organic food market in Germany

Germany has the largest organic market in Europe, with a market growth of 9%, and revenues rising from 6.02 to 6.59 billion Euros between 2010 and 2011 [22, 23]. Although Germany has the highest organic sales in the EU, the market share only represents around 4% of the total food market and the per capita consumption is around 81 Euros per year [22]. Organic foods are increasingly being sold by German conventional supermarkets and discounters. Additionally, approximately 2,400 specialised organic shops and organic supermarkets sell solely organic products. The largest segments by production value of organic food in Germany are meat and sausage products (23%), dairy products (16%), baked goods (9%), and confectionery (8%) [24].

2.2 Organic food market in Chile

In some Latin American countries with stable economic performance, high growth in terms of gross domestic product (GDP) and a stable political condition (e.g. Brazil, Chile) there is evidence of a growing domestic demand for organic food, mostly in urban areas [25-27]. Although there are no official statistics on Chile's organic domestic market, local authorities estimate that about 20% of organic production is sold locally and the demand is growing by approximately 20% annually [28, 29].

According to the Chilean Organic Agriculture Association (AAOCH), in 2010, the total market sales of organic products were 27 million Euros, and in 2013 it is expected to reach 40.8 million Euros. From this estimation, only 1.5 million Euros can be attributed to local

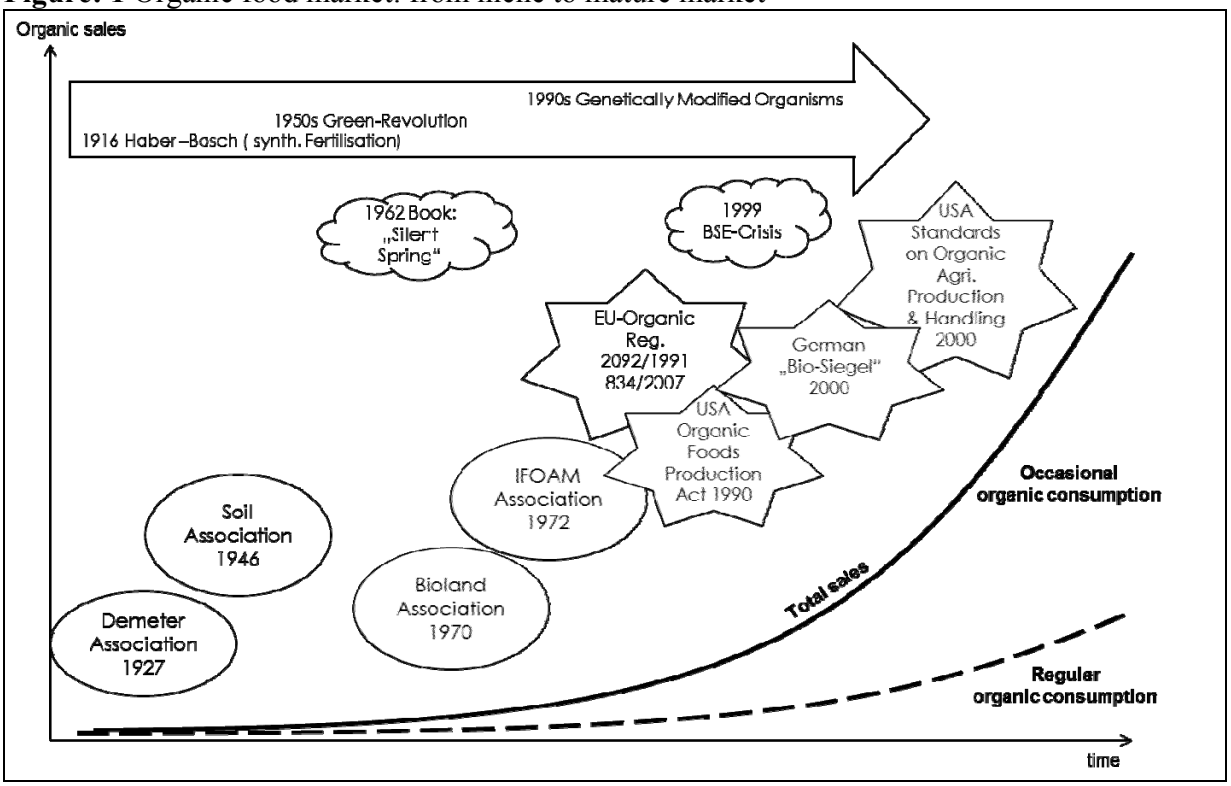
consumption [30]. The largest proportion of the organic land area is used for the production of berries (34%), grapes (31%), subtropical fruits (9%) and olives (8%) [26], which represent some of the competitive sectors within Chilean agribusiness that are focused on export. The domestic market contains a large variety of organic products such as fresh fruits and vegetables, olive oil, wine, herbal tea, spices and honey [26, 31]. The domestic market is mostly located in the capital city, Santiago, and other main urban areas such as Valparaiso. The main distribution channels of organic food are: conventional supermarkets, specialty shops, street fairs and restaurants [26].

2.3 Milestones in the development of the organic food market

Figure 1 displays key milestones associated with the development of the organic food industry. In the early stages of market development, farmers and farm associations played a pioneering role in the promotion of organic farming techniques, contributing with knowledge and experience on which the original organic principles (i.e. local production, free from chemical substances, environmental protection) were established. It is assumed that at this stage of development, early adopters of organic food based their preferences and choices on these underling organic principles, constituting a small niche market. During the 1960s and 1970s, the increasing consumer activism associated with concern about the environment [32] and the foundation of important organic organisations (e.g. IFOAM), which established the pioneers' private organic rules and standards, mark a second stage in the development of the organic market. However, it was not until the 1990s that organic food sales increased dramatically, mainly in the European market. Consumer distrust in the conventional food system due to a number of severe food scandals and scares (e.g. BSE / mad cow disease) and the formal recognition of organic farming as an alternative method of food production (e.g. EU Regulation 2092/1991) allowed this sector to leave the character of niche market in several countries. Later on in the 2000s, a series of events such as the globalisation of food markets, the establishment of stricter labelling programmes (e.g., national organic labels) and the adoption of organic products by conventional food distributors have reinforced the growth of the organic market.

