



## A qualitative study of Southern U.S. consumers' top of the mind beliefs about the safety of local beef



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### ABSTRACT

Following the Reasoned Action Approach, the aim of this study was to explore consumers' top-of-mind food safety beliefs about local beef. Beef consumers recruited from farmers' markets (N = 101) and grocery stores (N = 174) across the state of Alabama participated in face-to-face intercept surveys. The survey included closed- and open-ended questions designed to elicit consumers' food safety beliefs about local beef. Results indicate that beef safety was not a top-of-mind concern for a majority of participants, however of the total number of participants familiar with the term "local beef" (n = 168, 61%), a majority (n = 105, 63%) associated local beef with improved food safety. Content analysis of verbatim text revealed that consumers believed local beef was safer because they possess greater knowledge about the product and less shipping was involved. Respondents also believe that locally processed meat is derived from small-scale operations which provided the assurance that local beef is more likely to meet U.S. regulatory standards and therefore be safer. Consumers believe they have more oversight of local beef due to both their relationships with supply chain actors and proximity which also provided food safety assurances.

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"WANTED: SAFE BEEF, Bacteria-tainted ground beef remains a major source of serious illness in the U.S." declared the cover of the [October 2015 Consumer Reports](#). Prepared by the Food Safety and Sustainability Center, the "Beef Report" contends that to fully prevent foodborne disease and reduce the risk of illness it is necessary to address animal production and processing practices. The "Beef Report" goes on to assert that a majority of U.S. consumers are demanding sustainable beef products. Indeed, according to industry reports on the future of beef in North America, there is growing consumer interest and demand for alternative production systems such as organic, forage-fed (Galyean, Ponce, & Schutz, 2011; Gwin, Thibournery, & Stillman, 2013) and "local" (Gwin et al., 2013; Johnson, Marti, & Gwin, 2012; Martinez et al., 2010; Troop, 2015). Yet, the extent to which consumers' beef safety concerns drive demand for alternative beef production is unknown.

In terms of general beef production, concerns about beef safety have been shown to influence consumer attitudes toward meat (Verbeke & Vackier, 2004) as well as intent to purchase and/or consume beef (da Fonseca & Salay, 2008; Henson & Northen, 2000; Loureiro & Umberger, 2007). Much of this evidence comes from European studies. For example, a study conducted in the capital cities of Germany, Spain, France, and the United Kingdom found that focus group participants perceived beef from their own country to be safer than beef from other countries (Van Wezemael, Verbeke, Kugler, de Barcellos, & Grunert, 2010). This finding was related to consumers' knowledge and trust in the beef safety regulations of their own country (Van Wezemael et al., 2010). Studies from the E.U. have also found that consumers relate production practices to beef safety (Van Wezemael et al., 2010; Verbeke, Perez-Cueto, de Barcellos, Krystallis, & Grunert, 2010). For some consumers, organic certification signals safety because they associate organic with natural production where animals are treated and fed in "decent, healthy, and animal friendly ways" (Van Wezemael et al., 2010, p. 841). Animal welfare standards at the production stage are also seen as an indicator of beef safety; in particular, the

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conditions in which the animals are born, raised and killed (Verbeke, Van Wezemael et al., 2010). E.U. consumers also perceive different actors along the supply chain as possessing varying levels of trust with upstream actors (production and processing) trusted least and those in distribution and retail trusted most (Van Wezemael et al., 2010).

Research examining U.S. consumers' beef safety beliefs is limited. One study found that U.S. consumers value certification of USDA food safety inspection for beef products more than country-of-origin labeling, traceability, or tenderness (Loureiro & Umberger, 2007). Other research has found that consumer trust in the U.S. food system more broadly, is heavily influenced by beliefs that food system actors behave with fiduciary responsibility (Sapp et al., 2009). This work provides some insight into U.S. consumers food safety beliefs, including preferences for beef safety certification. However, there is little research investigating the beef safety beliefs that underlie these preferences, whether the products are classified as “sustainable” or otherwise. An essential step to understanding the rise in U.S. demand for sustainable and local beef production, is to examine beef safety beliefs that inform U.S. consumers' behavior. This is the theme of the present research.

Beef safety is a credence attribute and the level of safety is generally not observable nor easily experienced (Grunert, 2005). This makes it difficult for consumers to accurately assess beef safety (Van Wezemael et al., 2010). Instead, consumer beef safety perceptions are subjective and an individual's “perception filter” acts as a mirror that reflects, deflects, or distorts information (Verbeke, Frewer, Scholderer, & DeBrabander, 2007, p. 4). Additionally, consumers' perceptions of food, in general, are not only based on sensory factors, but also on an individual's attitudes and beliefs (Costell, Tárrega, & Bayarri, 2010). Studies of alternative foods more generally have also found attitudes and beliefs to be especially important in consumer choice and behavior (Connor, Armitage, & Conner, 2002; Costell et al., 2010; Roininen & Tuorila, 1999).

