Where I Come From: Exploring Regional Differences in California Consumers' Attitudes and Beliefs About Fluid Milk

As a state responsible for the production of hundreds of different crop varieties, California can be seen as a mecca for agriculture. Despite recent years marked by drought conditions in the reservoir-dependent Central Valley, the state's Mediterranean-type climate continues to deliver high-volume produce and income for the state. According to *Los Angeles Times* writers Karen Ross and Daniel Sumner (2015), "many of the most healthful and desirable foods and beverages grow on California farms and ranches. California, after all, helped start the farm-to-plate movement, and it's not an exaggeration to say that agriculture is tied to the state's identity from harvest (Cesar Chavez) to table (Alice Waters)" (p. 9). Californians' pride in their food can be seen in the prevalence of TV advertising focused on food and beverages sourced from the state. Blue Diamond Almond Growers is one company that has recently capitalized on high consumer demand by aggressively marketing their products through high-profile venues like the Rio de Janeiro Summer Olympics (Kasler, Reese, & Sabalow, 2016).

Perhaps the most widely known agricultural campaign in California, however, is a product of the California Milk Advisory Board (CMAB) and their 'happy' dairy cows. "The Happy Cows advertising campaign has enjoyed unprecedented success in the realm of dairy commodity marketing, but its content has proved controversial" (Specht, 2010, p.88). Many criticized their pastoral portrayal of dairy cows as being unrepresentative of the modern ways dairy farms look and function in California. CMAB has since shifted to a producer-focused approach of getting to know California dairy families through documentaries and interviews, as well as a natural-ingredient focus in their "Return to Real" commercials and content (Faw, 2015).

Another well-known advertising push came from the California Milk Processor Board and its "got milk?" campaign. "[Research] shows that 'got milk?' has become the most remembered tagline in beverage history, outstripping those of beer and soft drink companies" (Goodby, 2013, p. 9). This decades-long presence of television campaigns and print advertising, especially dairy-related, is important to consider when studying consumers in the state of California. Dairy commodity advertising has not only become part of the state's television zeitgeist, but these campaigns have also garnered national and international attention.

Purpose and Research Questions

By better understanding the ways in which individuals receive and conceptualize messages, researchers may gain insight into the imagery, values, and product traits that resonate with consumers and through which channels they receive information about dairy products. Knowing how and where attitudes are formed is key to learning to capture and influence consumers in a way that could be used in milk marketing. Studying individuals in varying geographic areas may also provide a look at how consumers come to make decisions about organic milk products versus conventionally produced milk.

The purpose of this study was to investigate how real-world interactions and contextual factors may lead to purchasing decisions within the realm of milk products. To gain a deeper understanding of why individuals purchase certain types of milk, agricultural communication researchers must learn how the attitudes and beliefs that influence their behavior are formed. This study was guided by two research questions:

RQ1: To which interpersonal channels and influencers do organic and conventional milk consumers primarily refer to acquire information about milk products?
RQ2: How do consumers in different geographic areas of California compare in their perceptions of organic versus conventional milk?

Review of Literature

To address the above research questions, the researchers relied on a theoretical framework that consists of the theory of reasoned action (TRA) and social cognitive theory (SCT).

Theory of Reasoned Action

The theory of reasoned action, rooted in the psychology of human behavior, can be applied to marketing strategy and consumer behavior in the realm of food campaigns, grocery-store advertising, and brand promotion. The theory poses the basic assumption that behavior results from conscious deliberation. TRA defines attitude formation as a process in which the individual's belief system becomes associated with certain behaviors and encourages him or her to favor these certain behaviors over time (Yzer, 2013). TRA can be used to assess the ways in which attitudes toward certain food types develop and how these attitudes will likely influence consumers' intention to purchase or avoid certain products. Previous studies have investigated attitude formation toward food options marketed as sustainable: For example, Vermier and Verbeke (2006) found that a consumer's generally positive interest in, and attitude toward, sustainable products led to a greater intention to buy these foods.

