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Motivation and Costs for Reformulating Food Products

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Abstract

Food manufacturers reformulate foods in response to (1) supply-side factors such as the need to reduce production costs or adjust to changes in ingredient availability, (2) demand-side factors such as the desire to appeal to the tastes or health consciousness of consumers, and (3) changes in government regulatory requirements. In some cases, reformulation is a voluntary response to a government labeling requirement as food manufacturers seek to improve the nutritional content of foods that appears on the label (for example, to lower fat, sodium, or sugar). Food manufacturers may also reformulate products to allow for the voluntary use of a specific health or nutrient content claim on a product. Information regarding the motivation and costs of reformulation can aid in conducting analyses of policies that affect product labeling and nutritional content. The objective of this paper is to examine the literature on food reformulation globally, assess frequency of reformulation, and estimate the costs of reformulating foods based on a range of factors.

First, we examined 18 studies published between 2002 and 2015 that analyzed food product reformulation in the United States, Canada, Australia, New Zealand, Portugal, the Netherlands, and the United Kingdom (Muth et al., 2014). These studies focused on reformulation in response to specific events such as labeling requirements or the initiation of public health campaigns. They used a variety of data sources including commercial databases of food products with nutrient values, information collected from products on grocery store shelves, information collected from websites, and interviews with food manufacturers. Although most studies examined changes in nutritional content as stated on product labels, some conducted laboratory analysis of nutrients in products. In almost all cases, products were reformulated to improve health through reductions in fat, trans fatty acids, sodium, and calories, but in many cases, the changes were relatively modest. It is likely that food manufacturers trade off considerations of healthfulness of products with consumer acceptability

Second, we examined patterns of food reformulation in the United States during a time when no new labeling regulations occurred and thus reformulations would have been primarily voluntary (Muth et al., 2014). To conduct the analysis, we used the Gladson Nutrition Database, a commercial database that contains full Nutrition Facts Panel information, label claims, and ingredient data at the Universal Product Code (UPC) level for packaged food products on the market. The analysis focused on comparing changes from 2009 to 2010 and from 2010 to 2011 and included both branded and private-label (store brand) food products. On a per-serving basis, about 4.8% of products overall had a change in nutrients between 2009 and 2011. In general, nutrient changes were significantly ($p < 0.0001$) more common among branded products (6,553 out of 120,926 branded UPCs, or 5.4%) than among private-label products (605 out of 29,418 private-label UPCs, or 2.1%). Among branded products, the most frequent changes were in refrigerated baked goods (18.5%), frozen meals (14.7%), and soups (14.3%). Among private-label products, the most frequent changes were in frozen breakfasts (12.9%), ice cream (5.0%), and dairy products (4.6%). Reformulated foods were not necessarily healthier; for example, sodium decreased in 39.5% of reformulated products but increased in 27.7% of products. Decreases and increases occurred at similar frequencies for total carbohydrates, sugars, and

calories. These results suggest manufacturers are frequently reformulating foods while balancing trade-offs between healthfulness and taste.

Third, we developed a model of the costs of reformulation that provides estimates of the costs to manufacturers of reformulating foods across multiple dimensions (Muth et al., 2015). Although the main purpose of the model is to conduct cost-benefit analyses of proposed regulations such as the changes in the Nutrition Facts Panel and serving sizes in the United States, it provides cost estimates that are also relevant for voluntary reformulations. We used Nielsen Scantrack scanner data to define 172 food product categories and to determine the number of unique products sold in the U.S. To develop the model structure and estimate resource requirements, we conducted two 2-day expert panel meetings with seven consultants who provide reformulation consulting services to food manufacturers or previously oversaw product reformulation at major food manufacturing. We estimated the number of labor hours, utilities and materials costs, and analytical and consumer testing costs by manufacturer size for eight steps in the reformulation process. The model accounts for variations in food formulation complexity, company size, reformulation type, and length of compliance period. The average estimated per-formula reformulation costs range from \$5,200 for substitution of a minor nonfunctional ingredient for a low complexity food produced by a small manufacturer (<\$1 million in sales) to \$4.3 million for a production process change with an ingredient substitution for a high complexity food produced by a large manufacturer (>\$500 million in sales).

Reformulation of food products is costly but driven by marketing and regulatory factors. The results of this study are particularly useful as countries are developing front-of-package labeling systems, revising nutrition labeling requirements, and updating serving sizes, all of which could induce reformulation. A thorough understanding of reformulation motivations and costs can help determine whether the healthiness of the food supply is likely to improve in response to consumer demand or regulatory initiatives.

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Purchasing versus Eating: The Case of US Beef Consumption

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Abstract

We propose a dynamic framework to test whether choices in Discrete Choice Experiments (DCE) are based on a subset of dominant attributes that are allowed to differ across respondents. We investigate attribute dominance by setting up an experiment in which the economic setting is changed from a purchasing context to an eating context. We find that the experimental ‘framing’ significantly influences which attributes participants pay more attention to and the corresponding attribute valuations. The results support the notion that DCE preferences are reference dependent and the reference point is determined by the economic environment describing expectations over recent past experiences. Flexible mixing distributions were used to estimate the random parameters in WTP space. Although the mean and standard deviations were similar, the use of flexible mixing distributions allows for richer information about the actual distributions of WTP rather than imposing more restrictive distributional forms.

Lifestyles and Self-Expression: Developments of Food-Related Lifestyle and Future Implications for Marketing

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Abstract

The way consumers act, choose food products and cook meals has increasingly been linked to self-identity and ways of expressing own values over the last years across the world. This development has been more pronounced in some countries compared to others, but has in general also been influenced by the increasing social media focus on food qualities, regional differences, traditions and cooking skills. New possibilities for social media forums and discussions have contributed to the focus on self-expressive trends, supported by the broadcasting of numerous events and television programs involving healthy eating, cooking skills, competitions and cross-cultural food travel experiences.

But has the overall food-related lifestyle changed across countries and years? We explore if and how the overall food-related lifestyle has changed based on a metaanalysis of datasets applying the Food-Related Lifestyle (FRL) instrument (Grunert et al. 2001). Since the first country wise and representative application of the FRL instrument in 1993, data collections have been carried out in numerous countries. Now, based on a compilation and merger of original datasets counting more than 10.000 respondents from 1993 to recent across Europe, we have examined consumer segment profiles and changes, and analyzed how the general interest in food and meal preparation is linked to self-fulfillment over time. Our results show that most segment profiles can be re-identified across both years and countries, but also that the share of consumers in different segment profiles have changed – this more in the later years – and our results indicate an increased interest in food-related self-expression and fulfillment.

Examining consumers' attitude towards food products fortified with vitamin D

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Abstract

Vitamin D is important for the body and its overall wellbeing. It is necessary for, among others, the absorption of calcium, as well as for maintaining healthy bones and muscles. Vitamin D forms on the skin during sun exposure, but this can be problematic for people residing above the 40th parallel (Kimlin et al., 2007). Food fortification with vitamin D could possibly provide a solution, but previous research has shown that the Danish consumers are sceptic about enriched food products (Bech-Larsen and Grunert, 2003; Poulsen, 1999). The purpose of this study was to examine how people who reside in Denmark accept food enrichment generally, as well as in relation to specific food products. Besides the general population, the study focused on three risk groups: People over 69 years old, people with a darker skin complexion, and people with reduced sun exposure.

A sample of 1263 Danish consumers participated a web-based survey in May-June 2014. The first part of the study, a conjoint analysis, investigated acceptance and purchase intentions of four food products. The second part examined additional parameters that potentially play a role in the acceptance of food fortification with vitamin D, such as attitudinal, knowledge-related and socio-demographic.

The results showed that the product considered more suitable for fortification with vitamin D is milk. Furthermore, consumers generally accept food products fortified with vitamin D, however, purchase intentions were lower. Lastly, a hierarchical regression showed that for both the general population, as well as for the identified risk groups, acceptance of fortification with vitamin D is affected by attitude towards vitamin D, perception of its effectiveness and health benefits, as well as by whether a public health authority has control over the fortification regulation and process.

The study results underline the importance of communicating the health benefits of food fortification with vitamin D, as well as enhancing credibility of the food fortification process through the involvement of a public health policy authority as a form of quality assurance.

Keywords: Food fortification acceptance, vitamin D fortification, conjoint analysis, hierarchical regression

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The Effect of China's One-Child Policy on Household Nutrition Intake and Food Expenditures

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Introduction

China's one-child policy and emphasis on the family may result in increased expenditures, especially on food when there is a child in the household. The one-child policy, a part of China's family planning policy, was a population control policy introduced between 1978 and 1980 and formally phased out in 2015. Because of these essentially "one child" restrictions, parents want to invest in their child providing the "best" food, but is the best food providing the best, or perhaps too much nutrition? The prevalence of overweight and obesity, especially among children, suggests nutrition may be an issue. Thus, we will examine the effects of income, food expenditures, and household demographics on nutrition intake in China.

To evaluate nutrition intake an Eating Healthy Index (EHI) is developed following the Compilation of Food-Based Dietary Guidelines, published by the Chinese Nutrition Society, and the Healthy Eating Index-2010 components and standards for scoring from USDA. Using previously collected household survey data from 11 cities in China an EHI is created for each family to assess their nutrition intake. The score increases if diet consumption is in a range representing healthy food intake. For example, if protein consumption is 300g per day and the recommended range is between 200g—400g then the individual would receive a high score. If nutrition intake is either above or below the healthy range, the score is reduced. Consumption below the recommended range indicates low nutrition intake reducing productivity and immunity to disease, both of which have associated externalities (Atkin 2013). Consumption above the recommended range may result in obesity increasing the incidence of illness or other health issues. Conceptually, the score should be somewhat like a normal distribution with the higher scores in the middle representing healthy levels of consumption and the tails representing unhealthy consumption.

The relationship between the score, representing healthy nutrition intake, and household income, wife's education level, and demographics was explored using OLS. The results indicate that changes in family structure have significant effects on household nutrition intake. We expect that when parents spend more money on food, their nutrition intake will change. If they are purchasing better quality and perhaps more nutritious food the nutrition intake score will represent a healthy relationship. However, overeating, and eating more away from home, including fast food, as incomes increase may not be healthy. Also, when the household structure changes their nutrition intake will change, such as when there is a child in the household can make the family eat healthier. These results may provide suggestions to guide healthier eating as well as developing recommendations to guide policymakers.

Section I presents the background of nutrition intake and food expenditure. Section II introduces the data and describes guidelines; then the way used our data to develop the EHI and score for each household. Section III explores the relationship between the score, representing healthy nutrition intake, and household income, wife's education level, and demographics. And provide suggestions as recommendations to policymakers. Section IV concludes.

Background

Vitoria, Kaiser G. et al (2008) pointed out that maternal and child malnutrition (maternal height, birthweight, intrauterine growth restriction, and weight, height, and body-mass index at 2 years according to the new WHO growth standards) were related to adult outcomes (height, weight, body mass

index, blood glucose, and blood pressure). They conducted a systematic review of these results and indicators with lipids, cardiovascular diseases, lung and immune function, cancer, osteoporosis, and psychiatric disorders in low income and middle-income countries. Finally, they pointed out that at age two, height is the best predictor of human capital. They also conclude that malnutrition in early life leads to permanent impairment and may affect future generations. Its prevention may result in significant health, education, and economic benefits.

Raghav Gaiha, Raghbendra Jha and Vani Kulkarni (2013) found, in India, despite the rise in income, per capita calorie intake has continued to decline. Atkin (2013) pointed out that the food expenditure patterns differ substantially by region and the families do not maximize nutrition, but it seems do show a preference for a particular food. He found that in the Indian state of West Bengal consumption of rice and wheat are respectively 48 percent and 5 percent of national food expenditures for households in 1987-1988, despite similar prices. Lower food costs have not resulted in better nutrition since over 50 percent of children in West Bengal were classified as underweight despite increased caloric intake.

Methodology

The U.S. Department of Agriculture's (USDA) Healthy Eating Index is a measure of diet quality in terms of conformance to the Dietary Guidelines for Americans, which are the basis of nutrition policy for the United States government and the foundation of all federal nutrition guidance. The accompanying USDA Food Patterns translates key recommendations of the Dietary Guidelines into specific, quantified recommendations for types and amounts of foods to consume at 12 calorie levels with limits on calories from solid fats and added sugars. Whether assessing diets or some aspect of the food environment, the basic steps for deriving USDA's Healthy Eating Index 2010, scores are the same: (1) identify the set of foods under consideration; (2) determine the amount of each relevant food group, subgroup, and nutrient in the set of foods; (3) derive the pertinent ratios; and (4) score each component using the appropriate standard (Table 1). The Chinese Nutrition Society published the Compilation of Food-Based Dietary Guidelines in 2007. These guidelines suggested that Chinese consumers should eat a variety of foods, mainly cereals; consume plenty of vegetables, fruits and tubers; consume milk, beans or dairy- or bean-products every day; consume appropriate amounts of fish, poultry, eggs and lean meat; and reduce fatty meat and animal fat in the diet. The guidelines suggest balancing food intake with physical activity to maintain a healthy body weight and choosing a light diet that is also low in salt; if consuming alcoholic beverages, do so in limited amounts; and avoid unsanitary and spoiled foods. The standards for seven types of food are presented in Table 2.

Table 1. USDA Healthy Eating Index standards

Component	Max Poi	Standard for maximum score	Standard for min score of zero
HEI-2010			
Adequacy:			
Total Fruit	5	≥0.8 cup equiv. per 1,000 kcal	No Fruit
Whole Fruit	5	≥0.4 cup equiv. per 1,000 kcal	No Whole Fruit
Total Vegetable	5	≥1.1 cup equiv. per 1,000 kcal	No Vegetables
Greens and Beans	5	≥1.1 cup equiv. per 1,000 kcal	No Dark Green Veg or Beans and Peas
Whole Grains	10	≥1.5 oz equiv. per 1,000 kcal	No Whole Grains
Dairy	10	≥1.3 cup equiv. per 1,000 kcal	No Dairy
Total Protein Food	5	≥2.5 oz equiv. per 1,000 kcal	No Dairy
Seafood and Proteins	5	≥0.8 oz equiv. per 1,000 kcal	No Seafood or Proteins
Fatty Acids	10	(PUFAs + MUFAs)/SFAs >2.5	(PUFAs + MUFAs) <1.2
Moderation:			
Refined Grains	10	≤1.8 oz equiv. per 1,000 kcal	≥4.3 oz equiv. per kcal
Sodium	10	≤1.1 gram per 1,000 kcal	≥2.0 grams per 1,000
Empty Calories	20	≤19% of energy	≥50% of energy

Table 2. Chinese Dietary Guidelines

Component	Standards
Meat	50g-75g
Fruit	200g-400g
Vegetable	300g-500g
Seafood	75g-100g
Dairy	≥300g
Grain	250g-400g
Egg	25g-50g

Based upon the USDA healthy eating index, Table 1, and the Chinese Compilation of Food-Based Dietary Guidelines, Table 2, we define the maximum points for each food as 10. For example, if the household consumes the quantity in standard range the score is 10 points, otherwise the score will decrease as follows:

$$S_i = \alpha |Q_i - M_i| + \beta \quad (1)$$

where S_i represents the points that household score, α is the coefficient, and β is constant, Q_i is the quantity that the household consumed and M_i represents the medium value of the standard range.

Each food type has a standard range, M_i is calculated as the average value of the range. For example, the average value of dairy is 300g (Table 3).

Table 3. Average values for recommended consumption levels.

Component	Value of M_i
Meat	62.5
Fruit	300
Vegetable	400
Seafood	87.5
Dairy	300
Grain	325
Egg	37.5

Also these values were used to calculate the weighted value, W_i , of each food as:

$$W_i = M_i / \sum_{i=1}^{n=7} M_i. \quad (2)$$

The overall total score of all the seven groups of food is calculated as:

$$\text{Overall Weighted Score} = \sum_{i=1}^{n=7} W_i * S_i \quad (3)$$

Regression between score and demographics

Based on the household data collected from the 11 cities, dummy variables were created for child, senior, wife's education and region. OLS was used to estimate the relationship between score and household income, household size and four dummy variables to evaluate the effects on household nutrition intake as follows:

$$S_i = \beta_0 + \beta_1 I_j + \beta_2 Z_i + \beta_3 E + \beta_4 C + \beta_5 D + \beta_6 R_i + \varepsilon \quad (3)$$

where

S_i is the score that i th household get,

I_j represents household income,

Z_i is the household size for i th household,

E is a dummy variable which represents wife's education, defined as wife's education higher than high school = 1, otherwise is 0.

C is a dummy variable that takes the value 1 for households with one child, and 0 otherwise.

D is a dummy variable for seniors, 1 if the age of a household member is greater than 65 for male and 60 for female, 0 otherwise.

R_i represents region dummies, $i=1$ if the city is in the East or West region, 0 otherwise representing the Southern region.

ε , is the error term.

To further assess the effects on EHI, for each food, consumption at levels lower and higher than the recommended levels are considered as well as the overall consumption. Evaluating the EHI for consumptions levels at higher and lower levels may reveal different behavior compared to the score for the individual food group.

Results

As shown in Figure 1, graphs of household nutrition intake scores demonstrate a normal distribution, except for dairy which has only a minimum recommended consumption level. The graphs clearly indicated that some households under-consume and some over-consume food. For example, according to the guidelines healthy meat consumption should be in the range of 50-70 grams. The graph of meat

consumption clearly shows that many of the households surveyed consume more than the recommended quantities.

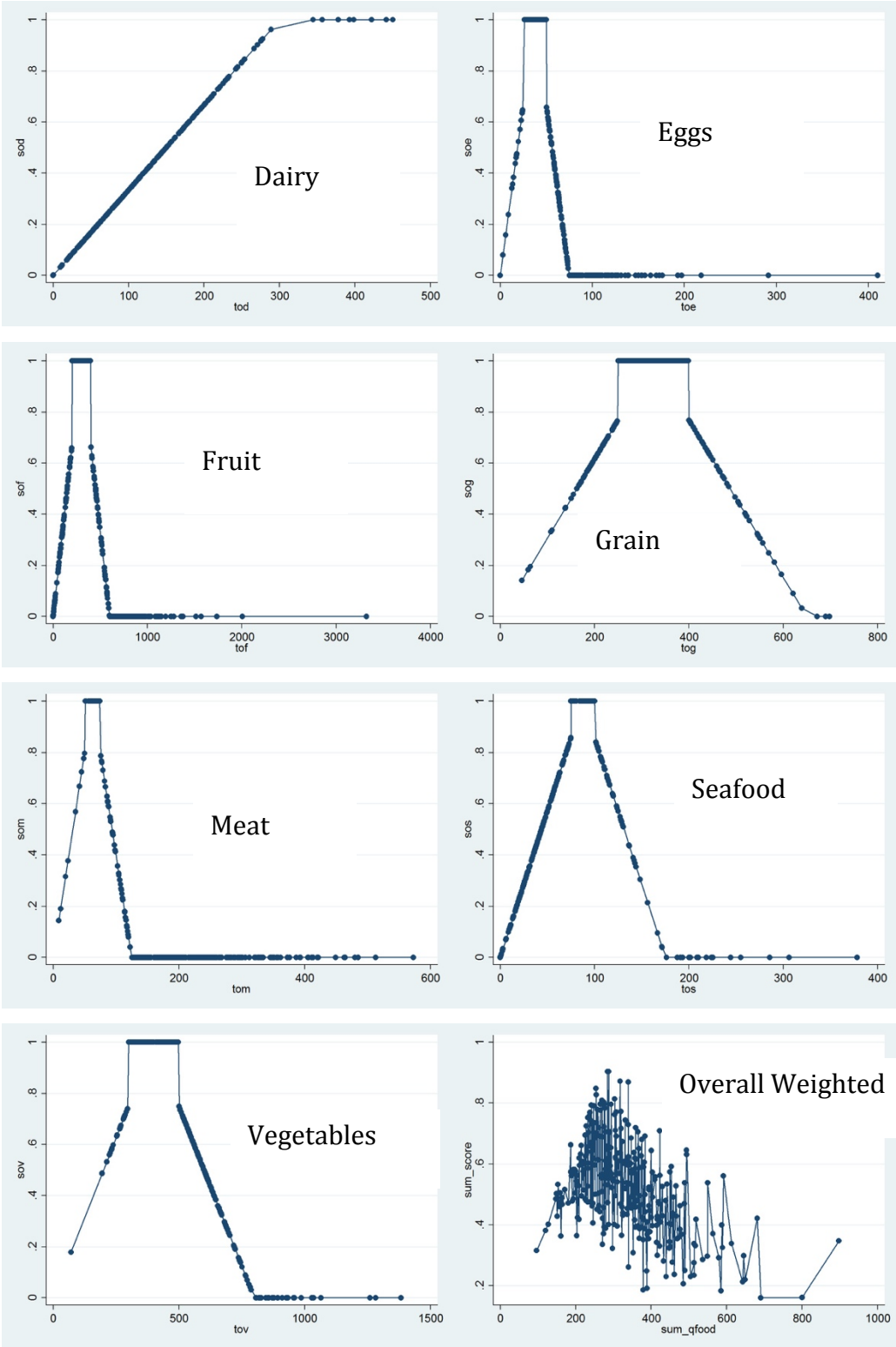


Figure 1. EHI scores

The estimation results, shown in Table 4, indicate that when a household includes a child, there is a positive and significant effect on eggs, vegetables, fruit, dairy, and the overall score. Meat and seafood consumption, although not significant, is decreased. Thus, the presence of a child in the household suggests that household will consume a more healthy diet presumable to provide their child with better nutrition. If the household includes seniors, there is a significant positive effect for meat and dairy, but for seafood a significant negative effect. Overall, the presence of a child or a senior in the household tends to result in a healthier diet.

Table 4. Estimation results

	Child	Senior	Western City	Eastern City
Grain	+	-	+	0.083***
Meat	-	0.083***	-0.114***	-0.147***
Seafood	-	-0.029*	-0.061***	0.141***
Eggs	0.032*	+	-0.042*	-0.047**
Vegetables	0.072***	-	+	+
Fruit	0.052***	+	-	-
Dairy	0.029**	0.047***	0.107***	0.044***
Overall Score	0.035***	+	+	0.032***

	HH Income	Wife's Education	HH Size
Grain	+	+	0.035***
Meat	-6.09e-06***	-	0.023***
Seafood	+	0.044***	0.016*
Eggs	-	-	0.044***
Vegetables	-	-	0.028***
Fruit	+	+	+
Dairy	3.65e-06**	0.026**	-0.039***
Overall Score	+	0.0146**	0.010**

confidence level *10% ** 5% *** 1%

There are significant regional differences for many of the foods with generally positive effects on grain, vegetables and dairy and negative effects on meat, seafood, and fruit.

Household income has a negative significant effect suggesting that as income increases people will likely buy more meat resulting in consumption beyond recommended levels and a less healthy diet. Dairy consumption will likely increase resulting in a higher score and a more healthy diet. Positive, but insignificant effects were found for grain, seafood and fruit. Also, insignificant were negative effects for eggs and vegetables. Overall, increases in income would result in less healthy consumption levels of meat, eggs and vegetables and more healthy levels of grain, seafood, and fruit consumption.

As the wife's education level increases the results suggest that the household will eat healthier levels of many foods, especially seafood and dairy, but less healthy levels of meat, eggs, and vegetables.

Household size has a significant positive effect on most types of food, which suggests that the more people in that the family will perhaps plan meals more carefully resulting in more equal allocation and healthier eating. But for dairy the results suggest that more as the number of household member's increase, individual shares of dairy consumption decreases resulting in a lower score.

Conclusions and Future Research

Overall, the results suggest that the one child policy has had a positive effect on household food consumption, with the exception of meat and seafood. There are significant regional effects in food consumption. Increasing incomes and the wife's education level have mixed effects on healthy eating tends to result in healthier levels of grain, seafood, fruit, and dairy consumption, but less healthy levels of meat, eggs, and vegetables. Increasing household size has a positive healthy effect on consumption of all foods except dairy. The effect on the overall EHI score which includes all foods what positive in all cases suggesting that children and seniors do influence the household diet. Future research of this topic

may include household health insurance, a more detailed assessment of nutrition intake and the implications for world food markets.

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**Consumer Trust in High Involvement Food Brands:
An Exploratory Study of Infant Formula Consumption in Urban
China**

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Abstract

Food products and food quality are crucial in everyday life. It is believed that the delinking of consumers and food production systems creates uncertainty and fear (Fischler, 1980), and the potential risks involved in modern food systems have increased the research of trust in food (e.g., Kjærnes et al., 2007). However, a review of existing literature indicates a lack of understanding of consumer trust in relation to how consumers experience the evolving process of trust development with high-involvement food brands, particularly after food scares. This work is the first part of a longitudinal study on consumer trust in high-involvement food brands, in the context of infant formula consumption in urban China. From in-depth interview with 25 first-time pregnant women from four major cities of China, this work explores how prospective mothers select their intended infant formula brands for future infant feeding, and explores the social construction of consumers' trust in such a high-involvement food category. As trust is a context-specific construct (Mayer et al., 1995), the preliminary findings of this empirical work highlight how Chinese parents' trust in infant formula brands is socially constructed within their social-cultural background, and provides insights different from previous research conducted in western markets. A follow-up study will be undertaken in 6 months in order to explore how the new parents' trust in their intended infant formula brand has developed, and how consumers' trust in infant formula brands impacts their brand selection and consumption over time. Managerial implications of this work may apply to food brands who are suffering from a loss of consumer trust, especially those attempting to restore the consumer-brand relationship.

Key Words: Consumer Trust, Brand, High-involvement, Infant Formula, Urban China

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Women's Believability Judgments for Weight Management Foods

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Abstract

Weight loss is an increasingly important, yet elusive goal for many consumers. Functional foods, with ingredients that provide hunger control, are under development as a means to assist consumers with their body weight endeavours. Because hunger can lead to failed weight loss attempts, the enhancement of the satiety, that is, the sense of fullness that lasts after eating, is seen as a promising consumer benefit (Hetherington et al., 2013). However, more research is needed from a consumer viewpoint to understand the possible market response to such foods (Van Kleef, Van Trijp, Van den Borne & Zondervan, 2012). Whilst consumers in general understand the benefits of satiety and the need for personal responsibility in their weight loss activities (Bilman, Van Kleef, Mela, Hulshof, & Van Trijp, 2012), there are concerns over the possible misinterpretation of satiety benefits by more vulnerable consumers (Booth & Nouwen, 2011). Research has not yet explored whether consumers will believe the claims, given their personal weight loss activities and lived experiences. This research, therefore, aims to gain qualitative insight into consumer believability judgements of the claims, from consumers seeking weight loss.

Using an interpretive approach, the responses of 14 New Zealand women currently seeking weight loss were obtained in unstructured, face to face interviews. Current food and weight loss experiences were firstly openly discussed. The participants were then presented with a written statement describing the concept of a range of foods, such as breads, cereals, and yoghurts, with a ‘feel fuller for longer’ benefit. If necessary, they were prompted to discuss whether they found the claims believable for themselves. Although both genders are known to have high involvement in weight related activities, the focus was on the responses of women, who continue to be the predominant gender facing tensions between immediate temptations of the food rich marketplace, and weight /body image concerns (St James, Handelsmann & Taylor, 2011).

The findings revealed that most women were uncertain and tentative in their responses. Due to an overshadowing scepticism of the weight loss industry, most women were protective of their judgments. Although they confirmed that the fullness enhancement benefit itself was “*very believable*” because of their existing knowledge of foods that are more filling, they suspended believability judgement due to personal adherence uncertainties. Clinical proof was not seen as impacting the believability judgement due to scepticism about testing practices. In line with the findings of Murray and Vickers (2009), craving and the desire for food is perceived as a form of mental hunger, and is seen by consumers to operate independently to physical hunger. Women, who self-identified as emotional eaters, held doubts about how the foods might help them overcome their mental hunger due to their tendency to eat when not physically hungry. However, despite being jaded by previous weight loss failures, and developing counterarguments and even negativity about the claims, they still wanted to try the proposed foods “just in case” they worked. The findings also revealed other very diverse views. For those who identified themselves as ‘food purists’, moral incompatibility issues meant the foods were totally unacceptable. In contrast to this were those who “*definitely believed*” despite previous difficulties and self-control issues. The presence of hope has been theorised to lead to motivated

reasoning, and in this case the response reflected that some women ‘want to believe in’ a product which can provide personal advancement towards weight loss goals (MacInnis & de Mello, 2005). This emotionally driven response was interpreted as indicative of the presence of consumers who may be more vulnerable to misinterpreting the benefit.

Overall, the claims were regarded as ‘a possibility’ for most consumers, but they would not be believed until further confirmatory evidence from themselves or important others. By identifying the goal-contingent and motivational nature of the judgements, the findings contribute by drawing attention to emotional components of the response. Implications for marketers looking to launch satiety enhancing functional foods in the future are provided, including ways to move beyond existing marketplace appeals to those which better resonate with women seeking weight loss.

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The Effect of organic food labels on consumer attention

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Abstract

This paper describes the consumers' perception and attention of organic and local food with special stress laid on eco labels placed on their packages. Objectives were to find out, if there is significant difference between men's and women's perception of eco-labelling and organic food. As the goal was to find out the importance of label being placed on a certain product, we split participants into two groups (88 subject in experimental and 59 subject in control group) observing the same products, once with eco labels, second time without them. In total, 147 participants (104 of them women) aged 20 to 23 years took part in this research. Data were collected by using an eye-tracking device SMI RED 250. For the purpose of analysing data, metrics Are of Interest and Heat maps were used. The conclusiveness of difference was tested using the Mann-Whitney U test. Research itself took place during November 2015 in the Eye-Tracking Laboratory at Mendel University in Brno.

The research showed the significance of local and eco-labelling of products for the consumer's attention. Only 27 % of consumers are not care about the organic quality label. For 74 % of consumers the labelling, particularly of the origin, is important in the case of deciding between two alternatives. Data also show that the most visual attention is paid to product brand, graphic elements and claims with additional information such a quantity or flavour. Results suggest, there is no marked difference in the average attention time in both sexes.

Keywords: research, organic food, labels, eye tracking, consumer attention

Individual differentiation of GI products: case of Monte Etna olive oil PDO

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Abstract

Geographical indications are proposed as a quality scheme in order to preserve the diversity of the products from different geographical origins. As a formalised quality scheme, developed through collective action of involved stakeholders, geographical indications are described in a protocol called product specification or code of practice, a document that Belletti et al (2014) describe as a set of rules for the exact characteristics of the product and the production process. Canavari et al (2010) explain that for the consumers origin is important cue and a feature of product quality, and Duarte (2008) suggests that for small scale producers obtaining market for high-value products is facilitated through collective action of GI consortia.

However, for small scale producers being in a consortium other than collaborating with the members for collective marketing strategy for the GI, it also means to compete between each other for their individual brands. Simultaneous cooperation and competition is described as coopetition (Bengtsson & Kock, 2000). Each GI producer is supposed to follow the common rules elaborated in the product specification, while being allowed to employ individual innovations for differentiation of their product (Vandecastelaere et al, 2009). According to Dentoni et al (2013) individual producers have a particular challenge to find a balance in their marketing mix between the GI label promotion versus brand communication of individual products.

The objective of this study is to examine how the presentation of individual producers and their products differs among each other and from the product specification.

Employing the web content analysis method, this study examines the 12 active websites of olive oil producers belonging to DOP Monte Etna. The websites are listed in the official website of Monte Etna PDO Olive oil, however several websites were also found through employment of a search engine. The content of each websites is compared with the code of practice of the consortia and with other websites. Certain elements are particularly taken into consideration: information about peculiar quality, information about varieties used, existence of agrobiodiversity concept, information about agritourism activities.

Findings of this study show that there are notable differences between the presentations of individual producers of PDO olive oil Monte Etna. The differences between individual producers and products mainly refer to: involvement in agritourism and wine and gastronomy tourism, reflection about gastronomic features, organic production and certification, olive variety information, targeting foreign markets.

Keywords : individual differentiation, geographical indication, olive oil

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Relationship between Price and Quality Rating of Wines from the Czech Republic

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Abstract

In this paper the relationship between prices of wines and their quality is evaluated. Wholesale prices from importers or winemakers and points of quality are considered to obtain different statistical indicators of dependence. Quality is measured on 100 point scale for wine evaluation. Only Czech wines rated during the first round of the Prague Wine Trophy 2015 wine competition are included in this study. The data set consists of 114 wine samples of 5 different wine categories: Chardonnay, Pinot Blanc, Blaufränkisch, White cuvée and Sparkling wines. Chi-square test of independence in contingency table was applied to explore the dependence between most frequently used price categories of Czech wines and medal awards. This test did not show statistically significant relationship. To avoid loss of particular data value, correlation coefficient was used as a second statistical method. After application of modified Kolmogorov-Smirnov test, normal distribution was not found for the prices. Therefore Spearman's correlation coefficient was used for further exploration within individual grape varieties of Czech wines. For categories White cuvée and Sparkling wines statistically significant dependences were found. However, the rest of categories did not show statistically significant relationship. Moderate correlation was found for Blaufränkisch and almost null correlation for Chardonnay and Pinot Blanc. White cuvée category was used to form regressive function and to estimate the prices of wines with more points than was the number of points gained during the competition. It is obvious that the price of White cuvée wine category would rise with its quality.

Keywords: Blaufränkisch, Chardonnay, Pinot Blanc, Sparkling wines, White cuvée

Willingness to Pay for Ecolabelled Products: the Case of Traditional Rice Varieties in the Philippines

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Abstract

Philippines is one of the megadiverse countries in the world and home to globally important agricultural biodiversity particularly in rice. However, the diversity is eroded as some traditional rice varieties are no longer produced. Some farmers, however, do not continue to plant traditional varieties of rice because they are not profitable. While there is an opportunity to continue producing them as consumers begin to recognize the importance of preserving traditional varieties, it is uncertain whether this opportunity translates to better incentives for farmers. A survey of 230 consumers in Luzon, Visayas and Mindanao was done to examine this opportunity particularly the demand and willingness to pay for ecolabelled products from these traditional varieties. Factors that affect the level of price premium were also analyzed using interval regression analysis. Results show that most consumers are willing to pay for a premium although they vary depending on the level of price premium. Certification fetches higher price and majority of the respondents are willing to pay price premium for ecolabelled products that range from 10% to 20%. Results show that gender, age, income and being an organic product consumer significantly affect the level of price premium.

1.0 Introduction

Philippines is one of the megadiverse countries in the world and considered to be a biodiversity hotspot. It is home to diverse species of plants, animals and microorganisms where more than half are found only in the Philippines. It is also home to globally important agricultural biodiversity such as in rice and rootcrops.

One way to preserve biodiversity in agriculture or agro-biodiversity is to provide opportunity for the farming community to derive sufficient economic benefits from conserving these traditional varieties such as rice. However, a key constraint to this opportunity is the dearth of information and awareness of consumers about the social, economic, nutritional and ecological value of traditional varieties. Previous studies show a potential for organic products such as traditional varieties of rice with annual industry growth rates of 10-20% and a price premium that ranges from 20-30% (Concepcion, et al 2008).

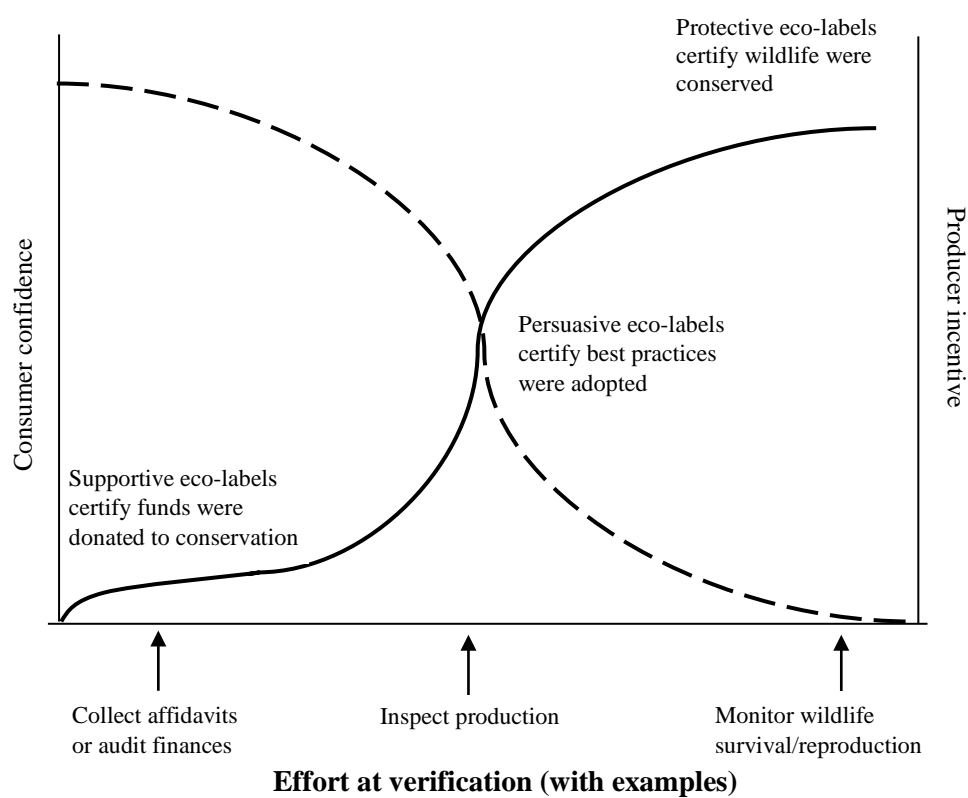
There are a number of products that are branded or labeled as environment friendly to respond to opportunities created by the awareness and value consumers place in preserving the environment. These products are generally known as ecolabelled products.

This paper attempts to examine the market potential for ecolabelled products particularly the traditional rice varieties in the Philippines. The paper is organized as follows. Section 2.0 presents some previous studies followed by section 3.0 which covers the discussion on the methodology used in the analysis. Section 4.0 provides an overview of the market for traditional rice in the Philippines while section 5.0 contains the analysis of market potential of traditional or indigenous varieties. Finally, summary and conclusions are discussed in Section 6.0.

2.0 Previous studies

There a number of studies that have explored the willingness to pay for environmental products and attributes (eg Aoki, et al, 2016; Lozano et al 2010; Rex and Baumann 2006). Of these, some focused on organic products such as Sriwaranun, et al (2015) in Thailand, Sirieix, et al (2011) in China and Kuo et al (2005) in Taiwan. There were also studies specific to rice that include Kajale and Baker (2015) in India, Flamohe et al (2015) in Togo and Ara (2003) in the Philippines. The latter analyzed the multiple attributes of organic rice in Manila and Naga City while this study covered more areas and types of rice including brands and labels.

