US Commercial Food Safety: Consumers Assignment of Responsibility within the Value Chain

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Abstract

Foodoffered through the United States (US)commercial food industry has been a safety concern for decades. Today,extensive global competition brings a wide variety of foods, at low costs,and increases the potential for unsafe food in an already suspect food supply. The currentempirical study adds to the literature by examining an understudied area of assignment of responsibilityfor product safety for which brands areoften unknown (e.g., meat) and where brand awareness has littleinfluenceon consumers' choices.Due to a lack of association between the product and abrand, consumers too often make choices based on price alone. This studytempers the findings against country of origin effect and consumers' risk aversion in their assignment of responsibility for food safety. The findings offer some explanations as to whymore consumers are notactively engaged in protecting themselves from dangers in the food supply.

Keywords: marketing, empirical study, attribution theory, country of origin, global marketplace, risk aversion

1. Introduction

This study empirically examines an understudied area,*assignment of responsibility* for product safety, in a globalized marketplace fortheproduct category (i.e., meat) where branding produces little or no emotional ties to the brand or does not exist and where product recalls are perceived to impact large numbers of consumers (e.g., largest US beef recall occurred in March 2008 - 143 million pounds). Without brand awareness, failures in productsafety are expected to impact consumers' perception of the entire value chainin that they do not know where to assign blame or where to turn to solve such complex problems(Dahlberg, 2008). Issues regarding the safety of the US commercial meat supply are easily traceable back to before 1906 when Upton Sinclair enlightened the nation about both the horrific conditions in the meat packing industry, the health dangers of working in the meat industry, and health issues from consuming meat products. Globalization and advances in technology have opened the door for new products, and greater risks from processing and growing practices in other countries. Although the Food and Drug Administration (FDA) tests for chemical/pesticide risk and have a targeted list of high-risk imported products,etc., problems are far from over (e.g., 2011 E Coli outbreak in Europe from leafy vegetables) that hold the potential for impact on the US food supply((FDA, 2011;Kanter 2011).The following section provides examples food safety concerns in a historical format, specifically in the meat category of beef. It also brings forth relevant theory and literature and offers measurable.

2. Theoretical Foundations, Relevant Literature, and Hypotheses

In 1906, the researcher, Upton Sinclair, brought significant attention toissues of food safety and inadequate consumer protection measures in the beef industry in the US. By the 1960s (age of consumerism),food safety issue awareness had grown significantly andthe public cry for solutions led to a surge in governmental consumer protection actions. Catastrophic events at Jack in the Box restaurants in 1993 resulted ina deadly outbreak of E Coli that was traced to nine slaughterhouses in Canada and the US. By 2006, imported food ingredients increased to $7.6 billion up from $4.4 billion in 2001. By 2007, over $70.5 billion in total food volume was imported (Hemphill, 2009). As the US opened its borders to more imported food products than ever before, problems grew from both domestic and imported food supplies. For example, indirect negative outcomes to humans from growth hormones fed to or injected into animals used for human consumption worried the consuming population (Smith, 2006). Yet, possibly for economic reasons, many companies continue to use growth hormones. Also, studies have shown negative outcomes to humans eating meat from animals given doses of antibiotics (i.e., loss of antibiotic effectiveness for humans – Center for Disease Control), yet the practice continues, and not for therapeutic use, but for the sole purpose of compensating for overcrowded factory-farms where unsanitary conditions persist.

Another significant negative impact came in the early 2000s *Mad Cow* disease (BSE) which, for a five-year period, shook the consumer's confidence in the safety of the imported commercial food supply and left the consuming public to wonder if those involved in the US commercial food supply chain were doing enough to protect them.Over a decade after the original Jack in the Box restaurants' incidents, heavily regulatedground beef is still making people deathly sick (e.g., meat with virulent strain of E. coli O157:H7). Again in 2009, E Coli was an issue in ground beef that involved ingredients from various slaughterhouses in the US and Uruguay and from a South Dakota company that processes fatty trimmings, and treats meat with ammonia to kill bacteria, which brings forth the difficulties of regulating the industry (Moss, 2009). Again, in March of 2011, approximately 14,158 pounds of ground beef products contaminated with E. coli (O157:H7) were recalled by the US Department of Agriculture's Food Safety and Inspection Service (USDA, 2011). Which begs the question,who is responsible for these issues, and how does recalls affect the entire meat industry. This study asks, who do consumers believe are responsible for safety of the food supply in the US? Is it the government or other members of the value chain (i.e., ranchers, producers, processors, wholesalers, retailers, etc.)? Many beef products are unbranded, thus, are considered a commodity product. US consumers are hard pressed to name the brands of meat they purchase.

