Marketing communications for organic food products: development and validation of two models leading to purchase intent

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Abstract

This paper aims to understand the antecedents of organic food communications, and how organic food communications could contribute in organic food purchase intentions. The current paper is a part of a larger study that collected data from a nationwide online survey during November 2012. This resulted to 1011 usable responses. This paper used Partial Least Square (PLS) based structural equation modeling (SEM) technique. The findings show that there are two major antecedents to perceived organic food communications, namely, controlled marketing communications and perceived organic consumers’ value. The findings also demonstrate three major and significant paths that lead organic food consumers from perceived organic food communication stage to purchase intent stage. These three statistically positive and significant paths are: trust, perception and self-image paths. Thus, the paper explains the role of marketing communications that bridges between consumers’ generally positive attitudes towards organic food and their low level of organic food purchases.

Introduction

Consumer interest in organic food is reflected in the global sales of over US$63 billion in 2012, which is an increase of US$3.9 billion from 2010 (Willer & Lernoud, 2013). Recent studies stated that organic food sales hold an estimated market share of 0.8–1.2 per cent (Monk, Mascitelli, Lobo, Chen, & Bez, 2012) in Australia and about 4 per cent in the United States (OrganicTradeAssociation, 2011). Thus, sales of organic food still account for a minority of the overall food market. One of the reasons for a low level of sales volume is that the organic food market consists of a small market and often with occasional consumers lacking much information and intention to purchase organic foods, in future.

Over the last two decades, studies in marketing of organic food have been based on a number of theoretical approaches that may broadly be classified into demographics, marketing mix variables, product attributes, and consumer values and attitudes (Sultan & Pearson, 2011). In relation to demography, for example, research finds that generally wealthy families, empty nesters and women tend to buy organic foods. In relation to marketing mix variables, the most frequently cited barriers include price, availability and appearance (Fearne, 2008; Henryks, Pearson, Anisimova, & Sultan, 2013). A number of studies, in various cultural contexts, found that consumers would like organic foods, as opposed to conventional foods, to have marketing information, such as nutritional and country of origin information, on product’s label (Kihlberg, Johansson, Langsrud, & Risvik, 2005). However, Henryks and Pearson’s (2010) study, in this context, found that existing marketing communications create a degree of confusion as to which of the foods are organic and which are not among Australian consumers.

A number of studies suggested that a lack of information about organic food can act as a barrier to consumers purchasing more of it (Harper & Makatouni, 2002; Henryks et al., 2013; Sultan & Pearson, 2011; Yin, Wu, Du, & Chen, 2010). In particular, Sultan and Pearson (2011, p. 5) stated that “the focus of marketing communication should be on creating interest...
and desire amongst consumers. There are two important aspects of this. First, it is essential that the marketing communication appeals to the values held by consumers in the target audience. Second, this communication should aim to develop a positive perception about organic food, and associated with this, trust in the communication sources”. The knowledge gap as identified in Sultan and Pearson’s (2011) study is the point of departure for the current paper. In particular, this paper attempts to explain the disparity between consumers’ general and positive attitudes towards organic food products and their relatively low levels of purchases, and explain the mediating role of marketing communications between attitudes and intentions. The current literature is inadequate to explain this disparity. Therefore, the current paper addresses this research gap with two specific research questions: (a) What are the antecedents of organic food communication? (b) How would organic food communications enhance organic food purchase?

Research method

This paper is a part of a larger study that collected data from a nationwide online survey during November 2012. Our review of current studies (Aertsens et al., 2011; Aertsens, Verbeke, Mondelaers, & Huylenbroeckt, 2009; Chen, 2009; Hennig-Thurau, Langer, & Hansen, 2001; Krystallis & Chryssohooids, 2005; Lea & Worsley, 2005; Roitner-Schobesberger, Darnhofer, Somsook, & Vogl, 2008; Sultan, 2011; Zanoli & Naspetti, 2002; Zeithaml, Berry, & Parasuraman, 1996) found 69-items, excluding the demographic items and open-ended questions. These items were used to design the online survey questionnaire on a seven-point Likert type scale following the suggestions of current studies (Churchill, 1979, 1999; Churchill & Surprenant, 1982; Nunnally, 1978; Sweeney & Soutar, 2001). The survey questionnaire is available on request.

The design of the online survey questionnaire followed the suggestions of Dillman, Smyth, and Christian (2009). Subsequently, the questionnaire was reviewed by two panel members who had been working in two organic food enterprises within the Australian Organic Food Industry as top managers, respectively. The questionnaire was pretested with 49 respondents following two-staged pilot tests. This results some minor changes in some questions and items for greater clarity.

