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Analysis of media agenda-setting effect on consumer confidence in the safety of the U.S. food system across consumer segments

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ANALYSIS OF MEDIA AGENDA-SETTING EFFECTS ON CONSUMER CONFIDENCE IN THE SAFETY OF THE U.S. FOOD SYSTEM ACROSS CONSUMER SEGMENTS

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ABSTRACT

Recent food recalls and food scares in the United States have increased consumers' risk perceptions about food borne illness and decreased their confidence in the safety of the U.S. food supply. Results from a continuous tracking of consumer confidence and media coverage of food safety events over a 67 week period between May 2008 and August 2009 are reported in the study. Factor analysis is performed on consumer characteristic statements to identify seven factors. Factor scores for these seven factors are used as inputs in a consumer segmentation procedure. A two step segmentation approach, hierarchical cluster analysis followed by partition cluster analysis is used to create eight consumer segments. An ordered probit model is used to test the hypothesis that media coverage of food safety events affects consumer confidence in the safety of the U.S. food system. The results show that media coverage significantly and negatively affects consumer confidence in the safety of nation's food supply during the sample period. The results also indicate that the effect of media coverage is different for each consumer segment identified in the study. Socioeconomic and demographic factors such as geographic region, media source, household size, age, ethnicity, education, and gender also had significant affects on consumer confidence in the safety of United States food supply. Another finding of study is that media effect varies depending on the media source used by respondents. Television has a negative effect on consumer confidence in the safety of the U.S. food system, while internet and newspapers have a positive effect on consumer confidence in the safety of the U.S. food system relative to the television.

The findings of this study are important and helpful for government agencies and private companies to understand the magnitude of consumer response to mass media, and for adjusting their response to food safety incidents and determining the economic downturn in the sale of

their products and for how long into the future. The consumer segments developed in the study can be used for integrating better risk communication strategies directed toward a specific consumer segment.

CHAPTER 1: INTRODUCTION

Food is a basic requirement of human life; man's hunt for food has evolved from gathering and hunting to cultivating plants and domesticating animals for food. Today food is produced and marketed on a very large scale. The major steps in modern day food marketing include transportation, processing, and distribution of processed product to the retail outlet. The increased length of the food marketing channel has added vulnerable points where food could be exposed to contamination. Consumers are faced with choosing among an assortment of competitively priced food products. A safe and nutritious food supply has contributed significantly to human wellness, but food recalls can disrupt the trust and confidence of consumers. To avoid food recalls quality control and hygiene assurance is very important. To address the food safety issue government has developed food safety regulations, and to implement these regulations various agencies were created.

1.1 Food Safety Agencies

Food safety has been an important issue for a long period of time. In the past, people ensured that food was safe by improving manufacturing, handling, cooking and preserving techniques. During the industrial revolution food began to be processed, packaged and marketed. The introduction of refrigeration techniques dramatically increased the shelf life for food items. The use of chemicals, increased handling, and the lack of regulation created numerous food safety concerns. In 1862 president Abraham Lincoln founded the United States Department of Agriculture (USDA). Later the USDA became the parent institution of several federal institutions charged with ensuring that food in the U.S. is safe. The expansion of railroads fueled the transportation of livestock and processed meat. The importation of livestock was identified as a source of diseased livestock by the USDA secretary Isaac Newton in 1865. Upon the request of

the USDA secretary congress introduced a law to quarantine imported animals. In 1884 president Chester Arthur established the Bureau of Animal Industry (BAI) within USDA, BAI's focus was on preventing the utilization of diseased animals for human food. In 1890 the initial Meat Inspection Act was expanded to the export of salted pork and bacon, the act was amended further in 1891 to cover all live cattle for export (USDA).

In 1905 author Upton Sinclair published a novel titled "The Jungle" depicting the exploitation of meat industry workers and the threat it posed to meat consumers. Sinclair's novel led to a rise in public awareness for unsafe processing conditions. As a result of increased consumer concern, the Food and Drug Act and Meat Inspection Act were passed in 1906. This was an early example of how information can change consumers' attitudes, which led to increase government regulation to ensure food safety. In 1927 the Food and Drug Act was reorganized to establish the Food, Drug, and Insecticide Administration and was housed under the USDA. In 1931 it was renamed the Food and Drug Administration (FDA) and transferred to the Federal Security Agency, which became the Department of Health and Human Services. Since its inception FDA has been an important institution charged with ensuring the safety of food in the United States. Today FDA is responsible for assuring safety and security of human and veterinary drugs, biological products, medical devices, cosmetics and a large portion of the nation's food supply. FDA regulates $1trillion worth of food products each year. FDA is charged with ensuring safety of all the food products except for meat, poultry and some egg products (Food and Drug Administration).

In 1950 and 1960 the growth of the interstate highway system and development in refrigerated transportation of meat products by trucks and trains allowed the meat packaging industry to grow at a much faster pace. While the focus was on visible contamination of meat

products like the use of diseased animals and faulty handling practices, and with the increase in meat packaging concern over invisible hazards like chemicals used for treatment grew among consumers. In 1977 the Food Safety and Quality Service (FSQS) was established. The FSQS was charged with the responsibility of inspecting meat and poultry products, later it was renamed as the Food Safety and Inspection Service (FSIS). In 1981, FSIS was one of the important institutions under USDA which regulated food safety. In 1993 an outbreak of E.Coli caused the death of four people and sickened 400 in the United States. The FSIS took steps to address this food safety issue in 1996 by introducing a regulation called Hazard Analysis and Critical Control Point (HACCP). HACCP's focal point was on prevention and reduction of microbes that could cause illness with raw meat products. FSIS has been a very important branch working under USDA. As of today, FSIS is responsible for setting up appropriate food safety standards for meat and poultry products, and performing inspection to make sure the standards are met by the industry (Food Security and Inspection Service). Another agency helping to reduce food safety risk in the United States is the Center for Disease Prevention and Control (CDC). Initially CDC was established to fight malaria, over the years the role of CDC has grown. CDC is primarily responsible for the prevention and control of infectious and chronic diseases, injuries, workplace hazards, disabilities, and environmental health threats. However the CDC also monitors health surveillance and helps prevent disease outbreaks including bioterrorism.

While agencies like the USDA have been charged with taking care of food safety, the Department of Homeland Security (DHS) is charged with protecting the nation's food supply against any intentional attack. In response to the September 11, 2001 attacks the Department of Homeland Security was created with the primary responsibility of protecting U.S. territories from terrorist attacks and responding to natural disasters on U.S. territories. Since September 11,

2001 DHS has improved its coordination with other agencies and is also ensuring safety against any biological terrorism or contamination attack (Department of Homeland Security). In 2002 it enforced two provisions in the Bio-terrorism Act, the registration of facilities that manufacture, process, or hold food for import into the U.S., and the prior notice of those shipments presented for entry. According to a 2006 CRS report for congress, the appropriations and user fees for agriculture-related homeland security activities in USDA and DHS had more than tripled from a $225 million "pre-September 11" baseline in 2002 fiscal year to $797 million in 2006 fiscal year (Monke, 2006). A presidential directive to protect critical infrastructure from 1998 did not include agriculture and food, agriculture was added to the list in 2003. Also there have been several bills introduced in Congress to authorize the funding or else improve the level of preparedness and coordination of response to an agro-terrorist attack (Monke, 2006).

1.2 Major Food Recalls

In 1994, a Salmonella contamination of ice-cream was detected. The outbreak resulted in the sickening of 740 people in 30 states. In 1997, over 2.6 million pounds of contaminated strawberries were recalled after thousands of students across several states reported illnesses from eating frozen strawberries in their school lunches. The strawberries were found to be contaminated with Hepatitis A (Klein *et al.,* 2009). In February 2008, USDA officials announced that California based Westland/Hallmark Meat Company had recalled 143 million pounds of ground beef. It was the largest meat recall in U.S. history. In July 2008 FDA issued a warning for the salmonella contamination in the jalapeno peppers and Serrano peppers. In 2006, Spinach contaminated with E.Coli O157:H7 caused several deaths and numerous illnesses. In 2005 and 2006 an outbreak of Salmonella contaminated tomatoes in four states, sickened hundreds of people across the country. In March 2009 another major recall was announced, Peanut Butter

Corporation of America (PCA) recalled its 3,918 separate products made with PCA peanut butter. The salmonella contaminated PCA products caused nine deaths and 714 illnesses in the country, and cost government and food companies $1 billion (Flynn, 2009). In July 2009 after FDA issued a warning against E.Coli O157:H7 contamination in Nestle cookie dough, Nestle recalled the product from the market, CDC reported 76 persons from 31 states had been infected due the outbreak. Table 1.1 presents the notable food recalls and food-borne illness outbreaks in U.S. history.

Table 1.1 Notable Food Recalls and Foodborne Illness Outbreaks in U.S. History

Year	Food Recalls and Outbreak
1990	Salmonella Javiana contamination in Tomatoes, 174 ilnesses
1991	Cantaloupe contamination by Salmonella Poona, 400 illnesses
1994	Salomnella contamination in Ice Cream, sickened 740 people
1996	Raspberries contamination by Cyclospora cayatenensis, 1500 illnesses
1997	25 million pound of ground beef recalled for listeria contamination
1997	Hepititis A contamination in sliced frozen strawberries, 2.6 million pound strawberries recalled
1999	35 million pounds of frozen, ready-to-eat meat products recalled
2002	27.4 million pounds of poultry product recalled
2002	ConAgra recalled 18.6 million pounds of ground beef
2006	E.Coli contamination in Spinach, 198 people sickened across 25 states
2007	21.7 million pounds of frozen meat patties were recalled due to e.Coli contamination
2008	143 million pounds of ground beef recalled
2009	salomnella contamination in PCA peanut butter products found, 714 illnesses
2009	Nestle cookie dough was recalled due to E.Coli contamination, 76 illnesses

Source: FDA, CDC, Klein et al. (2009)

In recent years consumers in the United States have witnessed many food safety events one after another. The food borne disease outbreaks have been noticed from high risk commodities to the healthiest and daily food products. A Center for Science in the Public Interest (CSPI) report used data since 1999 from Center for Disease Prevention and Control (CDC) to identify the top ten riskiest foods (Table 1.2) regulated by Food and Drug Administration (FDA) (Klein *et al.*, 2009).