A useful framework that illustrates the value of market-based mechanism such as ecolabelling is the one by Treves and Jones (2009). According to this framework, a trade-off exists between increasing consumer confidence through verification and the willingness of producers to participate because of the costs of verification. Consumer confidence increases while producer incentive decreases as the effort of verification increases as shown in the framework they developed in Figure 1 as applied to wildlife conservation.



Source: Treves and Jones (2009)

Figure 1. Trade-off between consumer confidence and verification effort

In this framework, they also came up with three classifications of ecolabels based on the effort of verification namely, supportive, persuasive and protective ecolabels. Supportive ecolabels have lower degree of verification. Persuasive ecolabels are those that certify the methods of production but not conservation itself as done in protective ecolabels. They classified ecolabels based on these three categories.

They further argued that there is a tradeoff between increasing confidence of consumers through higher effort of verification and providing incentives to producers. This is due to the fact that increasing effort of verification increases cost which lowers incentives for producers and may put pressure to certifiers to relax the standards. Moreover, they also raised the issue that profits may not be a realistic goal for ecolabels that have higher effort of verification such as persuasive and protective ecolabels. As such, while market-based mechanism can help protect the environment, the state in most cases is in a better position to provide this public good.

A study by Amstel, et al., (2007) was done to examine to what extent ecolabels in the Netherlands contain standards that promote conservation and sustainable use of agro-biodiversity particularly on-farm biodiversity of agricultural landscapes. They found that the ecolabels contain some standards that promote agro-biodiversity but the differences across labels varied extensively. They concluded that the five ecolabels they examined were insufficient for the Dutch government to use as part of a governance strategy to promote agro-biodiversity.

There were a number of issues that were identified in using ecolabels. A study by (Amstel, et. Al., (2008) assessed the reliability of information of five food ecolabels particularly on the aspects of biodiversity, reference to rule of law to assure buyer's confidence, farmer's compliance and ecological impact. They found that there was ambiguity on environmental themes. The information about the compliance of producers was also inadequate and there was failure to assure the buyers of the ecological impact of the products that are ecolabelled.

Market and government policy also play an important role in promoting agro-biodiversity conservation. In the case of natural rubber latex in Indonesia (Akiefnawati et al., 2011), farmers have difficulty complying with the certification standards of the Forestry Stewardship Council (FSC). There were no factories that were willing to receive eco-certified rubber as the market for certified-rubber is underdeveloped. There was also conflict with government's policy particularly in supporting palm-oil production while no policy supports rubber agro-forestry conservation.

There are three challenges in marketing ecolabelled products according to Ottman, et al., (2006). These are the so called three Cs, namely: consumer value, credibility of claims and calibration of marketing messages to minimize confusion. While ecolabelled products minimize competition as they cater to different market segments, they should be able to create value for consumers based on quality or convenience. They must also pass scrutiny from various groups and be able to communicate clearly the value of the product.

Combining ecolabels and geographic indication (GI) can strengthen small rural producer's development, conservation of biodiversity and marketing efforts (Guerra 2004). This is because GI is a collective guarantee with regards the biological identity and quality of the product particularly in developing countries where biological resources are not usually marketed through

brands. Thus, GIs can strengthen market access and can be used as a tool to regulate harvesting and promote rational land use strategies and in-situ conservation of biodiversity (Guerra 2004).

Incentives for producers of ecolabelled products have become attractive which explain why “green advertising” has increased in the last few years but many consumers who patronize green products want certification to be verified. In Indonesia for example, rain forest certified Robusta and Arabica coffee are priced 47% and 13% higher compared to non-certified Robusta and Arabica coffee (EEPSEA Policy Brief 2013).

3.0 Methodology

There were three types of ecolabelled rice products that were analyzed to examine their demand and willingness to pay. These were certified organic rice, rice products labeled or sold as organic but without organic certification from a third party or an organization that issues organic certification and lastly rice products certified to preserve Ifugao rice terraces as cultural heritage. Ifugao is a province in the Philippines known for its remarkable rice terraces. In the Philippines, it is known to be eighth wonder of the world. In 2013, two municipalities in the province, namely Hingyon and Hungduan are declared as a National Important Agricultural Heritage Site. This trademark is part of the initiative of the Food and Agriculture Organization’s program on Globally Important Agricultural Heritage Sites.

A survey was conducted which generated a sample of 230 consumers. A model was estimated to examine the factors that affect the level of price premia that consumers are willing to pay for products covered. In order to ensure that the respondents understand the reasons why the products are ecolabelled, it was explained in the introductory paragraph of the survey that the purpose was to understand the factors that determine demand for environment friendly products or eco-labelled products. It was also mentioned that the results of the survey will be used to develop eco-labelled products and inform government and private sectors to support the promotion of these products that help preserve our environment. Also, the respondent was asked if he is willing to pay for a price premium for ecolabelled products before he or she proceeds to choose the range of price premia. Thus, the respondent attaches a value contingent on the information about the attribute of the product that promotes preservation of the environment.

Interval regression was used to examine the factors that affect the level of price premia that consumers are willing to pay for the ecolabelled products covered. This method is appropriate since we know from the survey the range of premia that the consumers are willing to pay but not the exact premium. The Gnu Regression, Econometrics Library (GRET) software was used to estimate the model.

The model for price premia is specified as follows:

$$PP=f(I, H, C, G)$$

Where PP= price premium specified in nine categories or ranges of price premia

I=income specified in four income levels or brackets

below USD 326/month

USD 327/mo. – USD 652/mo.

USD 653 – USD 1,087

USD 1,088 – USD 1,522

H=level of health consciousness: 1 if consider self as health conscious and 0 otherwise

C=consumption of organic products: 1 if consuming organic labeled products and 0 otherwise

G=gender: 1 if male and 0 if female

Imposing a linear functional form, the model estimated was:

4.0 Traditional varieties of rice in the Philippines

The market is expanding for traditional varieties of rice in the Philippines which are usually grown without the use of chemicals. This is in response to changing market conditions where consumers increasingly appreciate living a healthy lifestyle. Part of this is the increasing consumption of organic products. According to Philexport, demand for organic products increased by 20-30% per year (www.philexport.ph).

The value chain for traditional varieties of rice is similar to commercial (modern variety) of rice. For commercial rice, palay or unmilled rice is sourced from the farmers, then sold to traders in the barangay and some are consolidated by municipal traders who mill the rice themselves or sell to large millers. They are then sold to wholesalers and retail outlets that include small retailers in wet markets, supermarkets and institutional buyers such as hotels, restaurants and fast food. Inputs such as fertilizers and seeds are sourced from various outlets including traders who also finance rice production. In some cases, farmers are able to get credit from government financial institutions, micro-finance institutions and non-government organizations. Technical and extension services are provided by government, non-government organizations and private sector.

The main difference between the value chain for traditional rice varieties and commercial rice is the market outlets. Traditional varieties are sold mostly in supermarkets, specialty stores and sometimes they are sold directly by farmers to tourists, hotels and restaurants and consumers (Figure 2). They are also sold in traditional wet markets but more recently, they are sold mostly in modern retail outlets such as supermarkets, hypermarkets and specialty stores.

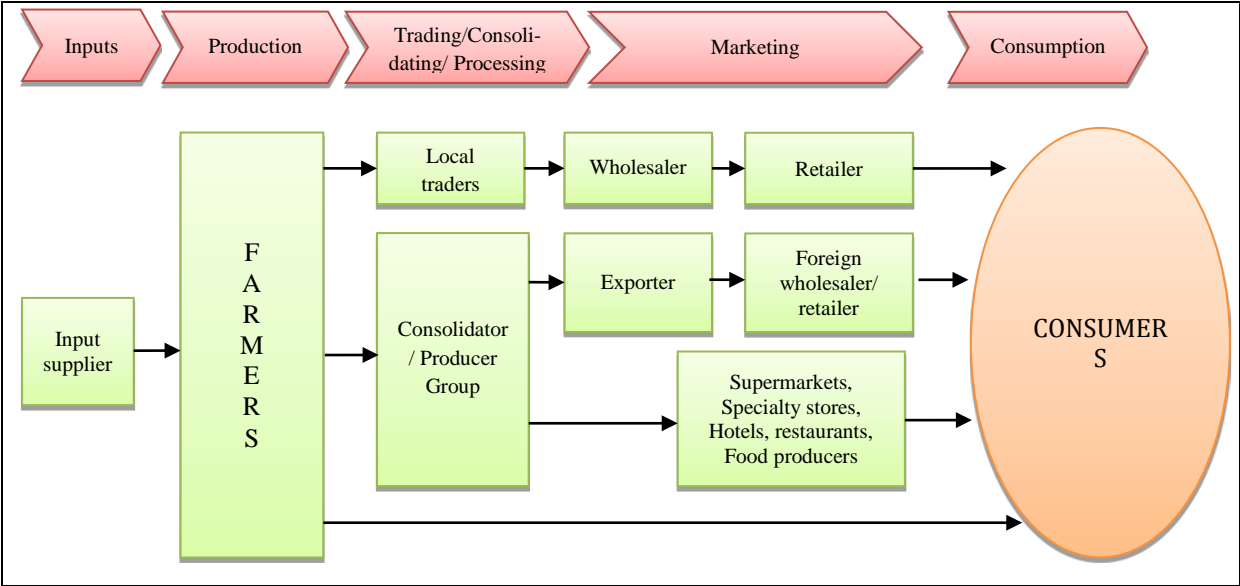


Figure 2. Value Chain for Traditional Rice Varieties

The market for the traditional varieties of rice is quite competitive given the number of brands available in the market produced by small famers and large companies from Luzon, Visayas and Mindanao. There are 16 brands based on the market outlets scanned for traditional varieties such as supermarkets, specialty stores, trade fairs, retail stores, and organic weekend markets (Table 1). Scanning was done within two month period (October to November 2014) although majority of the data were collected within a three day period in November. This is to factor out the time element that may affect prices for more accurate comparison of brands across market outlets. The type of market outlets was also included as they also affect prices. Differences in retail or marketing costs across types of market outlets also affect retail prices. It is true that organic products are not necessarily expensive but sometimes they are cheaper because of other factors. These include supply factors (volume of production), seasonality and retailing or marketing costs. If prices are compared to non-organic products, quality of the product should also be considered aside from the aforementioned factors. Generally, however, organic products are more expensive because of low volume of production and productivity. Marketing cost per unit is also high due to low volume of production particularly for small farmers. They are also sold in specialty markets catering to relatively affluent consumers (Table 1).

There are three types of labels that can be gleaned from this list of products of traditional rice varieties. These are: 1) labeled as organic that is certified 2) labeled as organic but without certification 3) without organic labels. In what follows, the effect of factors such as certification, location, and type of product (color) on price are discussed.

Certification

Rice products with organic certification such as Fresh Start, Gilded Grains, and Bios Dynamis are priced higher than those without certification. Prices range from USD 1.2 – USD 3.9/kg. (@ 1 USD to 46 Philippine pesos) and packed in 1kg to 2kgs. On the average, certified organic rice is priced at USD 3.9/kg. (Table 2). These products can be found in specialty stores such as the

echo stores in Bonifacio Global City & Makati, Department of Agriculture’s Agribusiness Center, and in Bios Dynamis outlets in Manila and Davao City. Third party organic certification used in these products came from the Organic Certification Center of the Philippines (OCCP) and Negros Island Organic Certification Services (NICERT).

Table 1. Price of traditional rice by brand, label, market outlet, and weight

Variety/Brand	Label	Type of product (as part of label)	Packed/Produced by	Main office address	Market outlet sold	Weight	Price	Price/kg
							(PhP)	(Php)
Fresh Start	NICERT certified organic	Heirloom variety Red rice	Fresh Start Organics	No. 3-A, SJ Bldg, Sta. Clara Drive, Brgy. Mandalagan, Bacolod City	Echo store Makati	2kg	5.9	2.9
Bios dynamis	OCCP certified	Black rice, red, brown	Bios dynamis	Magsaysay Ave., Mlang, Cotabato	Echo store Makati	1kg	3.9	3.9
Gilded Grains	NICERT certified organic	Export quality Organic -RED gold	Better country community corporation	Better Country, Don Simeon cor Silangan, San Lorenzo, Gapan City NE 3105	DA Agribusiness Center	1kg	3.5	3.5
Bios dynamis	OCCP certified	Black rice, red, brown	Bios dynamis	Magsaysay Ave., Mlang, Cotabato	Davao Bios dynamis store	1kg	1.2	1.2
Tawid Hill Exotic Rice	Organic*	Brown rice			Echo store Makati	1kg	3.5	3.5
Sun Made	Organic*	brown rice	Mindanao Agri-network Corp.	Davao City	Echo store Makati	5kgs	10.5	2.1
Sun Made	Organic*	brown rice	Mindanao Agri-network Corp.	Davao City	SM Makati	1kg	1.9	1.9
Cordillera Heritage rice	Organic*	brown, red, black	Kalinga	Tabuk City Kalinga		1kg	2.2	2.2
Kintoman heirloom rice	Organic*	heirloom rice - glutinous		Kibungan, Benguet	Charmp trade fair in Baguio	1kg	2.1	2.1
Kalinga Unoy	Organic*	organic export quality - heritage RED	Kalinga	Kalinga		1kg	2.6	2.6
Kalinga Jekot	Organic*	organic export quality– heirloom s. rice	Kalinga	Kalinga		1kg	3.3	3.3
Jordan Farms	Organic*	red rice	Sunnywood Superfoods corp	479 J. P. Rizal St., Bgy. Vergara, Mandaluyong City	SM North Edsa	800g	2.1	2.6
Jordan Farms	Organic*	brown			SM North Edsa	800g	1.9	2.4
Jordan Farms	Organic*	tapol de oro, Violet Rice			SM North Edsa	800g	2.3	2.9
Jordan Farms	Organic*	black rice			SM North Edsa	2kgs	5.0	2.5
F & C Forbidden Rice	Organic*	black rice	Upland Marketing Foundation, Inc.	Pasig City	SM North Edsa	500g	1.6	3.2
F & C Healthy Rice	Organic*	red rice				500g	1.2	2.4
Sun Made	Organic*	brown rice	Mindanao Agri-network Corp. (Mancor)	Davao City	Davao (Gaisano,NCCC, Rustans's)	1 & 5kgs		1.4
Dujali Organic Rice	Organic*	black rice	Coop	Davao del Norte	Davao retail store	1kg	1.2	1.2
Eighth Wonder Kalinga Unoy	Organic*	Export Red rice	Rice Inc.	Kalinga, Ifugao, Mountain Province	Outside Phils.	11b		12.1
Eighth Wonder Tinawon Fancy Rice	Organic*	Export fancy rice	Rice Inc.	Kalinga, Ifugao, Mountain Province	Outside Phils.	11b		12.1
Eighth Wonder Ulikan Red	Organic*	Export red rice	Rice Inc.	Kalinga, Ifugao, Mountain Province	Outside Phils.	11b		12.1
Dona Maria	not labeled as organic	Jasponica brown	SL Agritech Corp	Laguna	SM North Edsa	5kgs	9.8	2.0
Supermarket house brand	Not labelled organic	brown rice		SM	SM hypermarket	1kg		1.3
Supermarket house brand	Not labelled organic	violet rice		SM	SM hypermarket	1kg		1.7
Dona Maria	not labeled as organic	Miponica brown	SL Agritech Corp	Laguna	Robinson's Davao	5 kgs	9.8	2.0
Harvester's Red rice	Not labelled as organic	red rice	Sunnywood Superfoods corp	479 J. P. Rizal St., Bgy. Vergara, Mandaluyong City	Robinson's Davao	5kgs	7.9	1.6
Dinorado PG Rice	Not labelled as organic	Dinorado			Robinson's Davao	25kgs	26.9	1.1

*labelled as organic but without certification
Source: Market Monitoring November 2014

Table 2. Price of traditional rice by type of label

Type of label	Average Price (USD)	% Difference to Certified organic
Certified Organic	2.9	
Organic*	2.4	20
Not labelled as organic	1.6	51

* Labelled as organic but without certification

On the other hand, average price of rice brands that are labelled organic but do not have organic certification is USD 2.4 per kg. and the price ranges from USD 2.3 – USD 3.3/kg. The average price for certified organic rice is 20% higher than those labeled as organic but without certification and about 51% higher than traditional rice (red, black or brown) not labeled as organic.

A number of these products labelled as organic but without certification are packed in different weights. For example, F & C Forbidden rice (black rice) and F & C Health rice brands are packed at 500g. Jordan Farms is another brand having red, black, brown, Violet, and Black varieties of rice which were packed at 800g and available in SM North Edsa and other SM outlets. Other heirloom organic rice packed in 1kg were also showcased during trade fair in Baguio City in November 2014 which included Cordillera Harvest Rice, Kintoman heirloom, Kalinga Unoy, and Kalinga Jekot.

Eighth Wonder brands showcasing heirloom rice from Ifugao and Kalinga are exported and available online. Price ranges from USD5.75 – 6.50/lb. or USD 12.1/kg. excluding shipping cost (<http://www.heirloomrice.com/store/allprods.php>).

Other red and brown type of rice that are not labelled as organic have lower price ranging from USD 1.1- USD 1.9/kg. with an average of USD 1.6/kg.

Location

Considering the market outlet of the traditional rice, average price in Luzon is higher by 85% compared to Mindanao (Table 3). If we consider the label for each location, average price of certified organic rice sold in Luzon is higher by 33% and 107% higher than those that are not certified and not labelled as organic respectively (Table 4). However, in the case of traditional rice sold in Mindanao, price of certified organic rice is lower by 9% compared to non-certified, and much lower by 32% compared to those that are not labelled as organic. This is mainly due to transportation cost and the source of raw material. For example, Bios Dynamis with raw materials (produced) in Mindanao is sold at USD 1.2 per kg in Mindanao and USD 3.9 per kg in Manila. Also, another product labelled as organic but without certification and produced from Davao del Norte has the same price as Bios Dynamis sold in Davao City at USD 1.2 per kg. Another brand (Sun Made) which is based in Mindanao sold at USD 1.4 per kg which is higher than Bios Dynamis. However, this is still relatively cheap compared to those sold in Manila. This also indicates high marketing or retail costs in Manila.

Table 3. Average price of traditional varieties by location

Location	Ave. Price(USD)	% difference
Luzon	2.6	
Mindanao	1.4	85

Table 4. Average price of traditional varieties by type of label, and by location

Label	Luzon		Mindanao	
	Average Price (USD)	Price Difference to certified organic	Average Price (USD)	Price Difference to certified organic
Certified organic	3.4		55	
Organic*	2.6	33%	1.3	-9%
Not labelled as organic	1.7	107%	1.8	-32%

*Labelled as organic but without certification

Type (color and glutinous)

On the average, red rice is priced higher by 7% and 17% than black and brown rice respectively (Table 5). Violet/glutinous rice is priced differently since it is not used as staple food but as ingredient to special delicacies. On the average, Luzon price is 105% higher than the price in Mindanao.

Table 5. Price of traditional rice by type of product and by location

Product	Ave. Price (USD)	Difference to Red rice (%)	Ave. Price (USD)		Difference (%)
			Luzon	Mindanao	
Red	2.5		2.9	1.4	110
Black	2.4	7	2.9	1.2	146
Brown	2.2	17	2.4	1.5	58
Violet/Glutinous	2.5	2	2.5		
Average					105

If we consider the label, certified organic red rice sold in Luzon has an average price of USD 3.4/kg with price ranging from USD 2.9 – USD 3.9 per kg. This is 44% higher than those without certification (Table 6). Similar to red rice, price of brown rice, black rice, and violet/purple/glutinous rice sold in Luzon are also higher by 63%, 49%, and 60% respectively compared to those without certification. But this is not the case in Mindanao wherein certified organic rice is lower by 24% and 16% for red rice and brown rice, respectively.

Table 6. Average price of traditional varieties by type of product and location

Label	Luzon		Mindanao	
Red Rice	Average Price	Price Difference to organic (%)	Average Price	Price Difference to organic (%)
Certified organic	3.4		1.2	
organic*	2.4	44	1.6	-24
Brown Rice				
Certified organic	3.9		1.2	
organic*	2.4	63	1.4	-16
Not labelled as organic	1.6	47	2.0	-28
Black rice				
Certified organic	3.9		1.2	
organic*	2.6	49	1.2	-
Violet/purple/Glutinous				
organic*	2.7			
Not labelled as organic	1.7	60		

Clearly, labelling (e.g. certification), location and variety or type (e.g. color) affect price of traditional varieties of rice. The above results also show that ecolabelled products such as organic (with or without certification) fetch a higher price. In what follows, factors that affect the willingness of consumers to pay based on the survey results are discussed.

5.0 Willingness to pay for ecolabelled products

In terms of demographics, about 73% of the respondents are women and 58% are below 44 years old. Majority of the respondents are highly educated. More than half (53%) went to college, 41% with post-graduate studies, 6% went to high school and less than a percent had elementary education. More than a third of the respondents have monthly income from USD 326 to USD 652, 22% have income below USD 326, 18% between USD 652 to USD 1,087 and about 14% have income higher than USD 1,087.

In terms of psychographics or lifestyle, 80% of the respondents consider themselves health conscious. However, only 15% of the sample have been using products that are labelled organic. In terms of the frequency of using organic products, about 39% consume regularly or at least once a week and 61% said they rarely consume organic products. There is a higher percentage of respondents who said they consume either regularly (at least once a week) or rarely than those who consume products that are labelled organic. This can be attributed to possible reasons. One is the notion that the product referred to when they were asked about the frequency of consumption is not necessarily certified or labelled as organic. The other possibility is that those there were some respondents who consume regularly or rarely do not consider themselves as someone who consume products that are labelled organic as this means regularly consuming more than once a week. When asked about the reasons for not consuming or regularly consuming organic products, about 35% said that they are not available in the market, 31% found price expensive and the same percentage said they are unsure if they are really organic.

Willingness to pay

About 95% of the respondents are willing to pay for price premium for certified organic rice. This is only 1% higher compared to the percentage of respondents who are willing to pay for organic rice without certification. This is perhaps one of the reasons why of the 16 brands of traditional rice varieties (red, brown and black) surveyed, only 3 or 18% have organic certification either from OCCP (Organic Certification Center of the Philippines) or NICERT (Negros Island Certification). However, a different story emerges if one examines the specific price premium that consumers are willing to pay (see below).

The high percentage of respondents willing to pay for price premium can be due to their high level of income and education. About 94% of them have gone to college and 78% having monthly income of more than USD 326. Further insights can be gleaned on the factors that affect level of price premium through the models estimated (see discussion below). In addition, the high percentage of respondents who are willing to pay show the size of the market for these products if they are made available, affordable and claims verified.

Price premium

In terms of the price premium respondents are willing to pay for all rice products, about 26% are willing to pay above 21% price premium where 16% are willing to pay price premium between 21% to 40% and only 10% are willing to above 40% premium. Approximately 39% are willing to pay between 10% to 20% price premium and 35% are willing to pay below 10% price premium. This trend follows the law of demand such that the willingness to pay (WTP) decreases as the price premium increases. This is illustrated in Figure 3 which shows the average % of respondents of all products (y axis) against the price premium (PP) categories (x axis).

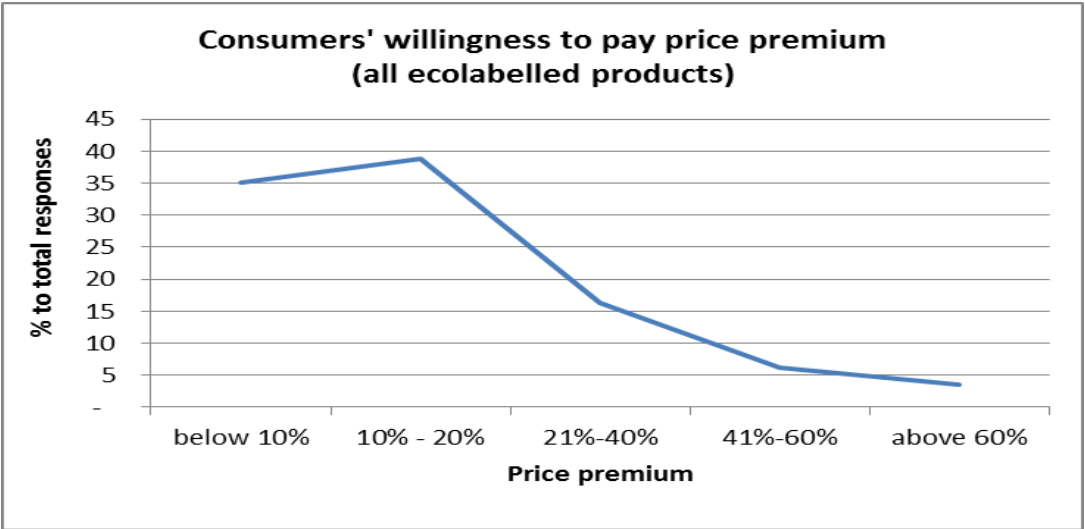


Figure 3. Consumers’ willingness to pay price premium for all ecolabelled products

Figure 3, however, shows a “kinked demand curve” since the percentage of respondents WTP the lowest range of price premium (below 10%) is lower than the next higher range of price premium (10% to 20%) but not compared to the other range of price premium. This kink implies

that majority of the respondents are willing to pay a minimum or threshold price premium between 10% to 20% to compensate for environmental claims or attributes.

It is interesting to note that the kinked curve applies to all products except for rice without certification which follows a normal (without a kink) downward sloping demand curve (Figure 4). This indicates that certification differentiates the product such that it fetches a higher threshold level.

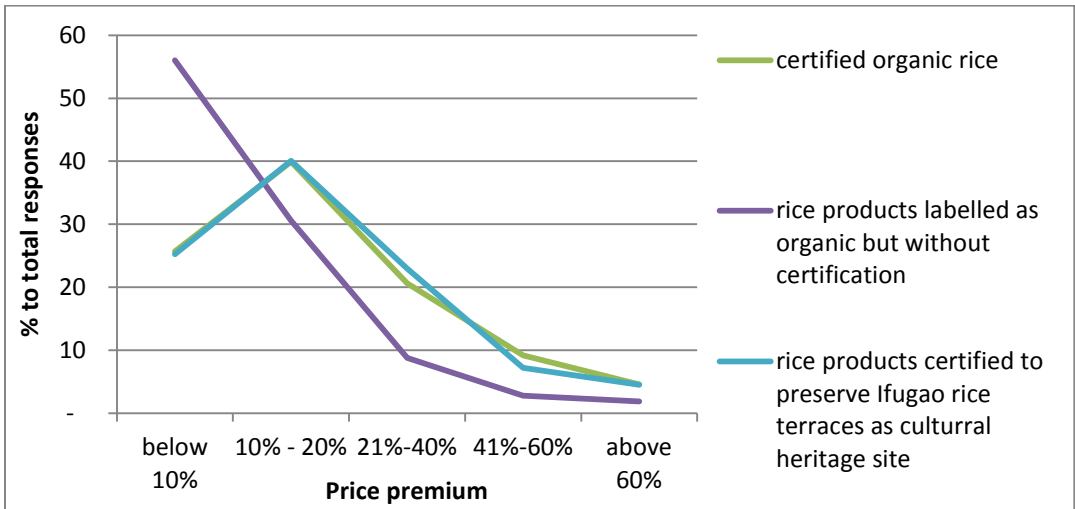


Figure 4. Consumers’ willingness to pay price premium by product

There are also some notable differences in the price premiums that consumers are willing to pay when it comes to specific products. For example, while there is only 1% difference in the percentage of respondents who are willing to pay for price premium between certified organic rice and organic rice without certification, there is a large difference in terms of the price premium consumers are willing to pay between these products. For rice products without organic certification, about 56% of the respondents are willing to pay a price premium of less than 10% compared to only 26% for rice with organic certification (Figure 5). Also, about 35% of the respondents are willing to pay price premium higher than 20% for rice with certification compared to only 14% for rice without certification. Thus, more consumers are willing to pay higher prices for certified organic products. This is consistent with the existing prices surveyed in market outlets of 17 brands where average price of 3 brands that have organic certification was 25% higher compared to brands without certification.

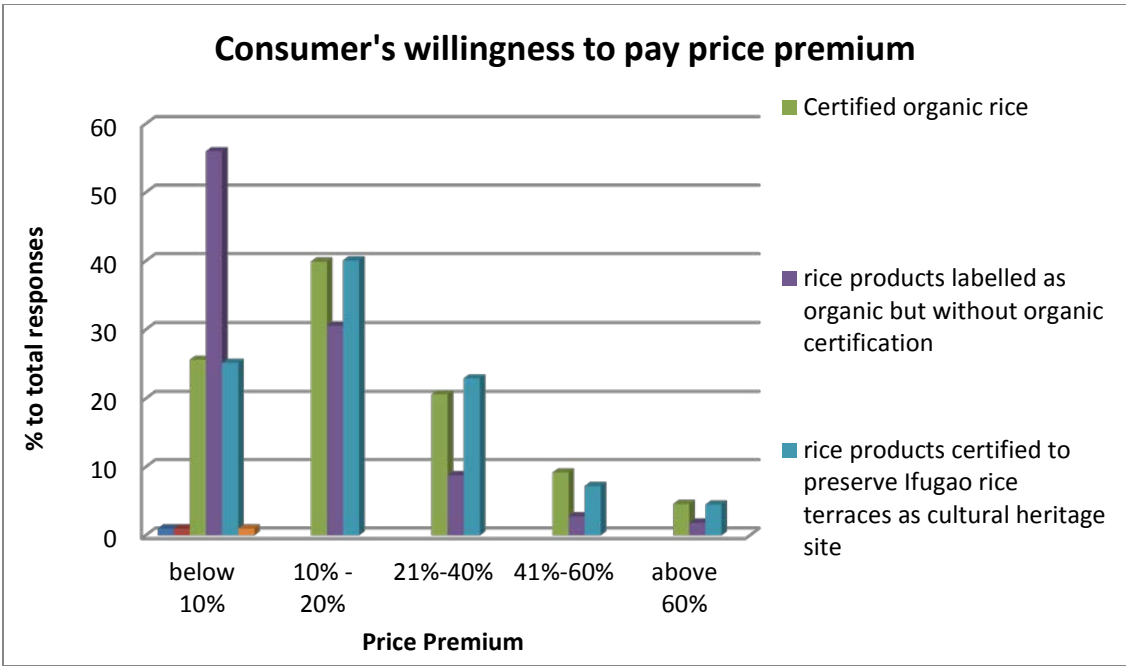


Figure 5. Consumer’s willingness to pay price premium by product

Factors affecting level of price premium

Results of the survey as well as the model estimated show that there are several demographic and psychographic factors that may affect the level of price premium that consumers are willing to pay. Demographic factors include gender, age, education and income and psychographic factors include level of health consciousness and whether the respondent is a consumer of organic products.

Demographic factors

In terms of gender, women are willing to pay higher price premium than men. For all ecolabelled products, an average of about 86% of men are willing to pay price premium below 20% compared to only 70% for women. On the other hand, only 14% of men are willing to pay more than 20% price premium compared to 30% for women. Particularly for certified organic rice, 41% of women are willing to pay more than 20% premium compared to only 15% for men. Also for products certified to preserve heritage sites, only 13% of men are willing to pay for price premium above 20% compared to 27% for women but the opposite is true for price premium below 20%.

For age, there is not much a pattern in terms of the willingness to pay. Respondents who belong to three age categories below 44 years old do not have much difference in terms of their willingness to pay across price premium categories. On the average, about 77% of them are willing to pay price premium below 20% and 23% of them are willing to pay price premium above 20%. This is different compared to respondents belonging to age group 45-54 where 63% are willing to pay price premium below 20% and 37% are willing pay above 20% price premium. About a quarter in this age group are willing to pay premium between 21%-40%.

In terms of educational attainment, there is a big difference in the willingness to pay between respondents who went to high school compared to those who went to college or did some postgraduate studies. On the average considering all products, most of those who went to high school (about 90%) are willing to pay price premium below 20% compared to 73% for those who went to college or post-graduate studies. The difference between those who went to college and to those who went to postgraduate studies is not as big compared to those who went to high school. However, there is a relatively a higher percentage of respondents who went to post graduate studies who are willing to pay for higher premium compared to those who went to college. About 45% of those who went to post-graduate studies are willing to pay price premium between 10% to 20% compared to 34% for those who went to college. On the other hand, only 29% of those who went to post-graduate studies are willing to pay price premium below 10% compared to 39% for those who went to college. The pattern is similar at the product level.

Income appears to be not affecting the level of price premium that respondents are willing to pay. The percentage of respondents willing to pay price premium lower than 20% does not vary across income brackets which ranges from 71% to 80%. In fact, when these income brackets are aggregated from five into two brackets (those below USD 652 per month and those above USD 652 per month), the difference between the percentage of respondents willing to pay below 20% premium between these two income categories is almost nil (only 1%). However, there is some difference when we disaggregate the price premium below 20%. A larger percentage of respondents are willing to pay price premium below 10% for those who have lower income but the opposite is true for higher price premium between 10% to 20%. In this case, more of those who have higher income are willing to pay higher premium albeit the difference is only 6%.

Psychographic factors

The effect of a respondent who is already consuming organic products on the level of price premium he or she is willing to pay is compared to the one who is not consuming organic products. Considering all ecolabelled products covered, the data show that there is not much difference between those who are already consuming organic products and those who are not. About 41% of those who are already consuming organic products and about 43% of those who are not, are willing to pay price premium below 20%. The small difference between the two types of respondents generally applies at a product level except for certified organic rice where the difference is quite significant. About 83% of those who are not consuming organic products are willing to pay less than 20% compared to 63% for those who are consuming products. Thus, only 17% of those who are not consuming organic rice are willing to pay price premium more than 20% compared to 37% for those who are already consuming. As expected, those who are already consuming organic rice are willing to pay higher prices compared to those who are not consuming organic products. In fact, almost a quarter of those who are already consuming organic rice are willing to pay price premium between 21% to 40%.

The effect of the level of health consciousness on the price premium is similar to the one whether the respondent is a consumer of organic products or not. Generally, there is no significant difference between the price premium that a consumer who considers himself health conscious is willing to pay compared to a consumer who does not consider himself health conscious. Considering all products, about 78% of the respondents who are not health conscious are willing to pay less than 20% price premium compared to 73% for those who are health conscious. Alternatively, there are 27% of health conscious respondents are willing to pay more than 20% price premium compared to only 22% for those who are not health conscious. However, the difference becomes bigger in the case of certified organic rice. For example, 41% and 23% of health conscious respondents are willing to pay price between 10% to 20% and 21% to 40% respectively. For those who are not health conscious, only 12% are willing to pay price premium between 21% to 40%. Also, about 39% of those who are not health conscious are willing to pay less than 10% price premium compared to only 23% for those who are health conscious.

An econometric model using integral regression was estimated to simultaneously examine the effect of both demographic and psychographic factors on the level of price premium that consumers are willing to pay.

Generally, the results are consistent with the findings in the previous section where each demographic or psychographic factor is related to the level of price premium that consumers are willing to pay. The advantage is that it provides whether the relationship between these factors and the price premium is statistically significant. The model also provides a quantification of the magnitude and the direction of this relationship.

For certified organic rice, the older the respondents the higher their willingness to pay price premium. A respondent is willing to pay 0.2% more for certified organic rice than a respondent that is one year younger. Respondents that consider themselves health conscious are willing to pay 4.3% more for certified organic rice. Respondents who are already consuming organic-labeled products are willing to pay 4% more for certified organic rice compared to those who have not consume organic-labeled products. The five income levels were represented in the model by four dummy variables, each representing the first four income level. The 5th income level is represented in the model when all the dummy variables are all zeros. Thus, the coefficients of the four dummy variables can be interpreted as the difference in price premium respondents from the first four income levels are willing to pay from the respondents from the last income level. For example, a respondent from the fourth income level is willing to pay 14% more than the respondents from the fifth income level. Positive coefficients of the four dummy variables indicate that the four lower income level is willing to pay more for certified organic rice than the respondents from the fifth (highest) income level. Also, except for the fourth income level, the value of the coefficients declines as we move up in the income levels (0.16, 0.13 and 0.11 for income levels 1, 2 and 3). Therefore, we can infer from the sample that the higher the income the respondents have the lower the price premium they are willing to pay for certified organic rice (Table 7).

Table 7. Certified organic rice, interval regression results

	coefficient	Std. error	z	p-value	
Const	-0.149234	0.0922376	-1.618	0.1057	
Age	0.00271338	0.00101394	2.676	0.0074	***
Healthconscious	0.0430959	0.0234174	1.84	0.0657	*
Consumeproducts1~	0.0406419	0.0242781	1.674	0.0941	*
Gender	-0.0179708	0.0278757	-0.6447	0.5191	
DIncomeLevel_1	0.164823	0.0651434	2.53	0.0114	**
DIncomeLevel_2	0.134602	0.0597059	2.254	0.0242	**
DIncomeLevel_3	0.112156	0.0598957	1.873	0.0611	*
DIncomeLevel_4	0.147769	0.0636814	2.32	0.0203	**
Chi-square (8)	17.49189	p-value		0.025376	
Log-likelihood	-54.37245	Akaike criterion		128.7449	
Schwarz criterion	148.6347	Hannan-Quinn		136.4156	
*Significant at 10%					
**Significant at 5%					
***Significant at 1%					

For rice products certified to preserve Banawe rice terraces as a cultural heritage site, the older the respondents the higher their willingness to pay (price premium). A respondent is willing to pay 0.3% more for rice products certified to preserve Banawe rice terraces as a cultural heritage site than a respondent that is one year younger. Unlike in the “certified organic rice” case, this time all the coefficients of the income levels, except for the third income level, have, more or less, the same value. However, results still show that the four income levels are willing to pay more compared to the fifth income level. This may be due to the discrepancy in sample size from the fifth income level (Table 8).

Table 8. Rice products certified to preserve Banawe rice terraces as a cultural heritage site, interval regression results

	coefficient	Std. error	z	p-value	
Const	-0.138025	0.0714361	-1.932	0.0533	*
Age	0.00342714	0.000788688	4.345	1.39e-05	***
Healthconscious	-0.0117332	0.0188956	-0.6209	0.5346	
Consumeproducts1~	0.0219005	0.0195023	1.123	0.2614	
Gender	-0.0245018	0.0221820	-1.105	0.2693	
DIncomeLevel_1	0.112761	0.0492654	2.289	0.0221	**
DIncomeLevel_2	0.121456	0.0448713	2.707	0.0068	***
DIncomeLevel_3	0.0779774	0.0450695	1.730	0.0836	*
DIncomeLevel_4	0.110548	0.0482271	2.292	0.0219	**
*Significant at 10%					
**Significant at 5%					
***Significant at 1%					

Summary of the effects of psychographic and demographic factors is presented in Table 9.

