The role of taste perception for the success of country of origin labeling in the case of organic pepper

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Abstract

Consumers associate with the quality of food its freshness (97 %) and taste (93 %) (GFK 2000). As the extrinsic cue country of origin serves as an indicator for the intrinsic cue taste it works as quality indicator (PETZOLDT ET AL. 2007; KROEBER-RIEL AND WEINBERG 2003). Indeed several studies reveal that country of origin (COO) labeling plays an important role in consumers' quality evaluation of food products (e.g. VAN ITTERSUM ET AL. 2001; HONG AND WYER 1989; ELLIOTT AND CAMERON 1994).

Most studies investigating consumers' preferences and willingness to pay for COO labeling focus on meat (e.g. VERBEKE AND WARD 2006; LOUREIRO AND MCCLUSKY 2000), olive oil (e.g. SANDALIDOU ET AL. 2002) or wine (e.g. SKURAS AND VAKROU 2002). Spices such as pepper have not been researched yet. Nevertheless, pepper for instance seems very interesting to analyze as we can note a shift from pepper being a low-involvement commodity to becoming a lifestyle product. This holds especially for consumers of organic products and for gourmets (KAUSCH 2008; BRAUN 2007). For example freshly grounded pepper experiences an increasing culinary demand (DEAK 2004). Pepper experts state that pepper should be differentiated with respect to country and region of origin, as it is already common for wine, tea and coffee, because origin has a strong effect on peppers aroma (BRAUN 2007; MCFADDEN 2008).

Research reveals knowledge is a crucial factor for the use of COO labels as purchase criterion (e.g. SCHÄFER 1997; VAN ITTERSUM ET AL. 2001). We can suspect that conscious consumers know about a products' diversity, e.g. taste variety as a result of its country of origin. Therefore it can be assumed that consumers' knowledge and taste perception is of relevance for the success of country of origin labeling.

Against this background, we carried out a standardized survey (n=100) in a organic grocery store in Bonn, Germany in August 2009 to investigate whether consumers expect

taste differences with respect to pepper, olive oil, wine, rice and tea and if so, whether they assume these differences to be a result of COO. The word association test is used to gain insights into what comes to consumers mind when being asked about pepper. Based on these results we assess the relevance of COO in the case of pepper. In addition, we analyze consumers' awareness and expertise with respect to the diversity of pepper as a result of country of origin and region. Finally, a blind tasting of black pepper of different origins and production methods (organic versus conventional) is conducted to assess whether consumers are able to identify aroma differences between the different varieties.

The results show that consumers' awareness of taste differences regarding product varieties differentiated by countries/locations depends on the familiarity with the considered product. For all products analysed, the correlation between COO and taste is positive (above 0.5) and highly significant at the 0.01 level. In the case of wine 82 % of the respondents expect taste differences due to the COO with 61 % indicating a preference for a specific country in their purchase decision. The preferred wine countries are Germany (34 %) and France (18 %). Also with respect to olive oil the majority of respondents (79 %) assume taste differences due to the COO and 66 % reveal a preference for a specific country (e.g. 52 % for Italy; 33 % for Greek). In the case of pepper only 44 % of the survey participants expect taste differences in view of country of origin. 16 % indicate a preference for a specific origin of which India is most often mentioned (56 %), followed by China, however with a considerable smaller relevance (13 %). The low relevance of the COO in the case of pepper might be a result of the fact that only organic brands label the producing country. Additionally advertisement for spices focusing on country of origin is in general rare. Therefore it is not surprising that the connection between COO and taste is less made for pepper compared to wine and olive oil which are, in contrast to pepper, considered as high involvement products and are often discussed in the context of country of origin. For these products advertisement focuses on and highlights this attribute (BECKER 2000). Therefore we can assume that consumers' knowledge and awareness of the producing country is more skilled and present

for wine and olive oil. Based on these results, we conclude that COO serves as an indicator for taste for the products under investigation.