Table 1.2 Top Ten FDA Regulated Riskiest Food since 1999

Food Porduct	Number of Outbreaks	Reported Cases of Illness
Leafy Greens	363	13,568
Eggs	352	11,163
Tuna	268	2,341
Oysters	132	3,409
Potatoes	108	3,659
Cheese	83	2,761
Ice Cream	74	2,594
Tomatoes	31	3,292
Sprouts	31	2,022
Berries	25	3,397

The top ten FDA regulated riskiest foods report noted that salmonella and E.Coli were the two pathogens commonly associated with these outbreaks, salmonella alone accounted for 33 percent of outbreaks related foods regulated by FDA (Klein *et al.*, 2009).

1.3 Media Coverage and Effect

In recent years, an increase in the number of food recalls and the rise of the modern news media has made a notable impact on the food industry. Recent food recalls in the United States have raised consumers' concerns about food-borne illness and decreased their confidence in the safety of the U.S. food supply. According to a Food Marketing Institute study, more than 80 percent of consumers expressed confidence in the safety of food they purchased in grocery stores, but this percentage fell to 66 percent in 2007(Anonymous, 2008).

Even though efforts have been made to improve the quality of the food supply chain, food safety has been increasingly perceived as an important health risk by consumers. However, in recent years, consumers' trust in the food supply has been eroded as the number of food recalls increased 135 percent from 240 recalls in 2006 to 565 recalls in 2008 (Food Industry Report, 4/14/09). Media has become an influential factor in altering consumers' perceptions and

attitudes regarding food safety. The increased competition among major media sources like television and newspaper has forced the various media outlets to compete and to follow sensational news stories regarding food safety events (De Jonge *et al.*, 2010).

With increased media coverage, consumers' perception of the risks associated with the food supply has increased. Today, consumers want to know if their food is safe or not. Therefore, various studies have taken notice of the media's impact on consumer confidence and have studied the effects of media coverage on consumer confidence (De Jonge *et al.*, 2010; Tansel, 1993; Kinsey *et al.*, 2009). Numerous surveys and studies have been conducted to measure consumers' confidence in the safety of food (Degeneffe *et al.*, 2009; Stinson *et al.*, 2008), but very few have tried to find linkages between the media and consumer confidence. Previous researches have shown that media coverage of food related risks has a negative impact on consumer risk perceptions (Frewer *et al.*, 2002; Siegrist and Cvetkovich, 2001; Liu *et al.*, 2004).

One example of research that found linkages between the media and consumer confidence was a study published in 2009 (Kinsey *et al.*, 2009). In the 2009 study, the authors constructed two continuous food safety tracking (CFST) indices that measured consumer confidence in food safety and food defense and consumer perceptions regarding how prepared the food system is in dealing with food safety events. The indices were constructed by aggregating frequency counts of individual responses from an ongoing weekly survey. A media tracking index (MTI) was also constructed (Kinsey *et al.*, 2009). The article found that changes in media coverage significantly affected consumer confidence in the U.S. food supply.

The media coverage of a food safety event has the potential to magnify the impact of the event on the industry experiencing the crisis. The media coverage impacts the industry by inducing change in the perceived public risk and in political implications. The increased

perceived risk leads to a decline in demand, giving firms associated with the food safety event an additional incentive to avoid the these events (Swinnen *et al.*, 2005). These studies (Kinsey *et al.*, 2009) have shown that food recalls and food safety events have the potential of disrupting consumer's life and shaking their confidence in safety of the U.S. food supply. To better assist and prepare consumers for these kinds of situations, it is necessary to gain a better understanding of consumer attitudes and concerns (Degeneffe *et al.*, 2006). The media coverage of a food safety crisis affects the demand for the associated food product by increasing the perceived risk of consuming the food product (Swinnen *et al.*, 2005). The strong public outcry resulting from these events may force governments to adopt regulations governing the import and export of the commodity, thus affecting the trade of the commodity (Buzby, 2001). In the October 4, 2009 edition of New York Times reporter Michael Moss introduced readers to Stephanie Smith, a children's dance instructor from Minnesota who was partially paralyzed from E. coli O157:H7, after eating hamburgers produced by Cargill. This story was quickly popular in the media; Stephanie sued Cargill for $100 million (Flynn, 2009).

One may argue that all consumers do not respond in the same way to the information coming from mass media. People vary greatly in their attention to mass media, some actively seek information, while others acquire it without much effort (McCombs and Shaw, 1972). To address this issue, the research in the following chapters uses segmentation analysis to group consumers into different segments according to their responses. The identification of consumer segments will allow development of specific strategies by focusing on the needs of specific segments of consumers.

Continuously tracking consumer confidence in the safety of the U.S. food supply chain will allow this research to follow the trends in consumer confidence and to determine whether

there is a need for change in food safety regulations or practices. Additionally, the media tracking will allow this research to test the influence of media stories on consumer confidence and will provide information regarding the power of various types of media to communicate risks. Using consumer segmentation will permit an estimation of the influence of media stories on consumer confidence across different consumer segments.

1.4 Problem Statement

Between 1988 and 1992, a total of 2,423 outbreaks of food-borne disease were reported, which caused a reported 77,373 illness cases (Bean *et al.*, 1996). During the period of 1993-1997, a total of 2,751 outbreaks of food-borne disease were reported, these outbreaks caused a reported 86,058 illness cases (Olsen *et al.*, 2000). The number of reported cases for food-borne illness increased to 128,370 cases and the number of outbreaks of food-borne diseases increased to 6,647 outbreaks during the period of 1998-2002 (Lynch *et al.*, 2006). According to the Center for Disease Control and Prevention (CDC), each year 76 million people contract food-borne illnesses, 325,000 are hospitalized, and 5,000 die. Out of these 76 million food-borne illness cases, known pathogens account for an estimated 14 million illnesses, 60,000 hospitalizations, and 1,800 deaths. Among these cases, three pathogens, *Salmonella*, *Listeria*, and *Toxoplasma*, are responsible for 1,500 deaths each year, more than 75% of those caused by known pathogens. While unknown agents account for the remaining 62 million illnesses, 265,000 hospitalizations, and 3,200 deaths (Mead *et al.*, 1999). According to the USDA Economic Research Service (ERS). Food-borne illnesses cost the U.S. economy at least $6.9 billion a year (ERS-USDA, 2005). In today's world, food related risks extend beyond natural contamination or contamination during production/processing. Incidents like the September 11, 2001 terrorist attacks and the London subway bombing have raised issues regarding safety of United States

food supply chain. A survey of U.S. consumers found that 89% of consumers considered food safety more important than safe drinking water, crime prevention, health and nutrition, and the environment (2004).

Since most American citizens are unfamiliar with food safety protocols and the risks associated with food borne illnesses, food safety issues are unlikely to be noticed by these individuals. Therefore, most consumers are expected to acquire their information and knowledge about food safety events and food recalls from mass media (Kinsey *et al.*, 2009). Consumer confidence perceived food safety risks affected by food safety events and media. Although how media and other factors play a role in affecting consumer perception are not well understood. The present study uses the most recent data from the Continuous Food Safety Tracking (CFST) survey to conduct an individual-level analysis (rather than aggregate) of the media agenda-setting effects on consumer confidence in the U.S food supply. The use of individual-level analysis will allow this research to analyze the effects of socioeconomic factors on consumer confidence in the U.S. food supply.

1.4.1 Specific Objectives

- To estimate media agenda-setting effects on consumer confidence in the safety U.S. food supply chain.
- To analyze how the agenda-setting effect varies across consumer segments.

1.5 Organization of Study

The remaining chapters in this study follow the following order. The second chapter surveys past research on the topics covered by this study. Chapter three describes the data collection procedure, survey design, variables measurement and modeling and methods applied for the analysis. The fourth chapter presents the discussion and interpretation of the results

obtained in the analysis. The last chapter focuses on the conclusions and suggestions from the study.

CHAPTER 2: LITERATURE REVIEW

Researchers have tried to get a better understanding of the factors that determine consumer confidence in order to develop and apply better risk management and communication strategies. There are various determinants which shape consumer confidence. De Jonge *et al*. (2007) stated that consumer confidence in the safety of food consists of two dimensions - optimism and pessimism. Trust and consumer confidence in the safety of product groups act as the basis for optimism about the safety of food, while pessimism is affected by individual difference variables like food allergies and trait worry. The results from the study indicated that to a significant extent optimism and pessimism about the safety of food developed from consumer trust in regulators and actors in the food chain and the perceived safety of meat and fish rather than other product categories. The study also found that notion of optimism and pessimism are distinct and they are influenced by different determinants (De Jonge *et al.*, 2007). The article also found that consumers' recall of food safety incidents affected the consumers' level of optimism and pessimism differently. Consumers who recalled the food safety incidents were not less optimistic relative to consumers who did not recall food safety incidents, but the consumers who recalled food safety incidents were more pessimistic than the consumers who did not recall food safety incidents (De Jonge *et al.*, 2007).

Marsh *et al* (2004) investigated the impact of meat product recall events on demand of beef, pork, poultry, and other consumption goods in the United States. The Food Safety Inspection Service's meat recall events and the newspaper reports over the period 1982–1998 were used to develop beef, pork and poultry recall indices. Findings from the study indicated that the Food Safety Inspection Service's announcement of meat recall events significantly impacted

the demand of beef, pork, poultry and other consumption goods in the United States (Marsh *et al.*, 2004).