Table 9. Effects of demographic and psychographic factors on price premium		
Ecolabelled Products	Statistically significant variables	Quantitative effect of significant variables
1.Certified Organic rice	Gender Consuming organic products	<ul style="list-style-type: none"> • Women are willing to 8.5% higher compared to men • Those who are already consuming organic products are WTP 6% more compared to those who are not consuming organic products
2.Rice products labelled/sold as organic but without official organic certification	Gender Age Income	<ul style="list-style-type: none"> • Women are WTP 5% higher compared to men • PP increases by .17% per additional year (age) • Consumers with income above USD 652 per month are WTP 4% lower compared to those with income below USD 652 per month
3.Rice products certified to preserve Ifugao rice terraces as a cultural heritage site	Gender Consuming organic products	<ul style="list-style-type: none"> • Women are willing to pay 6% higher compared to men • Those who are already consuming organic products are WTP 5% more compared to those who are not consuming organic products

6.0 Concluding comments

Most consumers are willing to pay for ecolabelled products but the willingness varies depending on the level of price premium. These include products certified to conserve agro-biodiversity, indigenous varieties including rice, cultural heritage (e.g. handwoven products from abaca), certified organic rice, etc.

The willingness to pay decreases as price premium increases which follows the normal demand curve. However for most ecolabelled products except rice without organic certification (the only one without certification), there is kinked demand which implies that there is a minimum price premium that most consumers are willing to pay.

Certification fetches higher price. All the nine ecolabelled products considered are certified except one on rice products sold as organic but without certification. The latter follows the normal downward sloping demand curve with majority of the respondents willing to pay the lowest possible price (below 10%). This is consistent with the actual prices monitored from various market outlets.

Majority of the respondents are willing to pay price premium for ecolabelled products that range from 10% to 20%. About 75% of the respondents are willing to pay price premium for ecolabelled products below 20% and about a quarter are willing to pay above 20%. About 15% of the respondents are already consuming organic products. One of the possible reasons is that currently, ecolabelled products such as the traditional rice varieties (red, brown and black) labelled as organic with or without certification are currently price more than 20%, in fact 104% more compared to those traditional rice not labelled organic. Thus, a lower price may expand the

market. In fact more than 30% of the respondents cited high price of organic product as one of the reasons why they don't purchase it.

Modelling results show that gender, age, income and being an organic consumption consumer significant affect the level of price premium.

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Fruits value chain and distribution channels in Kosovo – the case of berries

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Abstract

The **objective** of this study is to analyse, for the first time, the evolution and performance of the value chain of fruits, with focus on berries (raspberry and strawberry), in Kosovo. We analyze opportunities, constraints and challenges that characterise this value chain, and provide recommendations how they can be tackled by policy-makers and private sector actors. The study aims to address a series of research objectives and questions related to value chain performance and will use a set of datasets (both secondary sources and primary data), instruments, methods and set of indicators to provide analytical information about the selected value chain trends. The primary data consists of a structured farm survey (sample = 200) developed during December 2015 – January 2016, and semi-structured interviews carried out with value chain stakeholders, developed with the support of FAO. The paper analysis the value chains structure and actors' profile and it describes the main channels of distributions, sales and marketing for the selected products. It analyzes nature of relations between actors, governance in the agro-food value chain, particularly, implications for market access (very important for smaller agriculture holdings). The paper combines quantitative analysis (eg. statistical analysis of the structured farm survey using SPSS) with qualitative analysis (eg. findings from semi-structured interviews).

Keywords: Value chain coordination, distribution channels, strawberries, raspberries, Kosovo.

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The influence of visual and informational packaging attributes on consumer choice of fresh fish in Norway

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Abstract

Previous studies have shown that packaging plays an important role in attracting consumer attention, form their evaluation of quality and value, and influencing their food choice (Silayoi & Speece, 2007; Karimi et al., 2013). However, no study we are aware of have investigated the importance of food packaging attributes on consumer choice of fresh fish.

Food products use a range of packaging attributes, combining colours, design, shapes, symbols and messages (Nancarrow et al., 1998). In a review of main drivers that lead to packaging design, Azzi et al., (2012) identified attributes related to ergonomics, logistics, sustainability, safety and marketing. In the context of food packaging, Silayoi and Speece (2004) divided packaging attributes into two main categories: visual and informational attributes. Visual attributes consist of graphics, colour, placements, photos, size and shape of packaging, whereas informational attributes relate to information provided and technologies used in the package. Information attributes on food packaging are typically labelling and brand information. Examples are information about the product's technical characteristics, ingredients, serving size and information related to recommended uses, cooking instructions, instructions for proper disposal and shelf life (Harcar & Karakaya, 2005).

This study will argue for shape and colour as the primary visual attributes and information about taste, convenience, shelf life and freshness as the primary informational attributes. The first goal of this study is to evaluate the relative importance of visual and informational packaging attributes of fresh fish through a conjoint study. The identification of these attributes might offer the industry the possibility of designing a package that closely matches consumer needs and expectations (Deliza et al., 1999) and contributing to higher product satisfaction and choice of fresh fish.

When profiling important packaging attributes of seafood it is important to take into account that not all consumers evaluate packaging in the same way (Golan et al., 2001). Numerous individual characteristics such as past consumption behavior / experiences, preference, involvement and knowledge, as well as willingness to pay and sociodemographics account for differences in information needs and reactions to communications among consumers (Verbeke, 2008). This study uses profiling variables related to seven consumer characteristics: fish consumption, preference, willingness to pay, health orientation, involvement in fish, quality knowledge and individual socio-demographics characteristics. Information is most likely to be efficient and effective when it meets specific needs, preferences or expectations of the target audience (Forthofer and Bryant, 2000). A common way to insure this is through segmentation of the consumers to homogenous groups (Wendel and Kamakura, 2002). Thus, the second goal of this study is to distinguish between different groups of consumers based on packaging attributes, and to characterize these segments based on individual characteristics.

The study was based on data collected by using a two part consumer survey completed by a representative sample of 503 Norwegian fish consumers. In the first part, importance of specific packaging elements to consumer's choice was evaluated in a conjoint study. In the second part, the consumers answered to survey questions about their fish consumption, preferences, involvement, knowledge and other individual consumer characteristics. Conjoint analysis was applied in the first step of the data analysis to determine how individual consumers

evaluate the different attribute levels of the packaging of fresh cod. In the second step, hierarchical cluster analysis of the part-worth utilities for each attribute level was utilised to identify specific clusters or segments. In the third step, analysis of variance (ANOVA) was used in order to profile the different consumer clusters.

The result show that shelf life was the most important attribute (relative importance of 35,4 %) for the consumers, followed by convenience (25,6 %), color (16,9 %), freshness (9,0 %), shape of packaging (7,9 %) and taste (5,0 %). Hierarchal cluster analysis preformed on the different attributes provided three segments with different patterns. The segments were named according to the attributes with highest importance for each segment, resulting in a “quality” segment, a “packaging” segment and a “convenience” segments. Results also showed a distinct profile for each of the segments based on the consumer characteristics. Results will be further described and discussed and implications highlighted.

Keywords:

Packaging attributes, choice, segmentation, conjoint analysis

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Benefit-based segmentation of Norwegian seafood consumers: the inclusion of salient packaging variables

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Abstract

The main purpose of this study is to identify consumer segments based on the importance of benefits Norwegian consumer expect when buying seafood products for preparing their home made meal on traditional weekdays. In addition to traditional product and price benefits, this study contribute to the existing food marketing literature by examining whether the inclusion of salient packaging, labeling and brand benefits influence the segmentation results.

Understanding of the diversity of lifestyles, attitudes and preferences that exists among food consumers is one of the greatest challenges in market research. To address this challenge, consumer segmentation is applied in order to adapt marketing strategies (price, product, packaging, promotion and distribution) to specific groups of consumers with homogenous needs, priorities and preferences. During the past few decades of consumer (food) marketing segmentation, several bases are used to assign potential customers to homogeneous groups (Wendel & Kamakura, 2002). These include personality, values and lifestyle characteristics, situation, attitudes towards products, benefit sought in a product category, consumption behavior / habit, and demographics.

Consumer attitudinal benefits as the desire, preferences or expectations that consumers wants to achieve with purchasing and consuming a product or services are probably the most important base for consumer segments (Onwezen et al., 2012). The importance that consumers associate with the different benefits is a good indicator of underlying motives when consumers want to buy or consume products or services for general or specific purposes or goals. Benefits are suggested to be better predictors of consumer behavior than personality, value, lifestyle, volumetric, demographic or geographic measures (Myers, 1996). Nevertheless, application of benefit-based segmentation in the food domain are rare (Onwezen et al., 2012).

Because consumers associate different benefits and preferences with different food contexts (Edwards et al., 2003), this study examines which benefits are most important when consumers want to buy seafood for preparing their everyday main meals (Monday-Friday). Selection of benefits was based on previous studies of consumer choice of food in general (Steptoe, Pollard, & Wardle, 1995), and seafood in particular (Calucci et al., 2015). Thus, benefits associated with perceived quality (e.g., taste and freshness), affect (e.g., excitement and exclusivity), convenience (time and effort) and price / value are included in this study, in addition to packaging benefits.

Technical, functional and informative packing benefits are considered to have an important influence on consumer's attitudes and choice of food for home consumption (Liao et al., 2015). Packaging has an important role in influencing in-store purchasing decisions, especially for food products where purchase decisions are characterized by low involvement or impulsive processes (Liao et al., 2015). Nowadays, more and more fresh seafood are sold in various packing materials and formats in supermarkets compared to the traditional fresh fish counters and fish shops. Important packaging benefits used in this study are size, visual benefits (design, color, exposure of the core product), information (recipe, shelf life, product information), convenience (time/effort saving, availability in store, functional), and brand equity (Jinkarn & Suwannaporn, 2015; Koutsimanis et al., 2012; Liao et al., 2015).

A representative sample of about 1000 adult (18-80 years of age) Norwegian respondents were selected randomly from a pool of pre-recruited respondents by a professional research agency. A summary analysis of the main characteristics of the sample shows that 53.4% of the participants were female (because of sample restriction), and 24.6% were living in single households. The average age was 46 years and approximately 40% of the respondents had an income level of 400,000–900,000 NOK per year (middle class). Individuals completed a conjoint experiment (not reported here) and an online survey about their fish / cod consumption, preferences, health consciousness, seafood involvement, price-quality expectations and knowledge, willingness to pay, demographics, and along with other constructs (some are not part of this analysis). Each respondent had to rate their importance of 33 benefits for general seafood consumption of main meal during the weekdays (Monday to Friday) on a 9-point scale from not important (1) to extremes important (9).

The analysis of the data is performed in three steps. Firstly, an exploratory factor analyses (EFA) is used to explore the structure of the intended constructs and eliminate bad items for both the base and profile variables. Secondly, this study conducted a two-step cluster analysis. A discriminant analysis is conducted to retest the final cluster solution, to evaluate the accuracy of classification, and to determine the contribution of predictor variables to the inter-group differences. Finally, this study identifies the profiles of each cluster by an ANOVA procedure.

The result from the two-step cluster analysis shows that there are three segments. The first segment (N = 310; 31.2%) is termed as “Careless Consumers”. Consumers in this segment have lowest scores on almost all benefits associated with quality, price/value, convenience and packing information including labeling and brand benefits. The second segment (N = 376; 37.8%) is named “Quality Consciousness”. Consumers in this segment are characterized by highest scores on the quality benefits (e.g., taste, freshness, nutrition), while most other evaluation of price and packaging benefits are just average. Finally, the last segment is called as “Perfectionists” (N = 309; 31.1%) that includes consumers who evaluate that almost all benefits are important when buying food for their daily meals.

The Careless segment is less involved in seafood and in their health. They have also less knowledge about seafood quality and the lowest willingness to pay compared to the other two segments. The Quality segment show the highest preferences for fresh fish and are most willing to pay a higher price for freshness. There are not much differences between the Quality Consciousness and Perfectionist segments based on the profiling variables.

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Customers' perception of fish fast-casual restaurants

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Abstract

Fast-casual restaurants are an emerging foodservice category characterised by a limited-service or self-service format; an average meal price usually between \$8 and \$15; made-to-order food, complex flavours and healthy menu; upscale, unique or highly developed décor and without drive-through.

The aim of this study is to survey which attributes of a fish fast-casual restaurant are considered more or less important in a meal experience from a customer.

Data were collected through a questionnaire and then have been processed through an exploratory factor analysis on fast-casual food and restaurant attributes, followed by chi-square and ANOVA analysis to profile customers' perception towards the level of importance of the factors.

The results show that the most important attributes underlined by the interviewees are a high hygiene standard in the establishment, the personnel quality able to personalize a foodservice and the food sensorial attributes. Also service planning and managing receive a high level of importance and it could be strategic to develop a "customization", a personalization of the services for customers' groups (almost up to the single person) joined with a technology innovation. Considering the socio-economic characteristics, gender and age affect a large number of factors. A higher number of customers with academic degree gives high importance to the opportunity of socialization in fast casual foodservice and the food safety. Considering the age of the interviewees millennials give importance to socialize during the meal and to marketing strategies. Whereas older customers give importance to the internal ambience and to food offer attentive to nutrition and health and green local origin food.

Investing on these attributes could represent an effective strategic plan for this foodservice category in order to satisfy the customers and acquire a competitive advantage on the market.

Understanding Food Wasters: a Behavioral Typology

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Food waste is a global problem that affects all people, with the Food & Agricultural Organization of the United Nations stating that every year approximately one third of the food produced for human consumption in the world gets lost or wasted (FAO, 2011). Whilst food waste can occur at different stages of the production to consumption cycle, after harvest, the greatest amount of wastage takes place at the consumer level (BBC News, 2014). To help address this issue an improved understanding of the behaviors and reasons underlying *why* consumers waste food is required. Drawing from a multi-method qualitative research study conducted with 44 caregivers located in the U.S. (n=20) and Brazil (n=24), this study seeks to identify distinct behavioral drivers and patterns of wasted food in households. From this an empirically derived typology is proposed that categorizes consumers into five distinct groups of household food wasters. The resultant typology makes a novel contribution to the consumer behavior literature. Furthermore, it offers insights to management and policy makers that will be particularly relevant in helping guide the development of effective strategies and public policies related to food waste mitigation, and by doing so improve food security.

Consumers, even those living in the same neighborhood, are not a uniform group and do not all act or behave in the same way. The market attributes of diversity and heterogeneity have been known for a long time, as indicated by Smith (1956) in his classical work on product differentiation and market segmentation. From such early works, the elaboration of typologies has been widely used to expand the understanding of marketing phenomena. This is particularly evident in the area of consumer behavior where they have been utilized to classify different types of consumer. For example, older shoppers (Angell et al., 2012), ethical shoppers (Memery et al., 2012) and online consumers (Karimi, Papamichail & Holland, 2015). In the area of food-related research typologies have been employed to further understand how consumers differ in their decision-making with regard to, for example, food type choices e.g. organic produce (McEachern and McClean, 2002) and factors influencing their food purchase behavior e.g. ethics and social responsibility concerns (Memery, et al., 2005). These segmentations improve our knowledge of market heterogeneity and allow for marketing actions to be aligned with customer needs.

Food waste studies are growing in importance as the analysis of recent literature indicates, however our understanding of household waste patterns is still limited. Given the preceding discussion, it is anticipated that household behavior towards food waste is not homogeneous. Nevertheless, to date, no previous research has been found that identifies in detail how such behavior differs. Due to the global priority in reducing overall food waste (FAO, 2013) and the rising importance of sustainability from a marketing perspective (Martin, 2015), it is imperative to identify the fundamental differences and types of behaviors leading to food waste. Doing so will allow consumers to be suitably clustered into like-minded groups, thus enabling specific educational messages and targeted communications to reach each different type of food waster in a meaningful address.

Drawing from data collected in Brazil and the US, two culturally distinct countries, this study aims to classify consumers into food waster types and empirically explore the differences in food waste behavior exhibited by each proposed type. By analyzing the determinants of food waste,

we seek to answer the following questions: can we differentiate families according to their major driver of food waste? Are certain consumer behavioral profiles associated with higher levels of food waste? What behavioral characteristics can define a caregiver more prone to save food? Are there differences between American and Brazilian caregivers concerning their food waste profiles?

This study reports on the third phase of a broader research project on household food waste. It is an interpretative inquiry concentrating on meanings and processes. After the completion of a qualitative study involving 14 lower-middle income Brazilian families and 20 low-income American families, another ten low-income families were investigated regarding their food shopping, consumption and disposal habits in a different region of Brazil.

Convenience and snowball sampling were used for each phase of data collection. Phase one took place in Central New York, USA, where community centers in low-income areas were visited and caregivers invited to participate in the study. Phase two in São Paulo, Brazil, saw a community leader guiding the researcher in two distinct suburbs to recruit families. For the third phase, after a first visit to a low-income neighborhood in a suburb of Brasília (DF) to explain the research to a community leader, willing participants were contacted by telephone both to confirm their eligibility and to schedule the in-home interview. Respondents were caregivers, who lived with at least two family members, and identified as being the nutritional gatekeeper for their families. Every family in the total sample of 44 households was visited and the family member identified as the nutritional gatekeeper interviewed. Additionally, in each household visited the places utilized to store, prepare and discard foods were observed. Findings to be discussed include the content analysis of in-depth interviews, as well as participant observations, analysis of photos taken at each household, and field notes. It is assumed that the in-depth interviews combined with observations approximate this study to the helms of ethnographically inspired research.

Data analysis lead to the identification of five distinct food wasters' types: (1) Caring mothers; (2) Heavy cooks; (3) Leftovers killers; (4) Procrastinators; (5) Resourceful mothers. To illustrate each food waster profile, a conceptual network based on the analysis of empirical data in Atlas.ti software is presented. Interestingly, the proposed typology identifies both a segment characterized by the willingness and skills to reuse leftovers, named as "resourceful mothers", and another driven by a prejudice against leftovers associated with the habit of cooking from scratch, called "leftovers killers".

To enhance understanding of food waster behavior in each country a comparative analysis between Brazilian and American respondents by food wasters type is presented. Findings indicate that "leftovers killers" were more prevalent in Brazil while "procrastinators" – a behavior related to feelings of guilt for wasting food - are more frequent in American families. Perceived waste levels per country are also discussed as a form to provide insights for food waste reduction programs.

This study and resulting typology contribute to theory, whilst a number of potential implications for educators involved in food-related programs (e.g. nutritional education), government agencies and policy makers are explored in light of the results.

Keywords: food waste; consumer typology; food wasters types; food consumption; sustainability

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Consumer's perception of fruit innovation for sustainable and healthy food system

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Abstract

The objective of the present paper is to explore consumer's perception of fruit and fruit product innovations, that maximize health benefits, i.e. nutritionally enriched/fortified fruit; and minimize environmental impacts, i.e. laser-tattoo labeled fruit. These innovations may influence consumers' visual representation of fruit, impacting on consumers' perception of fruit intrinsic goodness. The research included more than 500 face-to-face interviews with fruit consumers at the point of sale. Data elaboration included factor analysis and multivariate logistic regression. Results show that the consumer pursues "nature integrity-oriented" innovation, both for health and environment-oriented innovation. The consumer is cautious towards fruit innovation and better accepts it if the final product keeps its original familiarity. Consumers are better inclined towards innovation if they have a higher education level, are young or middle age, or with higher income. To conclude, innovation is positively perceived if it respects consumers' perception of fruit as being intrinsically natural. Laser-tattoo labeling and consumers' increasing search for nutritional information can match by using fruits' surface to convey health-oriented messages and increase consumers' awareness over environmental-oriented innovative technologies and management practices. Agri-business manufacturers and retailers can exploit these innovative technologies for their marketing strategies. Innovation in fruit and fruit products should be carefully tested against consumer's acceptance, so to exploit its full potential and avoid unexpected negative perceptions.

Consumer reactions to animal welfare attributes in pig production in Germany and Poland

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Abstract

Issues concerning ethical production parameters, as divided into animal welfare, environmental impact and health and safety are increasingly being discussed in pig production as potential differentiation parameters. In cooperation with a major industrial pig producer (Axzon Group), we identified ten parameters of pig production (free mobility for the sows, complete traceability, GMO free feed, no microbial contamination, less use of antibiotics, short transport time, castration with painkiller and anesthesia, hay access, reuse of manure, zero CO₂ emission) that could realistically be achieved and credibly communicated to consumers. We conducted a choice experiment in Germany and Poland, where respondents had to choose among sets of product alternatives that differed in terms of price, origin, colour, fat content and those two out of ten production-related attributes that respondents themselves designated as most important for them when buying pork. Results were analysed by means of latent class analysis, allowing to account for heterogeneity in respondents' preferences. Data were collected by means of online surveys in Germany and Poland, with samples sizes of n=1000 in both countries. Free mobility, complete traceability and GMO free feed were the most important ethical production parameters in the German sample, and no microbial contamination, GMO free feed and complete traceability were the most important ones in the Polish sample. In both countries, zero CO₂ emission came out as least important. In the choice experiment, origin was the most important parameter in both countries. In Germany, the production parameters had importance levels comparable to physical appearance of the meat, where in Poland physical appearance was more important than production parameters. Results of the latent class analysis showed a comparable group structure in both countries, suggesting a four class solution: price conscious, focus on origin, focus on fat and colour, and interested in ethical production parameters. The latter segment accounted for 39% of the sample in Germany and 26% in Poland. Respondents in the segment interested in ethical production attributes tended to be more critical of farmers than other respondents. Their willingness to pay for a product with their *preferred* ethical attribute was almost 100% in Germany and about 50% in Poland, although these results may be affected by hypothetical bias. The results suggest that it is indeed possible to differentiate industrially produced pork by ethical production parameters, and that the most promising ones are those related to health, safety and animal welfare.

Do Consumers Really Care For The Environment? Exploring Consumer Behavior For Packaged Organic Fresh Produce

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Abstract

The organic food market has shown substantial growth and one of the reasons is due to their increased availability in big retailers. In supermarkets organic products, and especially fruits and vegetables, are primarily found in consumer-sized plastic packages. However, considering the harmful consequences of packaging waste on the environment, buying organic products in packaging is in contradiction with the principal idea behind their purchase –i.e. to protect the environment. The objective of this paper is to investigate if food packaging plays a role on consumers' purchasing behaviour and perceptions towards organic fresh produce. In a series of 3 experiments we show that consumer perceptions are almost indifferent between organic food products with and without packaging. We further find that organic food consumers express preferences for packaged products, in contrast to non-buyers of organic products whose choices lean toward fruits and vegetables without packaging. Moreover, consumers high in health consciousness and biospheric values show a significant preference towards food with no plastic packaging. On the opposite altruistic values do not influence preference towards organic product with no plastic packaging. We discuss implications for theory and practice.

Keywords: organic food, food packaging, consumer perception, values, health.

Cross-National Investigation on the Drivers Behind Obesity: Re-Assessment of Past Findings and Avenues for the Future

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Abstract

Obesity remains an all-pervading problem in contemporary societies. No country to date has been able to reverse this trend. In the past, researchers have attributed differences in levels of obesity prevalence to national variations in food attitudes. However, due to societal evolutions such as globalization, modernization and urbanization, we question whether prior national differences in food attitudes still exist. In addition to the investigation of food attitudes, physical activity was included to depict a more comprehensive picture. To measure physical activity, we do not look at amount of hours exercised each week. Instead, we incorporated elements from the small changes approach. This is in line with recent findings that taking baby steps is more beneficial than giant leaps. Further, this approach is more transferable across socially, culturally and economically diverse populations. Besides the use of validated scales to measure different food attitudes, behavioral measures for food choice and the incorporation of small physical activity changes were included by means of choice tasks. Finally, their relative impact on weight status was assessed by means of ordered logistic regressions. An on-line survey was carried out in four distinct Euro-American countries and resulted in a sample of 2167 participants (US n=650; UK n=530; FR n=511; BE n=476; 52% women, 48% men; mean age 39.0 years, SD 11.4). In short, our findings reveal that food attitudes have indeed converged internationally. Further, we find that the behavioral measures are better predictors of weight status than food attitudes and that believing that unhealthy food is tasty, is an important predictor for the chance of being obese. A key task for local governments seems to restructure social environments to encourage more physical activity and less sedentary behavior.

Keywords: Obesity, cross-national investigation, health behavior, small changes

**Food-related wellbeing questionnaire:
Development and testing of its dimensionality across cultures**

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Abstract

Interest in measuring consumers' perceived wellbeing in a food-related context has grown in the last decade. Culture is a measure that is expected to largely influence how consumers perceive food-related wellbeing. People in different cultures have different values and are part to different socio-economic contexts, which make them likely to consider different criteria when evaluating food-related wellbeing.

The present work aimed at investigating cross-cultural and cross-category differences in perceived wellbeing of food products using an instrument (i.e. questionnaire) developed specifically for this purpose. A web-based study was carried out with 1,332 participants in seven countries in four continents: Brazil, Uruguay, USA, China, France, Portugal and Spain.

The new questionnaire composed of 31 items was constructed considering results from previous studies and review of past general wellbeing scales. Six out of the nine food product categories (apple, beef, beer, broccoli, chocolate cake, coffee, fish, French fries and milk) that were selected as stimuli with varying degree of healthiness vs. hedonism perceptions were presented to each participant following an incomplete balanced design. For each concept, participants gave their degree of agreement with the 31 statements in a 7-point scale.

The scores of the 31 items of the scale were significantly affected by country and food concept, as well as their interaction. Using Exploratory Factor Analysis (EFA) at the pooled sample, the items were grouped into four main food wellbeing factors related to “physical”, “intellectual”, “socio-spiritual” and “socio-emotional” aspects of food consumption. The largest differences among products were found in the factors related to physical and intellectual aspects of wellbeing, whereas the largest differences among countries were found for factors involving emotional and spiritual aspects. However, multi-group Confirmatory Factor Analysis (CFA) did not confirm that the initial structure of the questionnaire was invariant across countries and products. Subsequently, EFA analyses at the country and product levels stressed that the invariance of the structure should be confirmed among countries and concepts individually.

Results from the present work provide insight on how consumers perceive different dimensions of food-related wellbeing and stress the influence of cultural differences on the conceptualization of this concept.

Sustainable seafood: Muddled, bewildered and baffled consumers

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Abstract

The economic, social and environmental benefits of doing business sustainably are now well established with many industries fully embracing and integrating sustainable practices. However, some industries are facing greater challenges and struggling to embrace sustainable practices. For example, within the seafood industry the issue of sustainability is highly topical with a 2016 Google search on the term 'sustainable fish' scoring over 8.8 million hits. Despite a groundswell of discussion and action within the seafood industry, the current literature on seafood sustainability remains emergent.

Ultimately, consumers are the group that generates value for all members of the supply chain through their purchase decisions. Existing research with consumers about seafood sustainability supports that consumer's value sustainability. However, the current research is based on the assumption that consumers have a common understanding of the term. Some exploratory research has highlighted that consumers may have a very limited understanding of what sustainability means and the impact of sustainability on purchase behaviour may be overestimated (perhaps due to the limited understanding). Hence the purpose of this research was to explore consumer understandings of sustainability in relation to seafood, specifically considering how consumers define sustainability, the link between purchase intentions and behaviour and the credibility of information sources about seafood sustainability.

Results of an online survey of 1,153 Australian seafood consumers indicate that 1 in 3 consumers have either no idea or an incorrect idea of what sustainability means in relation to seafood, with those consumers who are able to define sustainability considering the environmental aspect only. Sustainability is not currently impacting the purchases decisions of almost all Australian consumers for reasons including lack of knowledge of what seafood is sustainable, the higher price of sustainable seafood and a lack of information at POS.

This study provides an understanding of consumer perspectives with respect to the sustainability of seafood and provides a basis for developing strategies to reduce ambiguity, promote clarity and shared understandings regarding sustainable seafood, while increasing knowledge, leading to more sustainably managed seafood supply chains.

**Consumer Behavior, Food Waste and the Price of Food:
Exploration of Qualitative Insights and Lifestyle Segments in
Denmark**

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Introduction

Food waste is an issue increasingly discussed in society (Stuart, 2009) and focused on by academic research (Aschemann-Witzel et al. 2015). FAO reports that around a third of the world's food is lost or wasted at some point in the supply chain (FAO, 2013), in a situation where natural resources are becoming increasingly scarce (Godfray et al., 2010; Foley et al., 2011) and are under pressure (Rockström et al., 2009).

A complex interaction of factors causes food waste at the consumer stage (Quested, Marsh, Stunell, & Parry, 2013), which is the stage causing the greatest share of food waste in affluent societies (Parfitt, Barthel, & Macnaughton, 2010). Food plays various roles in consumer lives and our habits throughout the day, and goals such as nutritional quality, taste, safety, health, organic, tradition, local origin, and animal welfare are considered and weighted against each other.

Amongst others, the price of food has been found to play a prominent role in a number of ways: Affluent consumers waste more, and low valuation of food due to its low prices has been blamed to cause consumer wastage of food, potentially influenced by retailers pricing strategies and price promotions. However, a lot of efforts in food waste avoidance focus on reducing prices on foods that might go to waste, thus appealing to economic incentives and consumer's price orientation (Aschemann-Witzel et al. 2015).

In terms of food waste avoidance action, Denmark has been highlighted as an example of a country with especially high focus on the issue (Gjerres & Gaiani, 2013), amongst others attributed to the nongovernmental organization 'Stop Spild af Mad'. The organization claims that consumers self-report to have reduced waste of food in their households compared to previously (Stop Spild af Mad, 2015). Food market stakeholders have started to undertake actions to reduce food waste, such as for example retailers changing their marketing communication, package size and pricing, while alternative retailers – the so-called foodbanks – have started to distribute 'suboptimal' foods that otherwise might be wasted. Employing food waste avoidance actions appears to have become an industry standard in Danish food retail (Aschemann-Witzel, Hooge, & Normann, 2016).

The current paper looks at consumer's food and waste attitudes and behaviours and respective lifestyle, and how these might relate to their reaction to food wastage or food waste avoidance as triggered by prices. It firstly, presents a study on Danish consumer's food (waste)-related lifestyle with a focus on the food waste and price question, and secondly, explores qualitative data from accompanied shopping interviews and focus groups with Danish consumers, identifying elaborations on the same issue. The contribution of this research consists of explorative and more in-depth findings on the issue of consumer behaviour, food waste and price.

Methodology

To study food (waste)-related lifestyle, we adapted the established (Brunsø & Grunert, 1995) and cross-culturally valid (Brunsø, Scholderer, & Grunert, 2004; Grunert et al., 2011; Scholderer, Brunsø, Bredahl, & Grunert, 2004) food-related lifestyle measure, a 69-item long

measure destined to describe a consumers opinions, interests and behaviors towards food in five areas of his/her relation to food (called 1) purchasing motives, 2) quality aspects, 3) consumption situations, 4) ways of shopping and 5) cooking methods). The adaptation was based on expert interviews and literature reporting on consumer food waste research (Lyndhurst, 2010; van Boxstael, Devlieghere, Berkvens, Vermeulen, & Uyttendaele, 2014; Watson & Meah, 2013; Williams, Wikström, Otterbring, Löfgren, & Gustafsson, 2012; WRAP, 2013). The final 54 items (measured on a 1-7 agree/disagree Likert scale) were included in an online survey and choice task distributed to a quota-sampled sample of 4215 respondents of an online panel in five Northern European countries. Applying exploratory factor analysis in each country and for each of the five areas of lifestyle (Huang, Grunert, Lu, & Zhou, 2015), 12 dimensions were identified as valid across the five countries and used to conduct a two-step cluster analysis process (Punj & Stewart, 1983). The results revealed that five clusters of different consumer segments appear to best describe the differences in consumer statements. Segment differences were explored with subsequent ANOVA and post hoc Scheffe tests, and only the Danish country results are reported here.

Apart from the food (waste)-related lifestyle measure, we included self-reported share of food waste and the choice of an optimal versus a suboptimal food in the choice test as indicators of food wastage. The question for share of self-reported food waste was ‘If you would try to estimate your own household, how much of the following food that you buy or cook ends up being thrown away at home?’ for five categories (fresh fruit and vegetables, milk and dairy, bread and other bakery products, meat and fish, prepared dishes/meals). Tendency to choose optimal was measured by offering respondents the choice between pictures of an optimal versus a suboptimal product from the categories (brown spot) apple, (crooked) cucumber, (1 day before date) milk, (1 day before date) yoghurt, (dented package) juice, and (some broken) biscuits, with the question ‘Imagine that you’re in a supermarket, ready to select [category]. Given an identical price, which one would you choose / Imagine that you’re in your home, ready to select [category]. Which one would you choose?’ and then counting how often the optimal was chosen in the six choices. Furthermore, the respondent’s socio-demographics were surveyed.

Furthermore, 20 qualitative accompanied shopping interviews were conducted with customers of a supermarket (Fakta) in the city of Aarhus, triggering respondents to ‘think aloud’ while doing their grocery shopping. The store was chosen because it offers a lot of food that is close to the expiry date at reduced prices, highlighting these foods with a specially designed sticker. Two focus groups were conducted with consumers about the topic of food waste in the scope of a cross-country study in the same five countries as the quantitative survey. Both the qualitative accompanied shopping interviews and the two focus groups with consumers in Aarhus are currently under analysis to further explore the ‘why and how’ of the interaction between consumers, prices and food waste, and results will be available by the conference.

Results

We find a small group (cluster 1) of very involved food consumers that place relatively most importance on credence attributes and which most likely uses meals as a social event, and a

slightly larger cluster of very uninvolved (cluster 2). There are three larger groups which are firstly, a low involved group specifically oriented towards price as a criterion (cluster 3), secondly, an involved segment characterized by a high degree of planning (cluster 4), and thirdly, a moderately involved group, which is not pursuing low prices (cluster 5).

Cluster 1 (11.1%) is characterized by particularly favorable answers. They use food and meals for social events (eating out in restaurants, inviting friends for dinner), they appreciate the social relations tight to meals (chatting, being together), and derive self-fulfilment from being a good cook and being able to create meals from scratch. Moreover, the cluster respondents give importance to credence attributes of food (environmental friendliness, safety, health, organic, naturalness). In purchasing food, they specifically seek the optimal choice (appreciating packing that keeps food safe, comparing appearance and date label), and also report to adhere to the price criterion by seeking lower priced foods or spending time to find offers.

Cluster 2 (17.5%) is in contrast to cluster 1, because their responses indicate a particularly low food involvement across most dimensions, indicating consumers who do not give great importance to the characteristics that foods have or not derive greater self-fulfilment and pleasure from creating meals. Observing the socio-demographics, it appears that these are to a majority young and male respondent. Cluster 3 (21.6%) has as a distinctive characteristic in that this cluster is especially oriented towards price as a criterion in purchase. Else, the cluster is in a range of dimensions similar to cluster 2, in that these consumers do not seem to have a greater interested in food and cooking. Other than cluster 2, respondents give some importance to the social relations tight to food and agree to normative statements.

Cluster 4 (24.9%) appears to be similar to cluster 1 in a range of dimensions in food (waste)-related lifestyle and are also relatively more involved food consumers. However, there distinctive characteristic from among the segments is that respondents report to plan meals to a far greater extent, and least likely use any convenience food. Cluster 5 (24.9%) is not particularly engaged when it comes to price as a criterion, that is, seeking offers and low priced foods. Cluster 4 and 5 are significantly older respondents, with a tendency to show a larger share of females.

Comparing self-reported food waste, it appears as if both the uninvolved and the involved (cluster 1 and 2) report relatively larger share of waste among the food categories that they had to assess, compared to the remaining segments. In turn, both the well-planning and the price criterion-oriented (cluster 3 and 4) self-report a lower share of food waste. Given a choice between an optimal and a suboptimal item, significant differences are found when the choice is imagined to take place at home: here, the involved respondents (cluster 1) are significantly most often choosing the optimal food item from among their stored foods at home, while in particular the price criterion-oriented (cluster 3) indicate to use the suboptimal for immediate use relatively most often (in half of the choices).

Discussion and conclusions

The food (waste)-related lifestyle dimensions and segments identified allow some assumptions on the potentially underlying causes of food waste for each of the segment. In terms

of the question of price as the focus of this paper, it is found that there clearly are segments with greater price-orientation than others, but there is also a group relatively less likely to focus on that criterion in food purchase. Interestingly, while the price-dismissive group is low in planning, the two groups with greater focus on price as criterion differ in the degree of planning. Furthermore, a focus on prices during choice seems to be related to a relatively greater likelihood to consume the ‘suboptimal’ item first when at home – an indicator which might lead to lower levels of food waste.

In terms of the action encouraging food waste avoidance, it appears that cluster 3 can be expected to be specifically motivated by achieving low prices and savings, and thus can be suggested to be the right target group for pricing strategies. Cluster 5 would not likely react to the latter, thus, the recommendation to reach out to this group would rather be via their moderate involvement in food.

The analysis of the qualitative data will allow exploring more in-depth how prices affect purchase and potential wastage in the eyes of the consumer, and they report and elaborate on how price orientation interacts with food waste avoidance.

Table 1. Segment characterization results for the food (waste)-related lifestyle dimensions and food waste indicators

	Dimension mean	1	2	3	4	5
Segment mean		5.24	3.74	4.37	5.04	4.51
Social event	2.95	4.49 ^a	2.87 ^c	3.38 ^b	2.91 ^c	3.08 ^b
Security	3.26	3.81 ^a	3.48 ^{a, b}	3.42 ^{a, b}	2.91 ^c	2.86 ^{b, c}
Self-fulfilment	4.78	5.60 ^{a, b}	3.35 ^c	3.47 ^c	5.88 ^a	5.46 ^b
Social relations	5.24	5.81 ^a	4.08 ^c	5.05 ^b	5.80 ^a	5.39 ^b
Credence attribute	4.14	5.38 ^a	3.55 ^c	3.74 ^c	4.93 ^b	4.66 ^b
Price and taste	5.60	6.05 ^a	4.51 ^c	5.71 ^b	6.15 ^a	5.53 ^b
Convenience	2.94	3.80 ^a	3.22 ^b	3.57 ^{a, b}	2.47 ^c	2.29 ^c
Norms	5.27	5.81 ^a	4.12 ^c	5.60 ^a	5.85 ^a	4.97 ^b
Cooking interest	4.74	5.62 ^{a, b}	3.39 ^c	3.67 ^c	5.70 ^a	5.31 ^b
Planning	3.75	3.60 ^b	3.41 ^{b, c}	3.07 ^c	5.00 ^a	3.40 ^{b, c}
Optimal choice	5.51	5.93 ^a	4.59 ^d	5.52 ^c	5.89 ^{a, b}	5.59 ^{b, c}
Price criterion	4.60	5.29 ^a	3.40 ^b	5.64 ^a	5.64 ^a	3.22 ^b
Age in years	45.4	46.25 ^{a, b}	41.18 ^b	44.30 ^{a, b}	47.73 ^a	46.72 ^a
Gender, female in %	51.8	48.9 ^a	28.2 ^b	57.4 ^a	61.6 ^a	55.0 ^a
Share of self-reported food waste in %	11.60	15.8 ^{a, b}	17.6 ^a	9.0 ^{c, d}	7.1 ^d	12.3 ^{b, c}
Tendency to choose optimal, in store	5.14	5.34	5.41	5.14	4.97	4.97
Tendency to choose optimal, at home	3.42	3.96 ^a	3.90 ^{a, b}	2.95 ^b	3.12 ^{a, b}	3.55 ^{a, b}

Note: ANOVA with posthoc Scheffe test, significant differences indicated by different superscript letters (a = highest). No significant differences for share of higher education, whether there are children in the household, living area as well as income. The tendency to choose optimal is measured in frequency out of 6 choices. The sample (848 n) consists of 51.8% females, respondents had a mean age of 45.4 years, had to 56.3% completed a higher education, and 28.8% reported to have at least one child living in the household. Of the respondents, 48% stated to live in an urban area or large city, 39.4 in a suburban area or small town, and 12.6% in a rural area.

