

***Who Provides Information Matters:
The Role of Source Credibility on US Consumers' Beef Brand Choices***

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Abstract

Labels, certifications and endorsements signaling the quality of food have an impact on the purchasing choices of multiple segments of US consumers. At the same time, not much is known about the relationships between the sources providing information through these quality signals and consumer choices. In this paper, we explore 1) whether the credibility of an information source has an impact on US consumers' beef brand choices; 2) which labels, certifications and endorsements are chosen by US consumers among a range of eight brands with pre-selected sources of information; 3) which consumer segments have different perceptions on information sources and beef brand choices. Data are collected through an on-line survey on a representative sample of 460 US consumers and analyzed through structural equation modeling. The results show that credibility - although it has a positive impact on consumers' brand choice - is a complex concept which needs to be dissected in more specific variables, namely perceived knowledgeableability, perceived absence of vested interests, perceived absence of mistakes in the past and trust. In particular, perceived knowledgeableability and perceived absence of vested interests of the information source are inversely proportional.

Key Words: Credibility, Consumer Choice, Beef, Food Brands, Structural Equation Modeling.

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1. Introduction

Growing segments of world consumers seek improved quality, healthiness, safety and variety in their food (e.g., Verbeke, 2005; IDDBA, 2008). To make this trend a market opportunity and build competitive advantage, food companies need 1) to communicate product attributes to their customers effectively and 2) to build a reputation based on past consumption experiences over time, which are the two pillars of branding (Aaker, 1991; Keller, 1998). In particular, communicating effectively to customers is crucial when the claimed product attributes have a credence nature (Darby and Karni, 1973), that is, when the attributes cannot be verified by the average customer before, during or after consumption.

A large strand of the literature in agricultural economics recently found that food information and product attribute claims have a positive impact of consumers' buying intentions, especially in the context of credence attributes (e.g., Nimon and Beghin, 1999; Loureiro and Umberger, 2007; Basu and Hicks, 2008; Darby et al., 2008; Kanter et al., 2008; Frolich et al., 2009). Credence attributes that are increasingly valued by some consumer segments include "locally-grown", "place-of-origin", "animal welfare", "organic", "ecofriendly", "safe", and "natural" genetically-modified (e.g., Baker and Burnham, 2001; Lusk et al., 2003), organic (e.g., Thompson, 1998; Kanter et al., 2008), local or locally-grown (e.g., Darby et al., 2008; Froelich et al., 2009), environment friendly (e.g., Nimon and Beghin, 1999; Loureiro et al., 2002), place-of-origin (e.g., Van der Lans et al., 2001; Alfnes and Rickertsen, 2003; Loureiro and Umberger, 2005 and 2007; Ehmke et al., 2008), fair trade (e.g., De Pelsmacker et al, 2005; Basu and Hicks,

2008) and hormone-free (e.g., Alfnes and Rickertsen, 2003; Kanter et al., 2008). Although information plays inarguably a key role in establishing the value customers give to food, only a limited number of studies have so far analyzed how different information sources have an impact on consumers' buying intentions (Frewer et al., 1998a; Tonsor et al., 2005; Mazzocchi et al., 2008). Therefore, exploring which factors explain the variation of the impact of information from different sources on consumers' buying intentions would represent an important contribution to the literature.

In this study, we attempt to start filling this literature gap by analyzing the role of source credibility as a driver of the effectiveness of information on US consumers' beef brand choices. Information source credibility is generically recognized to play a role for the effectiveness of communication (Hovland and Weiss, 1951) and to influence consumers' perceptions and attitudes towards objects (Frewer et al., 1998b), but no study seems to have so far analyzed its role on consumers' food brand choices. By analyzing the role of information source credibility on US consumers' beef brand choices, we aim at providing a tool for beef industry managers to make their communication to customers more effective. Moreover, we explore how the credibility of different information sources and its effect on consumers' beef brand choice vary according to consumers' demographic and attitudinal characteristics. This provides further detail for managers aiming at providing information as tailored and effective as possible to specific market segments.

2. Literature Review

Only a limited number of studies in agricultural economics have so far analyzed how different information sources have an impact on consumers' buying intentions (Frewer et al., 1998a; Tonsor et al., 2005; Mazzocchi et al., 2008). Exploring which factors explain the variation of the impact of information from different sources on consumers' buying intentions would represent an important contribution to the literature.