On the basis of a word association test, the relevance of the attribute 'country of origin' is analysed in comparison to other product characteristics for pepper. The test reveals that country of origin (17 times mentioned) is only one of many relevant product attributes consumers associate with pepper. Most frequently mentioned are varietal diversity (64 times) and spiciness (54 times). Thus, the results of the word association test indicate that differences the majority of the respondents make between pepper varieties are rather based on the degree of maturity (e.g. black pepper versus green pepper) than on country of origin.

The blind tasting test aims to analyse whether consumers are indeed able to perceive taste differences between pepper of different origins and production methods. Therefore in the blind testing pepper of two different regions (India versus Sri Lanka) and two different production methods (organically versus conventionally produced) was considered. Three of the four organic peppers were exclusively distributed in organic stores. One organic and one conventional pepper are distributed in the conventional retail sector. All peppers distributed in the organic stores are COO labelled, the ones in the conventional retail stores are not.

The results reveal that consumers are able to identify taste differences - pungency, finish and aroma are the aspect respondents were asked to evaluate - between peppers of different countries of origin and production methods. We found out that aroma was the most important attribute for the appraisal of a pepper and consumers' willingness to buy one. On a scale from 1(hardly any aroma) to 4 (very aromatic) the two organic peppers exclusively listed in organic stores were from India and were ranked first and third by consumers. The organic pepper without COO labeling distributed in the conventional retail sector was placed second with regard to aroma. The organic pepper brand from Sri Lanka (also exclusively listed in organic stores) ranked fourth and the conventional one last.

Overall our results indicate that German consumers prefer a specific country of origin only if they assume that this is linked to differences in taste. Lacking awareness and knowledge hinders most of the participants of our survey to combine taste and country of origin in the

case of pepper. This holds despite the fact that the survey was conducted in an organic grocery store and thus was directed at consumers of organic food who are in general considered to be more involved in purchase decision and are more knowledgeable with respect to production issues (see e.g. SCHIFFERSTEIN AND OUDE OPHUIS 1998; SANAUER 2001).

In times of increasingly importance and renaissance of food culture, product differentiation by means of COO labeling can be appropriate to meet consumers' preferences for geographical indication. With respect to pepper our study indicates that this is still a low involvement product even for consumers in organic grocery stores. A precondition for the success of COO labeling in the case of pepper would be to increase consumers' knowledge of the relevance of COO for peppers taste.

Introduction

Consumers associate with the quality of food its freshness (97 %) and taste (93 %) (GFK 2000). The taste of a product is undetectable before purchase. There are two possibilities to evaluate a products taste without degustation: consumers can make use of so called extrinsic pieces of information (e.g. country of origin (COO) label) to infer to the intrinsic characteristic taste or they can rely on prior experience (PETZOLDT ET AL. 2007; KROEBER-RIEL AND WEINBERG 2003). Several studies reveal that COO labeling plays an important role in consumers' quality evaluation of food products (e.g. VAN ITTERSUM ET AL. 2001; HONG AND WYER 1989; ELLIOTT AND CAMERON 1994). Only few studies test whether expected taste and actual taste experience correlate and whether the former is used for product evaluation.

Most studies investigating consumers' preferences and willingness to pay for COO labeling focus on meat (e.g. VERBEKE AND WARD 2006; LOUREIRO AND MCCLUSKY 2000), olive oil (e.g. SANDALIDOU ET AL. 2002) or wine (e.g. SKURAS AND VAKROU 2002). Spices such as pepper have not been researched yet. Nevertheless, pepper for instance seems very interesting to analyze as we can note a shift from pepper being a low-involvement commodity to becoming a lifestyle product. This holds especially for consumers of organic products and