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Rural Food Deserts

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Introduction

The Great Plains region of North America stretches 500 miles from the Rocky Mountains to the Missouri River and 1,800 miles from the Texas-Mexico board lands to the Canadian Prairie Provinces. It is one of the world's great agricultural regions, yet sparsely populated. (Wishart, 2004). The entire state of Nebraska lies within the Great Plains region and is a microcosm of the changes happening throughout the region. Between 2000 and 2010, Nebraska's overall population increased by 6.7%, driven by strong growth in eight of the state's nine metropolitan counties. Conversely, only nine of the state's 65 mostly rural counties grew during this period (Cantrell, 2011). This rural population decline continues a decade's long trend in Nebraska, which is similar to most other states in the Great Plains region.

This persistent decline in rural population has contributed to a concurrent exodus of retail businesses throughout the impacted areas, including those selling basic necessities, such as hardware, clothing, and even food. A study by Kansas State University found that more than 38% of grocery stores in Kansas towns of less than 2,500 people closed between 2006 and 2009 (Impact Lab, 2010). A recent study from Iowa indicated that full-service independent groceries stores have the best chance for viability if they serve trade areas with populations greater than 3,253 (O'Brien, 2008). However, many people throughout much of the Great Plains region live in areas with much lower population density. This pressure on rural grocery retailers resulting from decreased market size is compounded by increasing operational costs, decreasing labor availability, and supplier/distributor contract requirements commanding larger minimum loads. The growth of Wal-Mart and other national retail chains exacerbates the issue as these stores have large trade areas.

For the average American, a trip to the supermarket is a six mile (9.6 km) round trip (Oak Ridge National Laboratory, 2001). However, a consumer living in Thedford, in rural Nebraska, faces a 66 mile (106.2 km) one-way trip to reach the nearest supermarket. As the population across the rural Great Plains declines and grocery stores close, the residents who remain often find themselves living in rural "food deserts"; areas with limited access to food. Insuring adequate food availability for rural consumers living in food deserts has become an important quality of life challenge. Besides the increased transportation costs, consumers living in food deserts also pay up to 10% more for food (Kaufman et al., 1997). Limited access to supermarkets has also been linked to higher rates of obesity and other negative health outcomes (Powell et al., 2007).

Food Deserts

The term "food desert" was first used in the 1990s by researchers in Great Britain. According to Reisig and Hobbiss (2000, 138), a British Low Income Project Team (LIPT) defined food deserts as "areas of relative exclusion where people experience physical and economic barriers to accessing healthy foods." Causes cited included growth of superstores (which replaced neighborhood shops), low car ownership, and housing developments which do not allow easy

access to food stores. The same phenomenon is also occurs in of the suburban United States, where there are fewer, larger stores located beyond reasonable walking distance for most consumers. Inadequate public transportation often exacerbates the problem.

Subsequently, poverty as an additional defining characteristic of food deserts was introduced by the United Kingdom Health Minister, who described the phenomenon as areas “where people do not have easy access to healthy, fresh foods, particularly if they are poor and have limited mobility”. Easy access was initially defined as being within 500 meters (0.31 mi) of households, reflecting the early focus on urban food deserts. Subsequently, researchers expanded the domain to include rural areas, again in the United Kingdom (Furey et.al., 2001). This expansion of the domain reflected the strategy employed by chain food retailers of opening larger stores on the periphery of cities, which negatively impacted both rural villages and inner cities.

Food deserts have been extensively researched from a myriad of perspectives. Beaulac, Kristjansson, and Cummins (2009) conducted a systematic review of food desert studies conducted from 1966 to 2007. The authors found strong evidence that access to food in the United States is impacted by income and race. Lower income, racial minorities tend to reside in food deserts. Walker, Keane, and Burke (2010) completed a comprehensive literature review of empirical studies on variables associated with food deserts. These researchers identified four major categories from the research. First, there is clear evidence that access to supermarkets impacts consumers’ diet. Second, neighborhoods with higher concentrations of ethnic minorities have less access to supermarkets. Third, lower income neighborhoods have less access to supermarkets. Finally, stores in urban areas tend to be independent (non-chain stores) and have higher prices compared to those in suburban areas.

Even before the notion of food deserts began to take hold, researchers were exploring food insecurity in rural areas (Morris et.al., 1992). These researchers determined that consumers living in persistently poor, rural areas (nonmetropolitan with poverty rates of 25% or more) pay more for food and are faced with fewer fresh food options. The need to travel greater distances to access supermarkets creates unique challenges for rural consumers (Hendrickson et.al., 2006).

It follows some studies suggest a link between higher obesity levels among rural consumers with local availability of healthy foods (Hosler, 2009). An alternative perspectives is offered by Hartely et.al. who conclude that availability of healthy food at local stores is not significantly linked to consumption in rural areas. This conclusion is shared by others who find that distance from supermarket indicators of rural food deserts (10 miles according to the USDA) do not account for rural consumers propensity to travel relatively greater distances to meet many basic needs, including food, employment, and healthcare (Kaskie and Burkink, 2016).

The Hartley et.al. study uncovered another mitigating factor when consider rural food deserts. The researchers found that a majority of respondents in their sample procured some food from local producers and, in some cases, procured food through gardening and hunting. Again, using

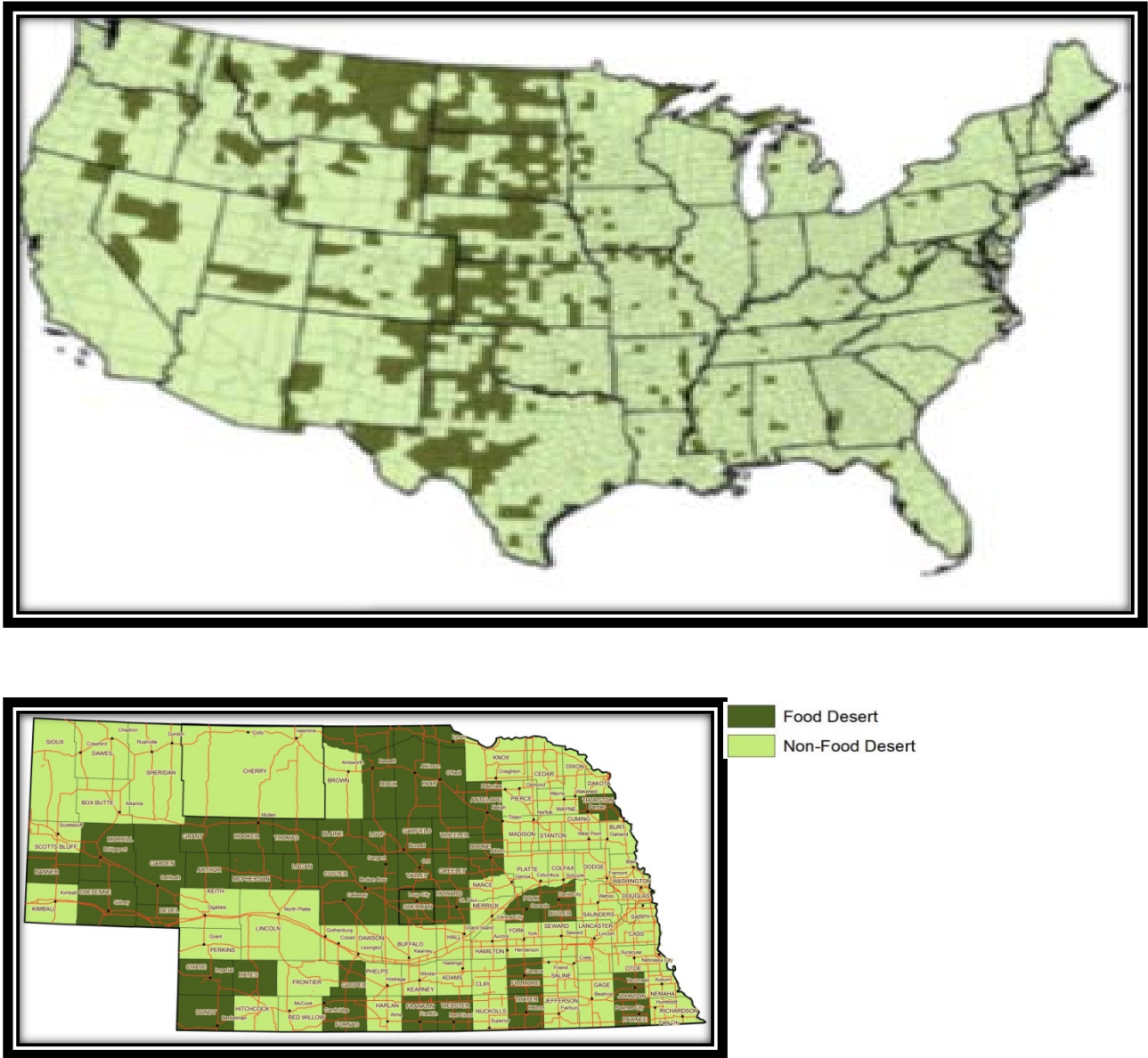
the strict government definition for rural food deserts may not account for these rural-centric food procurement practices.

Clearly, the definition and impacts of rural food deserts continues to evolve. However, the United States government, through the Healthy Food Financing Initiative (a partnership between the Treasury Department, Health and Human Services, and U.S. Department of Agriculture) presently defines food deserts as “a low-income census tract where a substantial number or share of residents has low access to a supermarket or large grocery store” (Morton and Blanchard, 2007).

To qualify as a “low-income community,” a census tract must have either: 1) a poverty rate of 20 percent or higher, OR 2) a median family income at or below 80 percent of the area's median family income; To qualify as a “low-access community,” at least 500 people and/or at least 33 percent of the census tract's population must reside more than one mile (1.6 km) from a supermarket or large grocery store (for rural census tracts, the distance is more than 10 miles/16.1 km). Based on year 2000 data, researchers identified 6,529 census tracts meeting the definition of “food desert”, or 10% of the total census tracks. Of these, 2,204 tracts were rural, or about 3% of the total (Dutko et.al., 2012).

The USDA operationally defined Food Deserts as “counties in which all residents must drive more than 10 miles (16.1 km) to the nearest supermarket chain or supercenter”. The USDA defines a supermarket as a “supermarket chain or supercenter with annual revenues over \$2,000,000.” (Morton and Blanchard, 2007). Figure 1 depicts food desert counties using this USDA definition for the continental United States and for Nebraska. According to these parameters, 418 of 3,142 counties in the United States and 38 of Nebraska’s 93 Counties met the criteria as a “food desert.”

Figure 1. Food Desert Counties, United States and Nebraska, 2000



Source: Morton and Blanchard 2007

Rural Food Deserts-Remedies

Clearly, consumers living in true rural food deserts face a significant quality of life challenge. Remedies should provide improvements in food accessibility, affordability, and/or variety. Researchers, public policy makers, corporations, and community-based organizations have identified several different potential remedies for consumers living in rural food deserts. These include public-policy, corporate, and community-based solutions. Clearly, the best remedy would address the underlying cause, population decline in rural areas. This is a larger issue and beyond the focus of this paper. We instead will focus on more targeted, short-run solutions that would ensure food access to populations in decline.

Public Policy Remedies

Mobile food carts. The USDA has developed a goal to improve food access for rural food desert dwellers. Deputy Secretary Kathleen Merrigan has speculated “mobile grocery stores” could serve food deserts in a similar fashion as bookmobiles (Gustafson, 2010). This type of solution has been tried in urban food deserts, such as Indiana University Garden-on-the-Go Initiative. This program delivers fresh produce to urban food deserts on a set schedule. There are similar efforts in New York, Michigan, and New Mexico (Hernandez, 2011). This type of solution may

prove effective in high population density areas, but would likely face significant challenges in areas where consumers are few, and widely dispersed, like communities in the rural Great Plains

Store Subsidies. Perhaps a more effective public policy initiative may be to subsidize grocery stores serving rural food deserts. For example, non-governmental stakeholders in California have recently introduced a \$200 million fund, called the California FreshWorks Fund (Schwartz, 2011). This program will incentivize the development of grocery stores and other solutions to increase accessibility to healthy food for consumers in food deserts. Perhaps the USDA could allocate funding to encourage the development and retention of grocery stores in rural areas. There is clearly an adequate precedent for governmental subsidy of critical industries, including agriculture, defense, and healthcare. Access to nutritional food for rural consumers is of a similar importance.

Corporate Remedies

Retail Development. Walmart, the world's largest grocery retailer, is often cited as contributing to the growth of rural food deserts. In rural areas, Walmart Supercenters may have a trade area of over 100 miles (160.9 km), putting pressure, often fatal, on independent stores in small communities within these trade areas. In a bid to perhaps respond to negative public opinion, Walmart recently announced plans to open "between 275-300 stores serving the Department of Agriculture (USDA) designated food desert areas before 2016in both urban and rural areas" (Walmart Stores, Inc, 2011). It is not surprising that Walmart is developing plans to enter more fringe markets due to saturation of more profitable areas. However, they will not open stores that will not be profitable. It is not clear how many of these stores will be opened in rural areas, where it is questionable if there is sufficient population to support Walmart's business planning requirements.

Wholesalers/Distributors. Food distributors serving rural areas, to address increasing operational costs, continue to raise prices, delivery charges, and minimum orders sizes for smaller, more dispersed retailers (Coddington, 2009). In some cases, retailers have responded by joining together to meet minimum requirements. For example, a convenience store in rural Nebraska, unable to meet minimum order requirements, cooperates with the local grocery store. This is not an ideal solution as product has been moved from the retailer where the product is delivered to the cooperating retailers. Other remedies may again be incentives from the government to insure distributors continue to provide access to retailers serving areas in danger of becoming food deserts.

Community-Based Remedies

Perhaps the most effective solutions have come from communities that have become food deserts. Typically, these solutions involve some form of government infusion of capital and/or cooperative organization of a grocery store. However, the impetus is typically a vested group of community members who find creative solutions (Mader and Brusse, 2011). Following are case studies of different community-based remedies.

Community Cooperative. As recently as 2000, residents of Arthur, Nebraska (population of 117) had to drive 40 miles (64.4 km) to reach the nearest grocery store. The Wolf Den Market now operates as a cooperative, but was started by local high school students. The 100 members pay an annual membership fee of \$20 and receive 5% credit based on purchases. The store carries a variety of food including produce, dairy, and prepackaged meats. (Interview Conducted with Store Manager, March 1, 2012).

Direct Farm Marketing/Farmer's Markets. Farmer's markets offer an opportunity for producers to sell products, including fresh fruits and vegetables, directly to consumers. Though these markets have grown in popularity in recent years, they are not likely a remedy for rural food deserts because of low volume sales in rural areas; they are most successful in more highly concentrated population centers (Kantor, 2001). Also, these tend to be a seasonal phenomenon, only providing fresh food sources for part of the year in many regions.

Public Ownership/Private Management. In Blue Hill, Nebraska, the only grocery store burned down in 2001. The community rebuilt the store through donations, a state community development block grant, tax increment financing, and support from the USDA (KNEB Radio News Story Transcript, 2003). Tax increment financing targets increases in property taxes resulting from development to repay the initial public investment. The local community foundation owns the property and leases it to the store owner.

Volunteer Activism to Raise Awareness and Sale. Many rural communities have a store, which is often at risk of going out of business. This may be due to low sales or the inability of the current owner to find a successor. In these cases, the community can work together to sustain the business. For example, volunteers in Wilmore, Kentucky have orchestrated a media blitz to reveal the challenges facing the local store owner and the consequences if the store is forced to close (Larsen, 2011). This effort at raising awareness has resulted in significant sales gains for the store.

Encourage local shopping. There is a high propensity of outshopping among rural consumers who often commute to larger communities for work (Subramanian, et.al. 2003, Anderson, et.al. 2010). Communities should initiate shop local strategies to encourage more inshopping to support viability of local food stores (Morton and Blanchard, 2007).

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Toward a Sustainable Food City: The Case of the Bournemouth and Poole Sustainable Food City Partnership

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Extended Abstract

Food and drink are essential parts of everyday life, so it is important to recognise how our relationship with them has a major affect directly, personally and continually on our well-being (Whatmore, 2002) and the world around us through environmental, social and economic impacts. This has led to calls to encourage the development of sustainable food systems that ensure food is sustainably produced, food waste reduced, and the effects of an increasing population on the planet minimised (Defra, 2013; Lorenz & Veenhoff, 2013; Lubin & Esty, 2010). Increasing concerns around the environment, food security (Van Passel, 2013) and diet-related health have resulted in greater emphasis on developing sustainable food and drink systems which balance economic, social and environmental goals through supporting local and regional economies, delivering social benefits, and protecting an increasingly fragile environment (Marsden & Morley, 2014). Defined as “a method of food production and distribution that is geographically localized, rather than national and/or international” (Grace Communications Foundation, 2016), ‘local food systems’ along with locally sourced, locally produced, and organic food networks (e.g. Donald, 2008) have received interest as potential models of sustainable consumption (Watts et al., 2005).

In 2013, Bournemouth and Poole became one of six cities in the UK to be funded under the national Sustainable Food Cities Partnership Programme (Sustainable Food Cities, 2016). The key issues to be addressed by the programme include:

1. Promoting healthy and sustainable food to the UK public
2. Tackling food poverty, diet-related ill health and access to affordable healthy food
3. Building community food knowledge, skills, resources and projects
4. Promoting a vibrant and diverse sustainable UK food economy
5. Transforming catering and food procurement
6. Reducing waste and the ecological footprint of the UK food system

The Bournemouth and Poole Sustainable Food City Partnership comprises “local people, businesses, community groups and public sector organisations who have come together to revolutionise the way people across the region grow, buy, cook, eat, celebrate and dispose of their food” (Bournemouth and Poole Sustainable Food City Partnership, 2016). The activities of the partnership support the need for developing sustainable food and drink systems in Bournemouth and Poole which balance economic, social and environmental goals through supporting the local economy, delivering important social benefits (e.g. food poverty campaign, community growing, etc.), and protecting the environment (e.g. sustainable fish cities programme) (Marsden & Morley, 2014). In order to arrive at a prioritised agenda for the partnership based on a shared understanding of sustainable local food, a survey was developed by a working sub-committee focused on research and information needs and knowledge dissemination for the partnership and emailed to existing members. Thirty four members of the fledgling Bournemouth and Poole Sustainable Food City Partnership reported on their

understanding of the term “sustainable food”, key issues and priorities around sustainable food, current understanding of sustainable food in the local area, appropriate media for informing people about sustainable food, and awareness of sustainable food schemes. As there were only 34 responses from the 120 strong membership, caution must be expressed as to the representativeness of the survey results; however the survey yielded some useful indicative findings for defining the direction of the partnership and for future research.

Thematic analysis uncovered central issues and associations around key terms. First, respondents were asked to list the three main things that came to mind when they heard the term “sustainable food”. Local was the predominant response, with sustainable fishing and environmental protection including responsibly sourced being the next key themes. The term “local” was frequently mentioned in connection with the term “sustainable food” - an interesting finding given sustainable food does not have to be local and local food may not be, in all instances, sustainable (Grace Communications Foundation, 2016). Lesser attention was given to organic, health and the absence of pesticides/chemical which tended to be mentioned second or third, along with issues related to effective use of resources, reduced food waste, food miles, Fairtrade and food security. Seasonality, taste and cost also tended to be mentioned second or third, along with ethical issues and animal welfare.

In terms of key issues and priorities around the sustainable food agenda, respondents focused again on the “local” theme, with education including the need to raise awareness and information on where to find sustainable food emerging as another important issue. The environment, together with sustainable fishing, was considered to be of key importance along with other issues including sourcing and availability, supply chains, and price and affordability. Mentioned less often were concerns related to the ability to grow food, equality including fair access to sustainable food for everyone, animal welfare, health, having sufficient resources and food poverty. While food waste was not mentioned as a key issue it was of secondary and third concerns to six of the 34 respondents.

Utilising a 7 point scale (7 = strongly agree; 1 = strongly disagree), respondents tended to disagree that food in Bournemouth and Poole is sustainable (3.5), people in the area are aware of the need for sustainable food (3.4) or that it is easy of find sustainable food in the local area (3.4). A range of media was considered useful for informing people about sustainable food and encouraging them to make more sustainable food choices, with social media (91%) and local newspapers (71%) considered to be the most useful by respondents, followed by local radio (65%), word of mouth (65%), attendance at food fairs/events (65%), and then websites (38%). Television (38%), leaflets/flyers (35%) and posters (35%) were deemed to be less useful for providing the required information. Respondents were questioned on their awareness of various sustainable food schemes/logos. While all of the respondents had heard of Fairtrade, only three quarters (76%) had heard of the Rainforest Alliance, and two-thirds (65%) had heard about the Marine Stewardship Council. Despite being interested in local food, fewer still were aware of local initiatives including Dorset Local Food and Drink (59%), Real Local Flavour (41%) and

Hampshire Fayre (18%). Next, respondents were asked how frequently they purchased various local food and drink products on a 5 point frequency scale from never (1) to daily (5). The most frequently purchased products were locally sourced vegetables (3.6), Fairtrade products (3.6), locally sourced fruit (3.0), locally sourced dairy products (2.8), locally sourced meat (2.8), bread from a local bakery (2.7) and finally locally sourced drinks (2.6).

Respondents were then asked to rank a set of possible priorities of the three year Bournemouth & Poole Sustainable Food City Partnership on a 10 point scale (1 = most important; 10 = least important). The most important priorities for the Partnership are minimising food waste and using food surplus more effectively (7.1) and campaigning to increase understanding of sustainable food within the community (7.1). Supporting local food producers (6.2), increasing sustainable food sourcing in business (5.9), and supporting sustainable food businesses (5.8) are also considered to be important priorities. Other key priorities include community growing (5.4), tackling food poverty (5.2), increasing sustainable food sourcing in the public sector (5.0), teaching cookery and other food skills (4.4), and finally, improving individual health and well-being (3.0).

In terms of what the Partnership should be focusing on over the next 3-5 years, the predominant issue raised by respondents was education. Other areas of focus include improving the ability to grow such as community growing and best use of land, food poverty and food waste. The involvement of local government was raised for the first time, followed by issues around sourcing, availability, accessibility, supply chains/distribution and the need for appropriate business and marketing solutions. When asked what needed to happen to support the longer-term vision (ten years) to be a sustainable food city, members of the partnership considered education, business support and business and marketing solutions including campaigning and a “seismic shift” in changing perceptions and attitudes toward sustainable food to be critical. Ongoing local government involvement, managing sourcing and availability issues, as well as ongoing funding were deemed important along with efficiencies in the food distribution system. Once again, community growing and best use of land and addressing food poverty were considered important in becoming a sustainable food city.

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The National Economic Benefits of Food Imports: The Case of U.S. Imports of Hass Avocados from Mexico

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Abstract

Imports of food products are often seen primarily as a threat to domestic producers. Their role in contributing to the broader U.S. economy is often ignored. U.S. imports of avocados, primarily from Mexico, have grown dramatically over the last 25 years and supported an equally dramatic increase in U.S. avocado utilization over that period. Imports now account for over 80% of U.S. avocado consumption, 90% of which come from Mexico. The related research literature has focused mainly on the consequences for the U.S. avocado industry. This study, however, considers two key questions regarding the impacts of those imports on the broader U.S. economy: (1) Have U.S. imports of Mexican avocados contributed to the growth of the U.S. economy as might be expected? (2) If so, then what is the level and industry distribution of the economic contribution of those imports? An IMPLAN (IMpact analysis for PLANning) input-output model is used to measure the contribution of U.S. imports of Mexican avocados in 2013 to the U.S. economy. The analysis concludes that those imports generated about \$2.2 billion in output, \$1.4 billion in GDP, 12,270 jobs, \$804 million in labor income, and \$373 million in tax revenue. A separate econometric analysis corroborates these results. Given their rapid rate of growth, U.S. avocado imports will likely continue to make substantial and increasing contributions to the U.S. economy. The results imply that the removal of U.S. phytosanitary restrictions on avocado imports from Mexico has been pro-growth for the U.S. economy.

Drivers of Demand for Specialty Crops: The Case of Arizona-Grown Medjool Dates

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Introduction

Creating demand for fruits and vegetables has become important in recent years. From Michelle Obama's "Let's Move" campaign to the Produce for Better Health Foundation's "More Matters", Americans are being encouraged to eat more fruits and vegetables. State agricultural departments have hoped to capitalize on the increased focus of produce consumption, as well as consumer preferences for locally grown produce (Patterson, Olofsson, Richards and Sass 1999). Towards this endeavor, federal specialty crop block grants have provided funding to help states enhance the competitiveness of their specialty crops. This research stems from one such grant. As growers are currently navigating the maze of packaging and labeling options available to them, questions remain as to the value consumers attribute to various labeling designations. The fresh date industry is an industry in which an understanding of consumer preferences and consumers' willingness to pay for various product attributes is needed. This research uses the Medjool date industry as a context to examine date attributes, such as growing region, "GMO-free" and "organic", and their effect on consumers' willingness to pay. The date industry provides a compelling field of study; the industry has experienced considerable growth, with worldwide sales of dates increasing 14% over the last decade. In the United States, sales of dates increased 7.2% from 2014-2015, in a category where overall fruit consumption declined or remained stagnant (Mintel Reports 2015). In the United States, the vast majority of date production occurs in Coachella Valley, California, with more than 90 percent of U.S. dates grown here. In recent decades, though, date production has expanded to the Southwestern Arizona desert, along the California-Arizona border, with the wide planting of Medjool date palm trees. In a depressed economic region, the Medjool date industry has contributed significantly to the region's economy. It is estimated that 7,500 acres of Medjool dates are planted in Southwestern Arizona, producing 14 million pounds of dates, totaling \$8 million in market value (Riggs 2015). Additionally, a packing coop located in the area, packs about 20 million pounds of Medjool dates annually. Medjool date farming adds an estimated \$30 million to the Arizona economy. While the Medjool date industry is vitally important to this region, experts have noted that "the biggest challenge in the Medjool date industry is increasing interest in consumers eating dates" (Riggs 2015). Thus, this research examines the drivers of Medjool date demand by looking at consumers' preferences for various date attributes (e.g., growing region, pesticide usage, and presence of genetic modification).

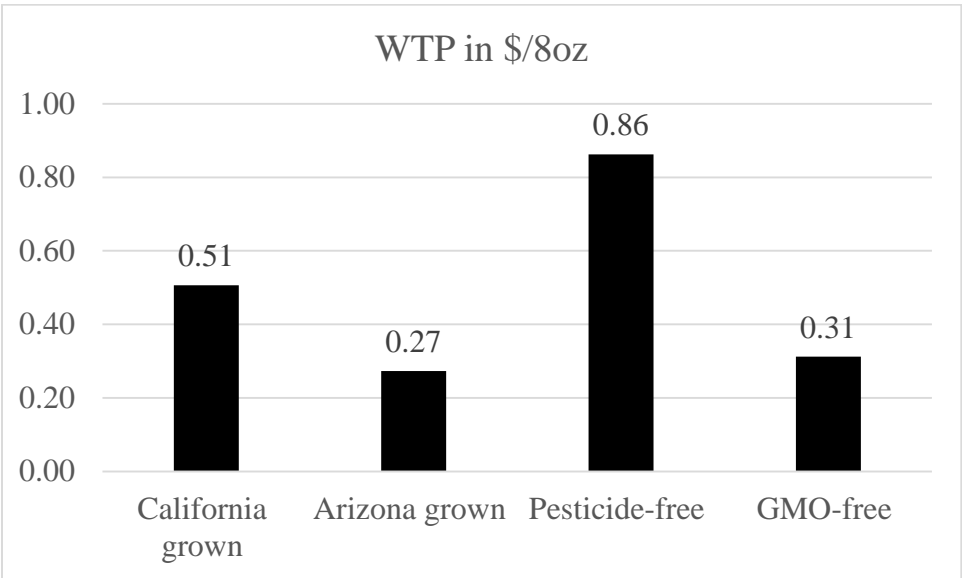
Choice experiments were employed to isolate product characteristics, such as region of origin labeling, and their specific influence on price. This provides an insight into consumers' preferences and related willingness to pay. In choice experiments, participants make repeated choices between different bundles that are characterized by different attributes and the respective levels of these attributes. The individual's utility depends on attribute levels of the choices made from the choice sets. This procedure enables the researcher to determine the attributes which influence the choice significantly and the marginal WTP for an increase/ decrease in the significant attributes (Goldberg and Roosen, 2007). By employing choice experiments with relevant consumer attributes, such as price, region of origin and pesticide-free as well as GMO-free labelling, we estimated consumer preferences and WTP for these attributes. Table 1 lists the attributes examined.

Table I: Attributes of dates

Attribute	Price / 8oz	Region of origin	Pesticide free	GMO free
Level	\$2.49	California grown	Label	Label
	\$3.49	Arizona grown	No label	No label
	\$4.49	No label		
	\$5.49			
	\$6.49			
	\$7.49			

Figure 1 illustrates the results obtained. Our results show that on average, consumers are willing to pay a larger premium for California grown Medjool dates than Arizona grown Medjool dates. Moreover, consumers were willing to pay almost a \$1 premium for pesticide-free production labelling of Medjool dates. Considering that this label is not in use currently, it will be a viable tool to communicate the production method in the market place. Overall, our results show that consumers respond to region of origin and production method labelling and that producers should consider strategies to improve the brand image of Arizona grown products and that they could benefit from incorporating and communicating pesticide-free production of Medjool dates.

Figure I. Willingness to Pay



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The state of art on Alternative Food Networks: gaps and opportunities for food marketing research

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Keywords

Alternative food networks; network analysis; short food chain; local food; bibliometric map.

Introduction

Alternative food supply systems are becoming more and more popular among consumers, and the research on this topic has flourished in the last 25 years. Alternative food networks (AFNs; Renting et al., 2003) are based on the geographic and/or relational proximity of production and consumption processes (Aubry and Kebir, 2013); the local dimension and the direct relationship among farmers and consumers are therefore crucial features of these systems (Renting et al., 2003; Pascucci, 2010).

Farmers' markets are the most popular form of AFN, with 8,476 markets operating in the US in 2015 (www.ams.usda.gov) and many practices recorded in European countries, especially UK (Kirwan, 2006) and Italy (Marino et al., 2013). More recent is instead the diffusion of Community Supported Agriculture schemes, where consumers assume a central role in supporting support local farms and sharing with them the risks and benefits of food production (Cembalo et al., 2013; Lamine, 2005). Estimates developed in the US report that direct-to-consumer sales of food products accounted for 0.8 percent of agricultural sales in 2007 (Martinez et al., 2010); in France, food purchases at AFNs are believed to represent 6 to 7% of the total (CIVAM, 2012); in Italy, during a survey conducted in 2009, 67% of consumers declared to have purchased directly from producers at least once in the previous year, and the total expenditure at AFN was estimated in 3 billion € (Censis and Coldiretti, 2010).

Such popularity of AFN practices is rooted in the willing of farmers to find more profitable marketing channels (Van der Ploeg et al., 2000) as well as by the changing demands of consumers (Goodman, 2003; Ilbery and Maye, 2005).

The research has followed very closely the emergence of AFN practices, by studying the profile of producers and consumers involved in these practices, and their motivations (Brown, 2002; Kneafsey et al., 2013), the connection between AFNs and sustainability (Kneafsey et al., 2013; Cicatiello et al., 2015), the role of AFN in improving consumers' food styles (Lamine, 2005; Pascucci et al., 2011).

In this paper, we analyse the body of research on AFN in the last 25 years, by providing an overview of the "hot topics" and their connections. Our objective is to identify the underpinning themes of AFN research, in order to identify gaps and opportunities for food marketing research.

Methodology

To select the relevant literature for setting the state of the art in AFN research, we performed a research on the Elsevier's Scopus database by inputting a set of keywords related to the topic. Namely, we searched all the articles in English published from 1990 to 2015 citing at least one of the following keywords: "alternative food network"; "local food system"; "short food supply chain"; "alternative agri-food network"; "local food network"; "food community network"; "farmers' market"; "solidarity purchase group"; "community supported agriculture"; "farm shop". As a result, we got a database of 911 documents.

We then used the information on the title, abstract and keywords of these papers to develop a Network Analysis (NA; Carrington et al., 2005; Wasserman and Faust, 1994), to disclose the main topics tackled by the papers and the relationships among them. We developed the analysis through the VOSviewer software and we constructed a *term map* based on the co-occurrence of terms in the title, abstracts and keywords of the selected publications. The map shows the terms as circles, whose size is related to the overall frequency of the term in the dataset, whilst the proximity of the circles indicates the strength of the relation among the terms. NA also divides the terms in clusters, representing the main research themes.

Results and discussion

The largest circle in the term map, which represents the most cited term, is “food system”, followed by “survey”. The position of these two terms (one at the left of the map and one at the right) reflects the structure of the map and the two main topics analysed in the literature on AFN. Looking at the three cluster produced by the NA, the first cluster mostly includes terms related to the study of the theoretical framework linked to AFN. The focal point of the cluster, which appears as central to the cluster, is “food system”, but other important items are “nature”, “society” and “economy”, as well as “sustainable food system”. The keyword “AFN” appears at the margin of the cluster, and it is strongly linked to the keywords about sustainability.

The second cluster includes items related to empirical studies. Two key topics seem central to this regard: empirical surveys on food stores (upper part of the cluster) and studies focused on food access and nutrition (lower part of the cluster). The keyword “food security” appears to be the bridge between the two clusters.

A third cluster is placed in the upper part of the map. It is made up of terms with lower occurrences, related to food safety issues.

The overview of the research topics provided by the term map confirms that the literature on AFNs is highly fragmented (Sonnino and Marsden, 2006). Indeed, the shape of the map, which is not centred on keywords related to the definition of AFN, suggests that none of the three research areas seems to be able to provide a robust theoretical framework for all the research on the topic. The concept of food system seems central for the theoretical discussion, although the link with the items related to the empirical studies is very weak. This suggests that many articles have a strong empirical focus, disregarding of the theoretical discourse on alternative food systems (Brown, 2002).

Conclusions

Following the overview of the research topics provided by the NA on 25 years of publications on AFN, we argue that there is still a lack of a common background underpinning the studies on this issue. The research on AFNs appears to be split into studies focused on theoretical aspects and empirical analyses of case studies. The relations among these two main trajectories seems very weak, and the marginal position of the term “AFN” confirms the lack of a strong and unique background. Indeed, most of the empirical studies on AFN practices still do not mention this keyword. The issue of food access appears to be the only contact point between the two trajectories.

This evidence opens a debate over the agreement on the theoretical framework linked to the concept of “alternative food networks” as a background for the study of these forms of food supply chain.

Moreover, “marketing” and “food marketing” are not found as items in the map, although several related keywords - “consumers”, “willingness to pay” etc. - appear, although with a very limited frequency. This suggests that, despite the large body of research produced in the last 25 years on the topic of AFN, there are still opportunities to deepen the research from an economic point of view.

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Customers' Preferences for Different Processed Tomato Categories in the Food Service

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Abstract

Foodservice professional purchaser are among the main actors in the food chain, and their role is particularly relevant in increasing consumption of food away from home. However, scientific literature regarding their preferences and willingness-to-pay (WTP) is scarce and there is a lack of available information. This study is based on a hypothetical discrete choice experiment (DCE) survey addressed to foodservice professionals aimed at eliciting preferences and WTP. Processed tomatoes were selected as products of interest due to their importance in Italian cuisine and their share of Italian export of food products. DCEs were conducted during food seminars for Foodservice professionals organized by Mutti Spa. In total, 110 food service professionals participated in the experiments in Italy, Russia, Eastern Europe and South Korea in 2012. Data were analyzed using multinomial logit (MNL) and random parameter logit (RPL) models. Results suggest that food service professionals preferred peeled tomatoes to chopped pulp, tomato purée and tomato paste. However, their preferences were heterogeneous. They have a positive WTP for Italian origin certification; therefore, they would probably pay a premium price for origin-labelled Italian products. A label referred to the World Wildlife Fund communicating environmental values did not trigger a significant WTP. Main factors affecting their purchasing decision were closeness of product to the fresh raw material, followed by convenience, cooking time, price, origin of product, and brand, respectively.

Keywords: food service professionals, processed tomato, country of origin label, discrete choice experiment, random parameter logit, willingness-to-pay

Using Social Learning Theory to Promote Fruit and Vegetable Consumption in School Cafeterias

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Abstract

The National School Lunch Program cost \$11.6 billion in 2012 and provided low-cost and free lunch programs to 31 million students in over 100,000 public and private schools in the United States. Unfortunately, approximately 37% of the food provided through the program is wasted every year. In this context, we take a behavioral approach to the problem and use social learning theory to promote fruit and vegetable (F&V) consumption in middle school cafeterias.

According to social learning theory, learning can occur not only through direct experience but also by observing behaviors of other individuals. We leverage these traits of human behavior by rewarding positive responses (i.e., F&V consumption) and reinforcing them in a social setting by offering small monetary incentives to randomly selected individuals who participated in government-sponsored lunch programs. We applied these principles in two field studies.

In a first pilot study, we measured fruit and vegetable waste over 12 weeks (i.e., three 4-week menu cycles) – pre-, during, and post-intervention – in one middle school in Texas. In this study, we rewarded students randomly selected and their peers sitting in their immediate proximity, who ate their fruits and vegetables during lunch hours. Preliminary results suggested statistically significant reductions of 32% in vegetable waste and 18.2% in fruit waste, respectively, relative to the pre-intervention baseline.