Parallel with the expansion of the organic food market, marketers and scholars have focused their attention on changing consumer motivations accompanying this market growth. The available body of literature suggests that two major organic food consumer segments, i.e. occasional and committed or regular consumers, dominate the current organic market (see Figure 1). In this respect, and considering empirical evidence, occasional consumers represent the major market segment and regular consumers the smallest segment [17-19, 33]. Furthermore, most organic food sales come from consumers who switch between conventional and organic food alternatives [16]. Unlike early adopters of organic food, the reasons that motivate consumers to purchase organic food today apparently depend on the purchasing frequency. Regular consumers seem to be more motivated by ethical aspects while occasional consumers (so called switchers) focus more on food safety and health concerns when they purchase organic food [34, 35].

Figure: 1 Organic food market: from niche to mature market



General big changes in agricultural systems
Important foundations of organic associations
Event causing public discussion and changes in consumer behavior
Introduction of regulations / labels in most important organic markets (EU / USA)

Source: Own compilation 2013

The scenario and tendencies described above represent the situation of the majority of mature organic food markets such as Germany, UK and the USA. However, little is known about countries like Chile where the organic market is still in a niche phase. In Chile, the organic food sector is relatively new. Organic production started in the 1980s and is mainly focused on exports. In addition, the Chilean organic legislation (Law No. 20.089) has recently come into force in 2007, regulating production, processing and certification. Unlike industrialised countries, the Chilean food industry has been free from severe food crises (e.g. BSE / mad cow disease). Therefore, we may expect local consumers to perceive less risk in the food industry compared with consumers in industrialised countries affected by several serious food crises during the past decades. In this context, and if considering that the organic market in Chile is in an early stage of development, local consumers (early adopters) could be more motivated by ethical arguments than by health or food safety issues when purchasing organic food, regardless whether they are regular or occasional buyers of organic food alternatives. Indeed there is evidence of an increasing ethical consumption behaviour mainly identified in the higher income segments of the population [36, 37].

To analyse the differences between organic food consumers in a mature market (Germany) and an emerging market (Chile), both countries will be compared in the following with regard to consumers' attitudes and motivations towards organic food consumption, intended and stated purchasing behaviour as well as the barriers that might deter organic food consumption in both markets.

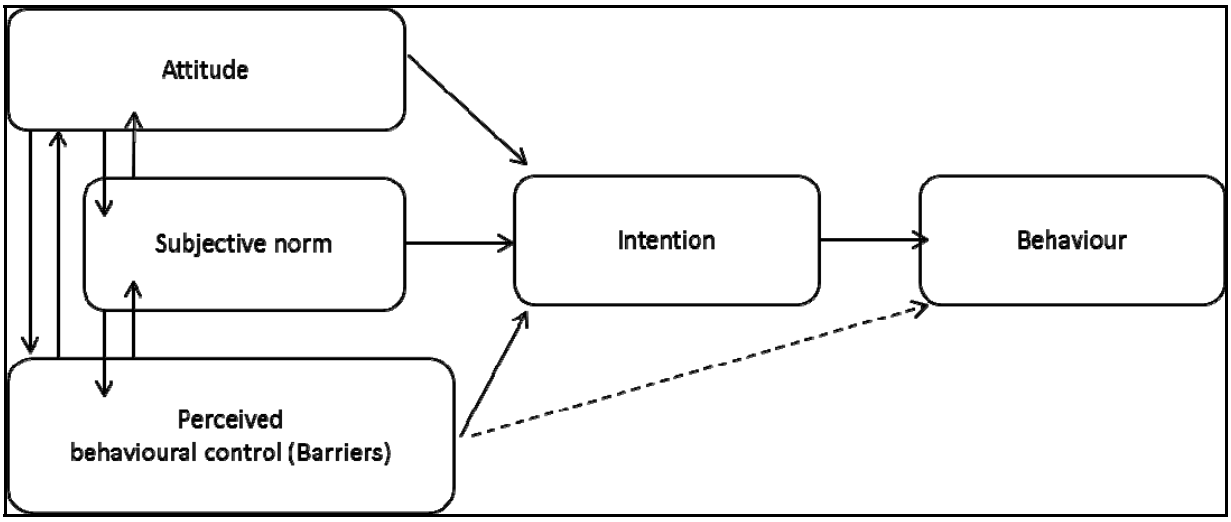
3. Conceptual framework and hypotheses

3.1 Ajzen's Theory of Planned Behaviour

The Theory of Planned Behaviour is an extension of the Theory of Reasoned Action (TRA) [38, 39]. Unlike the TRA, the TPB includes people's perceptions of obstacles to perform a determined action/behaviour [20, 21].

As shown in Figure 2, in the TPB, the core variable explaining behaviour is the individual's intention to perform a given behaviour. Intention is in turn shaped by three main determinants: the attitude towards the behaviour; people's subjective norms; and the perceived behavioural control (PCB) [21]. Underlying these three determinants are certain beliefs concerning the behaviour in question, i.e., behavioural, normative and control beliefs. According to this model, a person's behaviour thus is the result of a complex causal chain. Ajzen and Fishbein [40], however, emphasise that "this should be not taken to mean that people consciously review each step in the chain each time they engage in behaviour". This is relevant especially in the case of food shopping, which is commonly understood as a rather habitual behaviour.