In an unaided brand awareness study conducted by the Midan Marketing and Shugoll Research in 2010 (random sample of 200), 40% could not name any beef brands and 46% could only name one brand and the results were not much different for other kinds of meat or poultry. Consumers are more likely to identify the meat they purchase as to perceived-quality based on price (Morrison &Eastburn, 2006). Because of a lack of brand awareness, assignment of blame is expected to affect the entire meat industry to some degree and the bottom lines for all. Many US citizens and activist report a feeling of powerlessness to do anything about food product safety issues(Boyte, 2008). They have become growingly less vocal and less visible than their counterparts in the 1960s(Boyte, 2008). This, however, does not mean consumers do notcare. Knowing where the consuming public assigns responsibility for food safety in the US informs policymakers and value chain members so each can communicate safety measures and improvements to consumers. So, who do consumers believe are responsible for protecting them from health risks associated with the commercial food supply (i.e., food purchased for human consumption) in the US? Answering this question is important as members of North American societies today are a buzz about eco-friendly products, organic foods, healthy eating choices, sustainable food supplies, etc., and many are asking this very question and the answers could prove costly.

Books, steeped in research, on the subjecthave been written by such authors as Simon (2006) and Patel (2007) enlightening the consuming public on the shortcomings of the world food supply system, while others like Kingsolver, Hopp, Kingsolver (2007),and Hesterman (2011) offer solutions on a personal and/or global bases. Allof these authors have one thing in common;their belief thatat some level consumers must be responsible for the health of thefood supply through personal actions and not depend totally on others to solve problems. This study examines whether US consumers agree with this sentiment. Intuitively, it is expected that executives in the meat industry are concerned with their financial bottom line, thus it makes financial sense in the short run to make decisions such as increasinganimal's growth, production, and shortening time to the slaughterhouses if truly based on both profits and the law of supply anddemand. However, taking a long run perspective, stakeholders other than the producers, meat packers, ranchers, and industry executives are affected by the health of the food supply (e.g., animals,people, organizations that treat the sick and dying, insurance companies, and taxpayers to name a few). Thus, food safety is a societal issue, for short term gains may negatively impact long term survival.The following is a synthesis of the literature relevant to the study. The study examines the consumers' assignment of responsibility for the safety of their health to members of thefood value chain. The study tempers the findings against country of origin effect and risk aversion to uncover attitude toward assignment of responsibility.

1.1 Hypothesized Relationships

"While meat consumption measured in tonnage was up significantly in 2009, the dollars are lagging behind as shoppers opt for cheaper cuts and prices dropped in 2009" (American Meat Institute, 2010).Due to little or no branding,the price of meat still drives many purchase decisions, whether or not health risks are important.Based on the evidence presented on health risk from within and outside US borders, in the above section, the following hypothesis is offered:

H_1: The majority of US consumers are concerned about food safety risk fromimportedmeats into the US commercial food supply.

US consumers are predominately at the mercy of the overall commercial food industry (i.e., farmers/ranchers, producers and meat-packers, retailers, wholesalers, and industry executives) as well as the government for the safety of their food.

No research was found in which consumers' attitude toward the responsibility of these entities has been measured. Understanding whether or not the consumer recognizes the responsible of these entities for food safety may reveal if measures taken by these entities to protect the commercial food supply are visible to the end user. Research has shown that consumers recognize and assign socially responsible behaviors to businesses (Kilcullen and Kooistra, 1999). Consumers allocate responsibility for their safety from harm from products to the manufacturer (50%), the retailer (20%) and the user (30%) (Laughery, Lovevoll, &McQuilkin,1996).Attribution theory posits that people form causal inferences and judgments (Fiske & Taylor, 1991). Thus, consumes identify who or what is accountable for either a negative or positive valance and forms an attribution of responsibility (Shaver 1975, 1985). Attributions of responsibility often precede blame to attribute credit or blame to an actor (i.e., individual, corporation, government agency) for an action or inaction (Heider, 1958). The observer may hold the belief that a party (e.g., individual, corporation, government agency) should have foreseen the liability involved in offering a product. The attribution of responsibility influences the observer's attitudes toward a specific party or parties. In the case of the meat industry, attribution for responsibility to protect the US commercial food supply may be assigned to the entire food industryand/or the US government and its agencies. Thus, understanding each entities role in the "blame game" of the food supply chain'srisk of harm is important.