In a second pilot study, we altered the first experiment and implemented it in another middle school. In this case, we used convenience sampling to select the students to be rewarded. Preliminary findings showed an increase in vegetable waste of 9.5% and a decrease of 13.9% in fruit waste, and suggested that random student selection and rewards extended to peers sitting close-by may be the more effective strategy.

Bordeaux *Grand Crus* and Niche Marketing

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Abstract

Purpose – to examine the Bordeaux *Grand Crus* market in terms of niche marketing. This implies to develop a novel instrument for analysis of potential niche firms, and to assess the Bordeaux *Grand Crus* market according to this instrument to determine whether this can be termed a niche market or not.

Methodology – A case study design of the Bordeaux *Grand Crus* wine market, combining in-depth interviews of key informants and literature-based research.

Findings – Bordeaux *Grand Crus* firms, collectively, comply with all the identified main components of the concept of niche marketing; narrow, specialization, differentiation and effective barriers. Thus, Bordeaux *Grand Crus* firms can claim to pursue niche marketing.

Implications – Theoretically, these findings contribute to the operationalization of niche marketing as a concept. Until now, this concept has been lacking accepted definitions and operationalizations, and there have been multiple applied approaches. Thus, there has not existed a common understanding of what niche marketing is and is not.

Managerially, the tangible findings of applying effective niche marketing can aid prospective niche firms to enhance their future strategy and implement more precise and effective actions.

Key words – France; Wine; Strategy

Classification – Conceptual research paper

An exploration of Chinese Consumers' Appetite for New Zealand Lifestyle Wines

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Abstract

The Chinese population is rapidly embracing the Western lifestyle, and consequently is becoming affected by lifestyle diseases associated with increasing affluence and aging to the same extent as the rest of the world. Sales of alcohol have increased substantially in China in the last decade, as wine in particular becomes a more regular part of their diet. One potential tool for managing the high calorie load associated with alcohol use is the development and marketing of low alcohol 'lifestyle' wines which are increasing in popularity in New Zealand and other Western economies. Their attraction, in addition to the reduced calorie intake, is also because many consumers realise they have individual 'tolerance' levels with respect to alcohol consumption, and brands with low levels of alcohol allow them to still drink (moderately), and drive a motor vehicle. For Asian consumers a further potential benefit is that low alcohol wines are less likely to trigger the skin flush reaction many are genetically predisposed to.

There is clear evidence for economic opportunities arising from these new trends. One is the marketing of New Zealand lifestyle wines in China, given that China has become a major market, after Australia, the UK, the USA and Europe, for New Zealand wines. Within China there is a definite preference for overseas products, largely because of a lack of trust in domestic products and the local supply chain. While these changing consumer habits represent an opportunity for New Zealand companies, much of our understanding of the consumer has been developed in the West and may not be applicable to Chinese consumers. In this research a series of in-depth interviews were conducted with Chinese nationals, both male and female, ranging from ages 20 to 55, in first tier Chinese cities (e.g. Shanghai). Our aim is to directly explore Chinese consumers' attitudes and behaviours towards low alcohol lifestyle wines. Our intention is to better understand the Chinese consumer, especially in terms of their sensory experiences with low alcohol wines and their emotional connection to them, which may influence them to purchase these products. Further, we explore beyond price point expectation and seek to understand shopping behaviour and potential routine and celebratory use of these products in addition to attitudes and beliefs.

Key words: low alcohol wines, obesity, China, attitudes, lifestyle

Emerging Consumer Preference for Wine Attributes in Urban Kosovo – a Post-Conflict Country

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Abstract

This study analyzes consumer preferences for wine in Prishtina, Kosovo – a transitional post-conflict country in the Balkans. A Conjoint Choice Experiment method was used to evaluate wine consumers based on the following attributes: wine type (white vs. red), origin (domestic vs. imported), taste (sweet vs. dry) and price. Latent class analysis showed that there are four distinct classes of consumers. The top two important attributes in the choice of wine in Kosovo are type and origin. 63% of the study respondents prefer red wine and 64% prefer domestic wine. Although the sign of the price variable is significantly negative in three of the classes, the level of importance is lower than the other attributes: type, origin and taste. Understanding market demand and consumer preferences are important because generally there is limited market intelligence information. With the changes in life style and consumer behavior, and incomes rising rapidly since the post-conflict period, it is imperative to survey the changing demand in order for producers to compete in the domestic markets.

Keywords: Consumer preferences, wine, Conjoint Choice Experiment, Kosovo

1. Introduction

Kosovo is located in the Western Balkans, with a population of 1.8 million. About half of the population lives in rural areas. Kosovo was a centrally planned economy under Yugoslavia until late 1980s, while it underwent a notorious conflict and emerged as an independent country in the following decade. Despite economic growth since independence, Kosovo remains one of the poorest European countries. Kosovo has been facing the challenges of weak institutions, adapting to free market, and attracting investments. At the same time, income and lifestyles are changing fast while the country is progressing in the context of European Union integration, shifting consumer preferences and behavior. Growing and changing domestic demand for food and beverages comes with opportunities and challenges. Socio-economic changes would significantly affect consumer preferences for beverages such as wine, which is the focus of this study.

Archaeological findings in Kosovo show that the first vineyards were over 2000 years old. The tradition of grape growing and processing has continued until today. Suitable agro-ecological conditions in Kosovo combined with traditional methods of processing have been key factors for the growth of wine production in the past. The most productive period was in the 1980s, when Kosovo had about 9,000 hectares of vineyards. Wineries in the region of Rahovec, Suharekë, Prizren and Gjakovë were able to produce 100 million liters of wine per year. On top of this, Kosovo’s exports were around 40 million liters per year, mainly to Germany. During the late 1990s conflict, the vineyards area decreased drastically. Many vineyards were completely destroyed Over 80% of the grape grown in the vineyards of Kosovo is for wine processing, but only half of the production was used in the wine industry. Despite the challenges faced, situation in the wine sector, wine grape production and processing have been and is an important economic activity for Kosovo (Bytyqi, 2015a).

In 2013 exports accounted for 89% of the total wine production, implying strong export orientation of the domestic wine industry while imports accounted for 39% of total domestic consumption (supply) in 2013. Since 2012, the production of white wine has been greater than the red wine (in 2013 white wine accounted for more than half of the total wine production). Imports have declined since 2008. Imports come from Italy, Montenegro and Macedonia.

Table 1: Supply of Wine for Kosovo by year

Wine (HS 2204)	2008	2009	2010	2012	2013
Total wine production (000 L)	9,372	6,399	3,056	5,287	7,682
- Red wine (000 L)	4,995	4,078	2,082	2,518	3,659
- White wine (000 L)	4,377	2,321	974	2,769	4,023
Import	914	643	595	590	558
Export	8,925	3,311	2,402	3,572	6,810
Export/production (%)	95%	52%	79%	68%	89%
Domestic supply (apparent consumption)	1,361	3,731	1,249	2,305	1,430
Import/domestic supply	67%	17%	48%	26%	39%

Source: MAFRD 2014, Green report for production, Eurostat for trade

Kosovo average consumption of wine (hardly exceeding 1 liter per capita per year) is very low compared to neighboring Balkan Countries such as Albania (ca 6 liters per capita), Serbia and Macedonia (ca 20 liters per capita), and much lower than the average Southern and Western European consumption (ca 30 liters per capita), as reported by FAO (FAO, 2016).

With the increase of income, it is expected that the average consumption of wine will increase. The domestic wine industry, which export over the majority of its production, is keen to increase its presence or share of the production in the domestic market, as part of market diversification and risk reduction strategy. However, that requires better understanding of urban Kosovo consumer preferences for wine. The wine market is becoming increasingly sophisticated and competitive, and opportunities to expand the boundaries of local markets are increasing. Drafting a development and marketing strategy for the wine sector has been considered very important in order to achieve a sustainable development of this industry in Kosovo.

The goal of this study is to analyze consumer preferences for wine in Prishtine, Kosovo. Specifically, the research objectives are to:

1. Group consumers according to their preferences for the main wine attributes.
2. Analyze consumer preferences for each of the identified consumer classes.
3. Provide marketing and policy recommendations for the sector's stakeholders, with particular focus on producer associations, traders and policy-makers.

2. Literature review

There is a vast amount of literature about consumer preferences for wine. Different studies, carried out in different countries, deploy various methods to analyze consumer behaviour and preferences for wine. One of the most commonly used methods for consumer preferences are Choice Experiments. Choice experiments have been applied to consumer studies in neighbouring countries such as Zhllima et al, (2012) for the wine in Albania, and for other food products in Kosovo (Bytyqi et al, 2015b). The idea that all goods can be described by their characteristics, also known as attributes, is the basis of Conjoint Choice Experiments (CCE). For CCE, the most important attributes and their levels have to be determined when designing the experiments. Therefore in order to explore the attributes an extensive literature review on wine attributes was carried out.

There are many studies on Spanish consumer preferences for wine. Sanchez and Gil (1998) use CCE to analyze the Spanish wine market and the attributes selected are price, regional label and vintage (age). Barreiro-Hurlé et al., (2008) used conjoint choice experiment and found that the functional attribute such as price and origin positively and significantly affect the probability of selecting a red wine and that the willingness to pay for the origin attribute is as important as for aging in wine. Another study highlights price, wine aging, and grape variety as the most important attributes to estimate the Spanish wine consumer behaviour (Mtimet and Albisu,

2006). Barrena and Sanchez (2009) by means-end chain approach linked the emotional feelings to wine with their age. In general, consumers drink wine for the sensory pleasure it gives, with the younger generation driven by the cultural identity and older generation sees it as a social catalyst.

Other countries consumer surveys have a higher number of attributes included and the methods of study also vary. Palma et al., (2013) using a web based experimental design with Chile consumers found that grape variety was the main driver of preferences followed by price as quality indicator and alcoholic level. Jarvis et al., (2007) studied Hong Kong consumers based on a sensory experiment and using stated choice experiment identified taste and full bodied as main indices for consumer segmentation. Mueller and Szolnoki (2010) used other attributes such as region of origin, grape variety, brand and packaging style for the wine consumers in Germany. A study conducted by Lockshin et al., (2006) uses brand, region, price and awards as the most important attributes in wine consumption. Remaud et al., (2008) and Lockshin et al., (2006) study attributes including also environmental and organic claim as important attributes for wine to explore consumer perception toward organic wine in Australia. Zhllima et al., (2012) based on a conjoint choice experiment in Albania found preference for Italian wines over domestic wines among younger consumers, whereas some older consumers strongly prefer domestic, lower priced wines. Higher prices are also perceived as indication of quality. Jover et al., (2004) based on *scale measurement divided the attributes in two groups. The first group named extrinsic factors included reputation, region, brand, price and certifications while the second named intrinsic included age, harvest, alcohol level, varieties, taste, and aroma.* Price and origin are often found to be the most relevant attribute. Brand is also commonly studied followed by grape variety, gold medal awards, environmental claims and organic claims (Lockshin et al., 2006; Mueller and Szolnoki, 2010; Remaud et al., 2008). In some cases, other variables such as certification of origin (Mtimet and Albisu, 2006 and Scarpa et al., 2009) label design (Louriero, 2003).

Gjonbalaj et al., (2009) based on a structured consumer survey in Kosovo, show that approximately half of the respondents consumed wine of which a majority were males. Gender, incomes, purchasing behaviours and number of family members are important variables influencing the consumption. However, the survey does not reveal the wine attributes in particular. Based on literature review and expert consultations, the chosen attributes for this study are: price, type, origin and taste. The following sections describe the methodology used to explore the importance of these attributes and the results.

3. Methodology

In this study a Choice Based Conjoint analysis (CBC) is used to estimate how levels of different attributes combine together affect overall preference of consumers for wine in Kosovo. CBC permits respondents to choose between full product combinations against each other instead of rating or ranking the product based on the attributes. The method of CBC experiment has various

stages.

In the first stage the type of product attributes and their levels were determined based on an extensive literature review, expert assessment and market observations. The type and level of attributes selected to analyze wine preferences in Kosovo are represented in Table 2.

Table 2: Kosovo Wine Attributes and Levels.

Level of attributes	Attributes			
	Price (liter)	Type	Origin	Taste
	7.50 €	White	Domestic	Sweet
	5.50 €	Red	Imported	Not sweet (dry)
	4.00 €			
	2.20 €			

Source: Authors

In the second stage seven different questionnaires were generated with 12 product profiles each. The Complete Enumeration method⁹³ was used to combine the various attributes and levels to develop potential products choices for the respondents. This method considers all possible concepts to ensure the orthogonal design for each respondent with minimal overlap (Sawtooth, technical paper, the CBC System for Choice Based Conjoint Analysis). The quick test⁹⁴ was used to ensure the efficiency and integrity of the CBC design.

Table 3: Example of a product profiles in the questionnaire

If these were your only options, which wine would you choose (to buy)?			
7.50 €	5.50 €	4.00 €	2.20 €
Red	Red	White	White
Imported	Imported	Local	Imported
Not sweet (dry)	Sweet	Not sweet (dry)	Sweet
●	●	●	●

Source: Authors

Green and Srinavasan (1978) suggest a minimum sample of 100 respondents for conjoint analysis types of studies - in our case there were 215 valid questionnaires. Interviews were carried out by trained graduate students in Prishtina. Prishtina was chosen because it is the largest town in Kosovo, where also the purchasing power is concentrated. The interviews were carried out at various sites within Prishtina – people were approached randomly and after

⁹³ The Sawtooth Software was used for the analysis in this work

⁹⁴ The quick test, for each attribute and level, makes an approximation of the relative standard error of each main effect under aggregate analysis and assuming that each version is seen just once across the total observations. The quick test uses ordinary least squares efficiency. It provides a good approximation of the relative efficiency of the CBC design with respect to each attribute level.

(https://www.sawtoothsoftware.com/help/issues/ssiweb/online_help/hid_web_cbc_designs_6.htm)

completing each face-to-face interview, interviewers would approach the next closest person who walked by.

4. Results

Results of the CBC experiments are shown in Tables 4 and 5. Table 4 shows sample size and the importance of the attributes for each of the identified classes. Whereas Table 5 shows the estimated parameters and level of significance. All attribute levels coefficients, except for taste in the case of class 1, are statistically significant.

Table 4. Class sizes and importance of attributes.

Description	Class 1	Class 2	Class 3	Class 4
Class Size	26.60%	27.00%	36.20%	10.30%
Attribute	Importance of attributes (%)			
Price	17.09%	11.52%	3.36%	6.46%
Type	54.64%	67.08%	45.34%	34.29%
Origin	25.66%	13.01%	26.41%	28.63%
Taste	2.61%	8.39%	24.89%	30.62%
Total	100%	100%	100%	100%

Source: Authors calculations based on field survey

Table 5: Parameter estimates

Indicator	Class 1		Class 2		Class 3		Class 4	
Attribute	Utility	T-ratio	Utility	T-ratio	Utility	T-ratio	Utility	T-ratio
Price	-0.194	-4.803	-0.191	-4.458	-0.094	-2.094	0.199	2.363
Type								
White				-		-		
	0.932	16.627	-1.669	16.779	-1.904	21.728	1.583	10.618
Red		-						-
	-0.932	16.627	1.669	16.779	1.904	21.728	-1.583	10.618
Origin								
Domestic	0.438	9.489	-0.324	-6.554	1.109	16.295	-1.320	-9.309
Import						-		
	-0.438	-9.489	0.324	6.554	-1.109	16.295	1.320	9.309
Taste								
Sweet	-0.04	-1.03	-0.21	-4.63	1.05	16.14	1.41	9.86
Not sweet	0.04	1.03	0.21	4.63	-1.05	-16.14	-1.41	-9.86

Source: Authors calculations based on field survey

The wine consumers in Kosovo are divided in 4 distinct classes that differ in their preferences for the attributes of wine. Almost one fourth of the consumers (27%), Class 1 gives more importance in the choice of wine to the type and origin of the wine. They prefer white wine locally produced. For consumers in this group, the price of the wine (level of importance is 17%) is more important compared to other groups of wine consumers (respectively 11%, 6% and 3%).

Another group, Class 4 composed by 10% of the respondent’s sample, prefers white wine. However, different from Class 1, they prefer imported and sweet white wine. For this class, the type, taste and origin of the wine have almost the same importance (respectively 34%, 30% and 28%). This class is the only segment of consumers that has a preference for high prices wine, implying that high price is perceived as a signal of quality guarantee.

Consumers that strongly prefer red wine are found in Class 2 (27% of the sample). For this segment of the market the importance of the type attribute (red) is 67%. They prefer to buy at low price, imported and not sweet red wine. The price attribute for this class is 11% in terms of importance compared to 13% for origin and 8% for taste.

The largest class is Class 3 with 36% of the sample is also red wine lovers. However different from the other groups, they are more interested in local and sweet wine. They give more importance to the origin and taste of the wine and less importance to the price (respectively 26%, 24% and 3%). Although the price is not of high importance for this group over the other attributes of the wine, they still prefer low prices.

5. Discussion of the results, conclusions and recommendations

The most important attribute in the choice of wine in Kosovo is the type. 63% of the sample prefers red wine. This is very similar to Albania where majority of the consumers prefer red wine (see Zhllima et al., 2012). The consumption of red wine is also related to food life style and previous experiences on local white wines. Thus when considering the vineyards investments, red wine grape cultivars should be considered in order to match the general preferences related to type.

Origin is another important attribute that matters for wine consumers, 64% of consumers prefer local wine. The share is more dominant compared to the study on Albania of Zhllima et al (2012). Considering the characteristics of each class of consumers, Class 3 consumers prefer local red wine – this group could be labeled as traditional consumers which can be easily targeted by Kosovo wine processors. This is a good opportunity for Kosovo producer to promote the loyalty toward Kosovo wine and expand their market share. Additional studies have to be carried out in regards to origin in order to explore for regional preferences as it was one of the main attributes in the studies carried by Lockshin et al., (2006), Remaud et al (2008) and Mueller and Szolnoki (2010). Processing and marketing activities of local wine, which some may have the potential to be upgraded to Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI) may be supported. Kosovo policymakers have to identify viable instruments of support for the adoption of GI certification schemes for wine producers targeting the local markets, and diasporas in EU. Development of capacities related to GI (PDO/PGI) certification can strengthen sector competitiveness.

Similar to Jarvis et al., (2007) the taste of the wine is important (more than 25%) for 46% of the consumers in the sample. 26% of the interviewers were not interested in the taste at all. In order to target better this group additional information should be added into labels on regards to wine taste characteristics. Price is far less important compared to other attributes, while in the case of one consumer class, there is a preference for expensive wines, referring to the higher prices as a signal of quality as it is the case of Jarvis et al., (2007) and Zhllima et al (2012).

Considering these results, wine processors can strategically opt for competitive price wines in larger urban markets. A diversification strategy may be created where a small portion of the production of high quality wine may compete for a space on upper shelves where also imported wines are shelved. This strategy targets Class 4 consumers who prefer white, imported wines. To produce quality white wine, additional investments are required to improve the production

technology in addition to working on certification, promotion of regional origin differences, labeling and packaging which are important in other studies.

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Do You Diet by Drinking Diet Drinks? – An Empirical Study of Food and Drink Choices

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Abstract

Diet carbonated soft drinks (CSD) were introduced as functional foods to help consumers lower caloric intake. Critics suggest that these drinks are harmful by providing an excuse to consume more calories. Using meal-specific individual-level food and drink consumption data at a major fast-food chain, the authors estimated differences in caloric intake conditioned on consumers' choice of drink type (regular vs. diet) and size (small, medium, or large). Differences were estimated across demographic groups by treating the choice of drink type and size as treatments and using econometrics of heterogeneous treatment effects. The within-subject design avoids some of the endogeneity concerns due to self-selection in drink type and size. Estimated effects varied significantly across demographic groups; middle-aged females consumed significantly fewer food calories when choosing diet over regular CSDs, whereas young males consumed more calories from food when drinking diet compared to regular CSD. Interestingly, in terms of total meal calories (both food and drink), over-consumption of food calories, if any, was mitigated by the benefit of forgone calories in a regular drink.

Keywords: diet drinks, caloric intake, treatment effects, balancing.

Perceived Shopper Value for Consumer Beverage and Common CPG Products in Three Different Store Formats in the U.S. and Three European Central Countries

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Abstract

Obtaining value is a fundamental consumer goal in shopping. Consumer perceptions of value from products and the shopping experience are central to consumer re-purchase, satisfaction and loyalty. (Parasurman & Grewal, 2000; Jones, Reynolds, & Arnold, 2006; Davis, 2013) Key to the ability of both retailers and the companies that sell through them is how to create and deliver customer value. This research examines customer value for four CPG products and three types of retail formats in four countries. It has been suggested that when measuring value that both functional value and hedonic value should be measured. For example, shopping has been described as providing both task-related, or product-acquisition and hedonic value through responses evoked during the experience (Babin, Darden, and Griffin (1994).

The products we chose for this study are common consumer products that are typically associated with more “everyday” shopping and consumption (Deli-Gray et.al. 2011). Two of the four products were consumer beverages- coffee and orange juice (OJ) and the other two were laundry detergent and shampoo. Yim et.al. (2013) found that few empirical studies have assessed hedonic shopping motivation effects in utilitarian shopping environments. Jones et.al. (2006) found that when shoppers perceive a greater hedonic value in products that they often buy more on their shopping trip.

Shoppers were surveyed outside stores in three central European countries and the USA and asked to describe their perception of product and retailer value. This research will examine product, retail format, country and gender differences in how shoppers perceive product value and value for the store where they purchased that product. (Hirschman & Holbrook 1982) note that ethnic, cross cultural and gender differences should be expected when measuring hedonic differences among consumers.

Overview of Hypotheses

RH1: Perceived hedonic and functional value will be inversely correlated with a country's level of economic development and be stronger for more hedonic products.

RH2: Perceived value will vary among different CPG products. CPG Products that are more personal will have relatively higher levels of hedonic versus functional value.

Shopper emotional connections and shopper perceived hedonic value will be great for products that are more personal. Food and beverage products are experienced in a more intimate consumptive experience of ingestion. Household items such as detergent will have more functional than hedonic value.

RH3: There will be gender differences in the levels of perceived functional and hedonic value. Wang (2010) found gender differences between response to functional and hedonic value.

RH4: There will be retail format differences in the levels of perceived functional and hedonic value.

Four retail formats were used in this research. Grocery stores, hypermarkets, discount stores. It is expected that Supermarkets will offer the most hedonic value and discount stores the least.

Participants and Procedure

This study used survey research methodology to interview subjects from four countries about their shopping experience. A convenience quota sampling methodology was used where shoppers were interviewed outside the retail store. In this research 506 shoppers were asked to identify a product that they had recently purchased from a selected list of consumer durable and non-durable (CPG) products and to describe their experience with the product and the store that they had purchased the product. This research will focus on the four CPG products included in the research and on the four retail formats most closely associated with those products across the four countries where data were collected.

The research collected a number of measures from respondents including measures of functional and hedonic value for the product they had purchased and the store where they had purchased it. Shoppers were also asked about how the product and store were related to perceptions of status and self image, along with several scales measuring social influences and selected individual demographics. We used the (Voss, Spangenberg, and Grohmann 2003) 9-item scale for measuring hedonic and utilitarian dimensions of consumer attitude toward product value. All multi-item scales used in this research were suggested in the literature. Alpha reliability assessment was used with all multi item scales and is reported in the research. The scales used to measure value used seven response categories all other scales were five point Likert scales. Shopping enjoyment was measured using the scale developed by (O'Guinn & Faber 1989).

Analysis, Results

The analysis of the data will focus on examination of differences using SPSS routines for t-tests, ANOVA and MANOVA. Main and interactive effects will be examined in the analysis. Additional descriptive charts showing mean plots for factor levels will be displayed. The results of the statistical analysis of the data will include descriptive statistics on the sample data and the results of the hypothesis tests. Results will be discussed in context of the literature.

Discussion and Conclusions

Shoppers attribute value to both the products they purchase and to the shopping experience in the stores where they purchase those products. Both the products purchased and the retail shopping experience may offer shoppers functional as well as hedonic value. Research has shown that increased levels of functional and hedonic value are related to shopper selection of merchandise and retail outlet as well as the price they are willing to pay. This research examines how product characteristics, type of retail outlet are related to the level of value experienced by shoppers for four nations. Additionally individual differences such as gender can influence the perceived value of the product and the shopping experience.

Implications for cross cultural retailing research and managerial decision making will be discussed. Previous research has examined the relationship of store format on adaptation or standardization strategies in international retailing, (Ramanathan and Parashar 2005). Future research on the data set will also be discussed. Finally limitations of the dataset and methodology will be discussed.

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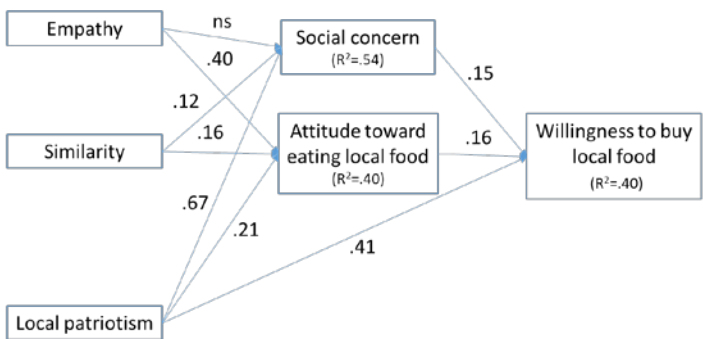
Buying local food: A matter of helping behavior?

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Abstract

Buying behavior for local food has become an increasingly important research topic in recent times given the growing consumer interest in local foods. However, previous empirical investigations are still limited. This study extends current works through investigating how prosocial helping behavior and local patriotism effect the likelihood of buying locally produced food. Globalization of supply chains and the consolidation of food retailing are key characteristics of contemporary food systems in developed economies. Concerns about the dominance of large businesses in the global food system have brought about the emergence of alternative food systems that emphasize locally produced food. In this study, constructs taken from the prosocial literature is used to provide an explanation for consumers’ willingness to purchase local food as a way to support local sources of food supply. Data from an Internet-based survey of Norwegian consumers (n = 213) were analyzed using structural equation modelling.



The model above shows the results of testing the proposed theoretical model. The general structure supports the main hypotheses that the relationships between helping behavior factors and willingness to buy local food is positive and mediated by social concern and attitude. Local patriotism also has a direct effect on willingness to buy local food. This study develops a theoretical framework of helping behavior based on five antecedent behavioral constructs. The test of the model provides empirical support for the pattern of influences it portrays. The support commends the model to researchers and practitioners who wish to understand what motivates consumers to buy local food products. In particular, the findings should be helpful to those who seek to promote local food products.

Keywords: local food, attitudes, willingness-to-buy, helping behavior, local patriotism

Market opportunities: quality and safety domestic produced food

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Abstract

Based on the results of the analyses and trends in the meat processing industry, it has been discovered that the poultry meat sector represents the market which is growing and is very dynamical. The survey examined various factors and determinants that influence the attitudes and habits of domestic produced food. A very important segment of the research was the one where we tried to determine the importance of country of origin in the purchase-decision-making process. Survey was conducted using self-administrated questionnaire, on a sample of 150 undergraduate students, also called young consumers, on the field survey in November 2015 in Slovenia. The results showed that Slovenian students express a positive attitude towards domestic produced food. The results show that the most of students interviewed decide to buy domestic produced food. We can thus confirm there is a significant tendency towards purchasing food of domestic origin because of its quality and safety. This chapter gives the latest account of students' perception of domestic produced food in Slovenia.

Keywords: *quality, safety, attitudes, habits, consumption, domestic produced food, poultry meat, Slovenia*

Introduction

Recently, there have been significant changes in the field of food sales and thus the new challenges and opportunities have been there, too. Food processing industry is faced with complex challenges that are associated with changes in the global environment (at local and national levels, in Europe and worldwide): changes in the volume and structure of demands (a decline of trust and rationalization of consumption), changes in the volume of food production, food prices rise, the need to provide quality and safe food and high consumer preference to products of domestic origin. Consumers have been becoming pessimistic, suspicious, thoughtful and rational.

Development of the world food market has, in recent years, been marked by rapid, unexpected and complex changes. The world food industry is operating in an explicitly dynamic environment which demands constant adjustments and responses. These intensive processes increase the competitive advantage of operating activities on the global market and are the result of numerous changes in the period of new economy (Vukasović, 2009, 2016).

Slovenian agrofood sector plays an important socio-economic role but it has been affected recently by many crises. Food quality and safety became a most important consumers' concern. Therefore, new safety and quality rules and standards have been designed by the public and private sectors and they are widely adopted as well as brands and labels. The meat industry is one of the most competitive international branches and is currently in its mature stage of development. Nutritional habits regarding poultry meat have recently undergone some major changes. In the past, we have witnessed an intensive process of concentration and consolidation in the operating activities of the world poultry meat industry, as well as the poultry meat market being formed under the influence of shocks caused by the outbreak of the avian influenza (H5N1).

Consumer attitudes to meat are influenced by a number of factors, such as price and availability. The major differences, in the volume and type of meat consumed between countries, are thought to be primarily due to differences in culture and eating habits (Flower, 2004; Matekalo-Sverak, 2009; Šarčević et al., 2011). Even though some studies have already reported signs of people in industrialized countries eating less meat than before (Šarčević et al., 2011), globally the trend is opposite. For instance, (Fiala, 2008), reports that the consumption of meat worldwide will rise by 72% between 2000 and 2030, and (Steifield et al., 2006) projects the global production of meat more than double between 2000 and 2050 due to increasing world population, rising incomes and urbanization (Šarčević et al., 2011).

The goal of this chapter was to explore attitudes and habits of Slovenian students in consumption of poultry meat. The survey examined various factors and determinants that influence the attitudes, perceptions, and consumption of poultry meat in Slovenia. A very important segment of the research was the one where we tried to determine the importance of fresh poultry meat

origin in the purchase-decision-making process. This chapter gives the latest account of students attitudes, perceptions, and consumption of poultry meat in Slovenia. The results of this research can be used to plan further marketing activities.

Poultry meat: an European perspective

Based on the results of the analyses and trends in the meat processing industry, it has been discovered that the poultry meat sector represents the market which is growing and is very dynamical. Poultry meat is one of the most favourite meat types. It is not only incredibly tasty, but it is also a food product that corresponds to the requirements of modern and balanced nutrition. In addition, it is quick and easy to prepare, healthy, safety, nourishing, and it offers a rich taste. The causes for the change in meat consumption have been a muchdebated issue in the agricultural economics literature (Aral et. al, 2013; Šarčević et al., 2011; Vukasović, 2011, 2014; Calvo-Porral et. al, 2016).

Poultry meat is the only meat of which production and consumption are expected to expand significantly over the outlook period (by 7% each between 2014 and 2024). Supported by sustained global demand, the EU will maintain its market share with EU exports accounting for 10% of global trade. The production of poultry meat is expected to continue to grow steadily over the outlook period, but the rate of growth is very likely to slow to 0.7% per year, having averaged 1.7% over the past ten years. The strongest increase in production (at 1% per year) is expected to be seen in the EU-N13, due largely to sustained productivity gains in Hungary, Poland and Romania. The other high production increasing countries are EU-15 Member States (e.g. Germany and the Netherlands), where production is expected to grow by 0.5% per year (European Commission, 2014).

With feed prices remaining lower than in recent years throughout the outlook period, strong domestic and world demand will together contribute to the increase in production, with total EU production expected to reach almost 14 million tonnes by 2024. Global demand for poultry meat imports is expected to remain strong, but with the rate of increase slowing (to 2.9% per year over the next decade, as compared to the rate of 6.4% seen over the previous ten years), to reach 16.2 million tonnes in 2024. Bullish demand from the Middle East (which currently represents 16% of global demand), South Africa (6%), other African countries (e.g. Ghana and Benin) and Asia could continue during the outlook period. In view of the above, the EU's position as a net exporter is expected to be further strengthened, with net exports rising by an average of over 50000 tonnes per year until 2024. A feature of the trade in poultry meat is that the EU is exporting lower-quality and cheaper cuts (such as legs and wings) and importing cuts with higher value-added (such as poultry breasts and cooked preparations). Demand from markets in the Middle East, Asia and Africa could continue driving EU exports up by 2.2% per year over the outlook period, to reach almost 1.6 million tonnes by 2024. Nonetheless, the development of the export flow to South Africa is subject to uncertainty, due to the anti-dumping duties imposed by this country on chicken meat exports from three EU Member States (Germany, the Netherlands

and the United Kingdom). On the assumption that these duties are lifted in 2015, exports could return to their usual level. Although it is assumed that the Russian import ban will be in place for one year, Russia's policy aim of self-sufficiency will lead to lower imports from the EU. Sustained demand from Saudi Arabia is, however, expected to continue in the future, and to support an expansion of EU poultry exports, despite the absence of export refunds. Moreover, in order to secure supply, foreign companies have started investing in European poultry firms (European Commission, 2014).

In the past, imports of poultry tended to settle at around the quota level. The situation has changed, however, since 2012, when new tariff-rate quotas were opened, despite the fact that these were not completely filled at that time. Nevertheless, imports are expected to grow gradually from the low level seen in 2013-14, and to achieve the quota level (around 1 million tonnes) by 2017, supported by increased production in two of the EU's main suppliers, Thailand and Brazil (where production is expected to rise by 30% and 17% respectively between 2014 and 2024). Despite the reorientation of exports towards geographically closer destinations, such as Laos and Japan, Thai exports to the EU market are expected to increase over the outlook period. In addition, Brazil, which currently supplies the Russian and Saudi Arabian markets, has the potential to fill its EU import quota of 518000 tonnes (in carcass weight) (European Commission, 2014).

Consumption still rising. Thanks to its relative cheapness and healthy image, poultry meat will continue to be the fastest growing part of the meat market in terms of consumption (out of the four main types of meat), with increases both in volumes consumed (by 0.6% per year, to reach 22.8 kg per capita by 2024), and in market share (rising to 32% by 2024). After a slowdown in the short run, reflecting lower input prices, prices for EU poultry meat are expected to then recover steadily over the period to 2018, following world prices, and to continue rising beyond past levels to reach around 2030 EUR/t by the end of the outlook period. Depending on the developments in the macroeconomic environment and in yields, poultry meat prices could vary between the 10th percentile (1680 EUR/t) and the 90th percentile (2510EUR/t) during the outlook period (European Commission, 2014).

Total meat consumption in the EU-N13 slowly catching up with that of the EU-15. While prospects of improved economic growth should leave EU consumers with more disposable income and provide incentives for higher meat consumption, this is not reflected in the projections. In line with trends seen over the last decade, consumption of meat products is not expected to rise over the coming years, due to the growing importance of social concerns (animal welfare and carbon footprints), health concerns and an ageing European population (who will be eating less meat per capita). Some of these factors serve to favour poultry over the other meats, adding to the effect of increasing poultry consumption as a proportion of total meat consumption. In 2012 and 2013, lower availability, higher meat prices, the ongoing economic downturn and the resultant high unemployment rates, especially in southern European countries—caused overall meat consumption to contract (by 1.5% over the two years), reaching the lowest level

seen over the past 11 years (64.4kg per capita) in 2013, as consumers turned to cheaper meats and cuts. Meat consumption is expected to recover between 2014 and 2016 as more meat comes onto the market and the economic situation improves, but this trend will be short-lived, with levels very soon starting to fall once again. By the end of the outlook period, per capita consumption is expected to have fallen to 64.9kg (in retail weight), a level similar to that seen in 2012 (European Commission, 2014).

Research materials and methods

Method and sample

In the next part of the chapter the key research characteristics are summarized. Consumer survey was conducted using a self-administered questionnaire on a sample of 150 undergraduate students, also called young consumers on the field survey in November 2015 with the use of closed and open questions. The survey examined various factors and determinants that influence the attitudes, habits, perceptions, consumption of poultry meat in Slovenia. The sample consisted of 79 women and 71 men. The most respondent of consumers were in the group between 20 and 35 years. The respondents are interested in poultry meat suggest that the survey respondents provide an interesting study group for this issue.

Questionnaire

The introduction letter, reminder, and draft questionnaire were developed for purpose of the research. The guidelines were used in order to give the questionnaire a good look and feel, and to ensure that respondents could progress quickly through it. The questionnaire used in this study consisted of the following groups of questions – perceptions about poultry meat, attitudes and habits. A very important segment of the research was the one where we tried to determine the importance of fresh poultry meat origin in the purchase-decision-making process. Several attributes of poultry meat were measured by means of the five-point Likert scale anchors of 1 = low or bad degree of the characteristic, and 5 = high or good degree of the characteristic. The questionnaire was distributed among the respondents, self-administrated and collected after three days.

The survey concept is based on prior literature. Magnusson et. al, 2001 learned that the most important purchase criteria for food are: taste, health, long shelf-life, and quality aspects of the product. A survey conducted in European Community (EC) countries (Lennernas et. al, 1997) has shown that quality/freshness, taste, healthy diet, price, family preferences and habits are the most important food choice factors. Wandel, M. and Bugge, 1997 showed that taste, freshness, appearance and nutritional value are significant in choice of fruits and vegetables. Verbeke, 2005 demonstrated that the top five important attributes for fresh meat in Belgium are freshness, quality, taste, healthiness, and free of hormones. Vukasović, 2014 demonstrated that important

attributes for fresh poultry meat in European Country are taste, healthiness, consistent quality, nutritional value, safety meat.

Data analyses

The data obtained from the survey were analyzed with univariate analysis in order to check distributions of frequencies and to detect possible errors occurring during the research and/or data entering. Univariate analysis was performed to examine the differences in attitudes and habits among respondents. The level of comparison was set at, 0.05. The data collected from the surveys was put through a validity assessment ($KMO = 0.861$; Bartlett's Test sign = 0.000) thus revealing that the sample of the study was appropriate for factor analysis and that there is a strong relationship between the variables. The purpose of the validity is that the measurement tool can measure the properties and characteristics desired to measure. Validity is a term that refers to achieving the desired goals. The purpose in the validity test is to deal with the potential problems and ambiguities in the questions and structure of the questionnaire and etc. (Khaki, 2003). After preliminary design of the questionnaire, the questions have been studied in several stages and in relation to intelligibility of questions, relatedness of the purpose of the test to the questions and removing irrelevant questions, a number of marketing experts were surveyed and finally by applying their comment, required changes have made in questions of the questionnaire. Therefore, the content validity of the questionnaire is achieved. The reliability of a measurement tool refers primarily to the accuracy of its results. Reliability, points out the accuracy, trust ability, stability, or repeatability of test results (Momeni and Ghayomi, 2012). In this study, Cronbach's alpha coefficient of reliability has been used since it is used as the basis of measuring reliability in most researches. Cronbach's alpha coefficient method is a method to determine the reliability of the test based on internal consistency. The reliability analysis of the research instrument yielded a Cronbach's Alpha value of 0.87 and a significance level of 0.000 which represents that the reliability of the questionnaire is acceptable.