for gourmets (KAUSCH 2008; BRAUN 2007). For example freshly grounded pepper experiences an increasing culinary demand (DEAK 2004). In addition, pepper's aroma diversity is determined by its origin and used in evaluating its quality (BRAUN 2007; MCFADDDEN 2008). Within the species "piper nigrum" about 100 varieties are characterised in Kerla state in southwestern India. Further varieties are native to Malaysia, Indonesia and Vietnam. For example Tellicherry pepper is from Tellicherry, Kerla (India) or Lampong-pepper from Lampung province located in Sumatra (Indonesia). Accordingly pepper has a product specific geographical origin and its variety in colour, size, pericarp, amount of essential oils and piperine are due to soil, climate and cropping system (MCFADDEN 2008). Because of its high ethereal oil content pepper from south-western India (Malabar coast) is traded as very aromatic pepper. In comparison pepper from Malaysia or Indonesia is hotter due to its high amount of piperine (MCFADDEN 2008). Accordingly pepper experts state pepper should be differentiated with respect to country and region of origin, as it is already common for wine, tea and coffee (BRAUN 2007; MCFADDEN 2008). COO labeled Pepper is available in Germany, but in general only in organic stores. Organic consumers are known as conscious and interested in production processes and related issues (e.g. SCHIFFERSTEIN and OUDE OPHIUS 1998; SANAUER 2001) with taste being one of the primary reasons for buying organic food (SCHIFFERSTEIN and OUDE OPHIUS 1998). As research reveals that knowledge is a crucial factor for the use of COO labels as purchase criterion (e.g. SCHÄFER 1997; VAN ITTERSUM ET AL. 2001) we suspect that especially organic consumers know about a products' diversity, e.g. taste variety as a result of its COO.

The **aim** of this study is to assess whether promoting COO labeling for pepper can be successful and whether there is a link between taste perception/experience and the success of COO labeling. We investigate those two elements (taste expectation and taste experience) which are crucial for the use of the COO label in consumers purchase decision. Taste expectation is based on knowledge (SCHÄFER 1997) and image which influence each other. COO information, if perceived, act as stimuli and is linked to existing knowledge. As a consequence an associative network of the product evolves. These are unobservable

processes. Besides taste expectation, and taste experience we will analyse knowledge, image, and past experience with regard to COO labelled pepper.

The article is organized as follows. Section 2 gives an overview over the use of COO as a cue and refers to the determinants of the quality expectations. In section 3 the empirical study and the sample is presented. Besides a standardised survey we carry out a word association test and a blind tasting of black pepper of different origins and production. In section 4 the results are presented and a summary is given in section 5.

Quality expectations

Quality is a subjective concept and its association is based on psychological processes (STEENKAMP 1990), related to the purchase situation and the person itself (CARDELLO 1995). During the decision making process stored internal information and current external information interact and form the quality expectation (KROEBER RIEL AND WEINBERG 2003). The current external information is composed of intrinsic and extrinsic quality cues and provided at the point of sale. To make a purchase decision consumers have to form quality expectations. These are based on their perception and assessment as well as on former experiences (GRUNERT 2005). To perceive quality and form quality expectations consumers use pieces of information which are called quality cues. These cues enable consumers to judge products before consumption (STEENKAMP 1990). OLSON (1972) classifies cues as either extrinsic or intrinsic. Intrinsic quality cues refer to physical characteristics of the product for example flavour. Extrinsic cues are related to the product without being part of it, e.g. brand, price (VERBEKE AND WARD, 2006). COO as well as certification labels are regarded as extrinsic cues since they can be manipulated without changing the physical product (OLSON 1972; SAMIEE 1994). With regard to food quality, which is considered as uncertain by consumers, they often rely on extrinsic quality cues (GRUNERT 1997).

Several studies concerning labeling seals of approval exist. For example LOUREIRO AND UMBERGER (2007) found that consumers use COO as a signal for product quality, if the source of origin of the respective product is associated with higher quality or safety.

HOFFMANN (2000) identifies gender, income and attitudes as crucial factors for the use of COO as quality cue with women as well as consumers with low income using COO more extensively then men and consumers with higher incomes. In addition consumers who are interested in sustainable consumption and food safety are more interested in COO as extrinsic cue (HOFFMANN 2000).

The purchase decision depends on the expected taste and prior taste experience (GRUNERT 1997). The expected quality/taste is influenced by consumers' knowledge and product-country-image (JOHANSSON 1989; BANOVIC ET AL. 2010). The experience characteristics like taste and smell are detectable after purchase (HOFFMANN 2000). The consumers use the cue in repeated purchases if the quality they experienced was satisfying.