Studies have tried to differentiate consumer attitudes towards food safety based on type of the food safety issues concerned. Brewer and Prestat (2002) surveyed consumer attitudes about the safety of the food supply in general, and related these general concern levels with the groups of specific items of concern, regulatory issues and prioritization of food safety finding areas, and compared them with results from a 1994 study. The study factored the consumer responses in six factors and later used MANOVA and univariate ANOVA to analyze the effect of general concern levels on the specific food safety areas. The study found that consumer priorities for various food safety concerns did not follow the same trend as for the general food safety concerns. The consumers were less concerned about chemical and health issues and were more concerned about regulatory issues (Brewer and Prestat, 2002). Authors Brewer and Rojas (2008) conducted a similar study. They found that the consumer concerns regarding microbiological issues was substantially higher than past studies, also concern over regulatory issues increased dramatically compared to the past studies (Brewer and Rojas, 2008).

According to Ajzen and Fishbein (1980), information plays a vital role in altering consumers' beliefs, attitudes, and choices. A person's understanding about food safety events, the government and industries protocols for managing food safety risks, and individual perceptions of the consequences are estimated to be alleviated by the person's belief and attitudes about food safety (Kinsey *et al.*, 2009; Ajzen and Fishbein, 1980). Studies that have applied this concept have found both direct and indirect effects on consumer confidence in the food supply. A study by Han and Harrison (2007) investigated the linkages between consumer beliefs and attitudes regarding the risks and benefits of genetically modified foods and consumer

purchase intentions (Han and Harrison, 2007). Another study by Moon and Balasubramanian (2004) demonstrated that trust, sense of outrage, and socio-demographic factors play an important role in shaping public attitudes (Moon and Balasubramanian, 2004).

Nayga (1996) studied the socio-demographic factors that affect the concern level of main meal planners in households. Although he did not study whether the sources food safety information had any effect on the consumer concern level, he did suggest that the source of food safety information might affect consumer concern (Nayga, 1996). The notion that the media frames the way people think about certain issues, and in doing so, influences the public's attitudes about said issues is referred to as the media agenda setting effect (Kinsey *et al.*, 2009; McCombs and Shaw, 1972). Mass media plays a very influential part in framing peoples' thinking. "Media may not tell us what to think, but they tell us what to think about" (McCombs and Shaw, 1972).

Mass media information and reports affect how individuals frame their thinking. Even sound information about a food recall event will add to consumers' knowledge. Most individuals learn about risk through media; this may cause "risk amplification," where media work as a amplification station (Kasperson *et al.*, 1988). According to Zucker (1978), if the individual has less direct experience and/or knowledge about an issue, he or she is more likely to rely on mass media for information about the issue and more likely to be influenced by the agenda setting effect (Zucker, 1978). Kornelis *et al*. (2007) conducted a nationally representative survey in the Netherlands to examine the preferences of consumers for the different information sources when they have a question about the food safety. The empirical results from the study indicated that two-thirds of the consumers were selective in their use of the information sources and prefer either the institutional or the social sources (Kornelis *et al.*, 2007).

The media coverage of food safety events has also had an impact on trade and export markets and an effect on the political atmosphere. An article by Swinnen *et al*. (2005) provided an empirical framework from the two food safety crises in Europe. The article concluded that the food safety crises provoked strong consumer responses, had considerable impacts on export markets, and led to important political implications (Swinnen *et al.*, 2005). The study by Piggott and Marsh (2004) developed an empirical framework to investigate if food safety information surrounding beef, pork and poultry had an impact on the consumption of meat in the United States. The study used LexisNexis academic version tool to search the top fifty newspapers in the country for any news about the food recall events with certain keywords in it. The data series collected was used to create a food safety index that can measure the impact of information on the consumption of meat in the United States. The study found that undesirable publicity in relation to food safety concerns do have *statistically* important own- and cross commodity impacts on demand for meat in the U.S. The study also found that average impact of these effects have been *economically* small over the last several decades (Piggott and Marsh, 2004).

In a 2000 study Verbeke *et al.* used probit analysis to investigate the impact of BSE (*Bovine spongiform encephalopathy*) and television communication on fresh meat consumption in Belgium. The study focused primarily on assessing the impact of television coverage on the fresh meat consumption. It found that television coverage had a highly negative impact on decision making toward fresh red meat consumption. The study also revealed that the likelihood of reducing the fresh meat consumption was increased with the presence of younger children in the household and also with the increase in age of consumer. It was also found that younger people's decision were more susceptive to media coverage relative to the older age groups (Verbeke *et al.*, 2000). The food safety event and food recalls has also affected stock markets, a

study by Wang *et al*. (2002) investigated the effects of five food recalls on the stock returns of the two affected companies. The results from the study indicated that around the event time period, first recalls had significant negative effects on the daily stock returns for both the companies. The study also found that the value of firms plummeted initially, but not in the subsequent events, which mean that the risks related to recalls were expected by the investors once the market became sensitized to the food safety issues (Wang *et al.*, 2002).

Studies have shown that people accept negative information presented by media more quickly than the positive information (Siegrist and Cvetkovich, 2001; Verbeke and Ward, 2001). Liu *et al*. (2004) conducted a case study of milk contamination to demonstrate the demand adjustment process to a temporarily unfavorable shock. The results from the study indicated that effects of positive and negative information to adjustment of consumption and risk perception were asymmetric over time, it also indicated that positive media had a lag period and positive media coverage could help reduce the loss of consumption (Liu *et al.*, 2004).

Swinnen *et al*. (2005) noted two kinds of media, quality media and the popular media. Popular media results from competing media outlets that are intensely covering popular events like food safety recalls. It is characterized by intense coverage in the early periods, followed by a rapid loss of interest. The competition and selectivity of reporting leads to bias in the treatment of the situation and a development of a mostly negative tone (Swinnen *et al.*, 2005). Studies have been conducted to estimate the impact of negative information and positive information (Verbeke and Ward, 2001; Smith *et al.*, 1988). In a study Ten Eyck (2000) investigated how the food safety issues were marginalized by reporters, as the mass media coverage tends to cluster around crisis situations. The study collected media stories from 1986-1997 to study the effect of the information, in addition to it the article also investigated two food safety issues- mad cow

disease and the Alar event. The study suggested that media coverage tended to cluster around the food safety crisis (Ten Eyck, 2000).

Verbeke and Ward (2001) showed that TV coverage of health risk related to meat consumption had a negative impact on meat consumption. The study also showed that the higher negative TV coverage may have outweighed the industries' advertising efforts to increase the consumption. In 1988, a study by Smith *et al*. (1988) sought to estimate lost sales following a food contamination incident of heptachlor contamination of fresh fluid milk in Oahu, Hawaii. The study found that the media coverage following the milk contamination incident had a significant effect on milk purchases, and it also found that the negative media coverage had outweighed the positive media coverage (Smith *et al.*, 1988).

Currently, less than two percent of the U.S. population is engaged in agricultural production, and the average consumer has little knowledge of the agricultural and food production system. As a result, consumers often rely on mass media for relevant information about food safety (Kalaitzandonakes *et al.*, 2004). It has been argued that mass media can play an important role in building or undermining consumer confidence in the safety of foods, particularly because consumers have limited ability to assess food safety prior to consumption (Verbeke *et al.*, 1999).

Media coverage of food safety issues has primarily been studied in relation to specific food incidents and food products (De Jonge *et al.*, 2010; Verbeke *et al.*, 1999). De Jonge *et al*. (2010) addressed how daily media reporting on the totality of food safety events may accumulate to affect consumer confidence in the safety of food. This was accomplished by monitoring actual newspaper coverage about food safety issues in parallel to evidence from consumer recollections of the food safety incidents (De Jonge *et al.*, 2010). The results from a 2008 study

by Stinson *et al*. showed that United States residents are low in confidence level that the nation's food supply is safe from natural or accidental contamination. The results of study also showed that consumers' concern over food defense has grown and that the public was holding the government increasingly responsible for food defense and food safety (Stinson *et al.*, 2008). These studies demonstrated that information-processing strategies substantially mediated the relationship between the local news media and the public's perception of the food safety, with elaborative processing being more influential than active reflection in people's learning from the news media (Fleming *et al.*, 2006).

Credibility of the information sources also matters in determining consumer attitudes towards food safety. A study by Bruhn and Schutz (2007) found that the Science magazines were considered highly reliable by more persons than the food or news magazines. Also Television was considered reliable by fewer people than print media (Bruhn and Schutz, 2007).

In addition to media coverage, the socioeconomic characteristics also affect consumers' confidence. Generally, women are likely to be less confident about the safety of food relative to men (De Jonge *et al.*, 2004). A study by Verbeke and Viaene (1999) surveyed meat consumers in Belgium for their attitudes toward meat. The study found that male consumers attach more importance to attribute of food safety than female consumers (Verbeke and Viaene, 1999). Also, a person with more education is less worried about food safety issues (Dosman *et al.*, 2002). A study by Herrmann *et al*. (1998) investigated the public reaction to the 1989 Alar crisis in the wake of extensive media coverage. The Alar crisis was the result of a report that apples became hazardous for consumption after being treated with Alar, a chemical. The study found that awareness of the crisis was greater among older adults, those with higher formal education, and those who reported frequent television news viewing (Herrmann *et al.*, 1998).

Burger (1998) investigated gender differences in the attitudes about the safety of fish by interviewing 197 men and 94 women. Significant differences were found among genders, women believed that it was less safe to eat fish relative to men (Burger, 1998). In the study men significantly perceived small fish as safer than large fish, but women did not. Also People consistently believed it was safer to eat fish they caught themselves or bought in a fish market than those from a supermarket (Burger, 1998). A study by Fein et al (1995) used the data collected from the two national telephone surveys conducted in 1988 and 1993 to describe consumer perception of food-borne illness. The study further used1993 data to assess the relationship between the perception that a food-borne illness had recently been experienced and awareness, concern, knowledge, and behavior related to food safety. The study found that people from 18 to 39 years of age in both surveys were more likely to believe that they had experienced a food-borne illness relative to those in other age groups. The study also found that people with at least some college education were more likely to believe they had experienced food-borne illness than those with less education (Fein *et al.*, 1995).