TRA also details the role that intention and norms play in the interaction between attitude and behavior. Intention is the desire of an individual to engage in a specific behavior, so if there is a high level of intention, the likelihood of performing the behavior is high as well. As explained by Fishbein and Ajzen (1975), intentions seemed to be the most reliable indicator of volitional behavior, based on the attitudes and norms toward performing the behavior. Norms influence behavior because they define what others might think about one's actions and how that behavior might appear to others. Lee (2011) found that norms and beliefs developed through peer influence were the greatest predictors of "green," or environmentally-friendly, purchasing. Based on Lee's findings, scholars may assume that consumers who go to the store needing milk are more likely to buy organic milk if they strongly intend to buy an organic variety when they walk into the store and they believe that those in their social circle would see this decision as an acceptable or positive behavior.

The theory of reasoned action addresses the ways in which attitude and subjective norms can influence behavior, but it asserts that these two influences are separate from each other. Hale et al. (2002) suggested that norms' and beliefs' influence on behavior are correlated. Both may have an effect, and because a person's beliefs shape both norms and attitudes, these are likely to coincide. This also leads to one of the drawbacks of the theory of reasoned action: Norms are difficult to measure and therefore predicting their influence can be difficult.

Social Cognitive Theory

The ways in which an individual's social environment affects his or her decision-making played a large role in this study. Social cognitive theory connects external events or people to the ways in which those external factors influence an individual's perceptions of, and motivation to perform, certain behaviors. Albert Bandura, the seminal researcher in his field, identified a number

of factors that contribute to social cognition, including *self-efficacy*, *social support*, *outcome expectations*, and *self-regulation* (Anderson, Winett, & Wojcik, 2007). Some factors are intrinsic and internal, while others, like *social support*, deal with external influences on beliefs and behaviors.

In his work on SCT, Bandura (2001) outlined a set of subfunctions, or steps, an individual completes before ultimately performing a certain behavior. In the first subfunction, *attentional processes*, an individual observes behaviors or acquires information from sources like the media and personal networks. For example, consumers interested in organic food products may seek out information from websites, blogs, or social media, or they may question their peers about their beliefs and behaviors related to food purchasing decisions. These outlets may influence individuals' attitudes and behaviors as they are exposed to posts, discussions, and promotional information. In the second subfunction, *retention processes*, this environmental reinforcement would be translated into memory codes (Bandura, 2001). If the users and networks that consumers associate with encourage and promote the superiority of a certain production practice, individuals may eventually internalize this belief. In the third subfunction of the theory, *production processes*, these memory codes lead to actions that support these codes (Bandura, 2001). This assumes that, after observing attitudes and behaviors within their networks, consumers will establish and perform the same behaviors (for instance, buying organic instead of conventionally produced milk).

Anderson, Winett, and Wojcik's (2007) study of healthy eating behaviors among adult consumers in Virginia support the notion that social factors like family support increase the likelihood of individuals to engage in certain behaviors. "Family social support made an important total contribution to participants' healthier nutrition; participants perceiving family members making attempts at healthier eating had lower levels of fat…and higher levels of fiber …and fruits and vegetables…in their food purchases and intake" compared to study participants who did not have health-positive behaviors to model (p. 309).

Together, TRA and SCT provide a solid theoretical base for studying the effects of social influences on consumers' attitudes and behavior. In this study, the researchers investigated how specific external forces—including interpersonal networks and the geographic area in which consumers reside—sway beliefs and decision-making with regard to fluid milk.

Methods

Instrumentation

An online survey was used to collect personal accounts of California residents' social interactions related to milk products and to investigate their knowledge, attitudes, and beliefs related to fluid milk production and purchasing. (As this study was part of a broader investigation of California consumers' milk-purchasing decision-making, the researchers will describe instrumentation, results, and conclusions for only the research questions addressed in this report.) In the researcher-created instrument, the first block of questions inquired about the demographics and education level of both the participants and individuals in their peer groups and social networks. Multiple-choice questions included "Would you say individuals in your social circle generally share similar views, opinions, beliefs, etc.?" and "How would you describe the neighborhood/area you *currently* live in?" Participants were also asked to discuss, in narrative form, where they come across or actively seek out information about milk products and production

practices. The open-ended responses were broken out into categories of types of sources and analyzed for frequency.