In this study, we attempt to start filling this literature gap by analyzing the role of source credibility as a driver of the effectiveness of information on US consumers' beef brand choices. Information source credibility is generically recognized to play a role for the effectiveness of communication (Hovland and Weiss, 1951) and to influence consumers' perceptions and attitudes towards the object of the information (Frewer et al., 1998b). Specifically, Frewer et al. 2008b suggest four measures capturing the extent to which consumers perceive an information source as credible. Therefore, we use these four measures to test if credibility could be effectively reflected by these measures in the context of beef brands and if it has a positive relationship with consumers' buying intentions.

To analyze the relationship between consumers' perceptions on the information sources and their brand choices, we build upon the theory of attitude formation (Fishbein, 1967; Fishbein and Ajzen, 1975). According to the learning theory (Fishbein, 1967), the cognitive process leading to consumers' attitudes towards brands and ultimately to their buying behavior usually starts from consumers' evaluation of a brand attribute, which is how much a consumer value a certain attribute of the brand, such as the perceived color, taste or safety of a certain brand. When receiving and processing information about the attributes of a brand, consumers usually change both their evaluations and belief strengths for each attribute. For example, when receiving a

negative information shock related to animal welfare, consumers may increase their evaluation for the animal welfare attribute, that is, they start valuing more how the animal are treated in farm operation when they evaluate a meat brand. Also, the information can decrease the belief strength that a certain brand has the animal welfare attribute. The combination of the two effects on consumers' evaluation of the brand attribute and on their belief strength determines their overall attitudes towards the brand, that is, how much they like the brand (Fishbein, 1967). Brand attributes are a type of brand associations, which in turn are a key dimension of brand equity: when a brand has strong, favorable and unique associations, then it is clearly differentiated from other brands (Aaker, 1991; Keller, 1993). Brand attributes may be observed before consumption (search attributes, such as color) or only after consumption (experience attributes, such as flavor, Nelson, 1970), but some of them may be visible neither before nor after consumption (credence attributes, such as animal welfare, Darby and Karni, 1973). In the case of credence attributes, consumers' belief strengths play a crucial role in establishing their attitudes towards products. Therefore, in the case of credence attributes such as animal welfare, as the product consumption do not necessarily change beliefs, brand information plays a crucial importance in determining consumers' beliefs and attitudes.

Consumers' attitude towards a brand is not always strongly associated with their real intention to buy that brand (Fishbein and Ajzen, 1975). However, when consumers' attitudes towards buying the brand are supported by their subjective norms, then attitudes predict buying intentions much more accurately (Fishbein and Ajzen, 1975; Sheppard et al., 1988). In turn, buying intentions predict behavior unless intent changes prior to performance or "unless the intention measure does not correspond to the behavioral criterion in terms of action, target, context, time-frame and/or specificity (Eagly and Chaiken, 1993). The intention of buying a

brand has various measurable dimensions. The most common one is the willingness to make an effort to perform to the buying action (Fishbein and Ajzen, 1975; Eagly and Chaiken, 1993). The nature of the effort varies according to the context: it may be willingness to pay, the likelihood to pay a premium for that brand or the likelihood to buy the product even if it is not sold in the most favorite purchasing location. A second key dimension of buying intentions is the choice of the brand among alternatives (Fishbein, 1980; Fishbein and Ajzen, 1980), that is, the process of comparing and selecting among the intentions associated with each alternative in a choice set.

3. Methods

To analyze the role of information source credibility on consumers' beef steak brand choices, we conducted an on-line survey on 460 individuals which are representative of US residents according to education, gender, income, state and ethnic group criteria in October 2009. We focus on beef as a product of interest for this study because it is a high-value product, it is relevant for US representative residents and because it allows comparison with a large number of studies in agricultural economics.

After answering questions on their demographics, food values and habits, respondents were asked four seven-point Likert scale questions about a list of eight pre-selected information sources. Information sources were 1) Government agencies, 2) chefs, cuisine books/magazines, and food experts, 3) producer associations, 4) non-governmental organizations (NGOs) certifying the quality and the sustainability of food products, 5) NGOs advocating and pressuring the industry and the governments on sustainability issues, 6) retail grocers, 7) food service restaurants or deli stores, and 8) other consumers, through word-of-mouth. Each information

source was given a simple definition and a couple of common examples. Respondents were asked to assess how much they consider each of these sources trustworthy and knowledgeable, how often they have been proven wrong and how much they believe them to have a vested interest, similarly to the items suggested by Frewer et al. (1998b). After a set of fulfilling tasks which took an average of 8 minutes, respondents were asked to indicate their first beef steak brand choice as well as their last choice, whereas each beef brand was distinguished only by an endorsement or certification from one of the eight pre-selected information sources. Finally, in order to obtain further detail on how they would rank the intermediate alternatives, respondents were asked again which their best and worst choices were after excluding the previously selected ones.