Studies have been conducted to see how the socio-demographic factors influenced the perception among the main meal planners of households regarding food safety (Nayga, 1996; Lin, 1995; Wilcock *et al.*, 2004). Nayga (1996) found that consumers with a high level of education, a high income level, or were female tended to be highly concerned about food safety issues. The study by Lin (1995) examined how the main meal planner's socioeconomic or demographic characteristics influenced his or her beliefs about the importance of food safety in food shopping.

For a long period of time, private industry has been using a segmentation approach to understand consumer group preferences. The segmentation approach is recognized as being

better at explaining or predicting consumer behavior than conventional demographics. Convincing consumers to adopt better risk protection practices can be accomplished more easily by segmenting consumers since the food safety messages can be customized specific to each consumer segment (Rimal and Real, 2006). Klontz *et al.* (1995) conducted a telephone survey of 1,620 respondents to assess the prevalence of selected self-reported food consumption and preparation behaviors associated with increased risks of food-borne illness and the demographic characteristics related to such behaviors. Study found that the persons who were female, were at least 40 years old, and had a high-school education or less consistently reported safer food consumption and preparation behaviors (Klontz *et al.*, 1995).

Various studies have surveyed consumers and grouped them into segments for effective targeting based on their preferences regarding food safety (Baker and Crosbie, 1993; Kennedy *et al.*, 2008). Kennedy *et al*. (2008) surveyed U.S. consumers and found five distinct consumers segments with differences in their food safety preferences. The study found that socio-demographic characteristics like education, income, person with allergy in the household, and person under the age of six living in the household, varied significantly for each of the consumer segment. Baker and Crosbie (1993) used cluster analysis to construct consumer segments based on the structure of their individual preferences regarding food safety. The study found substantial differences among all three consumer segments in paying for certified food produce.

The traditional segmentation approach segments or groups individuals based on their past choices or behavior (Baker and Crosbie, 1993). A study examined knowledge levels about food safety practices, food safety and food science for consumers in Ireland. This study used hierarchical cluster analysis to segment the population in four different segments, the study also

proposed target specific promotions for food safety promoters based on these segments (McCarthy *et al.*, 2007).

In a study by McGuirk et al (1990), the groups of consumers reporting similar food safety concerns and shopping behaviors were identified using cluster analysis. The study found significant differences in the perceptions and reactions regarding the food safety hazards, these differences were used in study to derive important implications for food marketing strategies and food safety policies (McGuirk *et al.*, 1990). In a 1990 study by Funk and Phillips, benefit segmentation procedure was used to segment the market for table eggs in Ontario, Canada. Study followed the agglomerative hierarchical cluster analysis to identify four market segments. Once identified, profiles of these four segments were developed using beliefs about eggs, attitudes toward eggs, lifestyle factors, health and nutrition consciousness, media habits, consumption habits, and demographics. Based on the profiles developed for the market segments, the study suggested promotional programs and marketing strategies (Funk and Phillips, 1990).

In contrast to this approach, predictive segmentation segments individuals based on how they might respond in the future. A study by Degeneffe et al. (2006) used predictive segmentation to analyze the attitudes of U.S. consumers' regarding terrorism by segmenting the consumers into six segments. The study demonstrated the value of consumer segmentation in that it can be stretched beyond the traditional marketing applications (Degeneffe *et al.*, 2006). Another study by Degeneffe et al. (2009) used predictive segmentation to segment U.S. consumers for food communication strategies. The study supported the development of a communication strategy that anticipates the reactions of U.S. consumers in the event of another terrorist attack. Both of these studies identified six consumer segments, based on the pattern of response given by consumers for independent (attitude/value statements) and dependent

(concerns/expectations relating to terrorism) measures; both also used demographic profiles to identify the segments (Degeneffe *et al.*, 2009).

CHAPTER 3: DATA AND METHODOLOGY

3.1 Consumer Survey Design

The survey design was developed after earlier surveys conducted by The Food Industry Center at the University of Minnesota and LSU AgCenter with funding from the National Center for Food Protection and Defense (Stinson *et al.*, 2008; Degeneffe *et al.*, 2009). The survey asked questions about consumers' attitudes towards terrorism in general and about food defense and food safety, and after defining the difference between the two terms to the respondents. These surveys and the current continuous survey are administered via the internet with respondents selected from Taylor Nelson Sofres' (TNS) national online panel of more than two million U.S. consumers. Respondents are contacted by TNS and invited to come to a website to complete a survey. The sample of respondents is selected in such a way that it comprises a nationally representative cross section of consumers by geographic region, income, household size, and age of respondent. A six point Likert scale is used to indicate the strength of positive and negative attitudes for each question. Data collection started on May 8, 2008. This thesis uses consumer survey data collected over 67 weeks, from May 2008 to August 2009.

3.2 Media Tracking

To assess the impact of media on consumer confidence a media index is needed. Different approaches have been tried to create a media index to analyze the effect of media, Tansel (1993) used dummy variables to measure the effect of anti-smoking campaigns on the cigarette demand in Turkey (Tansel, 1993). A study by Smith et al (1988) used the actual newspaper article counts, marked as positive or negative to analyze the impact of media coverage on a specific event (Smith *et al.*, 1988). Chang and Kinnucan (1991) used a cumulative number to create a media index to analyze the impact of cholesterol information on the

consumption trends of fats and oils (Chang and Kinnucan, 1991). A study by Burton and Young (1996) used a media index for BSE and incorporated it in the AIDS model for meat demand. The study used an indicator created by the count of newspaper articles that mentioned BSE. The article used the indicator in two ways, the number of articles per quarter to measure the transitory effect on meat expenditures and as the cumulative number of articles as a modifier for long run relationships. The study found that the media coverage for BSE had a significant effect on the allocation of consumer expenditure among the meats (Burton and Young, 1996). Similar to the study by Burton and Young (1996), Verbeke and Ward (2001) developed a media index as a measure of television coverage and negative press related to fresh meat issues. The study observes media stories from TV coverage and keeps track of positive and negative stories separately. However, the study found most of the media coverage was based on the negative stories, also the correlation between negative stories and difference was 0.98, making it impractical to weigh the negative and positive stories separately (Verbeke and Ward, 2001). The study also included a five period lag for TV stories, thus effectively extending interval to a period of 6 months for the negative press.

A study by Kinsey et al (2009) developed a media index. The index included several media sources which were weighted according to consumer responses, this research incorporates the media tracking index created by Kinsey *et al* (2009). A food safety media tracking index (MTI) was constructed during the same 67 week period by investigators at the Louisiana State University Agcenter. The MTI is constructed from article counts associated with food safety events from selected newspapers and/or television news programs in the United States. The reach of media intensity is not fully reflected by article counts as media exposure varies by the media type and the nature of the event. These shortcomings are addressed by constructing a media

index. The media index incorporates the respondents' use of selected media types and normalizes article/transcript counts across media types. The formula used for normalizing media counts is

$$Z_{kt} = \frac{X_{kt} - \mathrm{Min}(X_k)}{\mathrm{Max}(X_k) - \mathrm{Min}(X_k)} \qquad (1)$$

where Z_k is the standardized score for media source *k* during week *t*, X_{kt} is the article/transcript count for media source k during week t, and Min(X_k) and Max(X_k) are the minimum and maximum counts for the k^{th} media source over the sample period (Arundel *et al.*, 2002; Kinsey *et al.*, 2009). The X's are the article or transcript counts of news stories containing at least one of the following key words: *food safety, food defense, food terrorism, agricultural terrorism or agterrorism, food poisoning, food contamination, food borne illnesses, food-borne diseases,* and *food recall*. The media sources included for keyword searches were: *national and local newspapers, network and cable TV, radio, news magazines,* and *the internet*.

The next step in construction of the media tracking index involves aggregation of standardized scores using the following formula:

$$MTI_t = \sum w_k Z_{kt,} \qquad (2)$$

Where MTI is the media tracking index value for week t and wk is the weight assigned to the k^{th} media source where $\sum wk = 1$ and $0 \leq wk \leq 1$. Each respondent in the survey was asked to indicate which of the selected media outlets they considered their primary source of news. Frequency counts from these questions were used as estimates for the weights in equation 2.

3.3 Factor Analysis

Factor analysis helps in defining the structure of the interrelationships among variables in the analysis. Factor analysis yields groups of variables, which are highly inter-correlated, and describes an underlying dimension in the data. In this analysis, rather than using every attitudinal question as a dependent variable, we identify factors of these attitudinal questions by use of

factor analysis. Each factor identified in the study represents a dimension indicating consumer confidence.

To reduce the ambiguity and achieve simpler and more meaningful factors, factor rotation was performed. In factor rotation, the reference axes of the factors are turned about their origins. The factor rotation can be performed in two ways, orthogonal factor rotation, where reference axes are maintained at 90 degrees, or oblique factor rotation, where reference axes do not need to be at 90 degrees. A VARIMAX orthogonal factor rotation method was used in this analysis. VARIMAX factor rotation is a more popular and widely used factor rotation method, and it gives clearer separation among factors. This method maximizes the sum of variances of the required loadings in the factor matrix (Hair *et al.*, 2008). A raw VARIMAX procedure tends to give equal weights to variables with lower and higher communality. Thus Kaiser Normalization was performed before using VARIMAX rotation. Kaiser Normalization, founded by James Kaiser, divides each factor loading within a factor structure by the square root of the communality of that factor. The Kaiser normalization is removed after rotation by multiplying each loading by the square root of communality of the variable in each row (Harris, 2001).