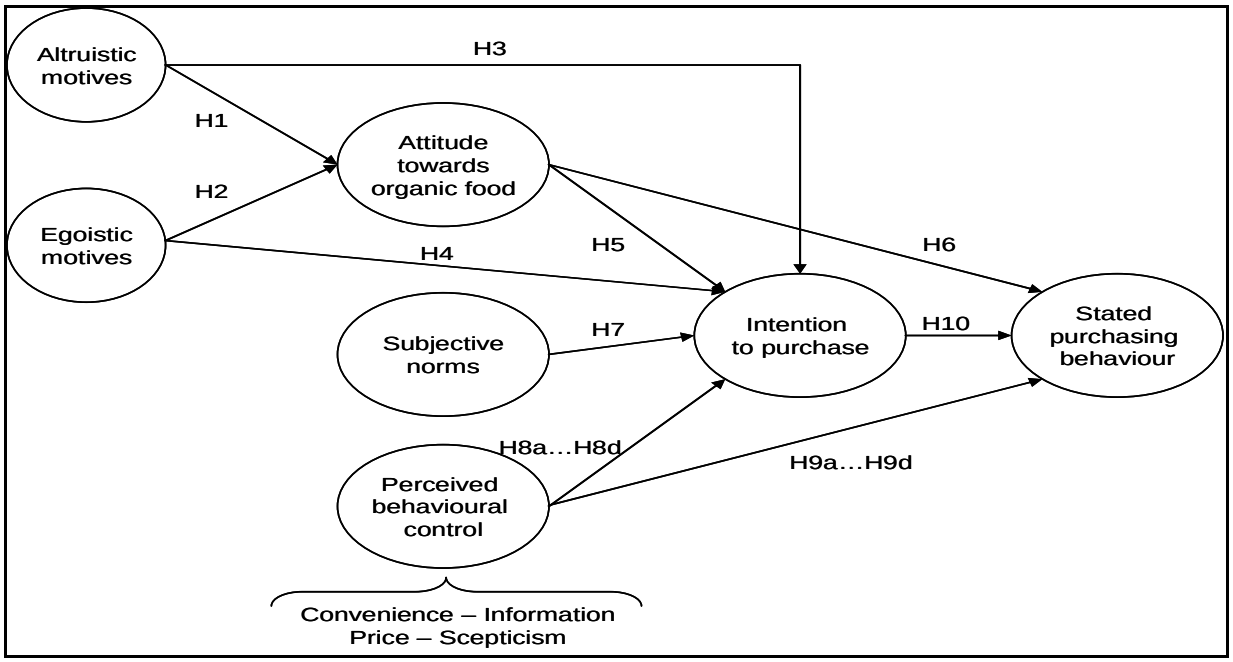
Figure 2 The theory of planned behaviour



Source: Own figure following Ajzen [21]

Following the logic of the TPB and after reviewing the literature on organic food consumption, the following model was developed:

Figure 3 Proposed research model for Germany and Chile



Source: Own figure 2013

The analysis in this study will focus on the possible differences between the main motives for organic food consumption between the mature organic food market in Germany and the emerging one of Chile.

Both altruistic and egoistic motivations for organic food consumption are important to determine organic food consumption [41-43]. Recently, a comprehensive study carried out in Germany [18] concluded that altruistic motives are the major factors affecting German consumer attitudes and purchasing behaviour, although the so-called egoistic motivations were not totally captured in this investigation. The specific impact of altruistic and egoistic motives on the attitudes and intentions regarding organic food consumption may vary among consumer groups, but also between different stages of organic market development as proposed here. In well developed markets such as in Germany, egoistic motivations such as perceived higher healthiness of organic food tend to dominate at least occasional organic food consumers' attitudes and intentions [17, 44- 46].

Applying Ajzen's TPB to organic food consumption, we assume that the more favourable consumer attitudes towards organic food consumption, the stronger their intention to buy such products [21, 47]. In this study, the attitudinal construct is operationalised as the perceived importance of organic food when purchasing food from the consumer's point of view. This measure has been identified as a good proxy for attitudes in a German context [18]. Similar evidence has been shown in Sweden [48].

Subjective norms are a construct that, according to Ajzen, includes normative beliefs. In this case, respondents are asked, e.g., whether their closest friends and or family support organic food consumption. Several studies show a positive and significant relationship between consumers' intention to purchase organic food and their subjective norms [7, 49-51].

Based on the TPB [21] it is found that behaviour can be predicted from intentions in a reliable manner. Some researchers have found that the relationship between intentions of buying organic food and the behaviour is positive and significant [52-54]. It is thus assumed that consumer intention will also influence stated behaviour of organic food consumption in Germany and Chile. However, there are several barriers, or as Ajzen calls them, perceived behavioural controls, reported by scholars that hamper behaviour and can also have an impact on individuals' intentions and behaviour [6, 18, 43, 55]. Following the body of literature addressing organic food consumption, the effect of premium prices, lack of information, scepticism and lack of convenience on consumer intention and behaviour is tested. A special focus of this study is to analyse these barriers hampering organic food consumption in the light of the different market developments in Germany and Chile. In other words, this study tries to answer the following question: does organic food consumption in an emerging market such as Chile suffer from the same barriers as in a mature market such as Germany?

Organic food is usually more expensive than conventional food, even in Germany, where discounters have entered the organic food market and sell organic food products at much lower prices than specialised organic shops. Apart from the well-known price barrier, there are also some more potential hurdles for organic food consumption. Lack of information and scepticism concerning organic food are in some cases interconnected due to the credence good nature of organic food. Although the national organic food label in Germany is now well known by at least 80% of the population, most consumers do not know its exact meaning [56]. This lack of information or knowledge among consumers may lead to exaggerated or unrealistic expectations towards organic food and consequently also to scepticism [57, 58]. In Germany, scepticism about organic food may also be caused by a series of miss-labelling scandals and fraud in the organic food sector (e.g. in a mislabelling scandal in spring 2013 about 700 000 tonnes of conventional food products were sold as organic; in the organic egg scandal a number of egg producers in Germany sold eggs as organic eggs but kept the hens under illegal conditions).