Data were analyzed with a structural equation model (SEM), as SEM allows assessing a set of relationships simultaneously rather than in separate analyses (Hair et al., 2006) and gives the opportunity of exploring the mediators and the moderators playing a role in explaining the impact of an independent variable on a dependent variable (Kaplan, 2009). Following the classic SEM methodology, we first conducted a confirmatory factor analysis establishing if the four Likert scale items related to the information sources could be effectively combined in the credibility factor. Second, we analyzed the relationship between the credibility factor and consumers' beef brand choices (Figure 1). Finally, we analyzed the relationship of consumers' demographics and attitudes with information source credibility as well as their interaction effect with credibility on consumers' brand choice.

4. Results

4.1. Consumers' Demographics, Credibility of Information Sources and Brand Choice

First of all, we found that credibility of information sources can be reflected effectively with only three of the hypothesized measures, specifically how much the source of information is knowledgeable, how much the source of information is believed not to have proven wrong in the past and how much is it trustable. On the other hand, respondents' perception of no vested interest by the information source does not effectively reflect the same factor as the other three measures. The overall fit of the confirmatory factor model with four reflective measures is poor and the effect of the credibility factor on the measure of consumers' perception of no vested interest is not statistically significant at a 95% level. Moreover, respondents' perception of no vested interest by the information source is scarcely correlated with the other three suggested measures of credibility. The overall fit of the confirmatory factor model with the remaining three reflective measures is acceptable and the individual reflective effects on the three measures are significant. Therefore, we continue our analysis with a credibility factor reflected with only three measures and a separate measurable variable of respondents' perception of no vested interest.

The second step to evaluate the credibility factor is comparing alternative structural equation models analyzing the relationship among credibility, the four reflective measures and respondents' brand choice in terms of overall fit of the model with the data. We found that the model putting into relationship the four individual measures of credibility with respondents' brand choice has a much higher fit than the model with the credibility factor reflected by the three measures. As a matter of facts, the former has a much lower Aikaike Information Criterion (AIC), lower Root Mean-Square of Approximation (RMSEA) and higher Comparative Fit Index (CFI) than the latter. Specifically, from the latter model we found the following relationships.

First, respondents' perception of no vested interest of the information source is negatively associated with their belief that the source is knowledgeable. In other words, respondents have a tendency to think that knowledgeable source of information have often some vested interest in the claim they make, and vice versa those with no vested interest are often less knowledgeable. Second, respondents' belief that the information source has not been proven wrong in the past is associated with their belief that it does not have vested interest and that is knowledgeable. Third, the more respondents perceive that the information source is knowledgeable and has not been proven wrong in the past the more they trust it. At the same time, respondents tend to slightly decrease their trust in the information source if they perceive that this has no vested interest. Finally and importantly, there is a significant positive association between respondents' trust in the information source and their choice of a brand that receives a positive claim from that information source (Figure 2).

Finally, after analyzing the effects of perceptions on information sources on brand choice for the average respondent, we analyze the moderating effect of demographic variables such as age, gender, education, number of children, and frequency of product consumption on respondents' perceptions and choices. From the results of the path models, we found two major results. First, respondents consuming beef more frequently perceive that information source on average are more knowledgeable. Second, elder respondents have lower trust on information sources on average (Figure 2). Intuitively, these associations seem reasonable. The more a person consumes beef, the more s/he may build the perception over time that one or more specific information source are knowledgeable and so his/her trust in it. On the other hand, elder people on average tend to have stronger prior beliefs based on a longer life experience, therefore they may tend to trust information source as a whole less than young individuals. Finally, it should be

noticed that in our sample elder respondents have on average higher education and consume a lower amount of beef. From a multi-group path model comparing the effect of demographics on perceptions and choice across males and females, we did not find any difference across the two gender groups.

So far, we analyzed only the aggregated effects on respondents' perceptions and brand choices across all the information sources. However, as expected we found the respondents' perceptions on information sources and brand choices have a large variance. Therefore, it is worth exploring how consumers' perceptions and brand choices vary across the eight individual information sources analyzed.