When food safety is the issue, government agencies (e.g., Food & Drug Administration) play a significant role inprotecting the safety of the food supply.Awareness of those failures takes a toll on the entire meat producing industry and outside agencies assigned to protecting the health of the US food supply no matter what agency is at fault. The level of confidence of the consuming public in US government agencies and the commercial food industry to protect the US commercial food supply is closely tied to consumer meat buying choices and effects the US economy. For example,a significant loss of jobs resulted due to fears over Mad Cow disease;costly regulatory actions increased, and imposed greater financial strains, as well as concerns as to health risks to cattle and humans (including the blood supply). Because the US food supply is truly a "globalized food supply", the product's country of origin is expected to play a major role in consumer choices. As a requirement of the 2002 Farm Bill, in September 2008 the US government moved to further protect the commercial food system through this legislation that had been in the works for six years known as, "COOL legislation" [i.e., mandatory Country of Origin labeling (COOL)] on beef, lamb, pork, chicken and goat meat along with other perishable agricultural commodities. As the US moved to secure the safety of the food supply, concerns over COOL come from Canadian farmers and ranchers and centered on the fear of what appeared to be an act of US protectionism against Canadian products (AAFC, 2008). The COOL legislation may be viewed as a protectionist act for the US cattle industry, but is not expected to be a form of protectionism in the minds of US consumers, rather one of safety.

From research we know that consumers tend to hold perceptions and attitudes toward certain countries whichextend to products and brands that come from those countries (Cateora, Gilly, & Graham, 2009). Typically, these perceptions and attitudes are toward products like automobiles, electronics, or fashions. These same perceptions and attitudes also play a role in the consumer's image of a brand and subsequent brand equity. As industries globalize, the issue of origin adds to complexity through country-of-design, of manufacture, and even source of parts. As the level of a country's industrialization changes, perceptions and attitudes change, but often slowly (Cateora et al., 2009). The media has published actions of the US government in identifying imported products and protecting consumers through legislation from the early 1900s (i.e., Pure Food and Drug Act), in 2008 (i.e. COOL), or the 2009 Food Safety Modernization Act signed in 2010. Further, the USDA freely and openly acknowledgedhealth risks from Mad Cow disease and ground beef as well as other products.It is, therefore, hypothesized that consumers are more likely to assign responsibility to the US government and its agencies than to the entire food value chain for the safety of the commercial food supply.

H_{2a}: The majority of US consumers assign responsibility for the safety of commercial food supply to the US government.

H_{2b}: US consumers accurately assign responsibility for commercial food safety to appropriate US government agencies.

Food is required to sustain life and is a unique product because it becomes part of the human body and cannot merely be removed as a piece of clothing can be removed. Humans tend to have lower ''risk tolerance'' when it comes to food because of this phenomenon (Jung, 2006). Today, more than ever before in the US, individuals depend on the commercial food supply over which they have little actual control. According to the Jung's (2006) article, the US commercial food supply is safer than ever before, yet consumers are believed to have lost confidence in the safety of the commercial food supply perhaps due to extremely large amounts of recalls of food products over the last few decades.

An individual's level of risk aversion may play a role in how one assesses health risks from the commercial food supply system. The more risk adverse an individual, the more likely he or she is to self-protect (Chiu, 2000). Thus, this study examines a consumer's attitude toward his or her personal responsibility for the safe usage of products purchased through the US commercial food supply as it correlates with the individual's level of risk aversion. It should be noted here that purchasing and product and assigning responsibility may be disconnected through social/economic status that may dictate consuming products even when an individual believes those responsible are letting him or her down. Also, the individual may have no means, time, ability or knowledge as to how to produce his or her own food supply. When it comes to the food consumed in the US, consumers may have the expectation that the risk of consuming unsafe food products is very limited as government agencies will, upon identification, prevent or quickly recall harmful food thus preventing it from reaching the end consumer. The expectation is that agencies such as the United States FDA will create and enforce laws necessary to protect consumers. Therefore, the US consumer's awareness of an issue does not necessarily lead to personal actions as a citizen in that he or she may see themselves *outside of the solutions* (Center for Democracy & Citizenship, 2008).