Johansson defined two types of mechanism to explain COO-effects (JOHANSSON 1989) which are used by GRUNERT (1997) to explain the process of quality expectation. First cognitive aspects influence quality evaluation; secondly quality evaluation is determined by affective aspects including the product-country-image (GRUNERT 1997; LEE AND LEE 2009). Knowledge constitutes the **cognitive determinant** and is characterized by product-familiarity, product experience, product- and country-image and specialised knowledge. The COO effect is strongest in the case of high (JOHANNSON ET AL. 1985) or very low (RAO AND MONROE 1988) product familiarity. With regard to a low product familiarity only little intrinsic product information is available. Extrinsic cues thus help to reduce the perceived purchase risk. In contrast, in the case of middle familiarity consumer can rely on intrinsic cues and thus extrinsic cues such as COO are less important. Finally, high familiarity is characterised by a huge knowledge of consumers. They choose selective extrinsic cues based on a conscious evaluation (GANESH 1997). A study of BECKER (2000) confirms those differences for fresh meat. The author shows that consumer with low familiarity with respect to fresh meat base their purchase decision on extrinsic cues, particularly COO and place of purchase. In contrast consumer experts rely on intrinsic cues like color (BECKER 2000). In addition the country and product image depend on past experiences and emotions such as those

experienced during holidays (VAN ITTERSUM ET AL. 2001; GRUNERT. 1997; BOTSCHEN AND HEMETTSBERGER 1998).

The **affective component** is characterised by the fact that the country-image has a direct influence on product-image. Even if the consumer is not aware of the quality characteristics of a product coming from a specific origin he often has specific preferences for a specific region/country and transfers the related image to the product. This holds for consumers with a low product familiarity (e.g. CEMBALO ET AL. 2009). The dimensions of country-product associations are broad and range from the expectation e.g. “that the more natural a region is, the healthier products from that area are” (VAN ITTERSUM ET AL. 2003), or that consumers make the link between wine and France, olive oil and Italy etc. (MORELLO 1993).

Country-images depend on political, socio-economic and cultural aspects. For analysing product-country-image cognitive, affective and conative aspects are discussed. The cognitive aspect includes the consumers’ knowledge about the country (development, culture, religion) and the affective aspect comprised the mental attitude toward people or products from these countries. Finally the conative component deals with involvement and perceptual vigilance and depends on the relationship between consumer and COO (BAUGHN AND YAPRAK 1993).

The interaction between consumer and COO implies country-familiarity. Familiarity has to be distinguished between product- and country-familiarity. HAN (1989) deal with the question, whether country-image is a halo or summary construct and postulate if consumers are familiar with a country’s product, country image may become a construct that summarizes consumers’ beliefs about products from this country. Consumers associate with the country a specific quality. By this COO receives brand character (ERICKSON ET AL. 1984; JOHANSSON ET AL. 1985; AHMED ET AL. 2004). Country-familiarity has an effect on consumer’s perception and reaction to COO-information. The reaction is strongest with low country-familiarity. In this context studies discuss the effect of ethnocentrism. Research shows that consumers prefer products from home-country because they expect a higher quality (LIEFELD 1989). In addition some consumers are interested in improving the home-country economy even in the case of lower product quality (BAUGHN AND YAPRAK 1993; AHMED 2004).

To conclude, studies indicate knowledge and image of a country have an effect on product evaluation and purchase decision (HESLOP AND PAPADOPOULOS 1993; LEE AND GANESH 1999). Nevertheless, the taste of a product is of crucial importance for its repeated purchase. Only if the experienced taste convinced the consumers the product will be purchased again (BANOVIC ET AL. 2009). Blind tests for various products revealed that consumers taste expectations and their experiences often differ strongly (e.g. STEFANI ET AL. 2006; HOEGG AND ALBA 2007).

How consumers purchase decision of COO pepper can be explained

The stimulus organism response model is used to illustrate consumers' behaviour as reaction to observable stimuli. The stimuli and response are observable variables whereas the organism is described as black box. Applied to the purchase decision of pepper the stimulus is the COO information. This stimulus links existing knowledge and the associative network of the product. Figure 1 shows the purchase decision of pepper from India with regard to the stimulus response model based on the neobehavoristic theory[1]. Provided that the COO information is perceived, the consumer interprets the COO information as stimuli. In case a positive association exists with respect to India as the native cropping area of pepper the consumer will be inclined to buy pepper from India if the other product characteristics are convincing.