Part of the survey instrument was used to gather information regarding individuals' existing knowledge of and exposure to information about milk production, while another section recorded participants' perceptions of milk production. Participants were asked to describe their knowledge of milk products and dairy farming on a scale of "a great deal" to "none at all." They were similarly asked about their level of concern with dairy production standards, nutritious values, and safety on a scale of "extremely" to "not at all." The survey concluded with a section related to individuals' actual milk purchasing preferences and behaviors.

Data Collection and Analysis

A sample of 308 survey participants was generated by a team from Qualtrics, a survey design and delivery platform. The survey was distributed to individuals throughout the state of California, and responses were sorted by geographic area based on self-reported answers about where they currently live (urban, suburban, or rural areas) until a quota of at least 100 completed responses was reached for each area. California was chosen because of its large agricultural presence coupled with densely populated urban areas along the coast. The researchers believed California would offer a unique array of perspectives and experiences between different geographic areas.

The survey was not stratified for a certain age range or gender makeup; the only parameters provided were residence in California and for geographic area within the state. Qualtrics handled the contact and collection process as participants completed and submitted the survey. Following Qualtrics procedures, only completed and usable responses (n = 308) were turned over to the research team at the end of the collection period. The survey instrument was used to define the real-world and online social networks to which participants belong. The team also collected data on typical milk purchasing preferences and behavior, including the type of milk and frequency of purchasing milk. Other topics covered in the instrument include the amount of milk- and milk-production-related discussion in real-world social networks and perceptions of different types of milk.

Quantitative data were downloaded in .csv format and analyzed in SPSS Statistics software. Frequencies were calculated for demographic data and scaled items, and analyses of variance (ANOVA) were generated to compare means for perception-related responses. A quantitative content analysis of short-answer responses was conducted to identify and categorize sources of milk-related information.

Findings

Demographics and Purchasing Behaviors

The final sample consisted of 308 completed and usable responses. The sample comprised approximately 100 respondents from each geographic area: 102 urban, 104 suburban, and 102 rural. Geographic area was self-reported by participants, and quotas for each area were met using these responses. This stratification was intended to make comparisons more statistically significant, though the resulting numbers are not representative of the distribution of Californians living in these areas. According to the 2010 U.S. Census, 95% of Californians live in urban areas, the highest of any state (Lambert, 2012). (Because the census only classifies areas as urban or rural, there is no data for suburban populations). The number of self-reported conventional-milk consumers in the survey (n = 222) was significantly larger than the number of organic consumers

(n = 76). While any comparisons between organic-milk and conventional-milk consumers cannot necessarily be extrapolated to a larger population, this does still offer some insight into the important differences between the two types of consumers.

Thirty-five percent of respondents were male (n = 108) and 65% were female (n = 200), while actual state gender distribution is almost exactly equal (U.S. Census Bureau, 2015). The average age of participants was 43 years old with a standard deviation of 15 years; the average age in the state is 35.8 (U.S. Census Bureau, 2015). Less than 3% of respondents had less than a high school education; 20.1% were high school graduates; 28.8% had some college education; 9.7% had a two-year degree; 26.3% received a four-year degree; and 12% had a graduate or professional degree. About a quarter of respondents (n = 72) indicated that they prefer to purchase organic milk, 68.9% (n = 213) said they prefer to buy conventional milk, and 7.5% (n = 23) of the participants indicated that they purchase alternative products.

RQ1: Which Channels and Influencers, Both Online and Personal, Do Organic- and Conventional-Milk Consumers Primarily Use to Acquire Information Regarding Milk Products?