Besides this, also the practical aspects of organic food consumption may be a barrier to consumers who today spend less and less time in the preparation and cooking of meals [59,°60]. This study intends to test convenience barriers in form of time needed for buying organic food products, which might not be available in all shops, and in the time of preparing and cooking of such products that are usually associated with naturalness or a lower degree of processing [61].

Socio-demographic variables are not considered in this study as part of the behavioural intention model, but they will be presented for both countries and will be considered in the discussion section. Even though socio-demographic variables are usually assumed as important predictors of consumer behaviour, most of the studies provide conflicting evidence and suggest that these variables are not good predictors of food consumption behaviour especially in developed countries, [14, 45, 48, 54, 62]. Analysing a set of empirical

studies on the attitude-behaviour relationship, background factors such as socio-demographics have been found to have mainly indirect effects through mediating constructs on intention and behaviour [40].

4. Methodology

4.1 Research design and sample

A survey-based quantitative study was designed to conduct this research. For both countries, the target population corresponds to individuals of 18 years and older. For the analysis, online surveys were conducted in Germany (n = 283) and in Chile (n = 284) in July, 2012. The sampling and technical implementation was done in cooperation with professional consumer panel providers in both countries. The main advantage of online surveys is the access to large country-wide samples at limited cost; some of the disadvantages are the hypothetical bias and its effect on the interpretation of the results [63]. Sampling bias is another problem, especially in Chile, limiting the representativeness of the sample. Table 1 displays socio-demographic characteristics of the samples.

Table 1 Socio-demographic characteristics of the samples: Germany and Chile

Germany			Chile		
Variables	**Frequency**	**%**	**Variables**	**Frequency**	**%**
Gender			**Gender**		
Female	155	54.8	Female	134	47.2
Male	128	45.2	Male	150	52.8
Age (years)			**Age (years)**		
Average 42.4			Average 38.5		
Education			**Education**		
University	66	23.3	University	225	80
Non-University	216	76.3	Non-University	59	20.8
Monthly household income (€)			**Monthly household income (CLP)**[a]		
< 1000	24	8.5	≤ 400000[b]	52	18.3
1000-1900	61	21.6	401000-600000[c]	59	20.8
2000-2900	76	26.9	601000-1700000[d]	134	47.2
3000-3900	42	14.8	> 1700000[e]	39	13.7
> 4000	32	11.3			
No answer [b]	48	17.0			

[a] CLP: Chilean currency (Chilean peso). Average currency exchange (November 2012): €1= CLP 620.4 (Central Bank of Chile, http://www.bcentral.cl/index.asp).
[b] The option 'no answer' regarding the income was included only in the German questionnaire.
Source: Own data 2013

In both countries, the majority of the respondents live in urban areas. In Germany, 42.4% live in a city with more than 100,000 inhabitants, whereas in Chile, 60.9% live in the capital city, Santiago (5.4 m. inhabitants). Compared to official statistics in Chile [64], the

Chilean sample is biased towards higher income and education levels. The same is true for the German sample, especially with regard to education, although the bias is much smaller here.

4.2 Questionnaire design

The online questionnaire used in this study contained the same questions for each country, including specific topics related to attitudes, intentions and behaviour. The questionnaire was developed in English and then translated into German and Spanish. Back translation by native speakers ensured that the content in both questionnaires were the same. An online pre-test with 43 individuals was conducted in both countries before administering the final version of the survey. Feedback from this test improved the precision and consistency of some questions.

4.3 Statistical procedure

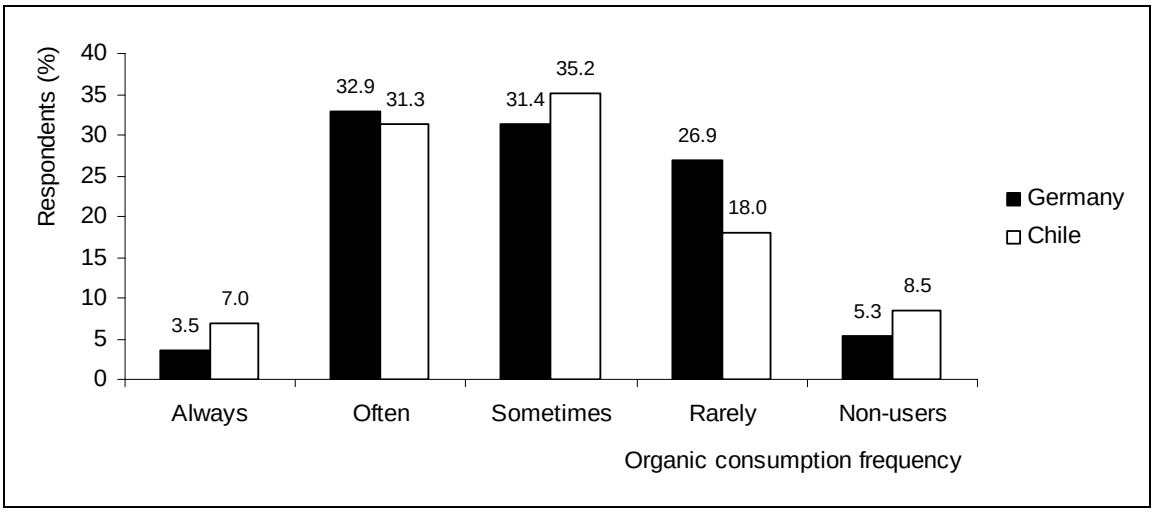
To analyse the data, the IBM® software Statistical Package for the Social Sciences (SPSS®) was used. To test for causal relationships in the proposed research model, the partial least squares approach (PLS) was used. This method is suitable for testing complex causal models with small sample size and has less stringent assumptions about normality of data than other methods [65-68]. PLS analysis involves two stages: (i) the evaluation of the reliability and validity of the measurement model; and (ii) the evaluation of the goodness of fit of the structural model [66]. The SmartPLS version 2.0 M3 [69] was used to analyse the proposed research model.