In the United States, the FDA publishes many pamphlets on food safety. Many food products come with warnings for proper usage and handling. Yet, at some level, food safety is out of the hands of the consumer. In other words, consumers may feel that they only have a voice about the safety of their food once it reaches their homes. Their belief is that they can only take limited actions such as wash, store, or cook food at proper temperatures to protect themselves and their families, but otherwise the risk is out of their hands. There is a segment of the consuming public known as high-risk consumers (i.e., individuals who are more vulnerable to food borne illnesses). These individuals tend to take more responsibilities for their own health protection from foods (USDA, 2010). However, for this study it was presumedthey would be part of the highly risk averse regarding food safety, None of the participants in the study were asked what specifically they believed their role is as to food safety, just whether or not they felt they had some level of responsibility.

H_3: The greater the US consumer's level of risk aversion, the more likely he or she is to believe it is his or her responsibility to protect himself or herself from unsafe food products that he or she purchases from the US commercial food supply.

Overall, US citizens purchase more food for daily consumption than they grow. Thus, to protect the commercial food supply, laws have been in place and updated for over 100 years. As well, industries, such as the meat packing industry, institute and abide by "self-regulatory" policies. Third party, non-governmental organization and powerful trade organizations across the world also influence and regulate the various sectors of the commercial food industry (Havinga, 2006). Food production plants in the United States from 1996 to 2000, as a whole, spent approximately $380 million annually in addition to long-term investing of $570 million in order to be in compliance with the USDA's 1996 "reduction/hazard analysis critical control point (PR/HACCP) regulation" (USDA, 2010). Additionally, retail establishments play a significant role in food safety through cooperation with food recalls by removing products from the shelves promptly, in addition to risk prevention behaviors such as storing food at appropriate temperatures, and pulling out-of-date products from store shelves. And, through the power of the dollar, retailers control the safety of the food supply by purchasing product from wholesalers who demonstrate a high level of food safety. Suppliers are dependent on the retailer and thus self-regulation is in the retailers' best interest (Havinga, 2006). However, this information seldom filters down to the average consumer.

H_4: A majority of US consumers assign responsibility for commercial food safety to the overall food industry and not to value chain members individually.

At the industry level for food produced for North Americanconsumption, there are those who seemingly demonstrate a lack of concern forcommercialfood health risk. For example, the feeding of herbivores meat and meat byproducts in order to make cattle grow faster and produce more meat products is a significant risk to the animal in the form of Mad Cow disease and to humans in various ways such as vCJD. vCJD isa fatal brain disease with an incubation period of several years and neurological symptoms such as nausea and/or insomnia, eventual loss of control of body movements, the onset of dementia, loss of mental and physical functions, a comatose state and death (National Institute of Neurological Disorders & Strokes, 2008).The economic through the loss of products due to the necessity to slaughter infected cattle is substantial. Problems that were once a world away are now present in the US. Since the early part of the 1990s, Europe has reported the most documented cases of BSE with over 184,500 cases in the United Kingdom (UK) by 2007. For example, in North American, *Mad Cow* disease first surfaced in 2003 in Canada (CDC, 2008). After Mad Cow disease was found in Canada, concerns over the safety of the US commercial food supply became front-page news as Canada is and has been for years the US's largest trading partner for many products.

Prior to 2003, Canada exported 90% of its meat and meat products to the US (i.e., $3.7 billion) (O'Neill, 2005). Between 1997 and 2006, over 150 individuals died from vCJD (most cases were in the United Kingdom) (Anonymous, 2006). "As of June 2008, the total number of vCJD cases identified in residents of the United States was only three; all of which were epidemiologically linked to likely exposures to cattle products contaminated with bovine spongiform encephalopathy (BSE)" while the individuals resided in the United Kingdom (two cases) or in Saudi Arabia (one case) (CDC, 2008). Therefore, the following is hypothesized.

H_5: The majority of US consumers perceive that the United States has one of the safest commercial food systems in the world.