4.2. Consumers' Perceptions and Brand Choice across Individual Information Sources

To start the analysis of consumers' perceptions and brand choices variation across the selected eight individual information sources, we first drew a picture of descriptive statistics (Table 5 and Table 6 in Appendix) and found the following results. First, holding the other characteristics of the product constant including price, respondents are most likely to choose a beef brand certified by the US Government (22.8%) or recommended by a family member or friend through word-of-mouth (23.0%), followed by beef brands recommended by a famous chef (12.8%), certified by a beef producers' association (12.2%) and endorsed by the retailer (10.2%). On the other hand, only a small number of respondents intended to choose a beef brand endorsed by a certifying NGO (8.9%), an advocating NGO (6.7%) and a deli store (3.2%) (Figure 3). Second, when taking their beef buying decisions, respondents on average tend to have higher trust for chefs (4.66 points out of 7) followed by retailers (4.23) and deli stores (4.16), while Government (4.03), producers associations (3.99), certifying NGO (4.02) and family and friends (3.97) have around the same level of trust. Third, respondents perceive chefs to be the information source that the

least has been proved wrong in the past (4.53 out of 7 points), followed by producers associations (4.23), certifying NGOs (4.23), retailers (4.21) and deli stores (4.27), while they have lower perceptions relative to the Government (4.17), advocating NGOs (4.12) and particularly for family and friends (4.00). Fourth, there are similar statistics relatively to respondents' beliefs that the information sources are knowledgeable, as chefs (5.11 points out of 7) are considered the most knowledgeable source, while in this case producers' associations (4.78) are considered the second most knowledgeable source. Fifth, consistently with our findings in the previous step of the analysis, the statistics on respondents' perceptions of no vested interest by the information sources are very different. As expectable, family and friends are perceived as having the lowest vested interest in providing information on beef brand choices (3.92 points out of 7), followed by certifying and advocating NGOs (3.52 and 3.58 respectively) and the Government (3.47), while deli stores (3.10), chefs (3.08) and retailers (2.92) are considered the sources having the highest vested interests (Figure 4).

Starting from these basic statistics, we finally explored how different respondent segments, according to their demographics and their values for the flavor, the origin, the naturalness and the sustainability of food, perceive these individual information sources and ultimately make their beef brand choices. To do that, we built a set of eight path models, one for each selected information source, testing the relationships among respondents' demographics (gender, age, education, number of children and frequency of consumption), values (for food flavor, origin, naturalness and sustainability), the four measures of perceptions on the individual sources and beef brand choice. Results are illustrated in the following eight sub-sections in decreasing order of respondents' share choosing the brand with the specific information source.

4.2.1. Family and Friends as Information Source through Word-of-Mouth

The path analysis of choice with of a beef brand after receiving positive information from family or friends through word-of-mouth provides the following three major results (Table 1). First, demographic variables do not have a direct effect on respondents' perceptions of family and friends as information sources for beef brand choices, while indirect effects mediated by food values are very limited. The indirect effect is computed by multiplying all the coefficients of the effects from the independent variable to the dependent variable, including the mediators. Second, respondents valuing food origin are less likely to choose brands with claims from family and friends. In turn, people valuing food origin are mainly elder individuals, females and with higher education. Third, respondents' belief that family and friends are knowledgeable have a significant impact on trust, while the effect of their perception of vested interest and of being proven wrong in the past does not affect trust significantly.

4.2.2. Government as Information Source

The path analysis of beef brand choice with Government information provides four major interesting insights (Table 2). First, elder respondents are more likely to choose brand with Government claims. Although they are less likely to trust Government as a source of information, this negative indirect effect on brand choice ($-0.11 \times 0.21 = -0.02$) is much smaller than the direct effect (0.13). Again, the indirect effect is computed by multiplying all the coefficients of the effects from the independent variable to the dependent variable, including the mediators. In this case, as the mediator between age and brand choice is one (i.e., trust), the multiplication involves the coefficient of age on trust times (-0.11) the coefficient of trust on brand choice (0.21). Moreover, elder respondents give stronger value to the origin of food, and in turn who has stronger value for food perceives a higher vested interest by the Government and so trusts it

more. Second, males perceive more that the Government has been proven wrong in the past than females, but this results only in a very limited positive indirect effect on trust ($-0.08 \times -0.16 = 0.01$) and on brand choice. Moreover, they give less value to food origin and naturalness and so indirectly also to sustainability and flavor than females. Anyways, the overall indirect effect on perceptions on Government as information source is very limited. Third, respondents consuming beef more frequently have a stronger perception that the Government has vested interests, which ultimately leads to a positive although limited indirect effect on brand choice. Finally, level of education is positively associated with respondents' value of food origin and so indirectly with their value for naturalness and sustainability, but it does not affect significantly perceptions of Government as information source.