[Insert Figure 1 here]

Design of the study

The study (n = 100) was conducted over four days in an organic grocery store in Bonn, Germany in August 2009. Face to face interviews at the point-of-sale were conducted for understanding how consumers evaluate pepper in every day purchase decision. The survey consisted of three parts, including mainly closed and rating-scale questions. The first part covered consumers' evaluation of extrinsic cues like price, brand and COO labeling in

[1] For further information on the neobehavoristic theory see Kroeber Riel (2003); Foscht and Swoboda (2004).

everyday purchase decision in general and the purchase decision of pepper. The second part aimed to analyse the link between COO and expected taste differences, including a word-association-test to identify the product-country-image of pepper and consumers' knowledge regarding COO and pepper quality. Finally, we conducted a blind-testing of black pepper from three different origins and two production methods (organic versus conventional). Figure 2 gives on overview over the structure of the work and survey.

[Insert Figure 2 here]

Sample characterization

The majority (66 %) of survey participants are women. According to research women are still the primary food shopper (CHILDS AND PORYZEES 1997). Respondents with the age of 20 to 30 (25 %) and 45 to 55 years (25 %), as well as highly educated consumers (50 % holding a bachelor or master degree) with medium to high income (more than 130 €/month) are over-represented in the study. 15 % are involved in Non-Governmental Organisations and 11 % are engaged in environmental protection work.

The respondents can be described as high involvement buyers purchasing their organic products in organic and conventional supermarkets. They purchase less often in smaller organic-grocery stores and discount stores. The most mentioned intentions to buy organic are health (25 %), better taste (21 %), naturalness (18 %), environmental protection and social aspects like child labour. 90 % of the respondents use black pepper (piper nigrum) at least once a week. Most of them (82 %) prefer the whole peppercorn. Familiarity level with different pepper species like "piper cubeba" or "piper longum" is very low.

Empirical Results

Consumers expect taste differences due to COO

To get a general overview above the relevance of COO in comparison to other possible purchase criteria respondents were asked to assess the importance of features for their purchase decision on a seven point likert scale with 1: very important to 7: not at all important. Production without child labour, quality, information, and ecological production

were more important than COO which ranked 7th in the 17 statements. Price, brand, advertisement and exclusivity were less important.

The relevance of COO was researched with respect to taste variety in the case of pepper, olive oil, wine, rice and tea. Studies confirming a positive effect of COO labeling on consumers WTP mostly use olive oil and wine (eg. SKURAS AND VAKROU 2002; VERBEKE AND WARD 2006; PETZOLDT ET AL. 2007). For these products advertisement focuses on and highlights COO (BECKER 2000). Besides this, brands highlight COO for rice and tea. Therefore we can assume that consumer's knowledge and awareness of the producing country is more skilled and present for wine, olive oil, rice and tea as it is in the case of pepper. Furthermore we assume a higher involvement and product familiarity for these products. Accordingly we test consumers taste expectation due to COO for pepper, olive oil, wine, rice and tea.

The results show that consumers' awareness of taste differences regarding product varieties differentiated by countries/locations depends on the familiarity with the considered product. For all products analysed, the correlation between COO and taste is positive (above 0.5) and highly significant at the 0.01 level. In the case of wine 82 % of the respondents expect taste differences due to the COO with 61 % indicating a preference for a specific country in their purchase decision. The preferred wine countries are Germany (34 %) and France (18 %). The chi-square value is 20 and highly significant ($p = 0.00$). Also with respect to olive oil the majority of respondents (79 %) assume taste differences due to the COO and 66 % reveal a preference for a specific country (e.g. 52 % for Italy; 33 % for Greek). In the case of pepper only 44 % of the survey participants expect taste differences in view of COO. 16 % indicate a preference for a specific origin of which India is most often mentioned (56 %), followed by China, however with a considerable smaller relevance (13 %). The chi-square value is 118 and highly significant.