There were no vCJDor BSE cases linked to meat from Canada or the US. In fact, the World Organization for Animal Health (WOAH) recognizes the effectiveness of surveillance and eradicationmeasuresfor the elimination of BSE by the Canadian Government (CDC, 2008). Nevertheless, indications are that for some time a significant number of consumers in the US hold the belief that there is a real and present danger of contracting vCJD or BSE coming from the Canadian food industry from eating BSE contaminatedmeat from Canada (Krauss, 2005). Nevertheless, *Mad Cow* disease is perceived by many as a threat to the US commercial food supply and thus has received a great deal of governmental and media attention along with other food supply problems. For example, in 2003 when the first case of BSE was discovered in the United States, 30 Food and Drug Administration (FDA) employees in the Seattle area and a number of state inspectors from Washington, Oregon, and Idaho took part in a major investigation (Bren, 2004). Between 2003 and August 2008, eighteen (18) confirmed cases of BSE were reported in North America of which fifteen (15) were in cattle from Canada and three (3) cases from the United States.

As more cases of BSE occurred on the North American continent the media brought a great deal of attention to the real or imagined dangers of the disease, and the US government responded with laws, Acts, inspections, and a ban on meat and meat products from Canada. Some US commercial food stakeholders have assigned blame outside of the US for commercial food safety issues, for example, the New York Times (Robbins, 2005) article, "Plans to Allow Canadian Cattle into US Worries Ranchers.**"**In 2007 the US ban on Canadian cattle imports was lifted (CDC, 2008) and Canadian meat products returned to grocery stores in the US. With Canadian beef in the US commercial food supply again, reports of violations of the ban on feeding protein (i.e., prion) to cattle, and reports of an inability to adequately inspect imported meat (e.g., US FDA asks for $275 million more to ensure the safety of imported food) surfaced in the media (Favole, 2008). Because of extensive media attention in the US since 2003 focused on the risk involved with Canadian meat (i.e., mad cow disease), a country-of-origin effect is hypothesized to influence attitudes toward meat products from Canada.

H_6: The majority of US consumers perceive that Canada has one of the leastsafest commercial food systems in the world.

3. Methodology

For this exploratory study, a non-probability quota sample was conducted using a mall-intercept methodology. Potential respondents were approached in large malls in targeted areas and asked to participate (if they reported being 18 years of age or older). The survey included 73 consumers residing in the United States in the areas of Middle Georgia, Eastern Virginia, and Central Florida. These three states were strategically chosen based on recent and ongoing events that have received significant publicity in each of these states regarding food safety. Middle Georgia was chosen because of the beef recall from the school systems' cafeterias and many restaurants in 2008. Eastern Virginia was identified because this is the area in which a woman died from what was first thought to be vCJD, but was later proven not to be the case. Florida was chosen because of the years of controversy in the dairy cattle industry over the usage of the rBGH (recombinant bovine growth hormone) to increase milk production.

Due to the importance of country-of-origin effect, two open-ended questions were asked allowing the respondent to identify which country they felt had the safest and which country had the most dangerous commercial food supplies. These questions were used in measuring H1;$H2_a$ and H6.Respondents were also given an open-ended question to identify US agencies responsible for protecting the US food supply. This measured $H2_b$. In an attempt to rule out bias from extreme risk aversion, the study incorporated a scale to measure the respondents' level of risk aversion. High scores on the 'risk aversion' scale are an indication that the participant tends to be more cautious in their decision making process. This information allowed the researcher to determine if the sample is skewed either to extremely risk averse or the daredevil type of respondent.

A five-item, 6-point scale (1=never to 6=always) adapted from the Donthu and Gilliland (1996) study (reliability = .756) was used to capture propensity toward risk aversion to measure hypothesis #3.In order to identify where consumers place responsibility for food safety in the value chain (hypothesis #4), respondents were asked to identify from seven (7) stakeholders who they believe to be responsible for the safety of the US Commercial food supply. The choices were: 1=the consumer, 2=farmers and ranchers, 3=overall food industry, 4=producers/packers, 5=retailers, 6=wholesalers, and 7=the U.S. government. The scale is exploratory in nature and is a first step in determining who the consumer believes to be responsible for the safety of the commercial food supply. Lastly, to measure the concern of US citizens regarding the overall safety of the US commercial food supply (hypothesis #5), a one-item five-point scale was created "Overall, how safe do you believe the commercial food supply is for human consumption?" The endpoints were zero equal to *do not have an opinion* and five equal to *very safe.*