4.2.3. Chefs as Information Source

The path analysis of beef brand choice with information provided by chefs gives two major results. First, elder people are less likely to choose beef brands advertised by chefs and trust chefs less than younger individuals, even if think they are not been proven wrong in the past. Second, males consider chefs more knowledgeable than female and so indirectly trust chefs more than females.

4.2.4. Beef Producers' Association as Information Source

The path analysis of beef brand choice with information provided by chefs gives three major results. First, elder respondents are more likely to choose beef brands with information by beef producers' associations, although they trust them less than younger individuals. Second, people valuing food origin and elder people have a higher perception that beef producers' associations have no vested interests. Third, respondents consuming beef more frequently trust beef producers' associations more than low frequency consumers.

4.2.5. Retailers as Information Source

The path analysis of beef brand choice with information provided by retailers gives the following three major results. First, people with stronger values for food origin, such as female, elder individuals with higher level of education, are less likely to choose beef brands with information from retailers. Second, elder people have a lower level of trust on retailers, but the indirect effect on their beef brand choice is very limited. Third, individuals consuming beef more frequently consider retailers more knowledgeable when providing information on beef brand.

4.2.6. Certifying NGOs as Information Source

The path analysis of beef brand choice with information provided by a certifying NGO, such as “Rain Forest Alliance” or “Humane Society”, gives two major results. First, the effect of trust in the certifying NGO on beef brand choice is not significant at a 95% level, differently from the other sources of information. This may be interpreted such as individuals on average do not necessarily need to build a personal trust in this type of organization certifying beef brands to orient their choice. Second, elder people are less likely to choose beef brand with a NGO certification and they have lower trust on this type of organizations.

4.2.7. Advocating NGO as Information Source

The path analysis of beef brand choice with information provided by an advocating NGO, such as Greenpeace or People for Ethical Treatment of Animals (PETA), gives four major results. First, people consuming beef less frequently are less likely to choose brands endorsed by advocating NGOs. Second, elder people trust advocating NGOs less than younger individuals, even if they think that these organizations have not been proven wrong in the past. Third, there is a negative relationship between respondents’ perceptions of advocating NGO being proven

wrong in the past and trust in them. That is, there is a large group of respondents that do not trust advocating NGOs even if they believe that they have not been proven wrong in the past. Fourth,

4.2.8. Deli Stores as Information Source

The path analysis of beef brand choice with information provided by deli stores or restaurants gives the following three major results. First, the effect of trust in deli stores and restaurants on beef brand choice is not significant at a 95% level, similarly to certifying NGOs but differently from all the other selected sources of information. This may be interpreted such as individuals on average do not necessarily need to build a personal trust in this type of organization certifying beef brands to orient their choice. Second, female respondents are more likely to choose beef brands with information from restaurants and deli stores, even if they trust them less than males. Third, elder individuals trust deli stores and restaurants less than younger people, but the negative indirect effect on their final beef brand choice is very limited.

5. Conclusions

By building upon the literature on the impact of information on consumers' choices, on the role of credibility of information sources and the theory of attitude formation, this paper draft preliminarily draws a number of managerial and policy implications and it provides a number of new questions to be explored in future research.

Results provide two major implications for both beef companies, policy-makers and other stakeholders providing information on beef brands. First, beef companies can use these results to find organizations that can provide effective information to their brand according to their targeted market segment, specifically of their own demographics, habits and values and way to

process information. Second, policy-makers and other stakeholders providing information on beef brands have an insight on how different individuals perceive their organizations and how these perceptions lead to their own brand choices. Therefore, based on these results, policy-makers and other stakeholders can attempt to change perceptions of consumers on them as information sources or to target only selected consumer segments, in agreement with beef companies.