Results and discussion

Buying habits and perceptions of poultry meat

Results of our survey, presented in Table 2, show that 100% of students consumed meat. The data indicates that most of the students consume poultry, pork, beef/veal and lamb. Students consume mainly chicken (91%) and turkey (79%) and beef/veal (45%) and pork meat (42%) (Table 1). Similar results about consumer's meat consumption were obtained in a study of European consumers by Vukasović (2011, 2014), also in the study for Greece consumers by Sismanoglou, A and Tzimitra-Kalogianni (2011), in the study for Turkish consumers by Aral et.

al 2013. Also, this is in accordance with previous statements regarding the position of poultry meat in Slovenian attitudes and eating habits, as very important nutrient in everyday use.

Table 1. Meat consumption (%)

Type of meat	%
Chicken meat	91
Turkey meat	79
Beef/veal meat	45
Pork meat	42
other (duck meat, goat meat, sheep meat, fish)	12

The analysis of variance to the question „How often do you eat meat? “ showed statistically significant difference in the frequency of meat consumption. Most of examined students (77.49), consumed poultry meat once a day. Small percentage (2.65%) indicated that they consumed meat two times a day, while 19.76% do it several times a week (table 2).

Table 2. The frequency of the meat consumption by students

How frequent do you eat meat?	Once a day	Twice a day	Once a week	Several times a week	Once a month
poultry	77.49	2.65		19.77	
pork			82.30	17.7	
beef/veal			73.28	4.53	22.19
lamb			4.17		95.83
other (duck, goat, sheep, fish)			5.25		94.75

Among the purchase motives domestic origin, quality, tasty, safety and healthy meat were indicated as the most important reasons of purchasing poultry meat (Table 3).

Table 3. Motives for poultry meat choice

Motives for poultry meat choice	Mean
Domestic origin	4.86
Quality meat	4.84
Tasty meat	4.81
Fresh meat	4.74
Safety meat	4.68
Healthy meat	4.55
Nutritional value	3.92
Easy to use	3.88

Results related to the place where meat was prepared, confirmed by ANOVA analysis, showed that students primarily consumed meat prepared at home. Consumption of meat, prepared in student's restaurants and fast food restaurants were equally represented, but to lesser extent than home prepared meat (Figure 1). Bowen et. al (2012) have noted that most meat and poultry consumption occurs in the home environment. This is very important result from both surveys,

because, according to our opinion, it gives very dispersive space for some nutritive health recommendations for young consumers, like students are.

Figure 1. Locations where the meat is most common consumed by students

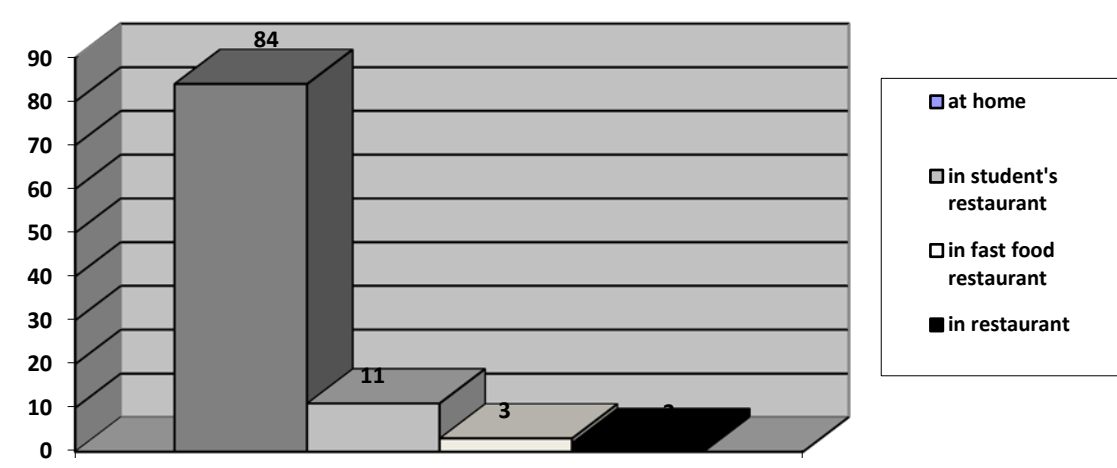
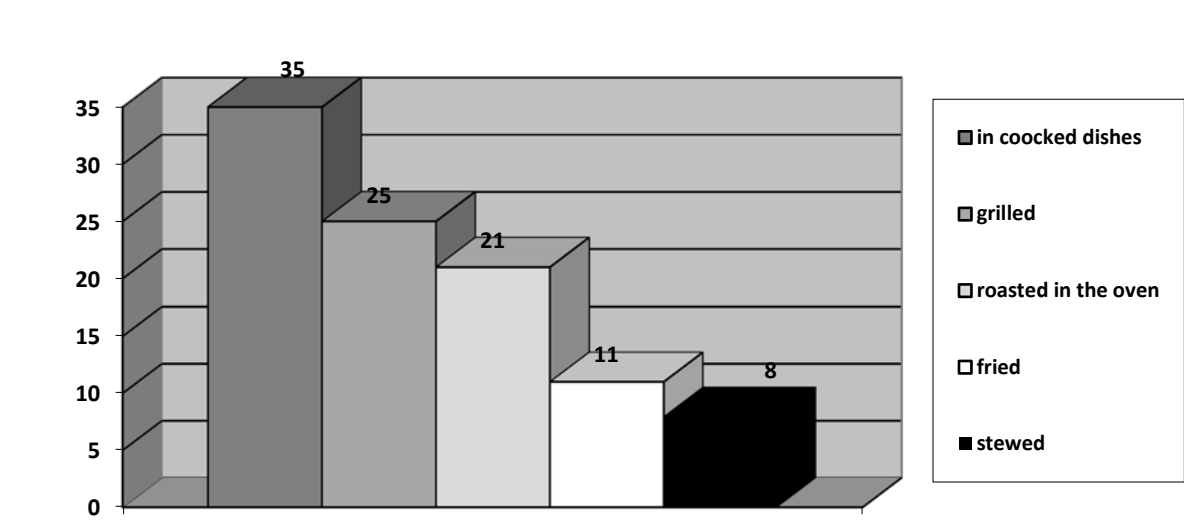


Figure 2 illustrates the results of different ways of preparing meat, which respondents indicate they are using in their diet. The primary consumption of poultry meat was in cooked dishes like (in soup, in sauce), as well as, grilled and roasted meat.

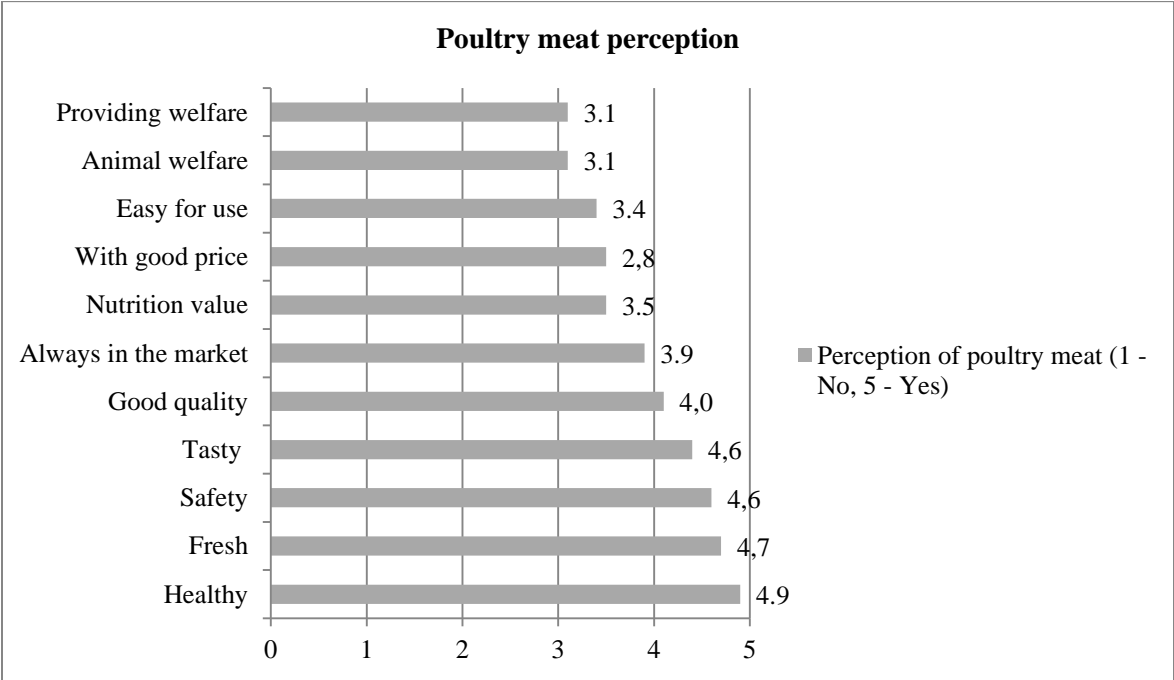
Figure 2. The most common preparation manner of meat consumed by students



Since the beginning of the 1980s some trends in food consumption has become evident in EU member state: increased vegetables, fruit, cheese, meat and fish consumption, on the one hand, and decreased sugar consumption on the other. Reasons for these trends, which are usually mentioned by experts, are increased health concerns and preferences for diet as well as lower demand for calorie intake. Those trends were also found in our quantitative research. In this part of the research, the perception of students towards poultry meat we have been researched. Characteristics of poultry meat, prepared in advance were in the questionnaire in order to help the consumers express their points of view toward the mentioned meat. Respondents expressed their opinions by marking an answer in the proper spot. They were evaluating the characteristics that refer to poultry meat. The average evaluations of the recounted characteristics were calculated based on the acquired evaluations and by that an image of views of Slovenian students toward poultry meat was determined.

A research made in Slovenia shows that students perceive Slovenian poultry meat as very healthy, fresh, safety, tasty, and of good quality (Figure 3).

Figure 3. Slovenian poultry meat perception



1. The attitude towards the origin of poultry meat

Poultry meat is typically a distinctively generic product where a trade mark has no special importance when deciding whether to buy it or not. The trade mark is built on factors of the consumer's way of thinking: the image of the trade mark, its familiarity, familiarity of the name, perception of quality, fidelity, positive associations and other benefits.

A very important segment of the research was the one where we tried to determine the importance of fresh meat origin in the purchase-decision-making process. The results show that the 98% of persons interviewed decide to buy meat available from domestic sources. The results also show that the students interviewed decided that "Slovenian origin of poultry meat is a guarantee for its safety and quality" (table 4). We can thus confirm there is a significant tendency towards purchasing fresh poultry meat of domestic origin. Similar results about attitude toward the origin of meat were obtained in a previous studies of Vukasović (2011, 2014). Also the results of these studies confirm the importance of meat origin in consumer decision-making process.

A particular challenge for the food processing industry is to assure advantages of global trade, food safety and quality food, which in the future can be expected to be the three main indicators of international competitiveness. It is important that food providers and consumers get clear information on the advantages of producing and processing the quality food locally (on the domestic market), so to ensure the international competitiveness of the food processing industry, it is essential to promote the features and advantages of the local food products and to develop consumer awareness.

Table 4. The attitude towards the origin of poultry meat

Poultry meat country of origin...	N	Arithmetic Mean	Standard Deviation
Slovenian origin of poultry meat is a guarantee for its safety.	150	4.95	0.215
Slovenian origin of poultry meat is a guarantee for its quality.	150	4.93	0.134
I always buy poultry meat with domestic origin.	150	4.89	0.213
The origin of poultrymeat is the most important factor when deciding to buy.	150	4.67	0.564
More trust poultrymeat that has been produced in Slovenia as that which is produced in other countries	150	4.62	0.632
If poultrymeat isn't produced in Slovenia I prefer not to buy it.	150	4,53	0.451
By buying poultrymeat produced in Slovenia I directly help to the Slovenian economy.	150	4,32	0.516

Conclusion

Meat industry is changing due to the changes in lifestyle, reshaped nutritional habits and needs of the consumers. The latter are more and more aware of the meaning of healthy and balanced diet. Nevertheless, we are concerned about what we eat. Health has become the most cherished value which means more health-friendly products. Therefore, the producers are developing products which offer ever more benefits to the consumers' health – they are promoting products with high impact on well-being. We, the consumers, have therefore begun to carefully read the declarations on products, giving special importance to the origin of products, which leads to a greater importance of packaging where the content and properties of products are combined. Trends like light, safe, less fat, without preservatives and additives, with additions of vitamins, minerals, dietary fibers and probiotics, are increasingly valued. This study provides interesting insights for future developments of Slovenian meat market. These results are particularly useful for product marketing and future product development in the poultry meat market sector, as they provide an indication as how it can better reach and satisfy existing young consumers, like students are.

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The Role of Food Involvement and Lifestyle in Influencing Local Food Consumption

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In recent times, there has been increased interest in locally produced food with consumers' purchases driven by a wish to support local growers, retailers and regional economies. Other drivers of local food include intrinsic attributes such as taste, freshness, seasonality, wholesomeness and quality, as well as ethical concerns regarding the protection of the environment and animal welfare. However, studies have revealed that psychological factors such as food involvement and food-related lifestyle also influence food choice. To explore this finding in the context of local food, this study investigates the relative importance of food involvement and lifestyle in influencing consumers' attitudes towards, and purchase frequency of, local food. Based on a sample of 307 Australian consumers, findings reveal that both food involvement and lifestyle factors influence purchase frequency of local food for both at home and out of home consumption. Recommendations for producers and retailers of local food, as well as directions for future research are discussed.

KEYWORDS: local food, food involvement, lifestyle

INTRODUCTION

Consumers are becoming increasingly concerned about the negative impacts of highly global industrialised food production and distribution systems on society and the environment, as well as their personal health and well-being (Hinrichs, 2000; Dukeshire et al. 2011, Eden et al. 2008; de Jonge et al. 2008). Today's more mindful consumer is concerned about issues such as reducing their carbon footprint, reduced food miles, more sustainable food production, ethical sourcing, and human and animal welfare (Johnston et al. 2011, Kemp et al. 2010). These concerns along with the desire to know how the food they are eating has been grown, produced and sourced, in addition to a search for more traditional and authentic foods, have resulted in consumers seeking more food which has been produced locally or in closer proximity to them (Chambers et al. 2007; Darby et al. 2008; Guthman, 2004; Hunt, 2007; Roininen et al. 2006; Weatherell et al. 2003).

CONCEPTUAL BACKGROUND

Drivers and Barriers of Local Food Consumption

In addition to environmental and ethical concerns and the need for greater traceability, key drivers for local food consumption include the desire to support local growers, producers and retailers, along with intrinsic qualities of local food such as freshness, seasonality, taste, wholesomeness, health, safety and quality (Bean and Sharp, 2011; Bellows et al. 2010; Chambers et al. 2007; Kemp et al. 2010; Knight 2013; Roinenan et al. 2006; Selfa and Qazi, 2005). While price is commonly cited as a key barrier to local food, due to its seasonal nature, local food may be more expensive when not in season and less expensive when in-season, and some studies have revealed that consumers may be willing to a premium for local foods (Adams and Salois, 2010; Knight, 2013; Schneider and Francis, 2005). Other barriers to local food include inconvenience, lack of awareness and information, lack of easy identification, reduced choice and variety, seasonality, limited availability, poor quality and poor appearance (Chambers

et al. 2007; Corporate Research Associates, 2005; Dukeshire et al. 2011; Knight, 2013; Marenick et al. 2010; Pearson et al. 2011).

Food involvement and lifestyle

Local food is becoming increasingly fashionable as people become more concerned with issues of lifestyle and “food purism” (Heslop 2007, p. 29). Indeed, Knight (2012, p. 29) argued that “localness is one of the hottest trends in the world of food” (Lerman et al. 2010, Gooch et al. 2009; Hartman Group, 2008). Ikerd (2011, p. 52) described the local food movement as a “search for food with integrity”. More sophisticated and ethically-minded food consumers are seeking “seasonally available foods, regional cuisines, organic products, and environmentally and socially sustainable food” (Selfa and Qazi, 2005, p. 452). Television cooking and lifestyle shows featuring locally grown produce (e.g. Rick Stein’s food heroes) have resulted in some consumers becoming more interested in sourcing local food products for eating at home, when dining out, or when on holidays leading to a rise in culinary tourism. Indeed, today’s more mindful consumers are also showing greater interest in traceability; that is, where the food they eat comes from and how it is produced (Brom et al. 2007; MacMillan et al. 2012; Megicks et al. 2012).

Beyond commonly cited drivers and barriers, other factors that influence local food consumption are the extent to which a consumer is involved with food and their food-related lifestyle (Marshall and Bell 2004; Brunso et al. 1996). Food involvement concerns the extent to which a person cares about, or is interested in a particular food product and its ‘personal relevance or importance’ to the person (Olsen 2001, p. 177). Food involvement influences the extent to which a person consumes a particular food and the extent of cognitive processing during the buying and consumption decision making process (Bell and Marshall, 2003; Zaichkowsky, 1985). For example, a positive correlation has been found between greater food involvement and fish consumption frequency and purchase intention (Juhl and Poulsen, 2000; Olsen, 2003; Verbeke and Vackier, 2005).

Food consumption has also been found to be related to a person’s lifestyle or way of life (Brunso et al. 2009; Juhl and Poulsen, 2000; Myrland et al. 2000). A cross-culturally validated instrument for measuring food-related lifestyles was first developed by Brunso and Grunert (1995). The food-related lifestyle instrument has been used to analyse peoples’ food-related cognitive behaviour and classifies consumers according to their attitude toward buying, preparing, and consuming food products to achieve life values (Brunso et al. 1996; Buckley et al. 2005).

In this paper, food involvement and food related lifestyle associated with local food are investigated to provide insights into levels of local food consumption by residents in South East Queensland. An analysis of these psychological dimensions of local food consumption will assist local food producers and retailers to gain a deeper understanding of the ways in which consumers view local food and thus how to stimulate consumption of local food. Based on the review of the literature related to food involvement and food related lifestyle, it is hypothesized that:

H1 (a): Higher levels of food involvement are positively associated with higher levels of *at home* consumption of local food.

H1 (b): Higher levels of food involvement are positively associated with higher levels of *out of home* consumption of local food.

H2 (a): Food related lifestyle is positively associated with higher levels of *at home* consumption of local food.

H2 (b): Food related lifestyle is positively associated with higher levels of *out of home* consumption of local food.

MATERIALS AND METHODS

A survey of 307 South East Queensland residents was conducted with an established and professionally managed online consumer panel. To avoid respondent bias, respondents were screened for industry affiliation (Market Research, Advertising, Public Relations, Local Food or Produce Manufacturing) and recent participation in market research relating to local food and beverage (within the past 6 months). The main purpose of the online survey was to measure current consumption of local SEQ food, assess attitudes toward local food, and identify key drivers and barriers to consumption of SEQ local food as well as the impact of psychological factors including food involvement and food related- lifestyle.

Consumption of local food for local residents was measured for frequency of both at home and eating out over the past three months and ranged from never (0 times) to very frequently (16 plus times). Food involvement was measured using Bell and Marshall's (2003) food involvement scale with an additional item "I am a foodie" to capture the more recent notion of being a "foodie" (Getz et al. 2014). Food-related lifestyle was measured on a bank of statements broadly based on the original extensive scale developed by Brunso et al. (1996) and adapted for this research context.

Screening revealed that 69% of respondents for the online survey were the main shopper, 29% were the joint shopper, and 6% were an occasional shopper of food and beverage for their household. Females represented 66% of the survey population and males represented 34%. The majority of the respondents were in the 55 years and older age bracket (32%), followed by the 45 - 54 year age bracket (27%) and 35 - 44 years (25%). Younger people, aged 25-34 years (12%) and 18-24 years (5%) were under-represented in the study. About one-fifth of respondents (20%) reported an annual household income (before tax) of \$100,000 or above. Respondents reporting an income between \$60,000 and \$100,000 comprised 24% of the survey population and those reporting an income between \$20,000 and \$60,000 accounted for another 35% of respondents. Respondents with an income below \$20,000 comprised 5% of the survey population. The majority of respondents in the study were tertiary educated (42%), with the next largest group being technically trained (29%), followed by people educated to secondary school level (27%), and then primary school level (2%). The majority of respondents were couples with no children or with children who had left home (31%), followed by single people living alone (20%) and then couples or single parents with children under 12 years of age (15%).

FINDINGS

Consumption frequency of local foods. To assess consumption frequency of local foods, local SEQ residents (n = 307) were asked how frequently they had purchased local food and beverage for use at home or when eating out in the past 3 months (Table 1).

TABLE 1 Purchase of Local Food and Beverage for Use at Home and Eating Out in the Past 3 Months

Purchase Occasion	16 + times (%)	11-15 times (%)	6 – 10 times (%)	1-5 times (%)	0 times (%)
At home	8.1	9.8	15.0	46.5	20.5
Eating Out	1.3	2.9	8.1	52.8	34.9

The results revealed low levels of local food consumption both for at home and when eating out. Indeed, one-fifth of respondents (20.5%) reported that they had not purchased any local food or beverage for use at home, and just over one-third of respondents (34.9%) indicated that they had not purchased local food and beverage when eating out during the past three months. The most common frequency for purchasing local food and beverage for use at home over the past three months was 1-5 times, with just under half of the respondents (46.6%) reporting that level of purchasing frequency. Likewise, 1-5 times over a three month period was the most common frequency reported for purchasing of local food and beverage when eating out over the past three months, with 52.8% of respondents reporting this level of purchasing frequency. Very few respondents (17.9%) reported purchasing local food and beverage for use at home more than 10 times over the past three months, and even fewer respondents (4.2%), reported purchasing local food and beverage when eating out more than 10 times in the past three months.

Food involvement. Food involvement was measured using Bell and Marshall’s (2003) food involvement scale with an additional item “I am a foodie” to capture the more recent notion of someone for whom food is very important part of their life experience (Getz et al. 2014) (Table 2). The respondents reported moderate levels of food involvement. Over two-thirds of the respondents (67.8%) agreed that when they travel, one of the things they anticipate most is eating the food there. Just under two-thirds (60.3%) of respondents agreed that they enjoy cooking for others and themselves. Less than half of the respondents (42.3%) agreed that they like talking about what they are or are going to eat, while 39.1% identified as a ‘foodie’, and just less than one-quarter (24.8%) agreed that they don’t think much about food each day. Less than one-fifth of the respondents (18.6%) agreed that compared with other daily decisions, their food choices are not very important.

TABLE 2 Food Involvement by At Home Consumption of Local Food

Item	Total	More	6 – 10	Less than	F	Sig
		than 10	times	6 times		
		times				
	Mean	Mean	Mean	Mean		
	(SD)					
When I travel, one of the things I anticipate most is eating the food there	5.1 (1.5)	5.20 ^b	5.74 ^b	4.90 ^a	6.6	0.0
I enjoy cooking for others and myself	4.7 (1.6)	5.16 ^b	5.43 ^b	4.48 ^a	8.9	0.0
Talking about what I ate or am going to eat is something I like to do	4.2 (1.5)	4.56 ^a	4.41 ^a	4.08 ^b	2.9	0.0
I am a ‘foodie’	4.2 (1.5)	3.90 ^a	4.74 ^b	4.62 ^b	9.4	0.0
* Compared with other daily decisions, my food choices are NOT very important	3.2 (1.5)	3.46 ^a	2.87 ^b	2.76 ^b	6.9	0.0
*I don’t think much about food each day	3.6 (1.5)	3.36 ^a	3.37 ^a	3.74 ^a	2.1	0.1

(7 point scale: 7 = strongly agree to 1 = strongly disagree)
ANOVA F-tests with corresponding p-value
Different letters (a, b) indicate significantly different means at p<0.05 using *post hoc* Sheffe test
* Negatively worded statement - a lower mean reflects higher food involvement

Analysis of variance with Sheffe post hoc tests was conducted to determine if there were differences in frequency of purchase of local food for at home (Table 2) and out of home (Table 3) consumption on the basis of food involvement. For analysis purposes, frequency of purchase was collapsed into three groups (Less than 6 times in the past three months, 6-10 times in the past three months, and more than 10 times in the past three months).

Residents who purchased local food and beverage for *at home* consumption on a less frequent basis were more likely to agree that “compared with other daily decisions, my food choices are NOT very important” and also less likely to agree with the statements, “I am a foodie”, “I enjoy cooking for others and myself”, “when I travel, one of the things I anticipated most is eating the food there”, and “talking about what I ate or am going to eat is something I like to do”. Hence, H1 (a) is supported with residents reporting greater food involvement purchasing local food for at home consumption more frequently.

TABLE 3 Food Involvement by Out of Home Consumption of Local Food

Item	Total	More	6 – 10	Less	F	Sig
		than 10	times	than 6		
		times		times		
	Mean	Mean	Mean	Mean		
	(SD)					
When I travel, one of the things I anticipate most is eating the food there	5.1 (1.5)	5.38 ^b	5.13 ^b	4.49 ^a	4.40	0.01
I enjoy cooking for others and myself	4.7 (1.6)	5.33 ^b	4.73 ^b	4.22 ^a	4.71	0.01
Talking about what I ate or am going to eat is something I like to do	4.2 (1.5)	4.83 ^b	4.20 ^b	3.63 ^a	7.11	0.01
I am a ‘foodie’	4.2 (1.5)	4.88 ^b	4.13 ^a	3.46 ^a	9.29	0.00
* Compared with other daily decisions, my food choices are NOT very important	3.2 (1.5)	3.40	3.21	3.34	0.39	0.68
*I don’t think much about food each day	3.6 (1.5)	4.00	3.51	3.85	2.55	0.08

(7 point scale: 7 = strongly agree to 1 = strongly disagree)
ANOVA F-tests with corresponding p-value
Different letters (a, b) indicate significantly different means at p<0.05 using *post hoc* Sheffe test
* Negatively worded statement - a lower mean reflects higher food involvement

Next, differences in frequency of local food consumption for out of home occasions on the basis of food involvement were measured (Table 3). Residents who purchased local food and beverage for *out of home* consumption more frequently agreed more strongly that they are a foodie, enjoy cooking for others and themselves, like talking about what they ate or are going to eat, and that when they travel, one of the things they anticipate most is eating the food there. Hence, H1(b) is also supported with residents reporting higher levels of food involvement purchasing local food out of home more frequently.

Food related lifestyle. Next, to investigate if the purchase and consumption of local food and beverage was associated with people’s food related lifestyle, respondents were asked to respond to a bank of statements used to measure food-related lifestyle, as presented in Table 3. The findings revealed that Australian consumers are very price sensitive with the majority of respondents agreeing that they compare prices of food and beverage to get the best value for money (85.7%), always check prices, even on small items (79.5%), and compare product information labels to decide which brand to try (70.7%). Respondents indicated concern for the freshness, natural products, and knowing the origin of food, with 82.1% of all respondents agreeing that they do not buy food products unless they look completely fresh, 81.4% agreeing

that they are interested in where their food comes from, and 72.0% agreeing that they prefer to buy natural products (i.e. products without preservatives). Interestingly, only 37.8% of respondents agreed that it is more important to choose food products for their nutritional value rather than for their taste, and only just over one-third (34.2%) of respondents agreed they always buy organically grown food products if they have the opportunity.

Australian consumers are relatively adventurous when it comes to food with 69.4% agreeing they like to try out new recipes, 71.0% liking to try new food they have never tasted before, and 62.2% looking for authentic Australian food and beverages. However, 38.4% agreed that they only buy and eat foods which are familiar to them. Food purchasing behaviour is relatively planned, with 72.6% agreeing they make a shopping list of everything they need before they go shopping. Just over half (51.1%) agreed that they don't like spending too much time on cooking, and about one-quarter (25.7%) agreed that don't like shopping for food. Just more than one-third of the respondents (38.4%) agreed that going out for a meal is a regular part of their eating habits.

Australians report moderate levels of concern about environmental issues with 59.9% agreeing that they prefer to purchase unpacked meat and vegetables rather than pre-packed, and 51.8% agreeing that they always buy sustainably produced food products if they have the choice. About one-third (32.9%) agreed that they don't mind paying a premium for ecological products, with one-third (35.8%) agreeing that they like buying food products in speciality food stores where they can get expert advice. Less than one-quarter (23.5%) agreed that they have more confidence in food products that they have seen advertised than in unadvertised products.

Analysis of variance with Sheffe post hoc testing was conducted to determine if there were differences in purchase frequency of local food on the basis of food-related lifestyle factors for both at home (Table 4) and out of home (Table 5) consumption.

TABLE 4 Food-related Lifestyle by At Home Consumption of Local Food

Item	Total	More	6 – 10	Less	F	Sig
		than 10	times	than 6		
		times		times		
	Mean	Mean	Mean	Mean		
	(SD)					
I compare prices of	5.59					
food/beverage to get the	(1.2)	5.29	5.39	5.09	1.18	0.31
best value for money						
I don't buy food products	5.47					
unless they look completely	(1.1)	5.90 ^b	5.72 ^b	5.30 ^a	7.56	0.01
fresh						

I always check prices, even on small items	5.44 (1.3)	5.49	5.61	5.39	0.57	0.57
I am interested in where my food comes from	5.36 (1.1)	5.80 ^b	5.72 ^b	5.17 ^a	10.4 3	0.00
Before I go shopping for food, I make a list of everything I need	5.17 (1.5)	5.29	2.39	5.09	1.01	0.37
I prefer to buy natural products, i.e. products without preservatives	5.17 (1.3)	5.71 ^b	5.57 ^b	4.94 ^a	11.5 3	0.00
I compare product information labels to decide which brand to try	5.10 (1.4)	5.40 ^a	5.35 ^a	4.97 ^b	2.94	0.05
I like to try new foods that I have never tasted before	5.03 (1.3)	5.49 ^b	5.37 ^b	4.84 ^a	8.08	0.00
I like to try out new recipes	5.02 (1.5)	5.45 ^b	5.52 ^b	4.79 ^a	8.12	0.00
I prefer to buy meat and vegetables unpacked rather than pre-packed	4.99 (1.4)	5.36 ^b	5.17 ^b	4.85 ^a	3.43	0.03
I look for authentic Australian food and beverages	4.91 (1.2)	5.36 ^b	5.74 ^{3b}	4.68 ^a	12.8 2	0.00
I always buy sustainably produced food products if I have the choice	4.61 (1.2)	5.11 ^b	4.94 ^b	4.40 ^a	9.30	0.00
I don't like spending too much time on cooking	4.38 (1.6)	4.29	4.07	4.47	1.28	0.28
It is more important to choose food products for their nutritional value rather than for their taste	4.28 (1.3)	4.47	4.41	4.20	1.23	0.30
I like buying food products in speciality food stores where I can get expert advice	4.21 (1.3)	4.67 ^b	5.00 ^b	3.91 ^a	18.2 6	0.00
I only buy and eat foods	4.05 (1.4)	3.87	4.17	4.07	0.6 7	0.5 1

which are familiar to me						
I always buy organically grown food products if I have the opportunity	3.90 (1.6)	4.51 ^b	4.30 ^b	3.65 ^a	8.53	0.00
Going out for a meal is a regular part of our eating habits	3.88 (1.7)	4.36 ^b	4.17 ^b	3.69 ^a	4.24	0.02
I don't mind paying a premium for ecological products	3.86 (1.4)	4.15 ^b	4.37 ^b	3.67 ^a	6.07	0.01
I have more confidence in food products that I have seen advertised than in unadvertised products	3.73 (1.4)	3.60	3.85	3.73	0.40	0.67
I don't like shopping for food	3.58 (1.6)	3.35	3.91	3.68	1.40	0.25

(7 point scale: 7 = strongly agree to 1 = strongly disagree)
ANOVA F-tests with corresponding p-value
Different letters (a, b) indicate significantly different means at p<0.05 using *post hoc* Sheffe test

Analysis of variance revealed that food-related lifestyle explains differences in consumption frequencies for local food for both at home and out of home occasions. Respondents who reported purchasing local food and beverage on a more regular basis for at home consumption appear to be more concerned about freshness and the origin of their food, agreeing more strongly than less regular consumers that they don't buy food unless it looks completely fresh, that they are interested in where their food comes from, like buying food products in speciality food stores where they can get expert advice, and going out for a meal is a regular part of their eating habits. Regular consumers of local food at home also appear to be more adventurous, looking for authentic food and beverages, trying out new recipes and new foods they have never tasted before.

More regular consumers of local food at home also appear to be more discerning and demanding in their food purchasing, agreeing that they compare product information labels to decide which brand to try, prefer to buy natural products (without preservatives), and always buy organically grown food products if they have the opportunity. Moreover, regular purchasers of local food for at home consumption appear to be more concerned with environmental issues, preferring unpacked meat and vegetables rather than pre-packed, always buying sustainably produced food products if they have the choice, and not minding paying a premium for ecological products. Hence, H2 (a) is supported with food related lifestyle factors positively impacting consumption frequency for purchasing local food for at home consumption.

To determine if food-related lifestyle factors influence out of home consumption of local food, we also conducted Analysis of Variance with Sheffe post hoc testing on the food related lifestyle items (Table 5). The respondents were divided into three groups for analysis based on the number of times they had eaten out in the past three months: more than 10 times, 6-10 times of less than 6 times.

TABLE 5 Food-related Lifestyle by Out of Home Consumption of Local Food

Item	Total	More	6 – 10	Less	F	Sig
		than 10	times	than 6		
	Mean	Mean	Mean	Mean		
	(SD)					
I compare prices of food/beverage to get the best value for money	5.59 (1.2)	5.46	5.60	5.46	0.24	0.79
I don’t buy food products unless they look completely fresh	5.47 (1.1)	5.48	5.53	5.10	2.49	0.08
I always check prices, even on small items	5.44 (1.3)	5.30	5.49	5.24	0.88	0.42
I am interested in where my food comes from	5.36 (1.1)	5.58	5.38	5.02	2.72	0.07
Before I go shopping for food, I make a list of everything I need	5.17 (1.5)	5.58	5.09	5.20	1.83	0.16
I prefer to buy natural products, i.e. products without preservatives	5.17 (1.3)	5.33 ^b	5.22 ^b	4.71 ^a	3.27	0.04
I compare product information labels to decide which brand to try	5.10 (1.4)	5.60 ^b	5.10 ^b	4.54 ^a	6.17	0.01
I like to try new foods that I have never tasted before	5.03 (1.3)	5.20 ^b	5.09 ^b	4.59 ^a	3.15	0.04
I like to try out new recipes	5.02 (1.5)	5.30 ^b	5.09 ^b	4.29 ^a	6.25	0.01
I prefer to buy meat and vegetables unpacked rather than pre-packed	4.99 (1.4)	5.40 ^b	5.04 ^b	4.44 ^a	5.21	0.01
I look for authentic	4.91	5.45 ^b	4.95 ^b	4.29 ^a	10.0	0.00

Australian food and beverages	(1.2)				9	
I always buy sustainably produced food products if I have the choice	4.61 (1.2)	5.23 ^c	4.64 ^b	3.80 ^a	14.67	0.00
I don't like spending too much time on cooking	4.38 (1.6)	4.33	4.32	4.63	0.66	0.52
It is more important to choose food products for their nutritional value rather than for their taste	4.28 (1.3)	4.65	4.23	4.12	2.07	0.13
I like buying food products in speciality food stores where I can get expert advice	4.21 (1.3)	5.05 ^b	4.16 ^a	3.61 ^a	13.25	0.00
I only buy and eat foods which are familiar to me	4.05 (1.4)	4.25	3.99	4.10	0.65	0.52
I always buy organically grown food products if I have the opportunity	3.90 (1.6)	4.78 ^b	3.89 ^a	3.20 ^a	10.88	0.00
Going out for a meal is a regular part of our eating habits	3.88 (1.7)	4.93 ^c	3.83 ^b	3.05 ^a	13.48	0.00
I don't mind paying a premium for ecological products	3.86 (1.4)	4.48 ^b	3.84 ^b	3.44 ^a	5.82	0.00
I have more confidence in food products that I have seen advertised than in unadvertised products	3.73 (1.4)	4.00 ^b	3.74 ^b	3.27 ^a	3.02	0.05
I don't like shopping for food	3.58 (1.6)	3.90	3.88	3.48	2.06	0.13

(7 point scale: 7 = strongly agree to 1 = strongly disagree)
ANOVA F-tests with corresponding p-value
Different letters (a, b, c) indicate significantly different means at p<0.05 using *post hoc* Sheffe test

Respondents who reported purchasing local food and beverage on a more regular basis for out of home consumption like buying food products in speciality food stores where they can

get expert advice and going out for a meal is a regular part of their eating habits. Regular consumers of local food out of home also appear to be more adventurous, looking for authentic food and beverages, trying out new recipes and new foods they have never tasted before. More regular consumers of local food out of home also appear to be more discerning and demanding in their food purchasing, agreeing that they compare product information labels to decide which brand to try, prefer to buy natural products (without preservatives), and always buy organically grown food products if they have the opportunity. Moreover, regular purchasers of local food for out of home consumption appear to be more concerned with environmental issues, preferring unpacked meat and vegetables rather than pre-packed, always buying sustainably produced food products if they have the choice, and not minding paying a premium for ecological products. Hence, H2 (b) is also supported with food related lifestyle factors positively impacting consumption frequency for purchasing local food for out of home consumption.

DISCUSSION

The findings indicate that current consumption of local food and beverage is low, and thus there is ample opportunity to increase consumption of local food and beverage both for at home consumption and when eating out. However, as a result of greater price sensitivity due to the current economic climate and people eating out less frequently, any short-term growth in consumption may more likely be associated with at-home consumption rather than out-of-home consumption. Australian consumers are moderately involved with or interested in food, however, people with higher levels of food involvement ('foodies') are more likely to purchase local food and beverage for both at home and out of home consumption. Regular purchasers of local food and beverage appear to seek out more information on the food they purchase by comparing product information labels to decide which brand to try and buying food products in speciality food stores where they can get expert advice. Thus, informative labelling of local food and greater availability in specialty stores may increase sales of local food and beverage. Regular local food and beverage consumers appear to be more discerning and demanding when purchasing food including looking for natural products which are free from preservatives, buying organically grown food products if they have the opportunity and not buying food products unless they look completely fresh. Hence, attention to the intrinsic qualities of local food and ensuring that consumers have access to fresh, seasonal and natural products will encourage increased purchase.