3.4 Segmentation

Market segmentation has been a very important concept in marketing since it was introduced for the first time by Smith. Smith recognized that "success in planning successful marketing activities requires precise utilization of both product differentiation and market segmentation as components of marketing strategy" (Smith, 1956). Various methods can be used for market segmentation, but at first they can be classified in two groups a priori and post-hoc methods. A segmentation approach is a priori when the numbers of segment are determined in advance, while in post-hoc method the numbers of segment are determined on the basis of data

analysis. The other way to classify is depending upon the statistical method used predictive or descriptive. The methods used for market segmentation include Contingency tables, Discriminant analysis, clustering procedures, out of these methods cluster analysis is widely popular among researchers (Wedel and Kamakura, 2000). As mentioned before the purpose of segmentation is to identify groups of individuals with common attitudes and values. Conventionally, consumers have been placed in the segments based on their past response or behaviors, but the predictive segmentation approach uses past responses and behaviors to examine how consumers might respond, to the same situations or changes in situation. In 1994, Baker and Crosbie (1994) developed market segments based on consumer preferences for food safety and other product attributes. Study used conjoint analysis to identify preferences and cluster analysis was used to identify the market segments (Baker and Crosbie, 1994). A study by Verbeke and Vackier (2003) based on cross-sectional data collected in Belgium investigated the consumer profile and effects of consumer involvement in fresh meat as a product category (Verbeke and Vackier, 2003). A principal component factor analysis was performed followed by hierarchical cluster analysis procedure to assess the consumer profile towards fresh meat. Results identified four segments significantly different in their approach to involvement in the fresh meat (Verbeke and Vackier, 2003).

3.4.1 Cluster Analysis

The purpose of cluster analysis is to place objects into groups or clusters, such that objects in a given cluster tend to be similar to each other in some sense, and objects in different clusters tend to be dissimilar. In cluster analysis, the clusters are created on the basis of distance or proximity. The factor mean scores of the factors obtained in the earlier procedure were used to define the clusters.

Among the various methods for cluster analysis, the two are most commonly used are hierarchical cluster analysis and partition cluster analysis. Hierarchical cluster analysis uses a hierarchy or a dendogram (treelike structure) to identify the clusters in the dataset. This procedure produces N-1 number of clusters, with N being the number of observations. There are some pros and cons for hierarchical cluster analysis. Hierarchical cluster analysis is simple, since there are various measures of similarities available for clustering, and it generates different clustering solutions. However, hierarchical cluster analysis may lead to early undesirable combinations and confusing results. Also, outliers may have a major impact on clustering procedure.

The advantages for partition clustering are that it is less vulnerable to outliers in the data and that large data sets can be clustered in less time. The disadvantages for the partition clustering method are that the number of clusters needs to be specified beforehand and that the initial seed points need to be specified. Even specification of seed points does not guarantee an optimal clustering solution.

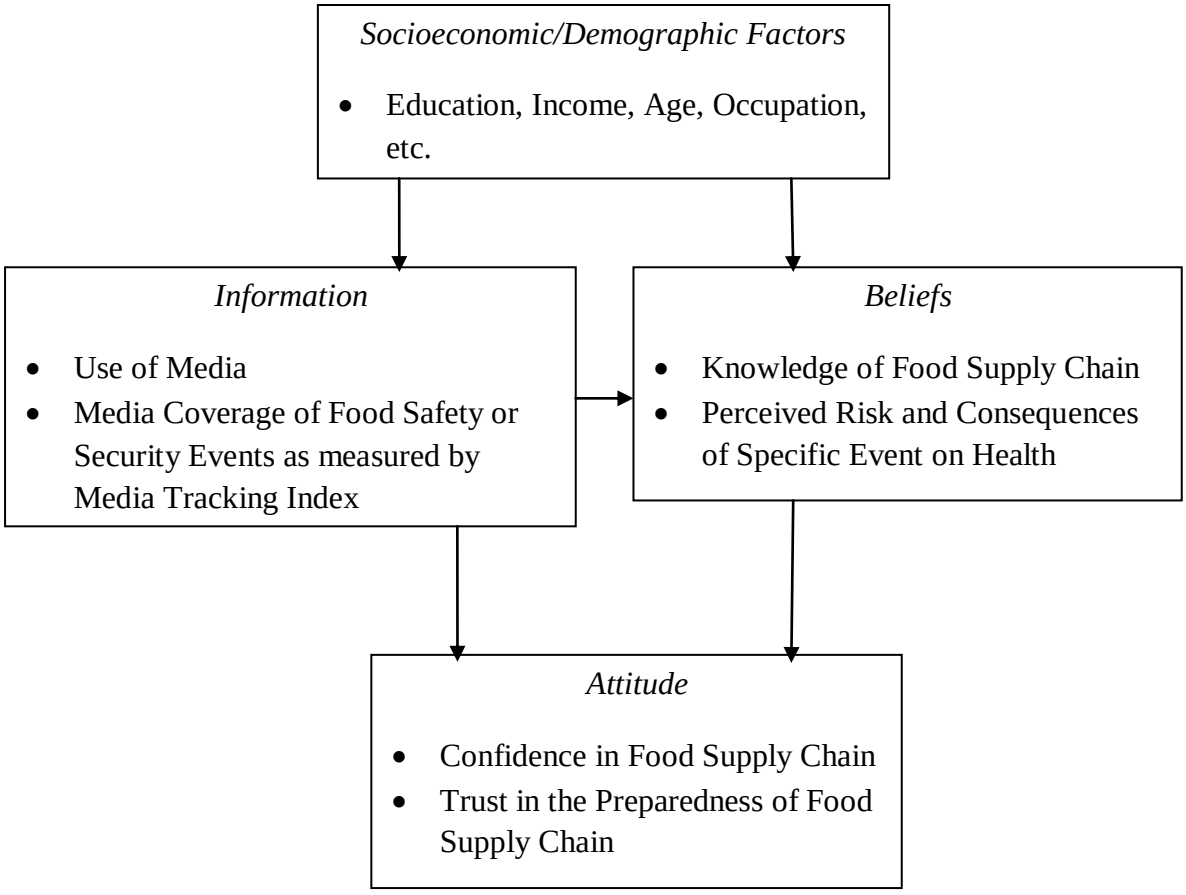
Therefore, in this study we use both steps for clustering the dataset, hierarchical and partition clustering procedures. Using STATA, hierarchical cluster analysis with Ward's minimum variance method was used to calculate the distance between observations. In Ward's minimum variance method, the distance between two clusters is the sum of squares between the two clusters summed over all the variables.

From the clusters generated in hierarchical clustering, the mean value for each cluster was calculated. These mean values were used as initial points for a K-means clustering procedure. In the K-means clustering procedures, each observation was assigned to the nearest seed to form the temporary cluster. The seeds of these temporary clusters were then replaced by

the means of temporary clusters. Euclidean distance was used as the means to cluster the observations in partition clustering. Euclidean distance is the measure of the length of a straight line drawn between two objects when represented graphically (Hair *et al.*, 2008).

3.5 Model and Analysis Procedure

This study proposes that the media coverage for food safety/ defense events will affect consumers' confidence in the safety of the U.S. food supply chain and the preparedness of the U.S. food supply chain. There are several different factors affecting consumers' confidence in the food supply chain (Figure 3.1).



Adapted from Han and Harrison 2007, and
Engel et al. , 1978

Figure 3.1 Theoretical Framework of Consumer Confidence in the United States Food Supply Chain

Figure 3.1 presents choice process model introduced by Engel *et al* in 1978 and was also used by Han and Harrison in 2007. The choice process model is used as conceptual basis for model specification in this study. Figure 3.1 shows the theoretical framework of the study. It shows socioeconomic and demographic factors influence the information and beliefs of the consumers. Information sources play role in determining consumer beliefs regarding food safety. Information and belief both affect consumer attitude regarding food safety. The perceived risk and beliefs about food safety directly affects consumers' confidence in the food safety.

The Kinsey *et al*. (2009) study identified two primary indicators of consumer's confidence. The first measures consumer's current confidence in the safety of U.S. food system, and the second measures their belief regarding how better prepared the food system is regarding food safety relative to a year ago. This was accomplished using factor analysis separate attitudinal questions in the survey into two sets of questions (appendix E). All the questions included in these two sets use a likert scale that ranges from 1 to 6. The first set of questions measures level of concern about food safety, or inversely their confidence in the safety of food (1 being Not At All Concerned to 6 being Extremely Concerned). In order to measure the consumer confidence, the scale for these four questions is reversed (1 being Extremely Concerned to 6 being Not At All Concerned). Responses for these four questions are aggregated to obtain a new aggregated variable to measure respondents' confidence in the safety of our food, and it is scaled from 4 to 24. For the ease of interpretation and calculation these 21 categories were consolidated into 7 categories, three categories were summed together to form a single category e.g. categories 4, 5, and 6 were added together to form category 1 and so on to create 7 new categories.

The second set of questions obtained from factor analysis measures respondents' attitudes regarding how prepared we are for food safety/defense events compared to a year ago. Responses for questions in the second set were aggregated together to obtain a new aggregated variable to measure respondents attitudes regarding how prepared we are for food safety/defense events compared to one year ago, and it is scaled from 2 to 12.

In order to measure the effect on the consumer confidence, the data for each section of the figure 3.1 was collected, through a consumer survey and media tracking survey. In order to use the collected data to measure the consumer confidence in the food safety/ defense events regression model was developed.

$CSFTC_i$ = f(MTI, MEDIASOURCE, DEMOGRAPHICS)

Where, where *CFSTC* is the aggregated variable measuring consumer confidence in food safety, *i* represent each segment for which the model was run, MTI represents the Media Tracking Index, MEDIASOURCE is the different primary media sources used by consumers.

A similar model was developed to measure consumers attitudes towards preparedness of food supply chain in different consumer segments.