A Sydney based independent market research company was recruited by the researchers, and a sample of 17,615 respondents were randomly recruited from a national research only panel by the market research company; considering all the states and territories of Australia. The prerequisites for qualifying for this project were that the qualified respondents had to be 18 years or above, and have purchased organic food products sometime in the past. Although the online survey is methodologically appealing due to its advantages such as access to large sample, low cost and time efficacy (Dillman et al., 2009; Wright, 2005), online survey generates a low response rate. For example, the online survey for this research generated 1011 completed responses (5.7 per cent response rate); excluding incomplete responses (508 responses) and screed out responses (351 responses); and this is consistent with the current literature (see, for example, Sax, Gilmartin, & Bryant, 2003; Sultan & Wong, 2012a, 2012b). The number of usable responses is good enough for SEM (Bentler & Chou, 1987; Sultan & Wong, 2012b).

The current study used PLS based SEM. PLS is used for theory confirmation that suggests where relationships might or might not exist. It also suggests propositions for later testing. As an alternative to the more widely known covariance fitting approach (exemplified by software such as LISREL, EQS, COSAN, AMOS, and SEPATH), the PLS avoids two serious problems: inadmissible solutions and factor indeterminacy (Fornell & Bookstein, 1982). In particular, research stated that PLS has the ability to model latent constructs under
conditions of non-normality and with small to medium sample sizes (Bagozzi & Yi, 1994; Chin, Marcolin, & Newsted, 2003). In addition, PLS, being a limited-information, component-based least squares alternative, tends to be less affected (Chin, 2010). The current study is exploratory in nature where theoretical knowledge is relatively scarce (Chin, 2010) and the collected data set is highly skewed. As a result, we employ PLS based SEM.

**Results**

This paper reports only the results of the path modelling, mainly in order to comply with the requirements of the conference proceedings. However, the two earlier papers (Henryks et al., 2013; Pearson, Henryks, Sultan, & Anisimova, 2013), based on the data collected for this study, have discussed about organic consumers’ demography, purchase frequency and organic foods’ labelling related issues.

**Operational definitions of the constructs**

Communication take-up (or perceived organic food communication) construct refer to the extent and depth of understanding organic food information and certification that consumers receive from various sources. There are two main sources: controlled and uncontrolled communication sources. The controlled communications refer to as advertising, news articles, and information from labels and sales people, and consumer promotions including direct advertising. However, the uncontrolled communications refer to sources such as blogs, word-of-mouth, social networking sites, special and independent comments and reviews on food, nutrition and well-being.

Consumers’ value of organic food is a function of health promoting effect, healthy lifestyle, health consciousness and healthy work-life balance. The self-image construct, however, refers to one’s feelings, pleasure and enjoyment in purchasing and consuming organic foods. Consumer trust in organic food refer to trust in organic certification and claims in marketing communications including labels, and trust on organic food products, producers, marketers, sellers and certifying organizations.

Consumer perception refers to their experience about organic food’s taste, quality, and effects on health-environment-and-ethical standards, production process, and shopping experience. However, the satisfaction construct refers the extent of consumer satisfaction in available organic foods, organic certification, and quality and availability of information and their sources. Finally, the behavioral intention construct refers to consumers’ purchase intent and their recommendations to friends/relatives to purchase organic food products.

**The structural analysis of the models**

The structural analysis of the model found two items with low factor loadings, and these were deleted. Table 1 shows the psychometric properties of the constructs. The results show that the items within each of the constructs are having a high factor loading (0.5 or higher), a high Cronbach’s alpha coefficient (>0.70) for each of the constructs, and a high Dillon-Goldstein’s rho; suggesting the unidimensionality and reliability of the constructs (Hair, Black, Babin, & Anderson, 2010; Ho, 2006).

In addition, the critical ratio values were all significant at the 0.05 level; suggesting a strong convergent validity for each of the constructs. The pair wise exploratory factor analysis using principal components with varimax rotation produced exactly two components; suggesting that a degree of discriminant validity exists between constructs (Sultan & Wong, 2012b).

The results found two alternative models (Figure 1 and Figure 2). The first model (trust–satisfaction model) proposes perceived communication (with consumer value and controlled communication stimuli)—trust—satisfaction—purchase intention path. The second model
The self-image and perception model proposes perceived communication (with consumer value and controlled communication stimuli)—self-image—(or organic food perceptions)—purchase intention path.

**Table 1: Psychometric properties of the constructs**

<table>
<thead>
<tr>
<th>Constructs (number of items)</th>
<th>Standardized factor loadings (low-high)</th>
<th>Cronbach’s alpha</th>
<th>D.G. rho (PCA)</th>
<th>Critical Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer values (5)</td>
<td>0.570—0.934</td>
<td>0.859</td>
<td>0.902</td>
<td>0.675</td>
</tr>
<tr>
<td>Controlled communication (11)</td>
<td>0.684—0.825</td>
<td>0.927</td>
<td>0.938</td>
<td>0.437</td>
</tr>
<tr>
<td>Uncontrolled communication (9)</td>
<td>0.740—0.839</td>
<td>0.917</td>
<td>0.932</td>
<td>0.390</td>
</tr>
<tr>
<td>Communication take-up (4)</td>
<td>0.537—0.857</td>
<td>0.717</td>
<td>0.832</td>
<td>0.358</td>
</tr>
<tr>
<td>Self-image (7)</td>
<td>0.743—0.860</td>
<td>0.879</td>
<td>0.907</td>
<td>0.481</td>
</tr>
<tr>
<td>Organic food perceptions (11)</td>
<td>0.677—0.813</td>
<td>0.918</td>
<td>0.932</td>
<td>0.428</td>
</tr>
<tr>
<td>Trust (8)</td>
<td>0.825—0.928</td>
<td>0.966</td>
<td>0.971</td>
<td>0.989</td>
</tr>
<tr>
<td>Satisfaction (4)</td>
<td>0.760—0.930</td>
<td>0.905</td>
<td>0.934</td>
<td>0.908</td>
</tr>
<tr>
<td>Purchase intentions (8)</td>
<td>0.589—0.893</td>
<td>0.919</td>
<td>0.935</td>
<td>0.547</td>
</tr>
</tbody>
</table>