5. Results

5.1. Organic food consumption in Germany and Chile

Consumer behaviour was measured in this study considering the frequency of organic food consumption on a scale from 1 = always to 4 = rarely. The consumption frequency question was only applied to those respondents who stated that they have already tried organic food. The non-users correspond to 5.3% and 8.5% of the sample in German and Chile, respectively. Figure 4 shows the distribution of user categories in the Germany and Chilean sample. In both countries the majority of respondents buy organic food occasionally. In contrast, committed users represent the smaller share among organic food users.

Figure 4 Distribution of buyer categories in Germany and Chile



Source: Own data 2013

In Germany, the results show that most consumers are occasional consumers (sometimes + rarely 58.3%), while heavy (always + often) users are only 36.4%. The proportion of non-users is small. In Chile, the proportion of heavy users (38.3%) is a bit higher than in Germany, as well as the number of non-users. It is important to note here that we do not have any information about the quantity of organic food consumption in either sample, and that they are biased towards higher education and income so that general conclusions from these results cannot be drawn. In this respect, however, we consider that interesting lessons can be obtained from this study.

5.2 Evaluation of the measurement model

Table 2 displays the mean, standard deviation and indicator reliability of the measurement models for Chile and Germany.

Table 2 Mean, standard deviation and indicator reliability

	Chile			Germany		
Variables and measurement items	**Mean**	**SD**[a]	**FL**[b]	**Mean**	**SD**[a]	**FL**[b]
Altruistic motives [c] What are the reasons for you to consume organic food?						
Environmental protection	1.41	0.67	0.88	2.29	1.07	0.86
Resource saving (e.g. water)	1.48	0.78	0.85	2.63	1.15	0.88
Reduction of emissions (e.g. CO^2)	1.48	0.78	0.89	2.66	1.15	0.88
Not jeopardizing needs of future generations	1.50	0.75	0.86	2.65	1.12	0.88
Payment of fair prices for food producers	1.87	0.98	0.77	2.67	1.09	0.87
Improved working and living conditions for food producers	1.80	0.91	0.83	2.73	1.11	0.87
Improved animal welfare conditions	1.67	0.93	0.83	2.31	1.10	0.84
Egoistic motives [c] What are the reasons for you to consume organic food?						
Spend less	2.76	1.29	0.51	3.72	1.06	0.57
Fitness	2.10	1.22	0.75	3.24	1.17	0.77
Health care / protection	1.65	0.91	0.82	2.44	1.13	0.91
Better taste	1.89	0.95	0.77	2.48	1.09	0.87
Attitude [d] Thinking about food products, how important it is to you that the food has been produced organically?	2.00	1.10	1.00	2.26	1.03	1.00
Subjective norms [e]						
Thinking about your closest friends: do they support the consumption of organic food?	1.39	0.67	0.86	1.51	0.72	0.88
Thinking about your family: do they support the consumption of organic food?	1.60	0.85	0.83	1.82	0.90	0.80
Intention [f] Would you try to consume more organically produced food in the future?	1.37	0.60	1.00	2.52	1.14	1.00
Barriers [c] To what extent do these barriers apply to you when you buy organic food?						
I need to spend much more time for shopping. convenience barrier	3.22	1.35	0.78	3.32	1.11	0.92
I need to spend much more time for cooking / preparing. convenience barrier	3.73	1.19	0.57	3.67	1.06	0.70
Such products are not available where I usually go shopping. convenience barrier	2.43	1.24	0.86	3.69	0.99	0.74
I don't know how to distinguish such food products from conventional ones. information barrier	3.15	1.33	1.00	3.58	1.01	1.00
I think such products are too expensive. price barrier	2.27	1.13	1.00	2.36	1.05	1.00
I don't think that such products really exist. scepticism barrier	4.09	1.06	1.00	2.87	1.08	1.00
Behaviour [g] How often do you consume organic food?	2.68	0.86	1.00	2.91	0.97	1.00

[a] Standard deviation.
[b] Factor loading: Results of the PLS confirmatory factor analysis.
[c] 5 point Likert response format (1= fully agree, 2= agree, 3= partly agree, 4= do not agree, 5= do not agree at all);
[d] 5 point Likert response format (1= very important, 2= important,3= partly important, 4= not imp., 5= not imp. at all);
[e] response format (1= yes, 2= no, 3= I do not know);
[f] 5 point Likert response format (1= fully applies, 2= applies, 3= partly app., 4= does not app., 5= does not app. at all);
[g] 5 point Likert response format (1= always, 2= often, 3= sometimes, 4= rarely, 5= never)
Source: Own data 2013

The measurement model for both countries was built only with reflective measures. In each case, the majority of measures meet the commonly suggested criteria of 0.7 [66, 67], which supports the reliability of the indicators in all models. Construct validity is also supported, since the majority of constructs achieve a composite reliability and a Cronbach's value higher than the recommended threshold [66, 67, 70]. Similarly, the average variance extracted values of the constructs are above the recommended threshold of 0.5 [66, 67, 71]. Therefore, convergent validity is also supported (see table3).