Sources of milk information. The team compared respondents' active and incidental exposure to milk-related information sources (Table 1). Online information sources (n = 139), such as Facebook, Google, or online news articles, were the most prevalent for individuals who actively sought information about fluid milk products. Other sources of information that were actively sought by respondents included the grocery store (n = 39), television (n = 37), and other people (n = 32).

Television was the information source most often reported as providing passive exposure to milk information (n = 131), followed by online sources (n = 87), grocery stores (n = 47), and other people (n = 47). Respondents reported finding information online via sites like Google, social media platforms, and health sites and blogs; in grocery stores, respondents found information on labels, in conversation with store personnel, and in advertisements. In the category "other people," respondents included family, friends, doctors, or teachers, while television sources included commercials and local news station coverage.

For both purposeful and incidental exposure, the overall least-reported sources of information were print media, including magazines and local and major-market newspapers, and individuals directly involved in agriculture.

Of the 308 survey participants, 76 reported that they prefer to buy organic milk and 222 prefer conventional milk; the remaining participants did not have a preference or reported that they choose to buy alternative products. Of the 76 organic purchasers, 40 (53%) said they purposefully seek out information about milk from online sources, and 11 (15%) said they seek out information from their local grocery stores and markets. When asked where they passively encounter information, however, 28 (37%) reported television, 23 (30%) reported online sources, and 14 (18%) reported print sources.

Among the 222 conventional-milk consumers, nearly half (45%; n = 99) reported that they sought out information from online sources, and less than 15% reported television (14%; n = 32), and other people (13%; n = 29). As for where these conventional-milk consumers passively encounter information, respondents reported television (46%, n = 103), online sources (29%, n = 64), and other people (18%, n = 40). Varying from the organic-milk consumers, a handful of conventional-milk consumers also cited their own personal experience with dairy farming as a source of information about milk products (3%).

Table 1

Comparison of Frequency of Active Versus Incidental Exposure to Fluid Milk-Related Information Sources

Source	Frequency of Active Source Exposure	Frequency of Incidental Source Exposure
Online	139	87
Grocery store	39	47
Television	37	131
Other people	32	47
Print sources	19	28
Those working in agriculture	11	15

Interpersonal networks. To gain a clearer picture of the interactions and relationships between individuals and their social environment, respondents were asked a series of short-answer questions about their real-world social networks. Participants were first asked to discuss whether they consider themselves to be similar to or different from those in their social groups in terms of general beliefs, opinions, and values. They were then asked to expand on their answers as to why they feel this way. A majority (79%) of organic-milk consumers said they share similar views, opinions, and beliefs as others in their social circles. A similarly large portion of conventional-milk consumers also said they share similar views, opinions, and beliefs as those in their social circles. For both groups, the similarities included political and religious beliefs, hobbies, and perspectives on parenting.

In the same format, participants were then asked about their backgrounds, families, education, and other characteristics as compared to their social groups. More than two-thirds (67%) of both organic- and conventional-milk consumers said they are generally of similar background, upbringing, and education level as others in their social circles. For similarities in upbringing and background, many common responses included community connections, familial values, education level, and socioeconomic status. The few disparities included embracing open-mindedness and differences, race and religion, politics, or coming from a different area or part of the world.

Next, survey respondents were asked about the level of discussion about milk that occurs between themselves and their friends and family. On a scale of 1 to 5, with 1 being "always discussed" and 5 being "never discussed," organic-milk consumers were slightly more likely (3.21) than conventional-milk consumers (3.82) to discuss milk products with their friends. Discussion with family was slightly more frequent for both groups, with organic consumers averaging 3.04 and conventional consumers, 3.59.

RQ2: How Do Consumers in Different Geographic Areas of California Compare in Their Perceptions of Organic Versus Conventional Milk?

Respondents were asked several Likert-type scaled questions to measure perceptions of milk products. Respondents were asked to indicate their level of self-perceived knowledge of milk products, concern with milk product standards, the perceived nutritious value of conventional milk,

the perceived nutritious value of organic milk, the perceived safety of conventional milk, and the perceived safety of organic milk. Respondents answered on a scale of 1 to 5, with 1 representing "a great deal/extremely" and 5 representing "none at all." Table 2 provides average perceptions by area.