**Figure 1: Trust–satisfaction model**

**Figure 2: Self-image and perception model**

We conducted global fit measures (GoF) for both of these models to ensure global validation of PLS models. The GoF for PLS path modeling is the geometric mean of the average communality and average $R^2$ for all endogenous constructs (Akter, D’Ambra, & Ray, 2010; Tenenhaus, Vinzi, Chatelin, & Lauro, 2005). The trust-satisfaction model has a GoF value of 0.401 (GoF$_{\text{small}}$=0.376, GoF$_{\text{medium}}$=0.403, GoF$_{\text{large}}$=0.435) for the absolute model, which
exceeds the cut-off value of 0.36 for large effect sizes of $R^2$ (Cohen, 1988). This suggests that the trust-satisfaction model has a better prediction power in comparison with the baseline values ($\text{GoF}_{\text{small}}=0.1, \text{GoF}_{\text{medium}}=0.25, \text{GoF}_{\text{large}}=0.36$) (Akter et al., 2010; Wetzels, Schroder, & Oppen, 2009). Similarly, the GoF value of the self-image and perception model is 0.466 ($\text{GoF}_{\text{small}}=0.433, \text{GoF}_{\text{medium}}=0.467, \text{GoF}_{\text{large}}=0.495$). Thus, the two models have predictive power and they adequately validate the PLS models globally.

**Discussion and managerial implications**

*What are the antecedents of organic food communications?*

This research found that controlled marketing communications from organic food producers and marketers, and consumers’ value of organic food have positive and significant effects on communication take-up. However, our findings confirm that uncontrolled communications have positive but insignificant effect on communication take-up.

The major implication is that consumers’ prefer their organic foods to have health effects and that this should be communicated through controlled communication sources. Investing in uncontrolled sources of communication, in this instance, may prove ineffective for organic food products.

*How would organic food communications enhance organic food purchase?*

There are three different paths: trust path, perception path, and self-image path that explain this question. First, the ‘trust path’ shows that one unit increase in consumers’ perceived communication backed by consumer values and controlled communication sources would enhance 0.672 unit of consumers’ trust in organic food. Subsequently, this will have an effect on satisfaction and purchase intention by 0.552 unit and 0.285 unit, respectively (please see Figure 1). The path coefficients are significant at the 0.05 level.

Second, the ‘perception path’ shows that one unit increase in consumers’ perceived communication backed by consumer values and controlled communication sources would enhance 0.493 unit of organic food perceptions. Subsequently, this will have an effect on purchase intention by 0.452 unit (please see Figure 2). The path coefficients are significant at the 0.05 level. Third, the ‘self-image path’ shows that one unit increase in consumers’ perceived communication backed by consumer values and controlled communication sources would enhance 0.432 unit of self-image, and this in turn, affects purchase intention by 0.353 unit (please see Figure 2). The path coefficients are significant at the 0.05 level.

Thus, a trustworthy communication and their sources with valued propositions such as health, taste, environment, pleasure and feelings would lead to future purchase intentions. This is because consumers’ behavioral intentions are not straightforward (Anisimova, 2007). As a result, consumer perception, satisfaction and self-image are found as mediating variables between perceived communication and behavioral intentions. Managers should emphasize and promote for trial purchases, consumers’ certifications and demonstrate organic consumers’ feelings and pleasure in buying and consuming organic food products.

**Conclusion, limitation and future research**

This paper aimed to understand the antecedents of organic food communications, and subsequently, how organic food communications could contribute in organic food purchase intentions. The findings show that there are two major antecedents to perceived organic food communications, namely, controlled marketing communications and perceived organic consumers’ value. In regard to the second question, the study found three major paths, namely, trust, perception and self-image paths, each of which lead organic consumers from perceived organic food communication stage to purchase intent stage.
There are several limitations, for example, this study considered consumers who had experience in purchasing and consuming organic foods sometime in past, though this was a nationwide survey. The study did not attempt to explain differences in model predictions due to differences in geographic locations and demographic variables. Future study should use co-variance based SEM with a large sample size, and compare and generalise the findings.

References


Sultan, P. (2011). Antecedents and consequences of service quality in a higher education context. (PhD), Central Queensland University, CQ University Library.