$CSFTP_i$ = f(MTI, MEDIASOURCE, DEMOGRAPHICS)

Where, CFSTP is the aggregated variable measuring consumer attitudes regarding preparedness of U.S. food system to deal with food safety/defense events, *i* represent the each segment for which model has been calculated. MTI represents the Media Tracking Index, MEDIASOURCE is the different primary media sources used by consumers.

3.6 Ordered Probit Analysis

Since the dependent variables are ordinal, an ordered probit model is used for the analysis. The ordinal regression model is commonly presented as a latent variable model with a structural equation specified as, $y_i^* = x_i \beta + \varepsilon_i$, where y_i^* is a latent variable ranging from $-\infty$ to ∞. This model is derived from a measurement model in which y_i^* is mapped to an observed variable y which is thought of as providing incomplete information about an underlying y* according to the measurement equation (Long, 1997).

The use of an ordered probit model provides two primary advantages over the OLS model. First, the ordered probit model provides a solution to the problem of heteroskedasticity, which occurs when a regression model is used to analyze a categorical dependent variable; and second, maximum likelihood estimates are, under general conditions, consistent, asymptotically efficient, and asymptotically normal (Hamath *et al.*, 1997).

The probability of observing y = m, of CFSTC taking a value 1 to 7, or of CFSTP taking a value 2 to 12 given x is,

$$\Pr(y = m \mid x) = F(\tau_m - x\beta) - F(\tau_{m-1} - x\beta)$$

where F is the Cumulative Distribution Function for ε_i(Long, 1997).

This research uses several explanatory variables in the model, like demographic variables and media source variables; but the variable of primary interest is the Media Tracking Index (MTI). As described above, the media tracking index is constructed from daily article counts and is a continuous variable.

To be consistent with the previous study done by authors of this article, and according to theory of media agenda setting, we hypothesize that media coverage has a negative effect on

consumer's confidence. Higher media coverage is expected to induce decline in consumers' confidence in the safety of our food.

CHAPTER 4: RESULTS AND DISCUSSION

This chapter discusses the results of the Consumer Food Safety Tracking (CFST) survey and the media tracking. The analysis used 12,236 observations from the Consumer Food Safety Tracking (CFST) survey, collected over a period of 67 weeks. The media tracking data was collected over the same period of time.

4.1 Consumer Demographics

The summary statistics of the demographic distribution of the respondents for Continuous Food Safety Tracking (CFST) survey are presented in Table 4.1 below. To collect a representative sample of the U.S., the country was divided into nine geographic regions; the survey data was collected from these nine geographic regions. The highest number of responses came from the Middle Atlantic, East North Central, South Atlantic, and Pacific regions of the country. More than 56% of our respondents had household age of 50 years or more. The number of respondents for the survey was evenly divided across the household income category. Over 33% of the respondents had a household income of over $75,000 or more, while 26% of the respondents had a household income of $30,000 or less.

Continuing with the household size demographic characteristic from Table 4.1, 27% of our respondents had a household size of one member and 40% had two members. Only seven percent of our respondents had a household size of five or more members. The survey respondents were highly dominated by one race; around 90% of the survey respondents were white. The survey response was weighted toward female respondents, in that nearly 80% were female. Around 28% of the respondents had some college education and no degree; almost 25% of the respondents had a bachelor's degree; and14% of the respondents had a post graduate degree.

Table 4.1 Frequency Distribution of the Demographic Characteristics of Survey Respondents

Charecteristic	Category (n=12,236)	Frequency	Percent
Geographic regions	New England	657	5.37
	Middle Atlantic	1,842	15.05
	East North Central	2,022	16.53
	West North Central	900	7.36
	South Atlantic	2,300	18.8
	East South Central	671	5.48
	West South Central	1,237	10.11
	Mountain	871	7.12
	Pacific	1,736	14.19
Household Age	Under 30 Years	1,068	8.73
	30 through 39 Years	1,810	14.79
	40 through 49 Years	2,352	19.22
	50 through 59 Years	2,811	22.97
	60 Years and Over	4,195	34.28
Household Income	Under $30,000	3,218	26.3
	$30,000 - $49,999	2,492	20.37
	$50,000 - $74,999	2,468	20.17
	$75,000 and Over	4,058	33.16
Household Size	1 Member	3,393	27.73
	2 Members	4,875	39.84
	3 Members	1,714	14.01
	4 Members	1,340	10.95
	5 or More Members	914	7.47
Race	No Answer	123	1.01
	White	10,953	89.51
	Black/African-American	576	4.71
	Asian or Pacific Islander	304	2.48
	American Indian, Aleut Eskimo	60	0.49
	Other	220	1.8
Marital Status	No Answer	30	0.25
	Now Married	7,071	57.79
	Never Married	2,163	17.68
	Divorced, Widowed, Separated	2,972	24.29
Gender	Male	2,504	20.46
	Female	9,732	79.54
Education	Grade School	18	0.15
	Some High School	190	1.55
	Graduated High School	2,477	20.24
	Some College-no degree	3,432	28.05
	Graduated College –Associate's Degree (2 years)	1,269	10.37
	Graduated College- Bachelor's Degree (4 years)	3,147	25.72
	Post Graduate Degree	1,703	13.92
Primary source of news	Television	6,782	55.43
	Newspapers	1,748	14.29
	Magazines	45	0.37
	Radio	600	4.9
	Internet	2,951	24.12
	Local Church	33	0.27
	Other (Specify)	77	0.63

When respondents were asked to denote their primary source of news, over 55% of the respondents listed television, 24% listed the internet, and 14% listed newspapers as their primary source of news.

4.2 Factor Analysis Results

This section presents the results from the factor analysis conducted by using the consumer concern questions and attitude towards preparedness of food system questions. The factor analysis was performed with the aim of identifying common dimension among several concern and attitudinal questions. Further factor rotation was performed which yielded two very clear factors with no variable with ambiguous loadings or cross loadings. To identify factors easily for each variable in the factor analysis, only factor loadings higher than 0.6 are displayed in the Table 4.2. The last column in the table shows the unique variance for each specific variable. Unique variance is associated uniquely with each variable; it is independent from any correlation with the other variables in the analysis.

Table 4.2 Rotated factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Uniqueness
q2_4	0.8048		0.3497
q5_4	0.7306		0.4662
q6		0.8935	0.1887
q7	0.7745		0.3723
q10		0.8933	0.1963
q11	0.8625		0.2366

(blanks represent abs(loading)<.6)

The first factor contains four attitudinal questions measuring each respondent's current level of concern about food safety. Therefore, the first factor can be characterized as measuring consumers' current confidence in the safety of the U.S. food system. The second factor set

contains two attitudinal questions measuring each respondent's attitudes on how prepared the U.S. is for food safety/defense events compared to one year ago.

4.3 Segmentation

This section reports results obtained from the segmentation procedure. The segmentation procedure involved factor analysis for attitude statements followed by hierarchical and partition clustering.

4.3.1 Factor Analysis for Characteristic Statements

Factor analysis was performed with aim of identifying a common dimension among several attitudinal questions (Table 4.3). The factor analysis was performed using twenty-nine attitudinal variables as input, and it yielded seven factors, with some variables having cross loadings over two or more factors. To obtain factors that were cleaner, VARIMAX orthogonal factor rotation was performed. Using factor rotation, the cross loadings, which had been present for certain variables, were eliminated step-wise from the factor analysis. In the end, twenty attitudinal variables were used to obtain a seven factor solution, with factor loadings of 0.5 or higher. To ease interpretation, statement 16 among characteristic statements was reversed on its scoring scale. According to the description of the attitudinal questions, each factor was given a name.

Table 4.3 Characteristic Statements Factor Analysis

Charecteristic	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7	Uniqueness
Most people are inherently good					0.7580			0.3894
It is important to question authority		0.7335						0.4359
I must admit that I like to show off	0.7310							0.4397
I follow the latest trends and fashions	0.6569							0.4267
Just as the Bible says, the world was literally created in six days			0.8048					0.3364
There is far too much sex on television today			0.6399					0.4835
I strive to win the admiration of others	0.5958							0.4731
Freedom of action and thought is very important to me		0.7307						0.4106

Table 4.3 Contd.

I am frightened by diseases I have recently heard about				0.7192			0.3594
I believe most of the health threats in the news are overblown (Reversed)				0.6453			0.4951
I maintain a healthy and balanced diet						0.7041	0.3878
The danger of catching a serious illness is increasing				0.6359			0.3635
I like to learn about things even if they may never be of any use to me		0.6255					0.5261
I am optimistic about the future					0.6526		0.4418
I believe that future events are predestined			0.7248				0.4219
I contribute regularly to a retirement plan e.g. IRA, 401-K, etc.						0.7504	0.3603
I have one or more life insurance policies						0.8198	0.2979
I have set a weekly/monthly budget, and stick to it							0.8021	0.3263
With respect to danger, I like to live a bit on the edge	0.7362							0.3482
I tend to seek adventure in my life	0.6641							0.4117

(blanks represent abs (loading)<.5)

4.3.2 Cluster Analysis

This study uses a two-step hierarchical clustering analysis, followed by partition clustering. The factor scores obtained for the seven factors in the factor analysis previously performed were used as input scores.

In the next step, K-means partition clustering method was performed using the FASTCLUS procedure in SAS. The seeds from the hierarchical cluster analysis were used as the input for the SAS FASTCLUS procedure. To perform the K-means clustering, the observations were clustered based on Euclidean distances. The observations were assigned to their nearest seed to create temporary clusters, and these seeds were then replaced by the temporary clusters.

Various cluster solutions ranging from two to eight segments were analyzed and tested for usefulness and interpretation. In the end, it was determined that the cluster solution with eight segments yielded the most useful and interpretable segments.