4. Findings of the Study

From a frequency analyses across 73 respondents, it was found that only 19.4% of respondents report a belief that imported meat products are *safe to very safe*. Therefore, H1 (*the majority of US consumers are concerned about food safety risk fromimportedbeef products into the US commercial food supply*) was supported. As more and more information becomes available to consumers at faster rates about where their food is coming from, what is or is not being done to protect it, and increasing recalls;consumers concerns and assignments of responsibility for food safety in other food groups are to be expected. As to hypotheses 2_a and 2_b, assignment of responsibility, a frequency analysis revealed that 46 out of 73 respondents (63%) report that they believed the US government is responsible for protecting the US commercial food supply. Therefore, hypothesis 2_a (*the majority of US consumers assign responsibility for the safety of the commercial food supply to the US government*) was supported. However, when asked to list the government agencies they believe are responsible for the safety of the US commercial food supply, respondents reported ten different agencies many of which have no or a minimal role in food safety. However, a majority,63% of 73 respondents correctly identified the FDA as one of the responsible agencies and only 10.9% correctly identified the US Agricultural Department as another responsible agency.

Therefore, based on a large number of incorrect agencies being identified as responsible for the food supply although the findings that the majority did identify the FDA, H_{2b} (*US consumers accurately assign responsibility for commercial food safety to the appropriate US government agencies*) was considered as not supported. These findings are of concern because respondents hold the government overall responsibility but do not know what agencies to address their concern to, which in turn means a lot of important concerns may go unaddressed. Many fears and concerns for health risk from the food supply could be reduced and/or properly addressed if the consuming public were more aware of which agencies to contact. This knowledge would put "we the people" into actionable terms. When it comes to commercial food safety, responsibility for the US food supply is in the hands of many individuals and entities. Because most the food consumed in the US comes through the commercial food supply, it is important to understand whom the consumers feel are responsible for commercial food safety. A frequency analysis revealed that, out of 73 responses to the question, 'who do you believe is responsible for the safety of the US commercial food supply?' in which the respondents were instructed to,"mark all that apply," greater than 60% of the respondents do not believe that the US consumer is in any wayresponsible for the safety of the US commercial food supply.

However, as to risk aversion and personal responsibility, a Spearman Rho correlation analysis revealed that risk aversion has a weak but direct linear (.326) relationship to assignment of responsibility (significant at .01). Therefore, H_3 (*The greater the US consumer's level of risk aversion, the more likely he or she is to believe it is his or her responsibility to protect himself or herself from unsafe food products that he or she purchases from the US commercial food supply*) was supported. The findings should be considered weak and more research is advised, as the majority of those reporting do not believe they have any personal responsibility for the safety of the US commercial food supply. A frequency analyses revealed that the majority of respondents (>50%) did not report that farmers and or ranchers were responsible. It should be noted, however, to a great extent the "entire food industry" was reported as responsibleforconsumer responsibility, with the exception noted above. (See Table 1 in the appendix for details.)Nevertheless, it should be noted that producers and packers as well asthe US government were identified by more respondents as having more responsibility than others in the food supply chain. These findings show similar percentages to the findings from the Laugheryet al.,(1996) study regarding shared responsibility for safety assuming producers and packers are considered the manufacturer. H4 (The *majority of US consumers assign responsibility for commercial food safety to the overall food industry and not to value chain members individually*) was supported.

When responding to an open-ended question as to which countries the respondents believed had the safest commercial food supply, a frequency analysis revealed that 71% of the respondents reported the US as having the safest food supplies in the world and 53% also listed Canada as having one of the safest food supplies. Therefore, H_5 (*the majority of US consumers perceive that the United Sates has one of the safest commercial food systems in the world*) was supported. And, H_6 (*the majority of US consumers perceive that Canada has one of the least safest commercial food systems in the world)* was not supported**.**Interestingly, when it came to the least safe country, 47.7 reported China and 16.9% reported Canada. This finding may stem from two sets of significant events occurring during the time of the study, 1) nationalism brought on by economic and political uncertainty (e.g., global recession) or 2) recency effect relative to food supply issues in the news. Nationalism may have been strengthened during a time of economic and political uncertainty as many US citizens have lost their jobs to outsourcing to other countries, specifically China. Thus, one contributing factor to these findings may come from a heightened sense of nationalism. Also, recency effect may have played a significant role, as the popular press had been teaming with articles of contaminated food products from China. A history of a broad variety of unsafe/dangerous exports from China in the last few years may have been more dominate in consumers' minds than an issue with one product (i.e., meat).