A theoretical model that is useful for examining consumer's attitudes and beliefs about beef safety is the *theory of planned behavior* (TPB). The TPB is a framework that has been successfully used to examine beliefs underlying behavioral decision-making in a variety of domains including food (Arvola et al., 2008; Claret et al., 2014; Connor et al., 2002; Dean et al., 2006; Sheats & Middlestadt, 2013). Developed as an extension of the theory of reasoned action (TRA), the TPB is a belief-based social cognitive theory (Ajzen, 1985) that posits that individual's expectations and values about engaging in a behavior form their behavioral, normative and control beliefs (Fishbein & Ajzen, 2010). These beliefs are theorized as the underlying factors which influence three latent constructs: attitude, subjective norm, and perceived behavioral control. Most often, the TPB is used to predict which of these latent constructs influence behavior and is the aim of a larger study from which the data for this paper originated. The focus of this paper, therefore, is to examine the beef safety beliefs that underlie consumers' intention to purchase local beef, a first step in modeling consumers' behavior and intention.

Beliefs represent an individual's perception and are defined as the subjective probability that an object possesses certain attributes and reflect the likelihood that performing a behavior will lead to a specific outcome (Fishbein & Ajzen, 2010). Beliefs can originate from a variety of sources (e.g. personal experiences, media, interaction with family and friends) and do not have to be factually accurate to influence behavior (Fishbein & Ajzen, 2010). The TPB recognizes that individuals can form many different beliefs about an object but it assumes that only salient or top-of-mind beliefs (i.e., beliefs that come readily to mind without much cognitive effort) serve as the prevailing determinants of behavior toward an object and are therefore the best predictors of the consumer's

behavior (Ajzen & Fishbein, 1980). Furthermore, salient beliefs are likely to vary because not all people share the same thoughts and feelings about particular behaviors (e.g. purchasing local beef and beef safety).

One reason beliefs about the safety of local beef may differ is food involvement which is the level of perceived personal importance of food in a person's life. This can include the extent to which individuals enjoy talking about food, engage in food-related activities, and entertain thoughts about food during the day (Chen, 2007). The level of involvement may influence the extent to which consumers rely on price, marketing efforts, and labeling in their decision-making (Verbeke & Vackier, 2004). Studies have also shown that the context in which agrifood products are purchased shapes the meanings which are attributed to said product (Holloway & Kneafsey, 2000). For instance, products acquired from farmers' markets can be imbued with particular symbolic meaning related to nostalgia for rural areas such as authenticity, quality, and naturalness. There is mixed evidence regarding how race, income, and education may shape the likelihood that consumers support local foods (Byker, Shanks, Misyak, & Serrano, 2012; Chambers, Lobb, Butler, Harvey, & Bruce Traill, 2007; Onianwa, Wheelock, & Mojica, 2005; Zepeda & Li, 2006; Zepeda & Nie, 2012) and it is possible that individuals from different socio-economic backgrounds vary in their beef safety beliefs. Some studies (e.g., Davidson, Schröder, & Bower, 2003; Roininen, Arvola, & Lahteenmaki, 2006) find that beliefs about local foods, in general, vary across consumers who live in rural areas versus those who live in urban areas, but other research has not found this variation (Chang et al., 2013).

Given the contextual variability of beliefs, it is important to identify the beef safety beliefs of the population of interest. According to the TPB, elicitation studies are recommended when the researcher's goal is to understand beliefs underlying context specific behaviors (Fishbein, 1995; Fishbein & Ajzen, 1975; Middlestadt, Bhattacharyya, Rosenbaum, Fishbein, & Shepherd, 1996). Specifically, Fishbein and Ajzen (2010) recommend that researchers 1) conduct interviews with members of the target group using open-ended questions eliciting top-of-mind beliefs about the behavior in question, 2) complete a content analysis to rank-order the elicited beliefs, and 3) determine the most salient beliefs based on the content analysis.

The findings from this analysis can help guide further research on motivations, attitudes, and behavior regarding local foods, which is of increasing interest to members of the U.S. beef industry (Graves, 2016; Onozaka, Nurse, & McFadden, 2010). It is also of interest to U.S. national and subnational governments as they continue to fund and to endorse relocalization efforts by promoting sustainable, local meat supply chains. Furthermore, non-governmental organizations promoting sustainable beef (e.g., Consumers Reports) will benefit from a deeper understanding of beliefs that may influence consumers' local beef and beef safety behaviors.

Given these gaps in knowledge and previous research of how beliefs about food risks are shaped by socio-cultural factors, this study sought to explore the food safety beliefs of southern, U.S. consumers because this population has been underrepresented in investigations of beef safety perceptions and in local food studies more generally. Furthermore, the present study focused on two types of consumers: farmers' market and grocery store. The decision to target these two consumer groups was based on an overall lack of available data regarding consumer awareness of local beef products. The former was chosen as these individuals are most likely to be familiar with local food products. This group, which is well represented in the literature (Byker et al., 2012) also tends to be white, urban, affluent, and well-educated (Rice, 2015). Much less

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