Regular consumers of local food appear to be more concerned about issues of sustainability, preferring to buy sustainably produced food products if they have the choice, being prepared to pay a premium for ecological products and preferring to purchase unpacked meat and vegetables rather than pre-packed. Hence, producing, communicating and delivering local food in more sustainable ways including environmentally responsible use of land and resources will increase consumption of local food and beverage. Moreover, more regular consumers of local food appear to be more curious and adventurous when it comes to food. Therefore, providing them with provenance information and stories on how the food has been

grown, produced and/or processed, and giving them opportunities to try new food they have never tasted before, try out new recipes, and source authentic food will lead to increased consumption of local food.

Further research could be expanded to other geographic regions and include a large sample of consumers, including visitors, as well as investigating other psychological factors influencing consumption of local food, such as ethical consumption and local identity. Moreover, the food-related lifestyle instrument and measures could be revisited in the light of consumer changes around food including greater interest in local foods, sustainable products, provenance and traceability. Indeed, gaining a better understanding of full the range of motivations including hedonistic, utilitarian and altruistic reasons for purchasing food will provide producers and retailers of local food with greater insights for effective production, distribution and marketing of local food (Memery et al. 2015).

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Consumers' trust in food quality and willing to pay more for National Parks' brands: Preliminary evidence from Italy

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Abstract

Marketing potential of food brands originating from National parks is an under researched topic. Brands and product labels associated with national parks can be a strategic tool for product differentiation and to improve companies' competitiveness in the marketplace. These brands are believed to carry credence qualities such as naturalness and eco-sustainability which are becoming increasingly important to consumers. But little is known about how consumers perceive, evaluate and choose such brands. Therefore, the purpose of this study is to examine the role of national parks' brands in influencing consumer trust and buying behavior. An empirical study using a sample of 227 Italian consumers shows that women and younger consumers are more likely to trust and pay a premium price for national parks' brands. The results indicate that consumers who place more importance on territory of origin of food products, environmentally friendly production, certification of origin, and food quality assurance purity of the materials used tend to promote consumer confidence in national parks' brands. These findings have important implications for food companies and other national parks' stakeholders.

Keywords: national park brand, trust in food quality, willingness to pay premium price, food quality, naturalness of foods, origin of food products

Delphi Study on Country-of-Origin Labeling for Processed Foods

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Abstract: In the international scene, Country-of-Origin Labeling (COOL) is a controversial issue; we used the Delphi method to conduct qualitative and systematic research on COOL for processed foods. The panel of experts in food labeling and food policy was composed of 19 members in 13 countries. The experts actively discussed many topics, from the possible protectionism of COOL to the desirability for a worldwide standardization of COOL, providing very broad perspectives on the issues concerning COOL. The most important consensus is that multiple countries of origin marking can provide accurate information about the origin of a food produced by two or more countries, avoiding misinformation for consumers. This research provides valuable insights for the formulation of COOL policy in various countries.

Key words: *Country of origin, labeling, COOL, policy, processed foods, main ingredient, Delphi study, international trade.*

The country-of-origin is the “nationality” of a food when it goes through customs in a foreign country, and is a “brand” that may be designed with a national flag when the food is for sale in a foreign market. The “nationality” determines which kind of treatment – preferential or non-preferential – the food receives at customs, and as a national brand it is often associated with safety, quality and the general reputation of the nation.

According to the WTO Agreement on Rules of Origin, when a good is produced by more than one country, the country-of-origin is the “country where the last substantial transformation has been carried out”. Although WTO member countries agreed that for goods not wholly obtained in one country the criterion for determining the country-of-origin is the last substantial transformation, the detailed rules for conferring the originating status may vary from country to country when a product is manufactured partially or totally from non-original (foreign) material. For the same product, the country-of-origin may be the country where the primary material was produced or where the final processing was carried out, depending on the rules of origin of the importing country. For example, if shrimps are raised in Country A and then shelled and frozen in Country B, the country of origin of shelled and frozen shrimps is Country A under the laws of the United States because there is no substantial transformation in Country B; in contrast, the country-of-origin of shelled and frozen shrimps is Country B according to the regulations of the People's Republic of China, which has rules for recognizing a substantial transformation in Country B.

In every country the government plays a very important role in matters concerning the country-of-origin marking of foods. Since the beginning of this century, the mandatory country-of-origin labeling (COOL) has been introduced in the European Union (2000), USA (2002) and some other countries and also has been applied to more and more products, so as to better guarantee food safety and quality. However, in the international scene, COOL is a controversial issue criticized as a trade protection measure. The most notable example was the COOL dispute between the USA and Canada/Mexico where the WTO ruled that United States' COOL measure is inconsistent with its WTO obligations. COOL seems to be a trade protection measure, and the consumer's right to know the origins of their foods seems to be in conflict with free trade.

In recent years, much academic research on COOL has been carried out for studying the value of COOL information for consumers (Devies and MacPherson, 2012; Loureiro and Umberger, 2007; Tonsor et al., 2013; Wang et al., 2013; Ward et al., 2005; Yong et al., 2010), the influence of origin labeling on consumers' choice (Chern and Chang, 2012; Ivanković and Kelava, 2012; Kimura et al., 2011; Klöckner et al., 2013; Lim et al., 2013; Menozzi et al., 2011; Peterson et al., 2013), the effect of COOL on trade (Johnecheck et al., 2010; Jones et al., 2013; Lombardi et al., 2013; Matsumoto, 2011; Plastina et al., 2011; Rabbani et al., 2011), etc. In reviewing the findings of the various research, we make the following observations: 1) It is common view that COOL is useful for protecting consumers' interest by better informing them when they buy foods. 2) Generally COOL can favor the sale of local products and would have a negative impact on international trade.

Among the existing literature, the products studied were beef and other single ingredient foods (fruit, rice, fish, etc.) produced in one country, and have not concerned the rules of origin. We have not found any academic publication on the COOL of the main ingredients of processed foods made in two or more countries.

The basic purpose of this research is to define criteria for the country-of-origin marking so as to provide accurate information to consumers and favor fair trade. The further objective is to study regulatory principles for the formulation of COOL policy and estimate the effect of COOL on international trade.

The research methodology we use is the Delphi method with the goal of gathering perspectives and ideas from experts in food labeling and food policy.

This Delphi study is conducted in three rounds. The panel of experts is composed of 19 members in 13 countries. Ten experts are academic, five are from government departments and four are representatives of consumer associations.

This Delphi study is conducted via the web site www.foodorigin.org where participating experts were able to provide their answers to our questionnaires.

The paper is organized as follows: After having analyzed the legislative provisions on COOL in various countries, we define first the research objectives and then design the research process by Delphi method, structured in three rounds. The research results are shown by summarizing and aggregating experts' responses to questionnaires on ten topics. Finally, as conclusions, the consensus of majority on COOL is highlighted around some important topics, and the most relevant divergence is discussed.

1. Background, Motivations and Objectives

The economic globalization of the food sector means not only active international trade of foodstuffs, but also the phenomenon that a food is manufactured in a country with ingredients produced in another country. When a food is made in one country with primary materials imported from another country and then is exported to a third country, an important issue is how to mark its origin so as to provide accurate information to consumers without creating obstacles to fair trade. We hope this research will be useful for the formulation of policy on the COOL of main ingredients.

1.1 Legislative Provisions on Ingredient Origin Statement

In recent years legislation on food labeling in many countries has evolved toward more stringent measures.

Generally, the legislative provisions on country-of-origin labeling for foods in various countries can be separated in two categories: one regards the determination of “country-of-origin” of the foods imported from other countries; another regards the statement on the place of origin of ingredients sourced from other countries and used in the domestic manufacture of foods. Currently, the majority of countries in the world have laws in the first category, while only a few countries have regulations in the second category. In other words, the statement on “country-of-origin” of ingredients is compulsory only in a few countries for certain kinds of food.

The first legislation in the world on the mandatory statement about the place of origin or provenance of the main ingredient is the Italian Decree-law (Decreto Legge) n. 157/2004, promulgated on 24 June 2004 and effective two days later. It requires an indication of the place of origin or provenance of the fresh tomato used in the production of tomato puree (in Italian “passata di pomodoro”).

Another interesting legislative initiative in Italy is Law No. 4 - “Provisions Related to Labeling and Food Quality (*Disposizioni in materia di etichettatura e di qualità dei prodotti alimentari*)” - promulgated on 3 February 2011, which required a statement of food origin: For non-processed foods, an indication of the place of origin or provenance regards the country of production of the products; for processed foods, the information concerns the place where the last substantial transformation occurred and the place of cultivation and breeding of the main agricultural raw material used in the preparation or manufacture of the products. This law needed a following implementing decree to “activate” it, but since it was not considered consistent with the regulations of the European Union, the implementing decree has not been promulgated yet, so it is not in effect. Someone called Law N. 4 /2011 an Italian invention far from European reality.

In the European Union the general provision on food origin labeling is set by Article 3 of Directive 2000/13/EC: the indication of the place of origin or provenance is mandatory if the omission of such information might mislead the consumer. Meanwhile, some regulations of the European Parliament and the Council of the European Union determine that origin labeling is mandatory for the following foodstuffs: beef and beef products (Regulation EC N°1760/2000), fruit and vegetables (Regulation EC N°2200/1996), fishery and aquaculture products (Regulation EC N°2065/2001), honey (Directive 2001/110/EC), eggs (Regulation EC N°2295/2003), olive oil (Regulation EC N°1019/2002, modified by Regulation EC N°182/2009). For all other products the origin may be indicated on a voluntary basis.

In 2011 the European Council adopted the new EU Regulation 1169/2011 on food information to consumers, which extends the mandatory indication of country of origin or place of provenance to unprocessed meat of swine, poultry, sheep and goats. The new Regulation

entered into force on 12 December 2011 and would apply 13 December 2014, with the exception of the provisions on the nutrition information, which applied 13 December 2013.

In addition, by 13 December 2013, the European Commission had to adopt acts implementing the application of “voluntary origin labeling” of foods, and make a report on the mandatory indication of the country of origin or place of provenance for the following products: (1) Meat used as an ingredient; (2) Types of meat other than beef, swine, sheep, goat and poultry; (3) Milk; (4) Unprocessed foods; (5) Single ingredient products; (6) Ingredients that constitute over 50% of a food. However, until now the European Commission has not adopted any act to implement these provisions.

Among the member states of the European Union, the United Kingdom has also made many interesting initiatives related to the ingredient origin statement. The “country-of-origin labeling guidance” issued by the British Food Standards Agency (FSA) suggests that in cases where manufacturers describe a product as “Produced in the UK” then the origin of any imported ingredients that characterize the product should be given.

After having also studied labeling regulations of some other countries (Australia, Canada, China, Ghana, India, Indonesia, Japan, Malaysia, South Africa, USA, etc.), we make the following comments:

- The developed countries have already started legislation on the origin of food ingredients, but all focus on their national markets (community market for EU) without considering the foods traded in international market.
- Developing and emerging countries (with exception of South Africa) formulate food laws focusing on the issue of safety, but the information on the origin of food ingredients is not yet considered important for consumers. A significant example is that in Indonesia the food pre-market registration system requires a statement on the country of origin of milk and egg powder used as ingredients, but such a statement is not required on labels.

1.2 Research Objectives

Our research focuses on the international trade of processed foods that are produced with ingredients from one or more countries different than the country of final processing, and are then exported to other countries. This is a new topic in academia.

For a processed food traded internationally we hypothesize the following business roles:

- (1) Country A: it produces the primary material for the food.
- (2) Country B: it handles the final processing of the food, with the primary ingredient imported from Country A.
- (3) Country C: it imports the finished product from Country B.

The first objective of this research is how to mark the country-of-origin of a food produced in two or more countries so as to provide accurate information to consumers.

Moreover, because COOL is a controversial issue in trade policy, we want to study it in a wide perspective, particularly about the following questions:

- Would COOL really favor protectionism?
- Which products should be labeled with the origin information of main ingredients?
- What should be the definition of “main ingredient”?
- Could COOL be substituted with the indication of geographic region (a group of countries, e.g. European Union, ASEAN)?
- What would be the potential impact of the main ingredient origin statement on international trade flows and production systems in various countries?
- Should COOL be voluntary or mandatory?
- Is it possible to establish a global COOL standard for foods?

2. Research Methodology - Delphi Method

We used the Delphi method to conduct qualitative and systematic research on COOL, aiming to gather opinions and perspective from experts in food labeling and food policy in various countries.

The Delphi method is a controlled debate among experts who answer questions in two or more rounds. Most Delphi studies use a panel of 10 up to 50 people (Turoff, 1970). Usually, the coordinator sends an invitation and the introduction of the study to persons that might be interested in the discussion and are likely to contribute valuable ideas. Those who accept the invitation form the Panel of Experts, starting in the first round. After each round, the coordinator prepares a report on the previous round with anonymous summaries of the participants' opinions. The experts may revise their previous-round answers after reading the opinions of other participants. In such a process, the discussion on a topic may converge towards a “consensus”; or, if this does not occur, at least the reasons of divergence become clear.

How to measure consensus is not clearly defined. A previous study (Alexandrov et al., 1996) suggested a criterion for agreement of 67% for policy issues. However, the Delphi method is not a mechanism for decision-making; it is an instrument for the analysis of policy issues. The primary objective of Policy Delphi is not to reach a consensus, but rather to estimate desirability and feasibility.

We chose this method because COOL on main ingredients is a policy issue that can affect economic development and international trade.

The main goals of this Delphi study are as follows:

- (1) To assess the desirability of a mandatory COOL policy on main ingredients, by exposing all the pro and con arguments.
- (2) To examine our detailed ideas about multiple countries of origin marking for processed foods.
- (3) To compare, with experts in various countries, our perspective on the effect of the COOL of main ingredients on national production and international trade.

2.1 Research Design

This Delphi study was conducted in three rounds:

- The 1st Round mainly focused on the possible protectionism of COOL, the necessity to label the origin of the main ingredient and its potential influence on international trade.
- The 2nd Round focused on how to mark the country-of-origin of a food produced in more than one country, and how to guarantee the reliability of information about country-of-origin.
- The 3rd Round discussed a regulatory principle proposed for the formulation of policy on the COOL of main ingredients, the definition of main ingredient and the desirability for a worldwide standardization of the country-of-origin marking.

Questionnaires of the three rounds were developed around the arguments listed in Table 1. In total there were 19 questions: 10 questions in the 1st Round, 6 questions in the 2nd Round and 3 questions in the 3rd Round.

Table 1. Structure of the Delphi study on COOL

Phase	Main Arguments
Round I	<ul style="list-style-type: none">• Discussion on the possible protectionism of COOL• Necessity to label the origin of primary ingredients• Comparison between country-of-origin and region-of-origin• Origin marking of a mixture with similar ingredients• Impact of the COOL of main ingredients on international trade
Round II	<ul style="list-style-type: none">• Advantages and disadvantages of mandatory COOL of main ingredients and those of voluntary COOL• Format of the multiple countries-of-origin marking• Assessment of the necessity to label the origin of main ingredients in various processed foods• Reliability of COOL information• Sellers’ business attitudes and consumers' imperfect information
Round III	<ul style="list-style-type: none">• General regulatory principle for COOL policy• Definition of main ingredient• Desirability for a worldwide standardization of the country-of-origin marking

2.2 The Panel of Experts

In order to form the Panel of Experts, in Nov. 2013 we sent 233 invitations to representatives of the following types of organizations in 65 countries. An introduction about this Delphi study and the 1st Round questionnaire were attached to the invitation.

(1) Academic (university, research institute)

Experts invited are mainly authors who have published papers on country-of-origin and food labeling or on food traceability. Among the 68 scholars contacted, only 9 are in emerging and developing countries. Only one of the scholars who accepted the invitation is in an emerging country, while 12 scholars are in developed countries.

(2) Government departments (legislative body for food, public agency for food safety control, customs, etc.)

We sent 110 invitations to representatives of government departments who took part in the 41st Session of the CODEX Committee on Food Labeling in July 2013 and the 39th Session of the CODEX Committee on Food Labeling in May 2011. Altogether, 8 accepted and 7 politely declined the invitation because they were not COOL experts, or because they could not participate in the study, since COOL is a politically sensitive issue in the international trade scene.

(3) Association of food producers

Invitations to directors or presidents of 43 associations of producers in various sectors (dairy products, beverage, olive oil, frozen food, seafood, cocoa, coffee, pasta industry, fruit juice, etc.) were sent: 33 in developed countries and 10 in developing countries. Little feedback and no acceptance was obtained. Reasons for non-participation could be the following: 1) Some industries are generally more opposed to COOL than in favor of COOL; 2) The associations of producers in developing countries know little about the issue of COOL and the company brand or country brand (country-of-origin) is not yet important for their business; 3) The majority of the directors or presidents of the associations of producers are not familiar with the Delphi method as an academic research instrument.

(4) Consumer association

We sent invitations to 12 associations of consumers in developed countries and 5 replied affirmatively. Consumer associations in developing or emerging countries were not included because we felt they were not concerned of the topic.

In total, 26 experts in 15 countries accepted the invitation to participate in this Delphi study on COOL for foods (Table 2).

Table 2. Information on the invitations for participating in the Delphi study on COOL

Type of Organization	Invitations sent	Experts who have accepted the invitation	Percent of acceptance	Expert Panel Members	
				Number	Percent
Academic	68	13	19,1%	10	52,6%
Government department	110	8	7,3%	5	26,3%
Association of food producers	43	0	0%	0	0%
Consumer association	12	5	41,7%	4	21,1%
Total	233	26	11,2%	19	100%

In order to facilitate communication and optimize timing in this Delphi study, we built the website www.foodorigin.org, where the experts who accepted the invitation were granted access to the secure zone by creating a personal account. Before responding to the questionnaire, they participating experts could declare own expertise as an economist or jurist or food specialist.

Since none of the experts belong to “Association of food producers”, it is not possible to conduct research related to food producer associations. Since none of the experts indicated his / her expertise as “Jurist” and seven experts did not indicate their expertise, and because all six “Economists” are academics, it is difficult and unnecessary to compare the viewpoints of experts according to their type of expertise. Given that only one expert is in an “Emerging country”, in comparing experts' viewpoints “emerging countries” will be considered together with “developing countries”.

The 1st Round questionnaire was completed by 19 out of the 26 experts in the timeframe from 1st Dec. 2013 to 15 Jan. 2014.

Thus, the panel of experts is composed of 19 members in 13 countries: Australia, Belgium, Chinese Taipei, Ghana, Italy, Japan, Malaysia, Morocco, New Zealand, Panama, UK, Uruguay and USA. More information on the participating experts is indicated in Table 3.

Similar to many other Delphi studies, the number of participants decreased in each round: As of 28 Feb. 2014 only 16 experts in 11 countries responded to the 2nd Round questionnaire; as of 3 April 2014 only 14 experts in 10 countries responded to the 3rd Round questionnaire.

Table 3. Expert Panel Members in developed and developing countries

Type of Organization	1 st Round		2 nd Round		3 rd Round	
	Experts in developed countries	Experts in developing countries	Experts in developed countries	Experts in developing countries	Experts in developed countries	Experts in developing countries
Academic	9	1	8	0	7	0
Government department	1	4	1	4	1	3
Consumer association	4	0	3	0	3	0
Sub-Total	14	5	12	4	11	3
Total	19		16		14	

In addition to the Panel of Experts, the Review Panel consists of one academic who works in an American university.

The web platform, based on Drupal, has been configured so that each participating expert can express viewpoints by making comments on questions, but cannot view comments made by other experts. Only the researchers and the review expert can see all comments.

In each round, experts’ opinions and comments were collected and aggregated in the following ways:

- Type of organization that experts belong to: academic – government department – consumer association.
- Level of development of the countries where experts live: developed – developing.

In the report of each round we compared their anonymous answers and highlighted the common and divergent points of view. Some experts did not provide substantive answers to all questions, however, each of them gave valuable comments to some questions. No response was rejected for the reason that the expert did not reply in a substantive manner to all questions.

3. Research Results

The research results of this Delphi study are obtained by aggregating and analyzing experts' answers to questionnaires, which were elaborated around ten topics. Six topics were discussed only in one round because experts' opinions were clear and none of them made any substantive revisions on their original statements after they have read the responses of other participants. Four topics were discussed in two consecutive rounds: three were started in the 1st Round and deepened in the 2nd Round; another one was started in the 2nd Round and deepened in the 3rd Round.

3.1 The Functions of COOL and the Trade Protectionism

In the 1st Round we first invited the experts to consider the functions of COOL from broad points of view and the impact of COOL of main ingredients on developing countries. The first question was:

Consumers have the right to accurate information on the origin of food, but could the indication of "country-of-origin" of primary materials also increase consumers' awareness of the world we live in?

15 participating experts agree that COOL of primary materials can increase consumers' awareness, while one doesn't think so. Three experts expressed their opinions only on the right to accurate information. Generally, the COOL of primary materials can increase consumers' awareness of the world, in particular, sensitize them to the producing countries. Moreover, but a clear statement on the origin of main ingredients can help build consumer confidence in today's global food system.

The second question was about the possible protectionism:

Country-of-origin labeling (COOL) was once criticized as a trade protection measure, but I think the effects of COOL of food ingredients would depend on the type of product and the availability of local products in different countries. Would COOL favor protectionism? Considering that many food ingredients are produced in developing countries, could the COOL of primary ingredients have a positive impact on developing countries?

The responses to this question are very different. Some experts said COOL favors protectionism or could potentially be protectionist, while others have opposing opinions. There are also points of view between these two extremes. Regarding the impact of COOL of primary ingredients on developing countries, there are also different but complementary opinions. All the answers can be summarized as follows: COOL itself simply provides factual information to consumers and is not protectionism, but because of externalities, it is often legislated for the purpose of trade protection and utilized as a trade barrier, so it is potentially protectionism. One can say it is necessary to take measures to fight against a trade barrier imposed through mandatory COOL, however, the effect of COOL depends on consumers' choice. COOL of main ingredients can have a positive impact on developing countries if specific ingredients are not available in developed countries; otherwise the impact would be negative because the production standards in developing countries are low or not trusted. In any case, COOL can increase the visibility of producing countries, and it can drive developing countries to improve their production standards.

3.2 Effect of Main Ingredient Origin Labeling on the Business of Finished Product

Before starting this Delphi study we conducted a research on the cost of main ingredient origin statement, obtaining the following result: Every country requires that the foods imported from other countries must be labeled with information in the official language of their own country (e.g. a food imported into China must have a Chinese label), so that the local consumers

can easily understand the information on the label. Therefore, when a food is exported from Country B of Language X to Country C of Language Y, the information panel of the label (usually the back label for bottled products, e.g. olive oil, wine) must be printed in Language Y according the law of Country C. Moreover, when the importer's name and contact information is required in Country C, the label in Language Y must be customized for each importer. In other words, the customization of the label is essential for concluding international trade operations of pre-packaged foods. As a matter of fact, in the majority of cases, the statement on the country-of-origin of the main ingredients used in the production of pre-packaged foods for a certain importer doesn't add any additional labeling cost to the exporter.

In the Delphi study we are concerned about the reasons for which the origin of main ingredient is not indicated.

3.2.1 Effect of main ingredient COOL on the perceived quality of finished product

During the 1st Round we asked the experts to answer the following question:

Would the statement on the origin of primary ingredient produced in Country A lower the image of the finished product made in Country B? Please provide examples of products and countries.

Some experts answered “No”, while some said “Yes” or “possible”. One expert made a general affirmation: “It could either lower or increase it - depends on the products and the countries involved”. Moreover, three experts respectively said: “The quality of ingredient may be more important than the processing”; “COOL of main ingredients would just provide accurate information about where ingredients come from”; when a producing country of main ingredients has a poor reputation, “such labeling would encourage countries with weaker food safety regulations to step up and change their regulations for the better.”

Summarizing, the effect of COOL of main ingredients on the perceived quality of a finished product depends on the characteristics of the main ingredient and the reputation of its producing country in the agri-food sector. If the producing country of an ingredient has a poor reputation, the origin statement would lower the image of the finished product made in another country; if an ingredient is recognized for good quality, COOL of ingredient can improve the image of the finished product, becoming a marketing instrument. In other ordinary cases, the effect of COOL would not be evident.

3.2.2 The imperfect information of consumers

In the 2nd Round we asked the following question:

Because the customization of the label is essential for concluding international trade operations of pre-packaged foods, the statement on the country-of-origin of the main ingredients used in the production of pre-packaged foods for a certain importer doesn't add any additional labeling cost to the exporter, but could reduce the exporter's “game space” (flexibility) related to ingredient origin. Do you think the exporters’ and importers’ business attitudes would be determining factors for the statement of origin when a food is traded internationally? Would the

COOL of main ingredients be useful for limiting the businesses based on the “imperfect information” of consumers?

Some experts felt difficult to understand and answer this question and did not give substantive responses, while other experts have various points of view. The substantive answers can be summarized as follows: Whether or not to state the main ingredient origin principally depends on the law of the importing country and the importer's business approach. COOL of the main ingredient can reduce the “imperfect information” of consumers if the origin statement is truthful and accurate. The accuracy of the information provided by the exporter and importer would determine which information to consumers is “imperfect”. If consumers care for the main ingredient origin, COOL of the main ingredient will decrease the market demand for the products with a disguised origin.

3.3 Necessity to Label the Origin of Main Ingredient

This topic was discussed in the 1st Round and the 2nd Round. The question in the 1st Round was:

Do you think the country-of-origin of ingredients should be stated for certain food products that are made with primary materials produced in a country different from that of the final processing?

The majority of participating experts agreed to label the country-of-origin of primary materials, while one academic suggested the COOL of main ingredients should be not mandatory but voluntary, and another expert from a government department considered the fact that many products are differently blended according to seasons. An academic expert commented: “It may increase administrative cost and possibly lead to the spaghetti bowl effect. However, as many countries join the COOL of ingredients, there would be an incentive that avoids the spaghetti bowl effect, eventually leading to a lower administrative cost.”

Generally COOL of main ingredients is desirable, but which products should it be applied to? To deepen the discussion we introduced a new question in the 2nd Round:

When the following products are made with primary ingredients produced in a country different from that of the final processing, please indicate the degree of necessity to state the country-of-origin of main ingredient: (1) Olive oils for blends of olive oils; (2) Coffee beans for roasted coffee; (3) Green tea leaves for black (fermented) tea; (4) Tomato for tomato puree; (5) Fruit for fruit juice; (6) Cocoa for chocolate; (7) Wheat seeds for flour; (8) Flour for noodles; (9) Fresh shrimps for shelled and frozen shrimps; (10) Fresh cod for frozen cod fillets; (11) Pork for ham or salami; (12) Beef for hamburgers; (13) Chicken for chicken nuggets.

Degree of necessity:

0 - Absolutely not necessary

1 - Not necessary

2 - Not very necessary

3 - Necessary

4 - Very necessary

Some academics and a government official think the COOL of the main ingredient would be not necessary or absolutely not necessary, while the experts from consumer associations deem it very necessary (except for one expert who thinks it would not be necessary to indicate the origin of wheat seeds for flour and the origin of flour for noodles). The viewpoints of other experts are between these two extremities: Generally they pay more attention to the COOL of main ingredients for olive oil and animal-origin food products, while for the other products (flour, noodles, fruit juice, etc.) it is less important to state the origin of primary materials. All the answers of 16 participating experts in the 2nd Round are listed in Table 4.

Table 4. Estimation of necessity to state the country-of-origin of main ingredient

Product	Academic								Government Department					Consumer Association			Average value	Median
Olive oils for blends of olive oils	0	0	1	4	4	3	3	4	4	3	4	3	1	4	4	4	2.9	3.5
Coffee beans for roasted coffee	0	0	1	4	4	3	3	3	2	2	4	2	1	4	4	4	2.6	3
Green tea leaves for black (fermented) tea	0	0	1	4	4	3	3	2	3	4	3	1	1	4	4	4	2.6	3
Tomato for tomato puree	0	0	1	3	4	2	3	3	2	3	2	0	1	4	4	4	2.3	2.5
Fruit for fruit juice	0	0	1	2	4	2	3	2	1	3	3	1	1	4	4	4	2.2	2
Cocoa for chocolate	0	0	1	2	4	3	3	3	3	3	2	1	1	4	4	4	2.4	3
Wheat seeds for flour	0	0	1	4	3	2	3	2	2	0	4	3	1	4	1	4	2.1	2
Flour for noodles	0	0	1	4	3	2	3	2	1	1	2	4	1	4	1	4	2.1	2
Fresh shrimps for shelled and frozen shrimps	0	0	1	3	4	4	4	4	3	4	4	4	1	4	4	4	3.0	4
Fresh cod for frozen cod fillets	0	0	1	3	4	4	4	4	2	4	4	3	1	4	4	4	2.9	4
Pork for ham or salami	0	0	1	2	4	4	4	4	3	2	3	2	1	4	4	4	2.6	3
Beef for hamburgers	0	0	1	2	4	4	4	4	4	4	4	3	1	4	4	4	2.9	4
Chicken for chicken nuggets	0	0	1	1	4	4	4	4	2	4	4	3	1	4	4	4	2.8	4

If we consider the average value and median of all the valuations, it is necessary or very necessary to state the ingredient origin for the following products: olive oils for blends of olive oils, coffee beans for roasted coffee, green tea leaves for black (fermented) tea, cocoa for chocolate, fresh shrimps for shelled and frozen shrimps, fresh cod for frozen cod fillets, pork for ham or salami, beef for hamburgers, and chicken for chicken nuggets.

3.4 Comparison between Country-of-Origin and Region-of-Origin

In order to compare the differences of effect between “Country of Origin” labeling and “Geographic Region of Origin” labeling (here region means a group of countries), in the 1st Round we first asked the experts to state their viewpoints on the necessity of indicating the originating countries for foods produced in the European Union:

When a product made in two member states of the European Union is exported to a country outside of the European Union, the indication of origin “European Union” is adequate for applying trade measures (e.g. calculating the customs duty), but for foods do you think the origin countries (member countries of the European Union) should be indicated?

The answers of the experts from academic organizations are very different. The American academics said “No” or “only voluntary”, while the Asian and European academics said “Yes” and made further comments. The government officials and the representatives of consumer associations said “Yes” or made positive considerations.

The most interesting opinions can be summarized as follows: Although the statement of origin “European Union” is adequate for applying trade measures, for foods the origin should be declared according to the law of importing country. Many countries do not accept the origin marking “European Union” and require the exact country of origin. Given that consumers in Europe note the differences among European countries and appreciate the origin labeling with country name, the indication of origin “European Union” is not very meaningful for consumers outside the EU. Moreover, a precise indication of origin will be useful for export promotion.

To deepen the discussion we asked another question in the 1st Round:

In various markets the indication of “European Community extra virgin olive oil” is very different from that of “Italian extra virgin olive oil”, while a survey showed that for the US population meat products labeled “Product of North America” is almost the same as “Product of United States” (Tonsor et al, 2012). Which factors should be considered for substituting the “country-of-origin” with “geographic region of origin”?

The responses to this question are very different but generally complementary, and can be summarized as follows: In substituting the “country-of-origin” with “geographic region of origin” the most important factor to be considered is the consumers’ perception of a specific region; another important factor is whether the production standard in the region is uniform. From the consumer perspective it is better to indicate a specific country but not a large region. It is possible that the cost of COOL would be higher than that of stating the region, but the indication of a specific country of origin can bring a marketing advantage. In principle the origin

information of a food should be provided so as to be easily and correctly perceived by the consumers in the country where the food is marketed.

3.5 How to Mark the Origin of Multinational Food

This topic was discussed in two cases: (1) A food is a mix of similar ingredients produced in two countries; (2) A food is made in a country from main ingredient produced in another country.

3.5.1 Origin labeling of a food that is a mix of similar ingredients produced in two countries

In the 1st Round the experts were invited to answer the following question:

For a food product that is a mix of similar ingredients produced in Country A and Country B and is packed in Country B, do you think that both countries should be marked “countries of origin” or that the country-of-origin could be only one and should be determined according to ad valorem rule (value-added criterion)?

The opinions of academics on the statement of origin are very different: both countries should be marked “countries of origin”; the country-of-origin should be labeled according to the *ad valorem* rule; nothing “should be marked” but let the market figure out which is preferred by consumers; a standard “one rule fits all” approach cannot be applied and the actual “impact” varies. The experts from government departments and consumer associations have similar opinions: they prefer to label both countries as countries of origin. However, for applying trade measures the originating status can be conferred only to one country and could be determined according to the *ad valorem* rule, while both countries could be marked as countries of origin for ingredients.

3.5.2 Origin labeling of a food that is made in a country from main ingredient produced in another country

In the 2nd Round we introduced a new question:

According to non-preferential rules of origin, a product can only have one country-of-origin, which is the country of the last substantial transformation, while for many consumers the “country-of-origin” means the country where the primary ingredient is produced. Do you think that multiple countries of origin labeling which specifies the producing country of the main ingredient and the manufacturing country of the finished product (e.g. chocolate is labeled: “Made in Switzerland from Ghanaian cocoa”; or, “Producing country of cocoa: Ghana; Manufacturing country of chocolate: Switzerland”) could resolve the issue of misleading consumers? Do you agree that all countries of possible origins would be listed (e.g. Cocoa sourced from: Ghana, Ecuador, Madagascar, Cote d’Ivoire, Peru, Jamaica, Dominican Republic)?

The responses from experts are quite different and can be aggregated in the following four types.

- (1) “Yes” to both sub-questions
- (2) “Yes” to the first sub-question and “No” to the second one
- (3) Don't overload information on the label
- (4) Use the last substantial transformation rule for the labeling

Summarizing the four types of answers, the majority (11 of 16) of experts agree that multiple countries of origin labeling which specifies the producing country of the main ingredient and the manufacturing country of the finished product could resolve the issue of misleading consumers. Regarding the practice that all countries of possible origins would be listed, the majority (13 of 16) of experts do not agree it because the list of countries would confuse consumers and the origin statement would have lesser value to consumers, who would ignore the origin information. Moreover, the longer list would bring higher costs for labeling (if the label dimensions should be increased), although the purpose of listing possible origins is to save costs for manufacturers when one origin is substituted with another origin for the reason of seasonal availability or managerial optimization. If a main ingredient is a mixture of various origins, the percentages of different origins should be considered; it is better not to list more than two countries of origin if there is not a particular purpose.

3.6 Impact of the COOL of Main Ingredient on International Trade

In the 1st Round we invited the experts to discuss the impact of the COOL of main ingredient on international trade by responding to the following questions:

For commercial activities to state the origin of ingredients means to increase transparency. Will this influence trade flows among Country A (producing country of primary ingredient), Country B (where the final transformation undergoes) and Country C (consumer country)? Specifically, will trade between Country A and Country B decrease? Will trade between Country B and Country C decrease? Will trade between Country A and Country C increase? Please state your perspective on the businesses of: 1) Export from Country A; 2) Manufacture in Country B; 3) Supply in Country C.

Some experts think there would be not significant increases or decreases, while some think it would affect trade flows. All the responses can be summarized as follows: When a food is produced in Country B with main ingredients from Country A and then exported to Country C, the influence of COOL of main ingredients on trade flows among the three countries would vary depending on many factors: the quality of the main ingredients produced in Country A, the industrial know-how and labor cost in Country B, the food culture and developing level of Country C, etc. If the ingredient quality is high and the manufacturing process is strongly characterized by local (country B) tradition or special technology (e.g. the production of chocolate), the trade flows among the three countries will increase. If the quality of the main ingredient is noted for poor quality, Country C will import less product from Country B, and the trade between Country B and Country C will decrease. If the manufacturing process is simple (e.g., blending olive oils), it is possible that Country C would directly import the ingredient from

Country A, and the trade between Country A and Country B and that between Country B and Country C would decrease. Combinations of different products and different countries would result in various situations.

In multilateral international trade, if the ingredient origin statement is required, a producing country of high quality ingredients will increase its export, while a country producing poor quality ingredients will decrease its export and should improve their production standard to compete in the international market. The manufacturers in the processing country B will prefer to use high quality ingredients; in order to reduce production cost they would need a new strategy, for example to invest in the ingredient producing country A or in an important consumer country C; in this way Country B will export its processing technology and management skill to develop global businesses. Thanks to the foreign direct investment of Country B, Country A will be able to produce and export finished products, and Country C will import primary material and develop industrial production for its domestic market.

3.7 Voluntary or Mandatory COOL of Main Ingredient

This topic was discussed in the 2nd Round and the 3rd Round. The question in the 2nd Round was:

Do you agree that COOL of main ingredients should be made on a voluntary basis? What will be the potential problems if the COOL of main ingredients is mandatory? What will be the advantages and disadvantages of a voluntary system?

The majority of academics and the government officials agree that COOL of the main ingredient should be made on a voluntary basis, while a minority of academics and the representatives of consumer associations deem that it should be mandatory.

Comments on voluntary COOL of the main ingredient: It can be used as a marketing instrument; the producers that want to serve consumers with COOL information can make the origin statement according to consumer demands and this system does not impose additional costs on all producers and consumers. However, in a voluntary system, COOL only applies to business promotion; consumers cannot access COOL information if producers do not want to provide it and conceal undesirable origins. Moreover, it is possible that the origin information would not be given in a standard form.

Comments on mandatory COOL of the main ingredient: It can provide more accurate information to consumers, but could increase cost for all the producers including small companies, especially when producers change the source country because of seasonal availability or other factors. For less valuable ingredients a mandatory COOL would cause welfare losses. Moreover, it could become a kind of technical barrier to trade, especially for developing countries, namely impeding exports from developing countries.

In the 3rd Round we deepened the discussion by introducing the following question:

A voluntary COOL system has advantages and disadvantages, and its disadvantages could be remedied by mandatory COOL. I think an integrated voluntary/mandatory system could be the right solution. Since the markets in different countries have different supply systems, they

need different COOL regulations. If a country does not experience commercial fraud based on false country-of-origin statements, its market does not demand mandatory COOL of ingredients, so its COOL of the main ingredient can be voluntary. If a country does endure commercial fraud related to the country-of-origin statement, its market needs new regulations, so mandatory COOL of the main ingredient should be introduced and applied to relevant food products in order to protect the interests of consumers and honest producers. Therefore, I propose a general regulatory principle for the formulation of a policy on ingredient origin statement: COOL of the main ingredient is generally made on a voluntary basis, but should be mandatory for the foods that could be subject to fraudulent practices on the origin statement. What do you think of this proposal? Could it be suitable for the formulation of COOL policy on the main ingredient in your country?