Table 2

Average Consumer Perceptions of Milk by Geographic Area

Variable	Urban	Suburban	Rural
Self-Perceived Milk Knowledge	2.84	3.29	3.33
Overall Concern with Milk Products	2.75	2.79	3.01
Perceived Nutritious Value of Conventional Milk	2.29	2.59	2.52
Perceived Nutritious Value of Organic Milk	2.16	2.33	2.41
Perceived Safety of Conventional Milk	2.23	2.57	2.53
Perceived Safety of Organic Milk	2.01	2.25	2.44

NOTE: Means based on a scale of 1-5, 1 being a high level (“a great deal/extremely), 5 being a low level (“none at all”).

A one-way analysis of variance (ANOVA) revealed no statistically significant differences between areas (urban, suburban, or rural) in three of the six categories: overall concern with milk products regardless of type, the perceived the nutritious value of conventional milk, and the perceived nutritious value of organic milk. There were, however, statistically significant differences between the geographical areas in three of the categories: self-perceived knowledge of milk products, perceived safety of conventional milk, and perceived safety of organic milk. With a level of significance set at .05, the between-group differences were identified using the Games-Howell post-hoc comparison.

The Games-Howell post-hoc comparison for perceived milk knowledge identified a significant difference between the urban consumers and suburban consumers at a .012 level of significance and between urban and rural consumers at a .004 level of significance. (Table 3 provides a detailed look at between-group differences and significance levels.) Urban respondents rated themselves significantly more knowledgeable about milk than their rural and suburban counterparts.

Table 3

Games-Howell Post-Hoc Comparison of Perceived Milk Knowledge Among Geographic Areas

Current Neighborhood (I)	Current Neighborhood (J)	Mean Difference (I-J)	Std. Error	Sig.
Urban	Suburban	-.45494*	.15777	**.012**
	Rural	-.49020*	.15140	**.004**
Suburban	Urban	.45494*	.15777	**.012**
	Rural	-.03526	.14667	.969
Rural	Urban	.49020*	.15140	**.004**
	Suburban	.03526	.14667	.969

Perceived safety of conventional milk was another area in which consumers differed by area. Urban consumers reported the highest average perceived level of conventional milk safety, followed by suburban consumers and rural consumers. The Games-Howell post-hoc comparison in Table 4 shows that participants from urban areas reported notably higher levels of perceived safety of conventional milk than did suburban consumers at a .029 level of significance. Differences between urban and rural consumers or suburban and rural consumers were not statistically significant.

Table 4

Games-Howell Post-Hoc Comparison of Perceived Conventional Milk Safety Among Geographic Areas

Current Neighborhood (I)	Current Neighborhood (J)	Mean Difference (I-J)	Std. Error	Sig.
Urban	Suburban	-.34182*	.13274	**.029**
	Rural	-.30392	.13336	.061
Suburban	Urban	.34182*	.13274	**.029**
	Rural	.03790	.13692	.959
Rural	Urban	.30392	.13336	.061
	Suburban	-.03790	.13692	.959

Both suburban and rural consumers indicated lower perceived safety of organic milk than urban consumers. Urban and rural consumers had significantly different perceptions of the safety of organic milk, and this category contained the greatest between-groups differences (Table 5).

Table 5

Games-Howell Post-hoc Comparison of Perceived Organic Milk Safety Among Geographic Areas

Current Neighborhood (I)	Current Neighborhood (J)	Mean Difference (I-J)	Std. Error	Sig.
Urban	Suburban	-.24020	.11954	.113
	Rural	-.43137*	.13223	**.004**
Suburban	Urban	.24020	.11954	.113
	Rural	-.19118	.13842	.353
Rural	Urban	.43137*	.13223	**.004**
	Suburban	.19118	.13842	.353

Aside from the three areas of significant difference presented above, consumers of different geographical areas of California were relatively similar in their perceptions of milk. Their purchasing preferences, however, differed quite a bit (Figure 1). Most participants prefer to purchase conventional milk in all areas. Urban residents were the most likely consumers to prefer organic milk (34%). Urban consumers also reported the lowest overall preference for conventional milk compared to suburban and rural areas. Rural consumers were the most homogenous group, as conventional milk was the preferred choice in the highest percentage (75%) among the areas, and rural consumers accounted for the smallest percentage of consumers who prefer organic milk (15%) across all areas. Suburban consumers fell in between these two ends with 21.15% of consumers choosing organic and 69.23% choosing conventional milk.