We also believe that this study can open up new directions of research. First, we found that, in the context of information on beef brands, source credibility is not reflected effectively by the four measures identified by Frewer et al. (1998b). Future research may look at establishing under which conditions source credibility could be considered a unique factor influencing brand choice. Second, we found that respondents' trust in the information source has a positive direct effect on the beef brand choice with information from a set of sources. Future research can investigate how this impact may vary according to the product, the information source, the content of the information or whether the information is generic about the quality of the product or if instead focus on a specific attribute only. Third, this study only looks at the impact of respondents' demographics, values and perceptions on beef brand choice, but studies with a similar analytical tool could be conducted with more complex dimensions of buying intentions, including respondent's willingness-to-pay. This would contribute to quantify the value of information for beef companies, with key implications for all the actors along the beef supply chain and other stakeholders providing the information.

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Figures and Tables

Table 1: The Impact of Consumers' Demographics and Values on Choice of Brands with Information from Family and Friends

Dependent Variable	Independent Variable	Coefficient	Std. Deviation
Value Origin	Male	-0.15*	0.05
	Age	0.21*	0.07
	Education	0.11*	0.06
Value Naturalness	Value Origin	0.49*	0.04
	Male	-0.11*	0.04
	Age	-0.09	0.06
	Frequency Consumption	-0.34*	0.08
Value Sustainability	Number Children	-0.03	0.04
	Value Origin	0.32*	0.05
	Value Naturalness	0.41*	0.05
	Male	-0.02	0.04
	Age	-0.08	0.05
	Frequency Consumption	-0.15*	0.07
Value Flavor	Value Sustainability	0.15*	0.05
	Value Origin	0.08*	0.04
Knowledgeable	No Vested Interest	0.40*	0.05
Not Wrong	Knowledgeable	-0.06	0.05
	No Vested Interest	0.14*	0.05
Trust	Not Wrong	-0.08	0.05
	Knowledgeable	0.43*	0.05
Brand Choice	Trust	0.19*	0.04
	Value Origin	-0.08*	0.03
Indices of Overall Fit: RMSEA = 0.034; CFI = 0.953.			
Legend: * = Significant at a 95% level.			

Table 2: The Impact of Consumers' Demographics and Values on Choice of Brands with Government Information

Dependent Variable	Independent Variable	Coefficient	Std. Deviation
Value Origin	Male	-0.15*	0.05
	Age	0.21*	0.07
	Education	0.11*	0.05
Value Naturalness	Value Origin	0.49*	0.04
	Male	-0.11*	0.05
	Age	-0.09	0.06
	Frequency Consumption	-0.34*	0.08
Value Sustainability	Number Children	-0.03	0.04
	Value Origin	0.32*	0.04
	Value Naturalness	0.41*	0.04
	Male	-0.02	0.04
	Age	-0.08	0.04
	Frequency Consumption	-0.15*	0.07
Value Flavor	Value Sustainability	0.15*	0.04
	Value Origin	0.08*	0.03
No Vested Interest	Value Origin	0.16*	0.04
	Frequency Consumption	0.20*	0.09
Knowledgeable	No Vested Interest	0.57*	0.03
Not Wrong	Knowledgeable	-0.16*	0.05
	No Vested Interest	0.10*	0.05
	Male	-0.08*	0.04
Trust	Age	-0.11*	0.05
	Not Wrong	-0.16*	0.04
	Knowledgeable	0.12*	0.04
Brand Choice	Age	0.13*	0.05
	Trust	0.21*	0.04
	Value Origin	0.06	0.03
Indices of Overall Fit: RMSEA = 0.024; CFI = 0.982.			
Legend: * = Significant at a 95% level.			