Table 3 Assessment of the measurement model for Germany and Chile

		Germany			Chile		
		AVE[a]	**CR**[b]	**CRA**[c]	**AVE**[a]	**CR**[b]	**CRA**[c]
Constructs	**N° items**	**(>0.5)**	**(>= 0.7)**	**(>= 0.7)**	**(>0.5)**	**(>= 0.7)**	**(>= 0.7)**
Altruistic motives	7	0.75	0.96	0.95	0.71	0.95	0.93
Attitude	1	1.00	1.00	1.00	1.00	1.00	1.00
Convenience	3	0.62	0.83	0.72	0.56	0.78	0.63
Egoistic motives	4	0.63	0.87	0.80	0.52	0.81	0.71
Information	1	1.00	1.00	1.00	1.00	1.00	1.00
Intention	1	1.00	1.00	1.00	1.00	1.00	1.00
Price	1	1.00	1.00	1.00	1.00	1.00	1.00
Behaviour	1	1.00	1.00	1.00	1.00	1.00	1.00
Scepticism	1	1.00	1.00	1.00	1.00	1.00	1.00
Subjective norms	2	0.71	0.83	0.59	0.72	0.83	0.61

[a] Average variance extracted.
[b] Composite reliability.
[c] Cronbach's alpha.
Source own data 2013

Construct discriminant validity in both countries is also tested. Then the cross loading of the indicators (data not shown) and the Fornell-Larcker criterion [71] were inspected. Both analyses clearly reveal that the constructs show evidence of discriminant validity (see Appendix).

5.3 Causal model estimation

In order to assess the goodness of fit of the structural model in Germany and Chile, the R^2 as well as the algebraic sign and the significance of the path coefficients were used. In the case of Germany, the model explained 28% of the variance in attitudes towards organic food, 56% of the variance in intention to purchase and 53% of purchasing behaviour. Regarding Chile, the model explained 32% of the variance in intention to purchase and 17% of the variance in purchasing behaviour. In Chile, the explanatory power was poor in the case of attitudes (R^2 = 0.07). Recently, a study in the organic sector in Germany reported R^2 values of 46% for attitude and 42% for purchasing behaviour [18]. Studies using covariance-based methods in the organic sector report R^2 scores between 13% and 37% for attitude, 15% and 56% for intention to purchase, and 48% and 82% for behaviour [47, 52, 53]. Considering these values, the model in Chile poorly explains consumer attitude. However,

given the niche character of the organic food market in Chile, low explanatory power in this kind of model can be expected, as consumer attitudes may be in an early stage of formation.

The SmartPLS bootstrapping routine with 5,000 sub-samples and 283 cases for Germany and 270 for Chile was run to assess the significance of path coefficients [66]. Both direct effects and total effects (sum of direct and indirect effects) are presented in this study. Tables 4 and 5 show the results for Germany and Chile, respectively.

5.4 Differences in direct and total effects

Comparing the total and direct effects of the model for Germany and Chile, the following major differences are observed:

Egoistic motives such as health aspects or taste have a positive significant impact on German consumer attitudes towards organic food consumption, while for Chilean consumers this effect cannot be shown.

The lack of information is a barrier to organic food consumption in Chile where consumers do not know how to distinguish organic food from conventional food, but not so in Germany. For Germans, the most important barrier is instead the perceived scepticism against organic food, which influences not only the intention to consume such products, but also the stated consumption behaviour.

Apart from the above mentioned major differences between the analysed countries, there are further interesting results. Contrary to the findings in the literature review, convenience aspects of organic food consumption are neither important for German nor for Chilean consumers. Subjective norms have a significant influence on intentions in both countries, but the impact is larger in Chile compared to Germany. In both countries price is a significant barrier to organic food consumption, but only when looking at its influence on behaviour, for intention there is no significant influence.

Table 4 Path estimates, significance and differences between countries (direct effects)

									Group comp. test[a]	
Exogen.	**Endogen.**	**Chile**			**Germany**				***t*-param.**	***t*-param.**
variable	**variable**	**Path**	**SE[b]**	***t*-value**	**Path**	**SE[b]**	***t*-value**	**|diff|**	**≠ variances**	**= variances**
Egoistic motives	Attitude	0.05	0.08	0.60	0.35	0.08	***4.45***	0.30	***2.72***	***2.72***
Altruistic motives	Attitude	0.23	0.07	***3.35***	0.21	0.09	***2.45***	0.02	0.20	0.20
Egoistic motives	Intention	0.01	0.06	0.23	0.20	0.08	***2.62***	0.19	***1.86***	***1.85***
Altruistic motives	Intention	0.26	0.07	***3.52***	0.25	0.07	***3.34***	0.01	0.10	0.10
Attitude	Intention	0.15	0.07	***2.36***	0.28	0.06	***4.73***	0.13	1.47	1.48
Subjective norms	Intention	0.37	0.06	***5.95***	0.15	0.05	***3.30***	0.22	***2.78***	***2.80***
Convenience	Intention	-0.01	0.08	0.08	0.03	0.06	0.51	0.04	0.36	0.37
Information	Intention	0.09	0.06	1.35	0.01	0.05	0.23	0.08	0.95	0.95
Price	Intention	0.03	0.06	0.13	0.01	0.05	0.13	0.02	0.26	0.26
Scepticism	Intention	-0.06	0.06	0.93	-0.11	0.05	***2.09***	0.06	0.68	0.69
Attitude	Behaviour	0.10	0.07	1.56	0.15	0.06	***2.41***	0.04	0.49	0.49
Intention	Behaviour	0.20	0.05	***3.70***	0.45	0.06	***8.00***	0.25	***3.16***	***3.16***
Convenience	Behaviour	0.02	0.09	0.20	0.01	0.05	0.18	0.01	0.08	0.09
Information	Behaviour	-0.30	0.07	***4.04***	-0.02	0.04	0.47	0.28	***3.32***	***3.36***
Price	Behaviour	-0.12	0.06	***1.79***	-0.12	0.04	***2.79***	0.00	0.04	0.04
Scepticism	Behaviour	0.09	0.06	1.37	-0.22	0.05	***4.10***	0.30	***3.75***	***3.76***

[a] Group comparison test (t-parametic ≠ variances; t-parametiric = variances): Normality of bootstrap data was checked through visual inspection of Q-Q plots. Small deviations from normality were observed in only few cases. Therefore, the classical parametric approach proposed by Keil et al. [83] to test for significant differences in path estimates between heterogeneous groups was used. T-value > 2.58:_ significant difference at 0.01 level; T-value > 1.96: significant difference at 0.05 level; T-value > 1.64: significant difference at 0.10 level.
[b] Standard error.
|diff|: Difference in path coefficient estimates between countries in absolute value.