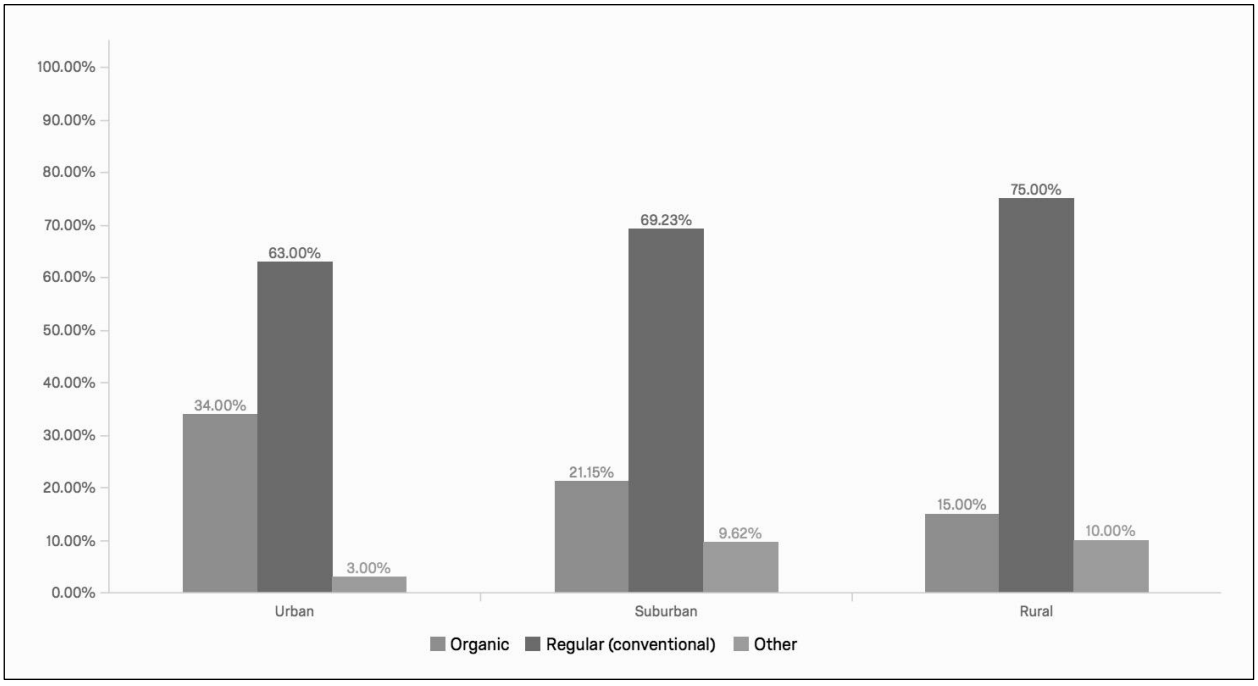

Figure 1. Comparison of purchasing preference by area.

Conclusions

Interpersonal Channels and Influencers

A larger percentage of organic-milk consumers indicated that they see their grocery store or local market as a source of information, while stores were not a prevalent source for conventional-milk consumers. This indicates that local stores and supermarkets may be important channels for reaching and educating organic-milk consumers in California. Based on organic-milk consumer responses and the assumptions of the social cognitive theory, leaning on social media and in-store communication channels may be the best way to reach organic consumers and influence their perceptions of milk.