Figure 1: The Hypothesized Role of Source Credibility on Consumers Brand Choice

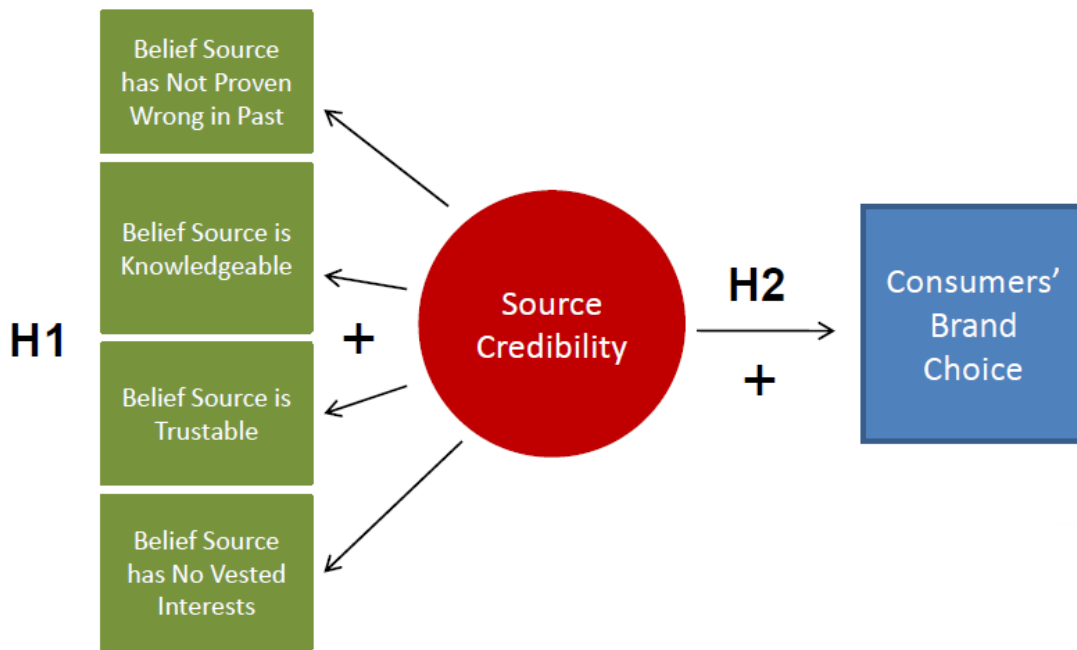


Figure 2: Impact of Consumers' Perceptions on Information Sources on Brand Choice

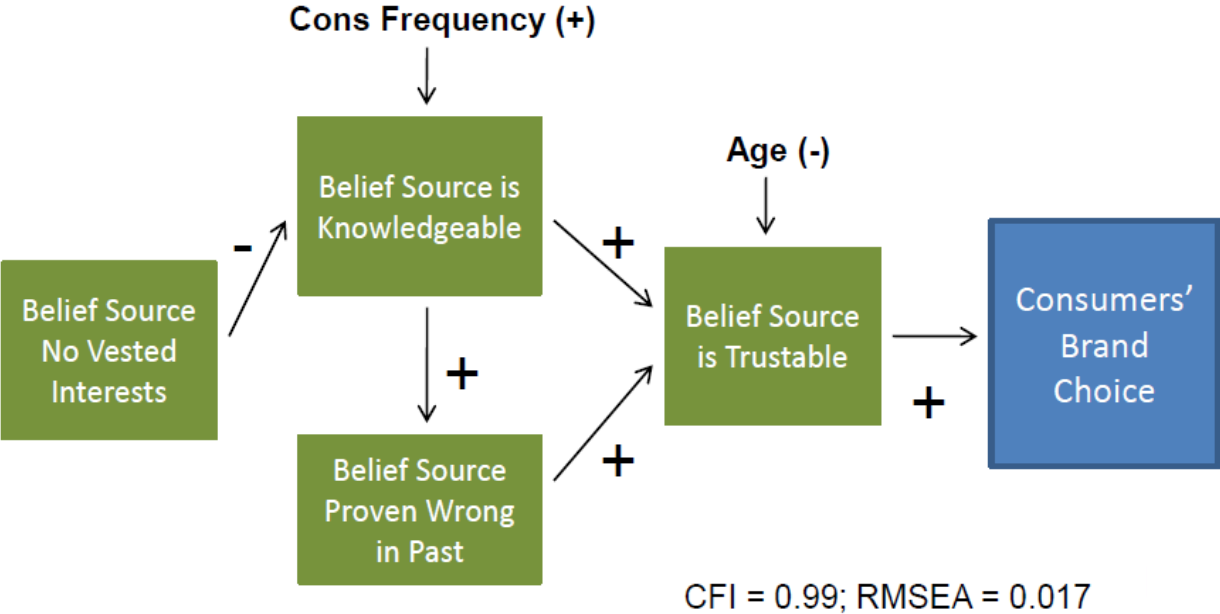


Figure 3: Descriptive Statistics on Consumers' Choice for Individual Information Sources