Source: Own data 2013

Table 5 Path estimates, significance and differences between countries (total effects)

									Group comp. test[a]	
Exogenous	**Endogenous**	**Chile**			**Germany**				***t*-param.**	***t*-param.**
variable	**variable**	**Path**	**SE[b]**	***t*-value**	**Path**	**SE[b]**	***t*-value**	**|diff|**	**≠ variances**	**= variances**
Egoistic motives	Attitude	0.05	0.08	0.60	0.35	0.08	***4.45***	0.30	***2.72***	***2.72***
Altruistic motives	Attitude	0.23	0.07	***3.35***	0.21	0.09	***2.45***	0.02	0.20	0.20
Egoistic motives	Intention	0.02	0.06	0.37	0.30	0.07	***4.24***	0.28	***3.00***	***2.98***
Altruistic motives	Intention	0.29	0.07	***4.29***	0.30	0.08	***4.08***	0.01	0.14	0.14
Attitude	Intention	0.15	0.07	***2.36***	0.28	0.06	***4.73***	0.13	1.47	1.48
Subjective norms	Intention	0.37	0.06	***5.95***	0.15	0.05	***3.30***	0.22	***2.78***	***2.80***
Convenience	Intention	-0.01	0.08	0.08	0.03	0.06	0.51	0.04	0.36	0.37
Information	Intention	0.09	0.06	1.35	0.01	0.05	0.23	0.08	0.95	0.95
Price	Intention	0.03	0.06	0.45	0.01	0.05	0.13	0.02	0.26	0.26
Scepticism	Intention	-0.06	0.06	0.93	-0.11	0.05	***2.09***	0.06	0.68	0.69
Attitude	Behaviour	0.14	0.06	***2.13***	0.28	0.05	***5.12***	0.14	***1.69***	***1.70***
Intention	Behaviour	0.20	0.05	***3.70***	0.45	0.06	***8.00***	0.25	***3.16***	***3.16***
Convenience	Behaviour	0.02	0.09	0.20	0.02	0.06	0.41	0.01	0.05	0.05
Information	Behaviour	-0.29	0.07	***3.93***	-0.02	0.05	0.33	0.27	***3.17***	***3.20***
Price	Behaviour	-0.11	0.06	***1.74***	-0.12	0.05	***2.49***	0.01	0.07	0.07
Scepticism	Behaviour	0.08	0.06	1.21	-0.27	0.05	***5.36***	0.34	***4.37***	***4.39***

[a] Group comparison test (t-parametic ≠ variances; t-parametiric = variances): Normality of bootstrap data was checked through visual inspection of Q-Q plots. Small deviations from normality were observed in only few cases. Therefore, the classical parametric approach proposed by Keil et al. [83] to test for significant differences in path estimates between heterogeneous groups was used. T-value > 2.58: significant difference at 0.01 level; T-value > 1.96: significant difference at 0.05 level; T-value > 1.64: significant difference at 0.10 level.

[b] Standard error.

|diff|: Difference in path coefficient estimates between countries in absolute value

Source: Own data 2013

6. Discussion, focussing on market and policy implications

The group comparison analysis between Chile and Germany revealed significant differences in some structural paths in the research model. Altruistic arguments play a more important role in forming attitude and intention than egoistic motives in the emerging organic industry of Chile. The fact that the sample in Chile was biased towards high income and educational groups may explain this result. According to some findings reported by 'Ciudadano Responsable' (a Chilean foundation established in 2009, which studies responsible consumption and sustainable development) the higher the standard of living and education of people, the greater the consumption of ethical products [37, 72]. No significant effects of egoistic motives (e.g. healthiness) on attitude and intention were found in the Chilean case. Structural-macro factors [5, 73] such as the absence of severe food crises and scandals in the Chilean food industry (low food risk perception) and the niche character of the market in Chile may contribute to explain this finding. At first glance, organic food marketers in Chile should focus more on altruistic claims in communication campaigns in order to capture the attention of consumers and consequently to increase domestic demand. These findings also provide relevant information for local authorities. In this context, it is necessary to assess to what extent it is possible to increase the domestic organic food demand based only on consumers with ethical motives. The available body of literature suggests that in more developed organic markets this is a small consumer segment [16, 34].

Government intervention, translated into policies supporting the growth of the organic food sector, will also be necessary to overcome the niche phase of the organic market in Chile. From mature organic markets such as Germany or Denmark it is known that the organic sector has received a strong government support on both the supply and the demand side [19, 73-75]. First steps in this direction have already been made by the Chilean state, but further efforts will be necessary [76].

Contrary to what is shown in Chile, egoistic arguments in Germany exert a stronger influence on consumer attitude, although it can be considered that both egoistic and altruistic motives are important drivers of organic food consumption in Germany [18, 77, 78]. Probably, the high risk perception in the conventional food industry in European markets can strongly motivate consumers to look for 'safer' food alternatives. However, at the same time it is observed that ethical aspects of food consumption can also play an important role in determining consumer behaviour in the German organic market. From a marketing perspective this has two implications: (i) egoistic as well as altruistic arguments could equally attract consumer attention in communication campaigns and (ii) a differentiated marketing focused on different consumer segments (regular and occasional consumers) using different arguments to purchase organic food seems to be the best strategy to build consumer loyalty and increase consumer demand. The stage of development of the German organic industry and previous empirical evidence support this recommendation [16, 34, 77].