4.3.3 Comparison of Segments

The average factor scores were used to label the segments obtained from the cluster analysis. Segment 1 was labeled as Non Differentiators because it had a positive factor score on all the factors. Segment 2 was labeled as Predestinarians/Disciplined because it had a high average factor score for factor three Predestination and factor seven Disciplined Life. Segment 3 was labeled as Afraid because it had a relatively high average factor score on factor four fearful. Segment 4 was labeled Adventurists because it only had a positive average factor score for factor one Adventurous. Segment 5 was labeled as Freedom Seeker because of its relatively higher average factor score for factor two personal freedom. Segment 6 was labeled as Life Planner/Freedom Seeker because of its higher average factor scores for factor two personal freedom and factor six planned life. Segment 7 was labeled as Life Planner because it had a relatively high positive factor score on factor six planned life. Segment 8 was labeled as Predestinarians/Optimists since it had a relatively higher average factor score for factor three predestination and factor five optimistic view.

Table 4.4 Cluster Analysis Summary: Average Factor Score for Consumer Attitude Dimension

Segment	Factor1 Show off, Adventurous	Factor2 Personal Freedom	Factor3 Predestination	Factor4 Fearful	Factor5 Optimistic View	Factor6 Planned life	Factor7 Disciplined Life
Non-Differentiators	**1.506**	**0.173**	**0.540**	**0.335**	**0.378**	**0.250**	**0.425**
Prdestinarians/disciplined	-0.635	-0.650	**0.706**	-0.618	0.293	0.414	**0.662**
Afraid	-0.561	0.579	0.246	**0.982**	-0.858	-0.478	0.664
Adventurists	**0.383**	-1.260	-0.379	-0.004	-0.628	-0.346	-0.276
Freedom Seeker	0.025	**0.591**	-0.914	-0.770	0.300	-0.809	0.407
Life Planner/freedom seeker	-0.022	**0.668**	0.278	-0.770	-0.800	**0.792**	-0.614
Life Planner	-0.270	0.106	-0.780	0.526	0.494	**0.939**	-0.157
Predestinarians/optimists	-0.378	0.178	**0.669**	0.249	**0.625**	-0.721	-0.970

Segment1-Non Differentiators

Characteristics for this segment included a younger household, a majority of the people being either 30 to 39 years old or 30 years or less, and a majority of the people having a household income of $75,000 or higher. The number of people who never married, i.e. single, was relatively higher than the general population, and people from this segment used television as their primary media source.

Segment2-Predestinarians/Disciplined

People in this segment believed in predestination of future events. Additionally, they followed a disciplined life style, maintained a healthy diet, and set up a weekly budget. Demographic characteristics for people in this group were a higher household age, a majority being over 60 years old, also a higher representation in lower middle income category of $30,000 to $50,000 compared to the general population, a majority of the population being currently married, a relatively higher percentage of females.

Segment3-Afraid

People in this segment could be defined as afraid of food scare events and of catching illnesses. The major demographic characteristics for this segment were a household age of 60 years or higher, an income level of less than $30,000 per year, a high school education or some college, a relatively higher number of divorcees, and a higher number of females compared to the general population. The primary media source for this segment was television.

Segment4- Trendy and Adventurists

The primary characteristics of this segment were that they followed the latest fashion trends and that they were adventurous. The major demographic characteristics for this segment were that the majority of the population was younger, with a household age of 30 to 39 years or

30 years or less; that the number of people with a low household income level, i.e. $30,000 or less, was relatively higher; and that the majority of the people used television as their primary media source.

Segment5-Freedom Seekers

The primary tendency of this segment was to pursue the freedom of expression in that people in this segment liked to question authority and liked to learn new things. Other characteristics were that the population tended to be older; that most people had only one member in the household, compared to the general population; that over half of the population had graduated from college or had a post graduate degree; that they were never married or were divorced/widowed; that they had a relatively higher percentage of males; and that they were using internet and newspaper as primary sources of information.

Segment6-Life Planners/Freedom Seekers

People in this segment exhibited characteristics of both Life Planner and Freedom Seeker. People in this segment considered freedom of expression very important, liked to learn new things, contributed regularly to retirement plans, and bought more than one insurance policy. This segment could be characterized as people who were mostly middle aged, i.e. in categories 30 to 39 years and 40 to 49 years, and who had a household income of $75,000 or more. This segment had a higher percentage of males relative to general population and a higher percentage using the internet as their primary media source.

Segment7-Life Planners

This segment was characterized by a desire to secure their future in life; people invest in insurance policies to prepare for hard times in the future. The prominent characteristics of this segment were that they were late middle aged, i.e. household age was 40 to 49 years or 50 to 59

years; that they had a high household income of $75,000 or higher; that they had higher education bachelor's or post graduate degree; that they were married; and that they had a relatively higher percentage individuals using newspapers as their primary media source.

Segment8-Predestinarians/Optimists

This segment tended to believe in predestination of future events, to believe that most people were inherently good by nature, and to have an optimistic view about life. The demographic characteristics of this segment were that they were generally older, over 60 years; that they had a low income level, less than $30,000 a year; and that they had high school or some college education. This segment had a higher percentage of females compared to the general population and used television as their primary media source.

4.4 Ordered Probit Results

An ordered probit model was used for this research because it allowed for the calculation of predicted probabilities for each category of ordered dependent variable and the marginal effects. Since the ordered probit model is a non-linear model, the estimated coefficients were not the marginal effects. Thus, the estimated coefficients and the marginal effects had to be calculated and discussed separately. The results for the general ordered probit model and each of the ordered probit models by segment are presented in this section. Chi square tests were used to test the significance of each model, and z-tests were used to test the significance of each coefficient associated with each of the models.

4.4.1 Consumer Confidence in Food System

As discussed previously, the four concern questions were grouped into one factor. These four questions, which had responses that individually ranged from 1-6, were aggregated together creating a response range of 4-24. To expedite the analysis, the response range was divided into

groups of three (4-6, 7-9, etc), resulting in a new aggregated variable that ranged from 1 to 7, with one being not at all concerned and seven being extremely concerned. We reversed the rating for this new aggregated variable so that we would obtain a confidence scale.

Several alternative specifications of the model were estimated, relating CFSTC to different combinations of explanatory variables. The final model used to estimate CFSTC is specified as:

$$CFSTC_i = \beta_1 MTI + \beta_2 Age + \beta_3 Region2 + \beta_4 Region3 + \beta_5 Region4 + \beta_6 Region5 + \beta_7 Region6 + \beta_8 Region7 + \beta_9 Region8 + \beta_{10} Region9 + \beta_{11} Mediasource2 + \beta_{12} Mediasource3 + \beta_{13} Mediasource4 + \beta_{14} Mediasource5 + \beta_{15} Mediasource6 + \beta_{16} Mediasource7 + \beta_{17} Hage2 + \beta_{18} Hage3 + \beta_{19} Hage4 + \beta_{20} Hage5 + \beta_{21} Hincome2 + \beta_{22} Hincome3 + \beta_{23} Hincome4 + \beta_{24} Hsize2 + \beta_{25} Hsize3 + \beta_{26} Hsize4 + \beta_{27} Hsize5 + \beta_{28} Race2 + \beta_{29} Race3 + \beta_{30} Race4 + \beta_{31} Race5 + \beta_{32} Education1 + \beta_{33} Education2 + \beta_{34} Education4 + \beta_{35} Education5 + \beta_{36} Education6 + \beta_{37} Education7 + \beta_{38} Maritalstatus2 + \beta_{39} Maritalstatus3 + \beta_{40} Gender2$$

where *CFSTC* is the aggregated variable measuring consumer confidence in food safety, *i* represents each segment for which the model was run, and β_1 through β_{40} are the estimated coefficients representing the change in *CFSTC* given a unit change in the associated explanatory variables, holding all other variables constant.

Tables 4.5A and 4.5B show the results from the ordered probit model, which used the aggregated variable measuring respondent's confidence in the safety of the food system as the dependent variable. The media tracking index (MTI) and the age variable were the only continuous variables in the model. All other independent variables were categorical; therefore, a dummy variable was created for each category. To create the dummy variables, one category from each of the variables was used as the reference category and was left out of the model. Tables 4.5A and 4.5B compare the coefficients for the general ordered probit model and each of the ordered probit models by segment. The results are discussed according to each segment.

Table 4.5A Coefficients for Ordered Probit model for Consumer Confidence for each Segment[a]

Variables	General	NonDifferentiators	Predestinarians/ Disciplined	Afraid
Media Tracking Index	-0.171***	0.069	-0.043	-0.076
Age	-0.002	-0.003	-0.010*	-0.004
Region[c]				
Middle Atlantic	-0.021	0.032	-0.008	0.094
East North Central	0.088*	0.009	0.141	0.252
West North Central	0.159***	0.271	0.294*	0.056
South Atlantic	-0.042	-0.095	0.019	0.213
East South Central	-0.151***	-0.040	-0.119	0.055
West South Central	0.089*	-0.065	0.120	0.118
Mountain	0.124**	0.204	0.149	0.186
Pacific	0.176***	0.011	0.213	0.231
Primary Media Source[c]				
Newspaper	0.221***	0.095	0.180**	0.188*
Magazines	0.374**	0.385	-0.159	0.929
Radio	0.237***	0.119	0.280**	0.110
Internet	0.091***	0.098	0.074	0.165**
Local Church	-0.115	0.986*	-0.128	0.370
Other (Specify)	0.405***	-1.187*	0.611**	-0.799*
Household Age[c]				
30 through 39 Years	-0.183***	-0.359***	-0.075	-0.124
40 through 49 Years	-0.292***	-0.416***	-0.041	-0.377*
50 through 59 Years	-0.348***	-0.430**	0.015	-0.339
60 Years and Over	-0.357***	-0.432	0.092	-0.254
Household Income[c]				
$30,000 - $49,999	0.077***	0.184*	-0.012	0.016
$50,000 - $74,999	0.084***	0.143	0.181**	0.157*
$75,000 and Over	0.143***	0.222**	0.094	0.269***
Household Size[c]				
2 Members	-0.089***	-0.162*	-0.080	-0.119
3 Members	-0.136***	-0.215**	0.045	-0.224*
4 Members	-0.147***	-0.321***	-0.026	-0.298**
5 or More Members	-0.145***	-0.113	-0.152	-0.238
Race[c]				
Black/African-American	-0.194***	-0.175	-0.094	0.046
Asian or Pacific Islander	-0.295***	-0.222*	-0.538**	0.051
American Indian, Aleut Eskimo	0.069	0.345	-0.031	0.149
Other	-0.090	-0.475**	0.075*	0.174
Education[c]				
Grade School	0.699***	0.043	2.181***	-3.979
Some High School	-0.029	-0.223	0.032	0.364*
Some College-no degree	0.066**	0.076	0.111	0.067
Graduated College –Associate's Degree (2 years)	0.133***	0.034	0.179*	0.082
Graduated College- Bachelor's Degree (4 years)	0.283***	0.192**	0.284***	0.159
Post Graduate Degree	0.446***	0.414***	0.374***	0.059
Marital Status[c]				
Never Married	0.106***	-0.024	0.089	0.165
Divorced, Widowed, Separated	-0.002	-0.070	0.003	-0.144

Table 4.5A Contd.