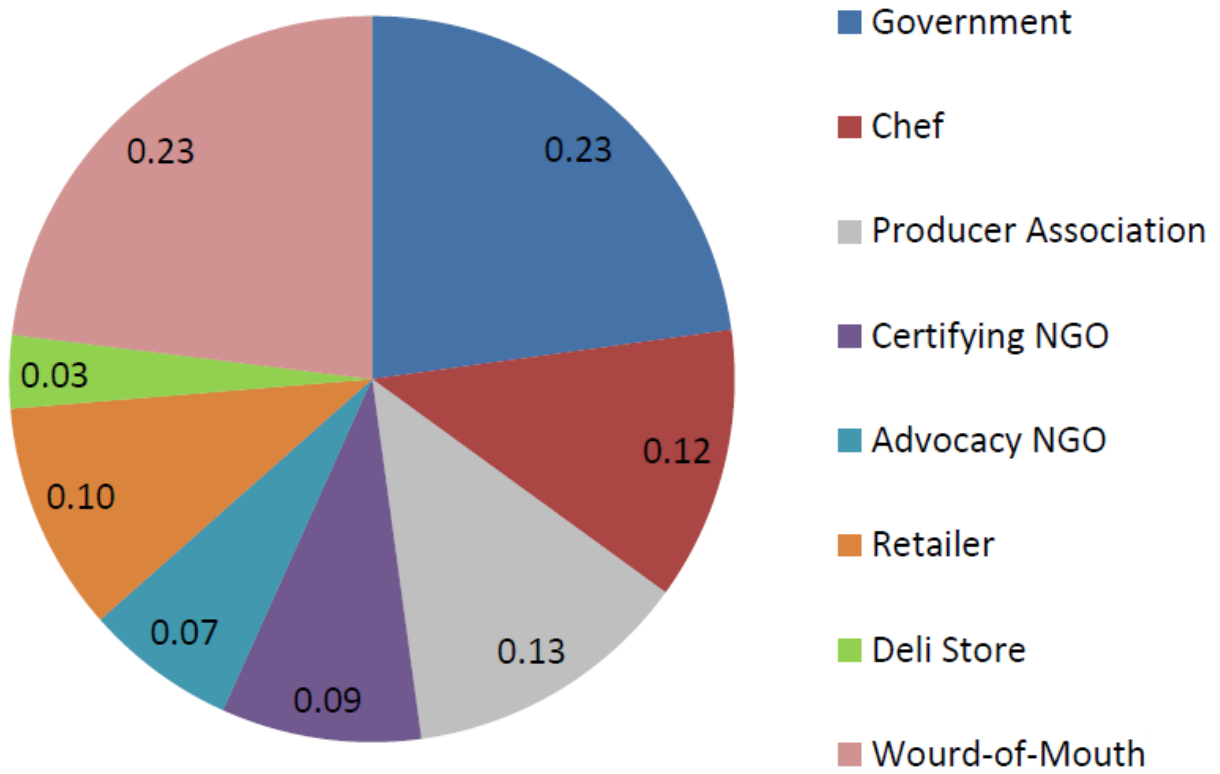
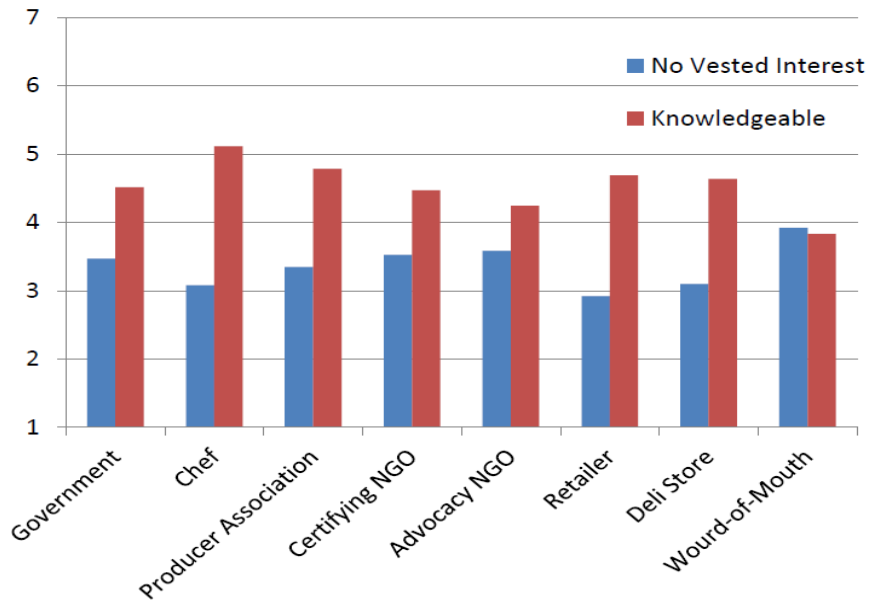


Figure 4: Descriptive Statistics on Consumers' Perceptions for Individual Information Sources

(a)



(b)