The explanatory power of the presented research model in both countries satisfies previous empirical and theoretical values. However, in Chile attitude is poorly explained by the research model. The niche character of the domestic organic market in Chile and, therefore, the low levels of experience of local consumers with organic food may suggest that

consumer attitudes are in an early stage of formation in this country. This fact could help to explain the lower explanatory power of the model in Chile compared with Germany, where consumers have been exposed to organic products for a longer period of time. Furthermore, a simple indicator was used to measure attitude towards organic food, which could have made the assessment for subjects in Chile (with less experience of organic food) more difficult in comparison to subjects in Germany (who are more familiar with organic alternatives). Experience with organic food could also contribute to explain why the structural relationships attitude-behaviour and intention-behaviour are stronger in Germany. The behavioural literature states that background factors such as individuals' experience with a good are important variables during the process of formation of consumer attitudes and behaviour [40].

Analysing the potential barriers deterring organic food consumption in Chile and Germany, significant impacts and also differences between countries in some path estimates are observed. Overall, barriers seem to be more important in determining behaviour than intention to purchase. While the problem of distinguishing organic from conventional food products may not be relevant in Germany, where marketing efforts and labelling schemes enjoy consumer recognition [56], Chilean consumers seem to lack information about how to identify organic food alternatives. The poor role that local authorities have played in organic food communication so far has brought consumers to rely on the scarce information efforts made by producers and retailers in the domestic market. Maybe the introduction of the official labelling program in 2007 will improve information at the local level in the near future. However, without comprehensive communication and promotional strategies, a label by itself will not be able to improve the current situation.

An important finding of this research is the strong influence of scepticism as a barrier to the intention of purchasing and consuming organic food in Germany. The growing scepticism in Germany regarding organic food products can be traced back to the credence good nature of organic food products [79] and the apparently low consumer trust in organic certification procedures in this country. Distrust in control and verification mechanisms prevent consumers to be sure about the true quality of the organic products they consume [6, 57]. Although in many countries organic food standards and labelling programs enjoy a good reputation, there have been a number of scandals involving contamination of organic food and reported cases of mislabelling and frauds in different organic markets, which have increased consumer scepticism with regard to the trustworthiness of organic food in Germany. This result should draw the attention of organic certifiers and public authorities in Germany, as the monitoring of stakeholders in the organic food sector seems to need improvements or modifications to regain consumer trust and increase acceptance of organic food products [80, 81].

The strong influence of subjective norms as determinant of intention to purchase in Chile indicates that the influence of the society plays a decisive role in organic consumption behaviour among Chileans. Furthermore, the social approval and the importance of meeting social expectations may also be a reason why individuals in Chile engage in altruistic actions and perform ethical behaviours. This is in line with studies about consumer perception of food products in Chile, which have revealed that the consumption of certain foods such as meat, bread or dairy involves social aspects [82]. The lower influence of

subjective norms on German consumers' intention to consume organic hints at the fact that organic food consumption in Germany is more a personal lifestyle decision.

7. Summary

The aim of this study was to investigate potential structural differences with respect to the variables influencing consumer behaviour when comparing a mature organic market in Western Europe (Germany) with an emerging organic niche market in Latin America (Chile). Based on Ajzen's Theory of Planned Behaviour (TPB), a structural equation model was built and tested using partial least squares modelling. The findings suggest that the TPB is a suitable behavioural theory to explain consumer attitude and behaviour in the organic market, even when including consumption motives in the analysis and few structural modifications with respect to the original model. Although the samples used in this study were biased towards high educational and income groups and survey-based studies using stated behaviour provide less accurate behavioural measures, important conclusions can be drawn.

The estimation of the German causal model has a higher explanatory power than the Chilean one, where the attitude, i.e. perceived importance of organic food, is not a good predictor for the intention to buy. Better predictors are altruistic motivations. In Germany, both altruistic and egoistic motivations have a strong influence on consumers attitudes towards intentions to consume organic food. Therefore, marketers should stress the aspects of personal benefit such as health and food safety, but also the environmental and social aspects, such as animal welfare and fair prices. In Chile, ethical behaviour drives the intentions and consumption of organic food at least for the medium and upper class segments of the population, which built the core of the sample. Altruistic motivations and actions therefore determine the consumption of organic food. This ethical behaviour could be a result of the large impact that social norms have on the intentions and indirectly on the consumption of organic food in Chile. Marketing campaigns focussing on the consumer's ethical responsibility could be a strategy in Chile to promote the altruistic benefits of organic agriculture among the upper and middle classes of the population.

Overall, this exploratory study helps to identify the determinants and deterrents in the consumption of organic food in Germany and Chile. In Chile, the lack of information is the main obstacle for the consumption of organic food. Not knowing where to buy or how to distinguish organic food is negatively affecting consumption. Organic producers should thus use labels and other positioning instruments that help consumers to easily recognise organic food.

The findings of this study can help to reduce the attitude-behaviour gap present in the consumption of organic food. Moreover, the comparison of an emerging market with a currently mature market can give useful advice on how to further develop the Chilean organic niche market.

8. Limitations and recommendations for future research

The present study faced some shortcomings. We used a stated behavioural measure that can be assumed to be less accurate compared with actual behavioural measures. In addition, sample bias in both countries limits in the same way the interpretation of the findings reported in this study. Therefore, generalisations cannot be made.

In testing further causal models, it is advisable to include more indicators to measure attitude towards organic food and other key constructs. In this way, the explanatory power of behavioural models and precision of estimates could be increased.

As this investigation is one of the first attempts to compare consumer behaviour in a mature and an emerging economy with regard to the organic food market using structural equation modelling, further research in this context should include new countries. In the case of emerging organic markets, it would be advisable to consider countries shaken by some severe food scares or where food risk perception is high. Asking for concrete organic products could also help future research to make more accurate recommendations.

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