The analysis of the chi-square-test implies that preferred COO depend on expected taste. In comparison with the other products the chi-square value due to pepper is the highest (120). The results indicate that taste and COO correlate depending on product familiarity and

involvement. In the case of pepper the majority does not expect taste varieties. But if consumers state to have a preference for a producing country this stated preference is based upon expected taste varieties.

The low relevance of the COO in the case of pepper might be a result of the fact that only organic brands label the producing country. Additionally advertisement for spices focusing on COO is in general rare. Therefore it is not surprising that the connection between COO and taste is less pronounced for pepper compared to wine and olive oil which are, in contrast to pepper, considered as high involvement products and are often discussed in the context of COO. For these products advertisement focuses on and highlights this attribute (Becker 2000). Therefore we can assume that consumers' knowledge and awareness of the producing country is more skilled and present for wine and olive oil. Based on these results, we conclude that COO serves as an indicator for taste for the products under investigation.

Consumers' knowledge is analysed asking questions around the diversity of pepper due to COO. 56 % of the consumers state to know where pepper first was grown. But in fact only 47 % of those name India. Besides India, consumers assumed that pepper was first grown in Madagascar (22 %), Indonesia (12 %), Sri Lanka and South America. Asked whether they expect taste differences for pepper from India or Indonesia 78 % of consumers had no idea whether there are any taste differences between these countries. However in case of the cultivation area 82 % expect taste differences.

To analyse the relevance of the attribute 'COO' in comparison to other product characteristics for pepper we use a word-association-test. The question consumers answered was: "What do you associate with pepper?" The test reveals that COO (17 times mentioned) is only one of many relevant product attributes consumers associate with pepper. Most frequently mentioned are varietal diversity (64 times) and spiciness (54 times). Thus, the results of the word association test indicate that differences between pepper varieties are rather made based on the degree of maturity (e.g. black pepper versus green pepper) than on COO.

The product-country-image of food from India is specified by a further word association test. Here, the products most frequently mentioned are rice (54 times), vegetable-curry (35 times), tea (27 times), spices (21 times), curry (18 times) and pepper (14 times).

The results indicate that pepper has a low product-country-image and that only some consumers make a link between India and spices and further more between pepper and its origin, India. Though, the findings show that there exist a large variety of associations with respect to pepper, the majority of consumers do not know where pepper originally comes from and that there is a huge taste variety due to its origin.

Consumers taste black peppers' varieties

The blind tasting test aims to analyse whether consumers are indeed able to perceive taste differences between pepper of different origins and production methods and to compare aroma, pungency and finish of five black pepper on a scale from 1 to 4 with 4 = very aromatic/very high pungency/very strong finish and 1 = hardly any aroma/pungency/finish. Therefore in the blind testing pepper of three different regions (India versus Sri Lanka versus Vietnam) and two different production methods (organically versus conventionally produced) was considered (see table 1). Three of the four organic peppers were exclusively distributed in organic stores. One organic and one conventional pepper are distributed in the conventional retail sector. All peppers distributed in the organic stores are COO labelled, the ones in the conventional retail stores are not.

[Insert Table 1 here]

The rank variance analysis is used to compare the aroma, pungency and finish respondents assessed. It delivers the middle-ranking for each pepper and the chi-square value. The results are significant with p-value < 0.00 for all tested pepper characteristics (compare table 2).

[Insert Table 2 here]

Results show that the organic peppers are better assessed than the conventional one. The pepper of Wagner, who belongs to the biggest conventional spice brand in Germany,

convinces the respondents in all three categories. Wagner pepper is ranked first in pungency and finish and second with respect to aroma. The pepper from Herbaria is the one who convinces the tasters with respect to 'aroma'. The conventional pepper (Fuchs) is valued as the least aromatic pepper.