Data as to demographics relevant to the study such as gender, age range, income level, as well as affiliation with special interest groups for the protection of animals were also collected. Respondents' reported household incomes were fairly evenly distributed among respondents with a mean range of $30,001 to $50,000. This is important, becauseindividuals in this income economic group are not typically dependent on the government for their food (e.g., public assistance) or are they in income brackets where food selection choices are the best of the best. The sample was examined to determine whether respondents hold membership in a special interest group,which would be expected to affect responses. The majority did not report membership in a special interest group. Table 2 (see appendix)provides additional demographics detail that demonstrates a fairly balanced sample other than country of origin. However, country of origin being mostly from the United States was needed for this study.

5. Discussions, Recommendations, and Limitations of the Study

Although the US government has enacted laws to protect the food supply (e.g., imposed inspections, labeling, etc.), unsafe food products continue to make the headlines and cause concerns among US citizens as to the food supply's affect on their health. Although articles in the popular press suggest consumer confidence in the US government's ability to protect the health of citizens from unsafe food products, this study found that respondents believe that all members of the food value chain are responsible for protecting them. At the time of the study, a majority of consumers strongly believed that the US government has the safest commercial food industry in the world. The study used meat as the food product as it is less likely that respondents would hold brand preference for meat products and thus it was expected to reduce bias that may have occurred if products were used that have strong brand recognition. Further, meat was used as there have been several years of public press on the meat industry; therefore, respondents were expected to identify with recalls, etc.
The implications of this study to those responsible for the commercial food industry come from the consumers' primary assignment of responsibility to the producers and packersand the US government.

This may have resulted from the pervasiveness of public press articles about the meatpacking and food production industries dating back to Upton Sinclair's The Junglewritten in 1906. By marketing socially responsible behavior such as the safety efforts taken by producers and packers to safely process food may help ease concerns about the US food supply chain while keeping the bottom line healthy for all in value chain since assignment of responsibility crosses to everyone. Next to farmers and ranchers, wholesalers and retailers were identified by the least amount of respondents as having responsibility. This perception may come becauseconsumers hear of retailers and wholesalers' socially responsible behavior of quickly removing recalled products from their shelves when producers or the government give recall notifications. For all members of the food value chain, cooperative advertising regarding food safety efforts would serve the entire industry well. When it comes to industry profits, shared costs of advertising may be a small price to pay to gain consumer satisfaction and greater confidence in the commercial food supply industry especially in light of a significant numbers of books and articles inpopular press asserting concerns about the safety of the world's food supply.

This study also revealed that in the consumers' mind, the US government is responsible for the actions of the food supply chain (import or domestic) forproducts in the US commercial food supply. The majority of the respondents in this study reported that they do not believe the consumer is responsible for food safety in the US. Perhaps this is because they feel helpless in doing anything about it (Boyte, 2008).

Therefore, it is the researcher's recommendation that the government make a greater effort to advertise food safety efforts to the end consumer through a Food Risk Communication Program to address food safety and communication of riskemphasizing individual responsibility. One important emphasis of this groupshould be to assure the public avoice (*We the People*) in the food regulatory process.In a future study, the investigation should ascertain the relationship between labeling containing country of origin and intention to purchase food products imported into the US based on country of origin effect. Further, studies should investigate perceptions of consumers regardingthesafetyof organically grown foods in the US food supply verses non-organic foods.Further, perception of food safety should be examined by comparing local food supplies to food imported from outside a location as to safe practices. There is a significant movement afoot in the US to shift 20% of roughly $5 billion now spent on food by institutions,such ascolleges, to local food sources by 2020. The group "Real Food Challenge" has commitments from schools equaling around $30M of purchasing power going to this initiative, thus, it is worthy of research as to the safety measures for this food and the perceptions of those consuming the foods as to its safety (Hesterman, 2011). All of these issuesshouldbe examined in light of social factors such as race, gender, discretionary income, and poverty as these are factors of society that impact choices.

6. Appendix

Table 1 – Cross Tabulation: Food Safety Responsibility

Farmers and/or Ranchers	Producers and Packers	Retailers	Wholesalers	US Government
50%	70%	57.5%	56.2%	68%

Table 2 – Demographics (N,72)

Gender	**Male**	**Female**			
	32	41			
Country of Origin	**USA**	**Other**			
	69	4			
Age Range	**18-24**	**25-34**	**45-55**	**Over 55**	**Not Given**
	12	10	13	14	24
Affiliation with Special Interest Group	**Yes**	**No**	**Not Answered**		
	20	51	2		

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