Conventional-milk consumers reported more seeking and gathering information from other people. The emphasis on others as sources of information among conventional-milk consumers indicates that interpersonal relationships and connections are an important avenue for information dissemination. For continued loyalty to and trust in conventional products, these consumers might be best reached through in-person community events or programs to more effectively reach their interpersonal networks.

Investigating social groups as a source of information for consumers, the researchers wanted to learn if consumers look to their friends, family, and other members of their interpersonal networks to learn about milk. The difference in reported milk-related discussions between the two groups was small, though organic-milk consumers were slightly more likely to engage in these conversations. This finding could indicate that milk and milk production are more frequent topics of discussion among organic-milk consumers. Further research could delve deeper into these conversations to determine if these consumers are surrounded by those who are more involved and engaged in a discussion surrounding milk product labels and standards. According to the theory of reasoned action, interpersonal interactions like these might indicate that individuals who choose to buy organic milk do so, at least in part, because their family and friends view that as a positive behavior.

Regional Comparisons in Perceptions of Milk

In discussing these comparisons, the authors note that geographic areas were self-reported by survey respondents and that respondents were given leeway to choose how to describe their geographic areas. Though this constitutes a limitation of the study, the findings described below should nonetheless be of interest to communication researchers and practitioners alike. In many ways, consumers in rural, urban, and suburban areas did not present very different perceptions of milk products, especially regarding nutrition and milk production standards. The idea that drinking milk provides health and nutrition benefits appears to be salient among consumers, despite some questions they have about its safety. Some clear differences existed among the three groups regarding their concerns about milk safety of milk and their perceived knowledge of milk.

Based on TRA and SCT, agricultural communication scholars can speculate about the differences in perceived self-knowledge of milk and perceived safety of milk. If consumers in different geographical areas express significantly different opinions on the subject, researchers may assume the consumers are being exposed to different messages regarding organic and conventional milk safety. Urban consumers reported higher overall confidence in the safety of organic milk products. While they reported slightly less confidence in conventional milk product safety, they still averaged higher than both suburban and rural consumers.

This comparatively greater confidence in milk product safety could indicate that there is more information being communicated in urban areas, especially considering these consumers' higher self-perceived knowledge level. This finding reifies seminal research in knowledge gap theory and the "digital divide" that found that metropolitan communities tend to adopt and use communication channels at faster rates than their rural counterparts and have better access to information (Hindman, 2000; Donohue, Tichenor, & Olien, 1986). Significantly more urban consumers perceived organic products to be safe than did rural consumers, perhaps because such messages are perpetuated in these areas in places like grocery stores, where organic consumers report acquiring milk-related information. This might be an opportunity for agricultural communicators to fill a knowledge gap in urban areas.

Urban consumers' higher self-perceived knowledge could also be an indication that they are more frequently seeing or seeking out information from their social networks. Continuous exposure to pro-organic messages may cause consumers to internalize this information and feel confident in the knowledge they have, regardless of who or where it comes from. According to the TRA, if urban consumers perceive people like themselves to be more knowledgeable, they might place a great deal of confidence in their interpersonal connections, leading them to follow suit in their actions. The lower self-perceived knowledge of rural and suburban consumers could indicate that urban consumers are exposed to more information; it could, however, be a result of suburban and rural consumers being exposed to mixed or conflicting information about milk products.

The results of this study reveal some interesting insights into how consumers learn about, perceive, and purchase milk products. Urban consumers, who consider themselves the most knowledgeable about milk, are the most likely to purchase organic milk and the least likely to question its safety. These consumers also report spending more time discussing milk, reinforcing the opinions and beliefs of their peer group. Suburban and rural consumers, reporting lower levels of perceived knowledge and greater safety concerns, are comparatively less apt to purchase organic products and are less reliant on peer influence. These findings indicate that conventional-milk processors and marketers should focus on interpersonal networks and individual-level communication to build influence in urban communities to prevent their market share from eroding in favor of organic milk. In rural and suburban communities, these organizations should focus on milk safety and nutrition to reinforce the message that conventional milk is safe, nutritious, and affordable.

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