Directly asked which pepper they would purchase after tasting 30 % of the respondents stated that they would purchase the Herbaria pepper which was in terms of an overall appreciation, evaluated as the most aromatic pepper but with low pungency and only mild finish. 27% of the taster would purchase Wagner pepper, who ranked first and second in the three pepper characteristics (See table 2). As non-favourite pepper Fuchs pepper is mentioned by 30 % of the consumers, followed by Sonnentor (23 %).

These results do not give a clear picture which of the three tasted category is important for the final purchase decision. A deeper look into cross tables reveal that 41 % of the Herbaria buyer describe the pepper 'aroma' as very aromatic while the non-Herbaria-buyer describes the pepper as less aromatic. The p-value of the chi-square is with 0.01 very significant whereas 'pungency' and 'finish' do not significantly influence the purchase decision. 81 % of the Fuchs-purchasers evaluate the pepper with a value of 3 or 4 (aromatic or very aromatic) but the non-Fuchs-purchaser characterizes the pepper as low aromatic. These results indicate that 'aroma' is the most important aspect of taste which mostly influences the purchase decision. We conclude that the consumer is able to taste and evaluate flavour varieties. These results lead furthermore to the conclusion that consumers purchase decision for pepper is mainly based on aroma experience and less on pungency and finish. The organic pepper is in general preferred and the two organic peppers from India, exclusively listed in organic stores, ranked first and third with regard to aroma.

Conclusion and discussion

The special feature of our study is the combination of face-to-face interviews regarding attitudes, image, knowledge and blind tasting of pepper. Our findings show that consumers are able to taste differences between different pepper brands from different origins. With

respect to this finding the labeling of COO can be useful for a differentiation in the rather homogenous pepper market. But at the same time we also found that even concerned organic consumers are not aware of the existence of any taste differences of pepper due to COO and as a consequence do not use COO labels as a cue in their purchase decision. Consumers are rather interested in sustainable consumption, product information about production method and social aspects like child labour and fair trade than in COO. As their exist a lack of knowledge regarding the impact of COO on taste and a low product familiarity with respect to pepper, these might be possible reasons for the obtained results.. This hinders interpreting and evaluating COO information in a useful way. Even if 80 % of the respondents expect taste differences due to region-of-origin they are not able to make a differentiated judgement based on their objective knowledge. The study verifies that the success of COO depends on expected products' taste. Those consumers who prefer a specific country mention most often India (50 %). According to taste experience consumers pay most attention to aroma. Thus providing consumers with COO information that links COO to a specific (aroma) taste could lead to an increase in the relevance of COO for consumers' purchase decision. Foreign countries as well as marketers using such a strategy would parallel increase consumers' knowledge with respect to the link between region-of-origin and different aroma characteristics.

The results also show that cognitive and affective determinants are interdependent. This is important to consider for producers from foreign countries, NGOs and governments who should communicate a positive country-image.

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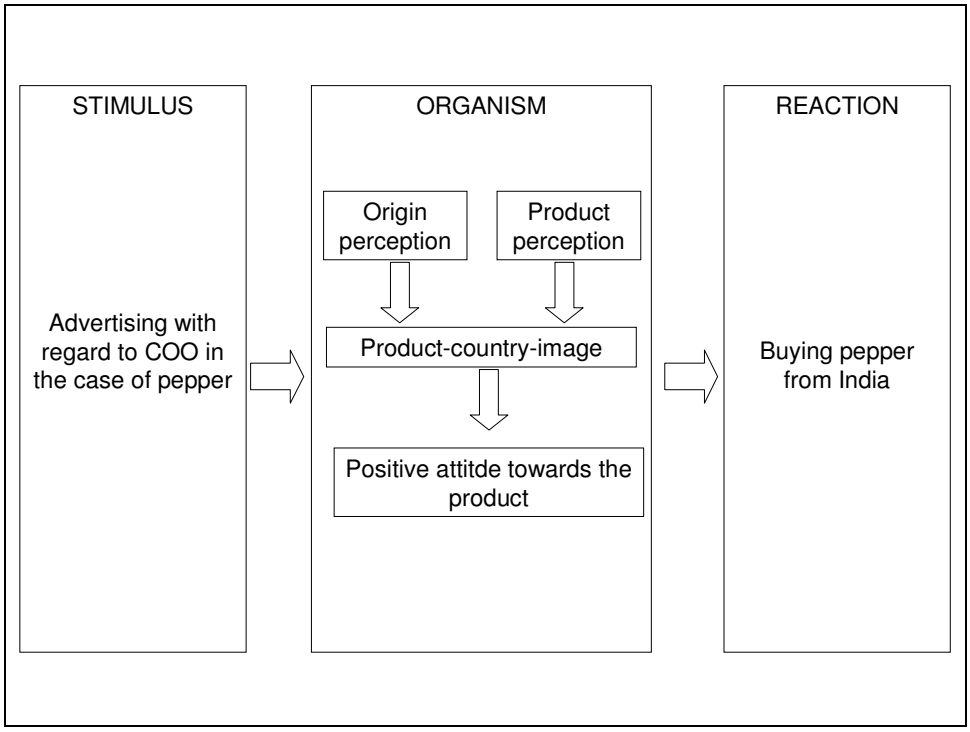
Figure 1: The stimulus organism response model for the purchase decision of pepper from India