Seven experts (50%) in seven countries (Australia, Chinese Taipei, Ghana, Italy, New Zealand, Uruguay and USA) agree or find interesting this general regulatory principle. A representative of a consumer association disagrees because he prefers “total mandatory”, while two academic and a government official disagree because they believe the mandatory COOL of the main ingredient would not help resolving the problem of commercial fraud. Three experts neither affirm nor disagree but have other considerations.

Comparing the opinions of each expert with his/her previous response to the question in the 2nd Round highlights some interesting evolutions:

- (1) Three experts who agreed that COOL of main ingredients should be made on a voluntary basis don't agree that COOL should be mandatory for foods that could be subject to fraudulent practices on the origin statement.
- (2) Three experts who agreed that COOL of main ingredients should be made on a voluntary basis are doubtful that COOL should be mandatory for foods that could be subject to fraudulent practices on the origin statement.
- (3) Two experts who agreed that COOL of main ingredients should be made on a voluntary basis also agree that COOL should be mandatory for foods that could be subject to fraudulent practices on the origin statement.
- (4) Two experts who were doubtful that COOL of main ingredients should be made on a voluntary basis agree that COOL should be mandatory for foods that could be subject to fraudulent practices on the origin statement.
- (5) Three experts who didn't agree that COOL of main ingredients should be made on a voluntary basis have accepted that COOL should be mandatory for foods that could be subject to fraudulent practices on the origin statement.
- (6) One expert who didn't agree that COOL of main ingredients should be made on a voluntary basis doesn't accept that COOL would be mandatory only for foods that could be subject to fraudulent practices on the origin statement.

Table 5. Comparison of the answers between the 2nd Round and 3rd Round

Type of Organization	In the 2 nd Round: Do you agree that COOL of main ingredients should be made on a voluntary basis?	In the 3 rd Round: COOL of main ingredient should be mandatory for the foods that could be subject to fraudulent practices on the origin statement.
Academic	Yes	No (it should be always voluntary)
	Yes	No (it should be always voluntary)
	Yes	Doubtful
	Yes	Doubtful
	Yes	Yes
	Doubtful	Yes
	No	Yes
Government	Yes	Yes
	Doubtful	Yes
	Yes	Doubtful
	Yes	No (it should be always voluntary)
Consumer association	No	Yes
	No	Yes
	No	No (it should be mandatory for all products)

Among the reasons of disagreement, the most important is that a mandatory COOL of the main ingredient would not help resolve the problem of commercial fraud. It is a topic to be studied more in-depth: If mandatory COOL of main ingredients is applied to a food that is subject to fraudulent practices on the origin statement, will the fraudulent practices decrease? The answer may depend on the general legal environment of the country where commercial fraud related to food origin statement occurs.

3.8 How to Guarantee the Reliability of COOL Information

Considering the origin marking could be a marketing instrument, in the 2nd Round we invited the experts to discuss the necessity of traceability certificate and the control of origin declaration in customs procedure.

3.8.1 The necessity of traceability certificate

For discussing the necessity of traceability certificate to support origin declaration we asked the following question:

Marking “100% (Country Name) (Product Name)” or “Product of (Country Name)” (for example, 100% Italian Extra Virgin Olive Oil) is an active way to distinguish typical foods of a country from the foods manufactured in the country from ingredients produced in other countries. Do you think this kind of declaration should be supported by a certificate of traceability (ISO 22005)?

The majority (13 of 16) of experts agree that the declaration of “100% (country name) (product name)” should be supported by a certificate of traceability because it is good way for marketing typical products and some producers might use COOL information for advertisement. For consumers it is important that the origin statement would be truthful. The certification of traceability that could confirm the veracity of a “100% statement” would also be a marketing instrument. However, an important question to be considered is: Should the certification of traceability be mandatory for the “100% declaration”? If the answer is “Yes”, the requirement would be a technical barrier to trade for developing countries.

3.8.2 The certificate of origin of the main ingredient

This sub-topic refers to customs procedure and official inspection, but not for providing information to consumers. Our question was as follows:

For a food made in Country B with the main ingredient from Country A and exported to your country, in order to be sure that the information on the label is true, do you think the certificate of origin issued by Country B should state the originating country of the main ingredient and provide an authenticated photocopy of the certificate of origin of the main ingredient issued by Country A?

The responses of experts vary depending on their field and experience. Some experts agree that the certificate of origin issued by Country B should state the originating country of the main ingredient and provide an authenticated photocopy of the certificate of origin of the main ingredient issued by Country A, while an expert responded “No”, and some experts have other considerations.

All the responses can be summarized as follows: It would be a positive approach that the certificate of origin issued by Country B would state the originating country of the main ingredient and provide an authenticated photocopy of the certificate of origin of the main ingredient issued by Country A. If the main ingredient origin is stated on the label, this information should be shown on commercial documents. However, an authenticated photocopy of the certificate of origin of the main ingredient issued by Country A cannot guarantee that the origin statement on the label would be true, and importing Country C might need other method to verify the origin if it would damage consumers' interests. The importer in Country C should address this issue according to the law of the country and should be able to substantiate the origin claim on the label.

3.9 Worldwide Standardization of COOL

In the 3rd Round the experts stated their viewpoints on the desirability for a worldwide standardization of COOL and the definition of “main ingredient” that is fundamental for the standardization of COOL.

3.9.1 Desirability for a worldwide standardization of COOL

In order to estimate the desirability for a worldwide standardization of COOL we asked the following question:

The Codex Stan 1-1985 is the global reference for food labeling. Regarding the country-of-origin it states: “The country-of-origin of the food shall be declared if its omission would mislead or deceive the consumer. When a food undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country-of-origin for the purposes of labeling.” The statement on the place of origin of the main ingredient would lessen misleading consumers and conform to the spirit of this standard. Do you think that in the future Codex should set detailed criteria for marking the country-of-origin so as to standardize worldwide origin labeling on the main ingredient? Please make comments and provide your input.

Among the 14 participants, six academics, one government official and three experts from consumer associations confirmed that a worldwide standardization of COOL is desirable. Another government official and one academic said “not necessarily”. Two government officials mainly discussed the possibility of formulating such a standard on COOL.

3.9.2 The definition of main ingredient

The question about the definition of “main ingredient” was:

For the formulation of the policy on COOL of a main ingredient, the definition of “main ingredient” is fundamental. In Japan’s COOL law and the possibly upcoming EU COOL regulation, the ingredients considered are those that “constitute over 50% of a food”. Do you agree with the threshold of “50%” or do you prefer another percentage? Do you think “main ingredients” should also include the characterizing ingredient (e.g. cocoa in chocolate; almonds in a confectionery with a picture of almonds on its packaging) even when its percentage is lower than 50%?

Eleven experts generally agreed with the threshold of 50%, and some of them provided further considerations. Two economists made some interesting comments on the definition of “50%”.

All the answers can be summarized as follows: “Main ingredient means over 50%” is currently the most popular definition, however, the percentage should be defined better according to the characteristics of the ingredient, referring to the presence by weight in the final product (excluding water). The definition of “characterizing ingredient” could be “appearance in the food designation (name) or being associated with the food designation, presence in words or pictures on the label”. In order to avoid misleading consumers, the minimum percentage of

“characterizing ingredient” should also be defined in accordance with other non-COOL regulations (e.g. that about advertising).

3.10 Future Perspectives for COOL on Main Ingredients

This topic was discussed in the 1st Round. Our question was as follows:

In recent years COOL of main ingredients has been introduced in some countries (e.g. Italy, Japan, Australia) for certain products sold in their domestic markets. If COOL for main ingredients is not yet required in your country, do you think the provision on COOL of main ingredients will be formulated in the near future? Or, if your country already requires COOL of main ingredients, do you think the provision will be applied to more products in the near future?

The 19 experts in 13 countries actively expressed their viewpoints. It is interesting to note that, unlike the divergences on some other topics, the opinions of the American academics are not evidently different from those of the representatives of consumers associations in the USA. Summarizing, in the USA where COOL of main ingredients is not yet started, the provision will not be introduced in the near future because of the political environment and industry opposition. In some developed countries (e.g. Japan) where COOL of main ingredients is already required for certain products, the provision will be applied to more products, while in the EU, COOL of main ingredients will become mandatory for certain food products in the near future. In some developing countries it is possible to introduce COOL of main ingredients to keep up with the international trend, but in the majority of developing countries COOL of main ingredients will not be required in the near future because the public knows very little about it.

4. Discussions and Conclusions

On the topics discussed above there is not any absolute consensus, but applying the criterion for agreement of 67% for policy issues we can note a consensus of majority on some of the most important questions:

- COOL of main ingredients can increase consumers' awareness of the world we live in.
- Multiple countries of origin labeling which specifies the producing country of the main ingredient and the manufacturing country of the finished product could resolve the issue of misleading consumers.
- When a product made in two member states of the European Union is exported to a country outside of the European Union, the statement of origin “European Union” is adequate for applying trade measures, but for foods it is better to indicate the exact country of origin. A precise origin statement is a marketing instrument.
- The declaration of “100% (country name) (product name)” should be supported by a certificate of traceability because it is good way for marketing typical products and some producers might use COOL information for advertisement.
- It is necessary to label the origin of main ingredients for animal-origin food products and olive oil.

- A worldwide standardization of origin marking will help reduce or even eliminate the confusion caused by different marking criteria, and the competent organization should be Codex. However, this will be a very difficult work for Codex.

In this Delphi study, generally speaking, there are evident divergences between the opinions of American academics and those of the experts from consumers associations (in USA and outside), while the perspectives of the academics in other countries are more near those of the representatives of consumers associations. Also the government officials stand between the American academics and the experts from consumers associations.

Among the academics, the difference between American and non-American is curious. Maybe this is because the food supply system, food culture and consequently academic research in the USA are very different from those in other countries.

The most relevant divergence is that COOL of main ingredients should be mandatory or voluntary. Our proposal of the general regulatory principle - COOL of the main ingredient is generally made on a voluntary basis, but should be mandatory for the foods that could be subject to fraudulent practices on the origin statement – seems to be an equilibrium among the divergences.

Considering that the misinformation on the country-of-origin is a frequent fraudulent practice in the market of high value foods, it will be appropriate to mandate the COOL of main ingredient to the foods with high value. However, mandatory COOL on main ingredient itself can provide only information to consumers, so a mandatory traceability system should be enforced for resolving the problem of commercial fraud related to the origin statement.

In the international trade of processed foods, the COOL policy of the importing country may affect the production system of exporting country: If the COOL of main ingredients is voluntary, in the market there are real origin foods and disguised origin foods, and the globally-sourcing companies are able to export more foods produced with low-cost ingredients from other countries; if the COOL of main ingredient is mandatory, the demand for real origin foods will increase and the disguised origin foods will decrease in the market. Consequently, the mandatory regulation of the importing country may favor the development of the traditional food production in the exporting country, while the business of globalized producers would be restricted and they will need to adjust development strategy, using domestic ingredients or transferring the production to another country.

The mandatory COOL of the importing country of finished products will also affect the economy of the producing country of primary materials: Because of the reduction of exports to the manufacturing country, it may invite some manufactures to invest in the production of finished products and export primary materials to the importing country for its national production.

Therefore, from a short term point of view, mandatory COOL of main ingredient is “protectionism” in the sense of impeding international trade of disguised origin foods and protecting the consumers. In the long term, the mandatory COOL policy of an importing country will favor sustainable development in the partner countries.

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Value of Time Saving in the Preparation of Food

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Extended Abstract

Introduction

Time is an element that has always affected everyday consumer choices (Jacoby et al., 1976). Modern changes in socio-demographic, cultural, and economic factors are indeed leading to an increased feeling of limited time availability (Gross and Sheth, 1989; Zuzaneck et al., 1998). This perception also appears in various food-related activities (Jabs and Devine, 2006; Hamermesh, 2007) and time dedicated to the preparation of a meal becomes an important attribute in choices, on an equal standing with taste, price, and health (Grunert, 2006; Lusk and Briggerman, 2009).

The relationship between food and time has been analyzed in literature vis-à-vis to the consumer perception of time and food preferences (see for example Warde, 1999; Candel, 2001; de Boer et al., 2004; Scholderer and Grunert, 2005; Botonaki et al., 2008; Brunner et al., 2010). However, to our knowledge no study has been conducted on consumer choice and willingness to pay for reduced food preparation time.

Research question

The principal research question of our paper is to verify whether time saving in food preparation has a monetary value. In response to this question, this paper will validate the following hypotheses:

Hp1: It exists a significant segment of consumers willing to pay for time saving in the preparation of food. *Hp2:* The willingness to pay for foods that make it possible to reduce preparation times depends on socio-demographic characteristics and on personal values.

Case study

We conducted an online survey in Italy and Germany on meat stew with different preparation times. The product choice was made due to the ready and widespread availability in grocery stores of both countries. The questionnaires were administered in September 2015 to a sample of 754 individuals (364 Germans and 390 Italians), representative for age, gender, and education. The questionnaires were aimed at eliciting respondents' willingness to pay for convenience products with different preparation times using multiple price list.

Data processing was performed through the Latent Class Regression (LCR) model aimed at breaking down the market in function of the relationship between willingness to pay and time saving (Magidson and Vermunt, 2002). The model was applied utilising the statistical software Latent Gold Choice 4.5 (Vermunt and Magidson, 2005a, 2005b). The socio-demographic characteristics were used for the first segmentation by means of the Chi-squared Automatic Interaction Detection (CHAID) analysis. Alongside the socio-demographic characteristics, we have surveyed the food-related lifestyles, defined as a set of cognitive categories that relate the purchasing and consumption behavior of food to the achievement of life values (Grunert et al., 2011).

The results show heterogeneous time preferences, and the existence of consumers willing to pay premiums for shorter preparation time. In particular, about one-quarter of consumers attribute a value to the time saved during food preparation. This segment is characterized by its fondness of known foods preferred over novelties, and proves to be less wary of the quality aspects of foods.

As to the socio-demographics, this class distinguishes for its family structure and education level, while there are not significant differences regarding its nationality.

These findings are discussed in relation to their implications on food marketing and examined in the light of future developments in the research on consumer behavior.

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Umbrella Branding of Private Labels

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Abstract

Private labels command a growing share of food retailers' shelf space. In this dissertation, I explain this phenomenon as resulting from "umbrella branding," or the ability of a single brand to reach across categories. Conceptually, I define umbrella branding as a behavioral attribute that describes a shopper's tendency to ascribe a performance bond to a brand, or to associate certain performance characteristics to a private label brand, across multiple categories. In the second chapter, I describe the performance bond theory in detail, and then test this theory using scanner data in the chapter that follows. Because secondary data has limitations for testing behavioral theories, however, I test the performance bond theory of umbrella branding using a laboratory experiment in the fourth chapter. In this chapter, I find that households tend to transfer their perception of private label performance across categories, or that a manifestation of umbrella branding behavior can indeed explain private labels' success. In the fifth chapter, I extend this theory to compare umbrella branding in international markets, and find that performance transference takes its roots in consumers' cultural backgrounds. Taken together, my results suggest that umbrella branding is an important behavioral mechanism, and one that can be further exploited by retailers across any consumer good category with strong credence attributes.

Nutrient Levels of Processed Foods Products with Natural and Organic Claims: Should Health Seeking Consumers Use Organic and Natural Claims as Decision Making Aids?

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(https://circle.ubc.ca/bitstream/handle/2429/45609/ubc_2014_spring_wiseman_kelleen.pdf?sequence=5).

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Background

Canadian food manufacturers offer consumers an expansive array of processed food products. Many of these products include on-package marketing and nutritional information in the form of mandatory core requirements and voluntary claims.¹¹⁶ Consumers, as part of their growing interest in the relationship between diet and health outcomes, want to eat healthier foods and are increasingly using on-package information to make purchase decisions. Studies have shown that organic and natural¹¹⁷ are two of the more important claims consumers consider when making food choices and that consumers use these terms as decision making variables because they consider products with these claims as healthier¹¹⁸. However, in recent years, the claim “organic” seems to be gaining strength as a signal of healthier food products and higher quality food claim while the strength of the claim “natural” seems to be diminishing. These changing views of the terms organic and natural are likely a result of increasing awareness of the regulated terminology associated with organic versus natural and recent high profile private firm litigation cases regarding usage of the term “natural” on questionably non-natural food products. Additionally, this diminished view of the natural claim is also reinforced by a current United States Food and Drug Agency inquiry regarding the appropriate use of the term “natural” on food labels developed in response to several citizen petitions. However, it is unclear whether natural claims are indeed poorer signals of healthier foods than organic claims and thus justify limited use of these claims by consumers as a guide to healthier foods.

Research Question & Methodology

The objective of this study is to examine a large data set of processed food products with voluntary claims and nutrient information to test the hypothesis that foods with natural and organic claims do not differ in the level of fat, sugar and sodium levels. This hypothesis was tested using data collected in grocery stores in the Vancouver metropolitan area. The nutrition facts and voluntary claims were collected from the product package of over 1600 food products from the categories of cookies, bread, granola bars, crackers, breakfast cereals, soup, granola bars, pasta sauce, salad dressings, frozen pizza, yogurts, hard and soft cheese, frozen single serve meals, pizza, vegetarian, potato chips and canned beans. Each product’s specific level of total fat, sodium and sugar was recalculated to a product category standard serving size (SSS) to allow for a standardized comparison. Standard serving sizes (SSS) were developed using the serving size range and average of collected data and Canadian Food Inspection Agency reference amounts. Linear regression was used to examine the relationship between the nutrient levels of sugar, sodium and fat and natural claims while controlling for the presence of organic claims and applying fixed effects to capture product category differences. This regression was repeated for

¹¹⁶ Mandatory core labelling requirements include items such as common name and ingredients/allergens. Voluntary claims include food claims, nutrient content claims and health claims, with each of these having their own specific set of requirements for use.

¹¹⁷ The terms natural and organic are regulated as composition and quality voluntary food claims. Natural claims can be made on foods where ingredients are derived from natural sources. Organic claims are allowed on products when organic content is greater than or equal to 95% and requirements of the Canadian organic regulation are met.

¹¹⁸ The phenomenon is referred to as the halo effect where product benefits are extended outside the regulated attributes of the food claim.

the organic claim and controlling for natural claims. A separate regression was conducted for each of the three nutrient variables of fat, sugar and sodium.

Study Findings

The analysis reveals a number of interesting and significant relationships between levels of fat, sugar and sodium and natural and organic claims. Specifically, preliminary results indicate that on average, for processed food products with a natural claim, a product's sodium level is 69.75 milligrams (mgs) lower per standard serving size than products without that claim, controlling for the presence of organic claims and product category difference. This value represents 4.65% of the 1500 mg recommended daily intake (RDI).¹¹⁹ When reviewing products, given an organic claim is present and controlling for natural claims and product category differences, sodium levels are 131.7 mgs lower (8.78% of RDI) and fat levels are 0.583 grams (.68% of RDI¹²⁰) lower than products without that claim. Therefore, preliminary results indicate that processed food products with natural or organic claims may be considered similarly healthy in terms of lower sodium levels than products without these claim. Reasons for the lower sodium levels in natural and organic foods could include products being overall healthier food products or that food manufacturers are making strategic decisions regarding placement of claims on processed food products. Strategic decisions could include awareness by food manufacturers that the consumer segment purchasing natural and organic food products are looking for healthier foods making it important to either reformulate these claimed food products or place claims only on those products that are healthier in terms of key nutrients.

Contribution of the Study

This study is unique in that it explores the differences in the healthiness of products with organic claims versus natural claims using a unique data set and utilizing empirical analysis. Results indicate that in general, consumers should not view food products with natural claims as inferior to those with organic claims and may be able to utilize these claims as a signal of healthier foods under select conditions.

¹¹⁹ Health Canada's adequate daily sodium intake is 1500 milligrams.

¹²⁰ Health Canada's recommended RDI for fat is 85 grams.

Consumer awareness and preferences for organic food in transition countries – the case of Albania

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Abstract

Despite the production and market potential for the organic food sector, organic farming is weakly developed in Albania. The sector faces several challenges related to legislation, institutional and private sector capacities. Another major challenge for the development of the organic food production sector in Albania is the limited awareness of Albanian consumers for organic products. Understanding consumer preferences and behaviour is important in the related decision-making of key stakeholders. This consumer study provides insight into consumer awareness and preferences towards organic products, applying descriptive and segmentation analysis based on a structured survey conducted in Tirana, Albania. Overall, there is a strong preference for organic food among interviewees – organic food is perceived as safer and healthier compared to conventional food, while environmental considerations as important. There is a limited understanding about organic food – this gap in consumer awareness and understanding about organic food should be addressed with awareness campaigns by private sector and policy makers.

Keywords: Consumer preferences, organic food, Albania.

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1. Introduction

Albania has favourable climatic conditions for growing a wide range of agricultural products, including organic (bio)¹²³ products. However, organic farming in Albania is in infancy stage. Organic products in Albania were first introduced in the mid 1990-s due to the increasing demand for Medicinal and Aromatic Plants (MAPs). About 30% of the exporters of MAP in Albania are certified for the export of organic products complying EU and USA standards. In addition to MAPs which is export oriented, there is a growing interest also in producing organic food products like olive and olive oil, grapes, wine, fresh fruits and vegetables.

Since 2008, Ministry of Agriculture¹²⁴ has provided financial support for the organic certification of agricultural products encouraging farmers to go organic. Also several donors such as USAID, GIZ and Swiss Development Cooperation have implemented projects specific to the development of organic farming in the country. Despite the growing interest, the number of farmers certified organically is still very low – the number barely exceeds 100 (out of more than 300,000 farmers in total) in early 2010' (MAFCP, 2013).

The current low levels of organic production can be explained by several factors. The organic sector faces several challenges such as transparent legislation, institutional capacities for certification and farmer's knowledge and competencies in obtaining financial resources and proper technologies. There has been limited support for organic farming in Albania. More importantly, without both the private sector and policy-makers knowing the extent of Albanian consumer preferences for the organic products, support for developing an organic food industry is difficult. Understanding consumer preferences and behaviour are essential in the decision-making of producers, industry and the government to go organic. The slow but emerging emphasis on organic food production from the government with the introduction of the subsidy scheme for organic agriculture in 2008 underscores the importance of consumer preference market intelligence. Furthermore if the demand for organic food continues to grow, there will be more interests in entrepreneurs investing in producing and selling organic food thus the information on consumer preferences are crucial.

The objective of this study is to analyse the Albanian consumer awareness and preferences of organic food. We aim to group consumers according to the main socio-demographic variables and assess awareness and preferences for organic food for each of the identified group. As a result of the analysis, we provide marketing and policy recommendations for the sector's stakeholders.

2. Literature Review

A vast amount of literature on consumer perception of organic food is currently available. Consumers of organic products prefer organic as their lifestyle choice, based on their orientation

¹²³ In the Albanian legislation, reference is made mainly to the term “bio”. Therefore, we also applied this term in the questioner. However, we use the words bio and organic inter-changeably throughout this paper, as they are widely considered as synonyms.

¹²⁴ Until 2013, full name was Ministry of Agriculture, Food and Consumer Protection (MAFCP). After this year, following governmental and institutional changes, it is named Ministry of Agriculture and Rural Development and Water Administration (MARDWA)

to food quality and as source wellbeing (Yiridoe et al., 2005). Organic food has been widely perceived as more environmentally friendly and safer compared to conventionally produced food, thus the concern for human health and safety is an important factor that influences consumer preference for organic food (Yiridoe et al., 2005; Zanolli and Naspetti, 2002). Goldman and Clancy (1991) find consumers who usually buy organic food are concerned about food safety. Positive attitudes towards environmental issues were found to be positively correlated to the buying of organic foods and the frequency of purchases (Grunert and Juhl, 1995). Specifically, concern for pesticide residues is a significant factor affecting preference for organic food (Wilkins and Hillers, 1994).

In addition to safety and environmental aspects, a long list of other product attributes has been identified as important to consumers when purchasing organic produce. Freshness and nutritional attributes have been identified as the most important attributes in purchasing organic products (Buzby and Skees, 1994). Magnusson et al., (2001) indicates that the most important purchase criterion for Swedish consumers was good taste, and the least important was “organically produced”. Zhao et al., (2007) found that overall, organically and conventionally grown vegetables did not show significant differences in consumer liking or consumer-perceived sensory quality. Other studies found mixed evidences of consumer preference of organic food (Hemmerling et al., 2013), and it is usually difficult to rule out the effect of the credence attribute over liking (Fernqvist and Ekelund, 2014). Magnusson et al., (2001) and Ekelund and Tjarnemo (2004) found that most consumers perceive organic products as more expensive compared to conventional ones. According to Ekelund and Tjarnemo (2004), price was by far the most important criterion among Swedish consumers when purchasing food.

However, the word “organic” has many meanings, while consumers of organic foods are not homogeneous in demographics or in beliefs (Hughner et al., 2007). Also Yiridoe et al., (2005) confirms that consumers are not consistent in their perception of what is organic food product and, it is not clear whether most consumers consider particular organic products as normal goods, or if consumers consider such products as luxury goods.

Most of the available research focuses on the analysis of consumer studies performed in the US or Western Europe. More recently, many studies on consumers in less developed countries are available, but they were performed in very different cultural contexts (e.g., Roitner-Schobesberger et al., 2008; Chen and Lobo, 2012). Few works are focused on consumers in the Balkans. A study by Kuhar and Juvancic (2010) on organic and integrated fruit and vegetables in Slovenia found that the main factors were the perception of health and environmental benefits, while constraints were availability in retail outlets, household’s income, and visual attractiveness of organic products. In the case of Albania, Skreli et al., (2014) found a strong preference and willingness to pay (WTP) a high premium for organic tomatoes among Albanian consumers – however, that paper does not provide insight into consumer awareness and perceptions about organic food, except for preferences and WTP based on conjoint choice experiment.

3. Methods

3.1 Sampling

This paper is based on a structured survey targeting Albanian urban consumers. Questionnaires were designed based on an extensive literature review, and consultations with agricultural economists, scholars and practitioners including one focus group consisting of agrifood marketing experts. The questionnaires were initially tested with randomly selected consumers and further improved after testing. The questionnaire intended to collect information about consumer socio-demographic factors as well as preferences and perceptions for organic products. The surveys were conducted and 300 face-to-face interviews were completed in Tirana. Tirana is the capital and the largest city in the country, and consequently offers the advantage of a highly diverse population in terms of culture, religion and income. We expect that potential market demand for organic/quality products will mainly come from Tirana given the size of the population and higher average income that characterize Tirana. A sample size of 300 questionnaires is deemed as representative and has been used in other similar surveys. Data were collected by well-trained interviewers (students or graduates), and the authors of this paper closely followed the process. Then the data were transferred to SPSS for further processing.

3.2 Methods of analysis

In addition to descriptive statistical analysis, a two-step clustering technique was used to classify consumers by socio-demographic variables. The two-step cluster analysis (available in the SPSS statistical package) is an exploratory technique that allows a clustering of large data sets simultaneously using continuous and categorical variables. The main advantage of this approach is the avoidance of the randomness that can be generated in traditional clustering techniques, considering that, unlike other clustering techniques; this procedure is able to automatically detect the most appropriate number of clusters (Norusis, 2003). This method uses a probabilistic approach, in which the clustering of algorithms is based on a likelihood distance, measured as the similarity criterion, and the optimal number of clusters is selected on the basis of Schwarz's Bayesian information criterion (BIC).

For any feasible clustering solutions, SPSS calculates “silhouette coefficients” that measure clustering quality. The silhouette coefficient is independent from the number of clusters, k . A higher silhouette coefficient (that is, the closer to 1), indicates a better clustering solution. (Kaufman and Rousseeuw, 1990).

Cluster analysis has been previously used in various consumer studies, especially those focused on acceptance of intrinsic product attributes, including health and safety concerns, where different levels of innovative product adoption among consumers were explored (Luizou et al., 2013). Furthermore, Zakowska (2011) utilised this analysis in evaluating organic food choice motives, attributes of organic food, and, barriers to purchase in Polish consumers. In a subsequent study, focused on fruit and vegetables-related perceptions of Swedish consumers, with the use of the two-step cluster analysis accompanied by regression analysis (Simunaniemi et al., 2013). Also in Albania this approach has been applied in the past to assess consumer perceptions towards food (meat) safety (Zhlilima et al., 2015) and consumer preferences for olive oil (Imami et al., 2013).

4. Empirical results

4.1 Descriptive statistics analysis

Most consumers consider factors surrounding health to be the most important dimension of the organic products; taste is less important (chosen by about 5 percent), while environmental dimension is not chosen as a key factor by any of the consumers (Table 1).

Table 1: Responses given to the statement “organic food products are more important for you because they are” (only one choice)

Category	Frequency	Percent
Healthier	172	57.3
Tastier	14	4.7
Fresher	14	4.7
Does not damage environment	0	0
Without chemicals	20	6.7
Not damage health	80	26.7
Total	300	100.0

Source: Field survey, 2013

Most interviewees view organic products as safer and healthier compared to other (conventional) products. About 97 percent of interviewees perceive bio products to be safer than other products whereas 94 percent perceive them to be healthier (Table 2 and Table 3).

Table 2: Responses to the question: “Do you think that organic food products are safer than other products?”

Category	Frequency	Percent
Yes	292	97.3
No	8	2.7
Total	300	100.0

Source: Field survey

Table 3: Responses to the question: “Do you think that organic food products are healthier than other products?”

Category	Frequency	Percent
Yes	283	94.3
No	4	1.3
Total	287	95.7

Source: Field survey

According to EU legislation, the definition of “bio” and “organic” are identical while in Albanian legislation, reference is made mainly to the term “bio”. According to expert focus group, it was concluded that only a few consumers are aware of these definitions and that most are more familiar with using “bio” (as it is more commonly used in the daily vocabulary by average consumers in Albania). About 60 percent of respondents think that there is a difference between organic and bio products and only 25.3 percent think that organic and bio is the same thing (Table 4).

Table 4: Answer to the question: “Is there any difference between organic and bio products?”

Category	Frequency	Percent
1 Yes, they are differences	180	60.0
2 No	76	25.3
3 No answer	44	14.7
Total	300	100.0

Source: Field survey

Organic products are typically associated to fresh agro-food products in average consumers’ minds, although there is a growing trend in the world market to extend organic certification and

production to processed food too. Most consumers perceive that processed agro-food products cannot be organic (Table 5).

Table 5: Answer to the question: “Can processed agro-food products be organic?”

Category	Frequency	Percent
Yes	116	42.0
No	160	58.0
Total	276	100.0

Source: Field survey

Most consumers are willing to pay a premium for organic products (Table 6). The information generated in this survey is rather indicative. Other approaches, such as Conjoint Choice Experiment (CCE) are more suitable for this purpose, such as Skreli et al., (2014) that assessed willingness to pay for organic food focusing on one specific product, namely tomatoes, applying CCE. However the information provided below is useful when interpreted as indicative for consumer preferences and behaviour towards organic food.

Table 6: Willingness to pay a premium for organic products

Indicator	Not Pay	Pay	Total
Frequency	10	284	294
Percentage	3%	97%	100%

Source: Field survey

4.2. Two-step Clustering Analysis

In our segmentation analysis, clustering was based on 3 socio-demographic variables (as clustering input factors) – namely education, gender and age. Such socio-demographic variables are widely considered as important determinants of consumer behaviour. This clustering, yielded Silhouette Coefficient = 0.6.

Our clustering yielded 5 difference consumer groups/clusters, summarized in Table 7 and described follows:

Cluster 1 represents 23.5 per cent of the sample. All members of this group are male, with high school education while average age is 50.5.

Cluster 2 represents 21.5 per cent of the sample. All members of this group are male, with university education while average age is 47.2.

Cluster 3 represents 10.6 per cent of the sample. All members of this group have basic education. This group is gender balance (female are slightly over-represented making up for 55 per cent of the sample). Average age is 49.

Cluster 4, is the largest identified consumer group – it makes up for almost ¼ of the sample. This group consists only of female with university education. Average age is 36.6.

Cluster 5 consists only of females with high school education. Average age is 46.4.

Table 7: Two-step clustering table

Category	Cluster 1		Cluster 2		Cluster 3		Cluster 4		Cluster 5	
Size	69 (23.5)		63 (21.5%)		31 (10.6%)		73 (24.9%)		57 (19.5)	
Attributes										
Education	High school		University		Basic education		University		High school	
Importance = 1	(100%)		(100%)		(100%)		(100%)		(100%)	
Gender	Male (100%)		Male (100%)		Female (55%)		Female (100%)		Female (100%)	
Importance = 0.45					Male (45%)					
Age	50.5		47.2		49		36.6		46.4	
Importance = 0.06										

Source: Field survey 2013

As expected, clusters of consumers with university education tend to be more familiar bio certification. However, still only about 40 percent of such clusters are familiar with bio-certification (Table 8).

Table 8: Answer to the question: “Are you aware of/familiar to Bio certification”

Cluster	Indicator	Yes	No
Cluster 1	Frequency	12	56
	Percent	18%	82%
Cluster 2	Frequency	24	39
	Percent	38%	62%
Cluster 3	Frequency	3	28
	Percent	10%	90%
Cluster 4	Frequency	30	43
	Percent	41%	59%
Cluster 5	Frequency	12	45
	Percent	21%	79%
Total	Frequency	81	211
	Percent	28%	72%
		Chi Square = 0.001	

Source: Field survey 2013

Most respondents in each identified cluster would not completely trust Bio certification by a National Independent Institution – differences between the identified clusters are not statistically significant. On the other hand, most consumers in each identified cluster would trust Bio certification by an International Independent Institution – such trust is higher among “the educated” consumer clusters (Clusters 2, 4) – about ¾ of consumers in these clusters would trust such certification. Trust for the Bio certification by an International Independent Institution is lowest in the “least educated” consumer cluster (3), most of whom do not trust such certification. Differences between the identified clusters are statistically significant.

Most consumers in cluster 3 (least educated, gender balanced cluster) trust products are bio when officially recognized by Ministry of Agriculture as bio produce. Also large share of consumers in Cluster 5 (less educated female cluster), namely 46 per cent, do trust official recognition by Ministry of Agriculture. The most “distrustful” cluster is cluster 2 (educated males), 75 per cent of who distrust official recognition by Ministry of Agriculture (Table 9).

Table 9: Answer to the question: “When do you consider a product bio?”

Cluster	Indicator	Certified by a National Independent Institution		Certified by an International Independent Institution		Officially recognised by Ministry Of Agriculture as Bio	
		Yes	No	Yes	No	Yes	No
Cluster 1	Frequency	21	48	44	25	22	47
	Percent	30%	70%	64%	36%	32%	68%
Cluster 2	Frequency	26	37	47	16	16	47
	Percent	41%	59%	75%	25%	25%	75%
Cluster 3	Frequency	10	21	14	17	16	15
	Percent	32%	68%	45%	55%	52%	48%
Cluster 4	Frequency	27	46	54	19	24	49
	Percent	37%	63%	74%	26%	33%	67%
Cluster 5	Frequency	14	42	31	24	26	30
	Percent	25%	75%	56%	44%	46%	54%
Total	Frequency	98	194	190	101	104	188
	Percent	34%	66%	65%	35%	36%	64%
		Chi Square = 0.376		Chi Square = 0.015		Chi Square = 0.045	

Source: Field survey 2013

For about half of the respondents, the most important factor assuring that olive oil is bio, is buying directly from the producer – only Cluster 3 (consumers with basic education) gave more trust in the trader (Table 10). Indeed, it is quite common that consumers buy olive oil directly from producers in Albania, to ensure quality (Imami et al., 2013; 2015).

Table 10: Perceived sources of assurance that olive oil is bio

Cluster	Indicator	Label and brand	Origin (domestic vs. import)	Knowing the trader	Buying directly from the producer	Buying from specialized shop	Total
Cluster 1	Frequency	3	3	20	35	7	68
	Percent	4%	4%	29%	51%	10%	100%
Cluster 2	Frequency	3	9	13	32	6	63
	Percent	5%	14%	21%	51%	10%	100%
Cluster 3	Frequency	1	6	15	9	0	31
	Percent	3%	19%	48%	29%	0%	100%
Cluster 4	Frequency	6	4	20	35	7	72
	Percent	8%	6%	28%	49%	10%	100%
Cluster 5	Frequency	1	7	12	31	6	57
	Percent	2%	12%	21%	54%	11%	100%
Total	Frequency	14	29	80	142	26	291
	Percent	5%	10%	27%	49%	9%	100%
		Chi Square = 0.09					

Source: Field survey 2013

5. Conclusions and recommendations

Albania has favourable climatic conditions for a wide range of agricultural products including organic products. However, organic farming in Albania is still not popular. Producing and selling organic products face several **challenges** such as gaps in legislation, institutional capacities and producers' capacities. Another major challenge for the development of the organic production sector in Albania is the limited awareness of Albanian consumers for organic products.

There is a lack of understanding about organic food among Albanian consumers. Even in more advanced economies with rather developed organic food (production and trade) sector, there is limited understanding around definition of organic food (Hughner et al., 2007). Also Yiridoe et al., (2005) confirms that consumers are not consistent in their perception of what is organic food product. Thus, it is not a surprise that in the case of Albania, with poorly organic food production and marketing, the awareness among consumers around organic food definitions is low.

The market for bio product in Albania is still small, but the consumers' preference and willingness to pay a premium for bio food represents a potential for market development. Most respondents consider that the most important dimension of the organic products is related to food safety and health. Indeed, in Albania food safety standards enforcement represents a major challenge for the public health (Zhllima et al., 2015), therefore safety and health attribute scores very high for the Albanian average consumers. Also other studies have found that concern for human health and safety is an important factor that influences consumer preference for organic food (Yiridoe et al, 2005; Zanolli and Naspetti, 2002). According to Goldman and Clancy (1991) consumers who usually buy organic food are concerned about food safety. However, Albanian consumers tend to be less concerned about environmental aspects – in advanced economies, environmental awareness is becoming a key driver behind the motivation to buy organic.

The perceptions on link between bio products and health-related issues represent an important advantage for production of bio products, and can be capitalized in marketing promotions by producers/traders. The state of consumers' knowledge on bio products calls for a consumer education campaign. The campaigns could be led by the Ministry of Agriculture and conducted in cooperation with Ministry of Health, and consumers associations. The education campaign should address the bio (organic) product concept and standards, health and environmental benefits and other related issues. Bio products labelling should contain information regarding content (or not) of chemicals and hormones.

Respondents prefer to buy organic products directly from the producers, when applicable such as in the case of olive oil. Purchasing directly from producers is considered the traditional method to guarantee origin for average Albanian urban consumers (Imami et al., 2015). Similarly, Imami et al. (2013) report that for most consumers, the main indicator of a quality guarantee of olive oil is having a personal/direct interaction with the producer. The preference of consumers to buy directly from producer/on farm, represents a potential for agro-tourism development and for the establishment of farmers marketing cooperatives.

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