Source: adopted from FOSCHT AND SWOBODA (2004, p. 30).

Figure 2: Framework of the survey

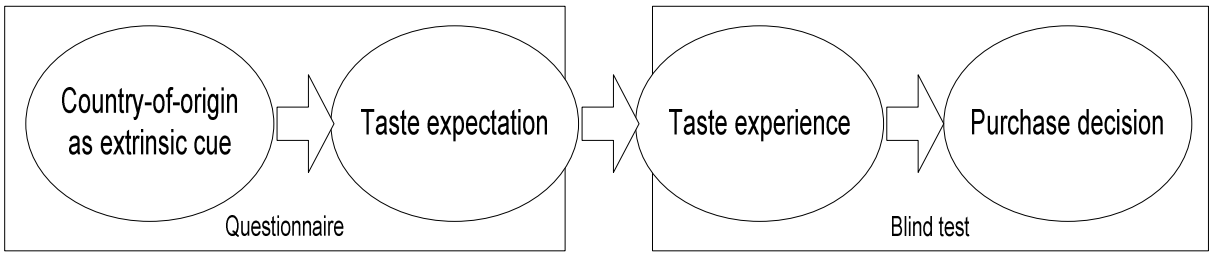


Table 1: Overview of the tasted pepper origins and production method indicated on the package

Brand	production method	COO	region-of-origin	further quality aspects
Herbaria	organic	India	Periyar Wildlife Sancturary	Telicherry quality
Heuschrecke	organic	India	Peermade	Telicherry quality (smallholder-project: Peermade Development Society)
Sonnentor	organic	Sri Lanka	n.s.	n.s.
Wagner	organic	n.s. (Sri Lanka)*	n.s.	n.s.
Fuchs	conventional	n.s. (Vietnam)*	n.s.	n.s.

n.s: not specified
* According to mail and phone information

Table 2: Blind testing of pepper: mean and middle ranking value

	Herbaria		Heuschrecke		Sonnentor		Wagner		Fuchs	
	Mean (std.)	Middle Ranking Value	Mean (std.)	Middle Ranking Value	Mean (std.)	Middle Ranking Value	Mean (std.)	Middle Ranking Value	Mean (std.)	Middle Ranking Value
Aroma	2.57* (1.04)	3.37	2.14 (0.94)	2.86	2.12 (0.93)	2.85	2.45** (0.10)	3.30	2.07 (1.00)	2.63
Pungency	1.87 (0.84)	2.7	2.05 (0.9)	3.00	2.10** (0.87)	3.08	2.33* (0.92)	3.45	1.96 (0.91)	2.77
Finish	2.09 (0.83)	2.57	2.41 (1.02)	3.05	2.45** (0.90)	3.11	2.62* (1.10)	3.39	2.33 (0.94)	2.88

Own calculations: n = 97; Chi^2 = 19.186; df: 4; p = 0.001. 4 point scale from 4 = very aromatic/very high pungency/very strong finish to 1 = hardly any aroma/pungency/finish.
* Best product in the blind test
** Second best product in the blind test