Gender[c]				
Female	-0.272***	-0.139*	-0.109	-0.240***
Log Likelihood	-20239.0	-2057.8	-2519.6	-1636.6
Number of observation	12236	1375	1492	1335
LR chi2(40)	1125.76	127.97	110.32	85.94
Prob. > chi2	0	0	0	0
Pseudo R2	0.0271	0.0302	0.0214	0.0256

a The coding for questions measuring respondents current level of concern is reversed in order to measure respondents confidence in the safety of our food.

*: significant at 0.10 level, **: significant at 0.05 level, ***: significant at 0.01 level

C The selected reference variables are: region1- New England; mediause1- Television; householdage1- under 30 year; householdincome1- under $30,000; housemembers1- 1, race1 – white, education1- Graduated High school, marital status - Currently Married.

Table 4.5B Coefficients for Ordered Probit model for Consumer Confidence for each Segment[a]

Variables	Trendy and Adventurists	Freedom seekers	Life Planners/ Freedom seekers	Life Planners	Predestinarians/ Optimists
Media Tracking Index	-0.355**	-0.376**	-0.217	-0.257*	-0.049
Age	-0.007	0.000	-0.003	-0.002	0.004
Region[c]					
Middle Atlantic	-0.010	-0.213	-0.017	0.057	-0.110
East North Central	0.112	-0.111	-0.061	0.184*	0.044
West North Central	0.138	-0.028	0.286	0.118	0.155
South Atlantic	-0.068	-0.308**	-0.158	0.138	-0.123
East South Central	-0.247	-0.278	-0.078	-0.116	-0.213
West South Central	0.017	-0.013	0.117	0.118	0.098
Mountain	0.247*	-0.073	0.149	0.215	-0.031
Pacific	0.162	-0.003	0.106	0.213*	0.159
Primary Media Source[c]					
Newspaper	0.067	0.308***	0.199**	0.244***	0.158*
Magazines	0.558**	-0.011	-0.881	0.432	0.221
Radio	-0.041	0.110	0.282**	0.390***	0.268*
Internet	0.035	0.022	0.145**	0.095	0.054
Local Church	-0.469	-0.499	-0.612	No Obs.	-0.347
Other (Specify)	0.307	0.499*	0.857**	0.574*	0.248
Household Age[c]					
30 through 39 Years	-0.165*	-0.091	0.014	-0.066	-0.197
40 through 49 Years	-0.200	-0.229	-0.031	-0.064	-0.429**
50 through 59 Years	-0.163	-0.407**	-0.104	-0.199	-0.426**
60 Years and Over	-0.121	-0.438	-0.089	-0.219	-0.431*
Household Income[c]					
$30,000 - $49,999	0.012	0.061	-0.059	0.013	0.149**
$50,000 - $74,999	-0.047	-0.024	-0.036	0.023	0.061
$75,000 and Over	-0.042	0.137*	0.057	0.079	0.182**
Household Size[c]					
2 Members	-0.130*	-0.059	-0.069	-0.146	-0.038
3 Members	-0.042	-0.149	-0.162	-0.211*	-0.084
4 Members	-0.243**	-0.096	-0.177	-0.123	0.128
5 or More Members	-0.204*	-0.249*	-0.081	-0.136	0.007

Table 4.5B Contd.

Race[c]					
Black/African-American	-0.218**	0.031	-0.311**	-0.080	-0.239**
Asian or Pacific Islander	-0.255**	-0.156	-0.170	-0.273	-0.519**
American Indian, Aleut Eskimo	-0.312	0.186	0.174	0.136	-0.515
Other	0.062	0.009	-0.373*	0.008	-0.293
Education[c]					
Grade School	0.522	0.489	No Obs.	No Obs.	-5.118
Some High School	-0.102	-0.168	0.274	0.102	-0.079
Some College-no degree	-0.077	0.101	-0.033	0.113	0.147**
Graduated College –Associate's Degree (2 years)	-0.088	0.281**	0.055	0.151	0.231**
Graduated College- Bachelor's Degree (4 years)	0.104	0.296***	0.226**	0.422***	0.379***
Post Graduate Degree	0.315***	0.489***	0.476***	0.502***	0.344***
Marital Status[c]					
Never Married	-0.066	0.048	0.214*	0.021	0.354***
Divorced, Widowed, Separated	-0.099	0.001	0.027	0.006	0.158**
Gender[c]					
Female	-0.243***	-0.259***	-0.203***	-0.325***	-0.195***
Log Likelihood	-2995.7	-2709.1	-2138.3	-2877.7	-2426.9
Number of observation	1815	1564	1274	1808	1573
LR chi2(40)	135.8	161.62	137.25	166.99	127.87
Prob. > chi2	0	0	0	0	0
Pseudo R2	0.0222	0.029	0.0311	0.0282	0.0257

a The coding for questions measuring respondents current level of concern is reversed in order to measure respondents confidence in the safety of our food.

*: significant at 0.10 level, **: significant at 0.05 level, ***: significant at 0.01 level

[C] The selected reference variables are: region1- New England; mediause1- Television; householdage1- under 30 year; householdincome1- under $30,000; housemembers1- 1, race1 – white, education3- Graduated High school, marital status - Currently Married.

4.4.1.1 Overall/General Model

The log likelihood statistic indicates that the model was significant at greater than the 99 percent level of confidence. The continuous variable for MTI was significant and negative, which means that a larger MTI value decreased consumer confidence in food safety as measured by the ordered probit model's index function. In other words, a higher MTI increased a person's concern level. Thus, greater media coverage about food safety events reduced consumer confidence in food safety. These results were consistent with the hypothesis of the media agenda-setting effect, as described earlier in the paper.

The coefficient for the East South Central region had a negative sign and was significant, while the coefficients for the East North Central, West South Central, West North Central and

Pacific regions were significant and positive (Table 4.5A). This meant that confidence in food safety decreased if a person lived in the East South Central region of the U.S. relative to the omitted New England region. On the other hand, a person living in the East North Central, West South Central, West North Central or Pacific regions of the country was indicated to have higher confidence relative to the New England region.

The coefficients for all media sources were significant and positive, except for the variable for local church (Table 4.5A). If a person used newspapers, radio, internet, magazines or other sources as their primary media source, the person's confidence in food safety increased relative to a person who used television (the reference category) as their primary media source. This suggests that individuals who rely on television as their primary media source had generally less confidence in the safety of the food system over the sample period. Moreover, greater than 50 percent of the respondents in the sample indicated that television was their primary news source, implying that television coverage of food safety events was an important driver of the public's opinion regarding food safety.

The coefficients for household age were negative and significant in the model. The age variable indicated that people aged greater than or equal to 30 were generally less confident about food safety, relative to the reference category of people aged less than 30. The results suggest that people older than 30 were more concerned about food safety.

The dummy variables for the household income categories were significant and positive (Table 4.5A). The positive direction of the categories indicated that a person with higher household income, relative to the reference category of household incomes under $30,000 would be more confident about food safety. These results suggested that households with higher

incomes were less concerned about food safety, perhaps because the higher income allowed them a wider variety of food choices relative to lower income households.

The variables measuring the number of household members were found to be negative and significant (Table 4.5A). These results were in accordance with the expectation that people with larger families were more concerned about food safety. Along with the number of members in his or her household, a person's education had a significant negative effect on his or her confidence in food safety (Table 4.5A). Specifically, having higher education increased a person's confidence in food safety, relative to a person who graduated from high school. These results were in line with the expectation that a person with higher education would be knowledgeable and concerned about the safety of his or her food. Finally, the variable gender showed significance in the model and had a negative direction (Table 4.5). The results showed that women were generally less confident about food safety, relative to men.

Figure 4.1 presents predicted probabilities for the continuous variable MTI over consumer confidence for the overall model. As mentioned before, to ease visualization and understanding, the seven categories of dependent variables were consolidated into three super-categories, with the top two categories representing the highest confidence super-category, the middle three categories representing the middle super-category, and the bottom two categories representing the lowest confidence super-category. The graph with all seven categories is presented in the appendix A.

Figure 4.1 shows the decrease in probability of a person being in the highest confidence or middle confidence super-category as the MTI increased. This result was in line with our hypothesis that as the media coverage increased; a person's confidence in food safety went down. Also, the probability of a person being in highest confidence category was very low.

In Figure 4.2, the predicted probabilities for the different media sources are plotted. In the overall model, all the media sources except Local Church were significant relative to television. One should note that the probability of being in the lowest confidence categories was lower for these media sources.

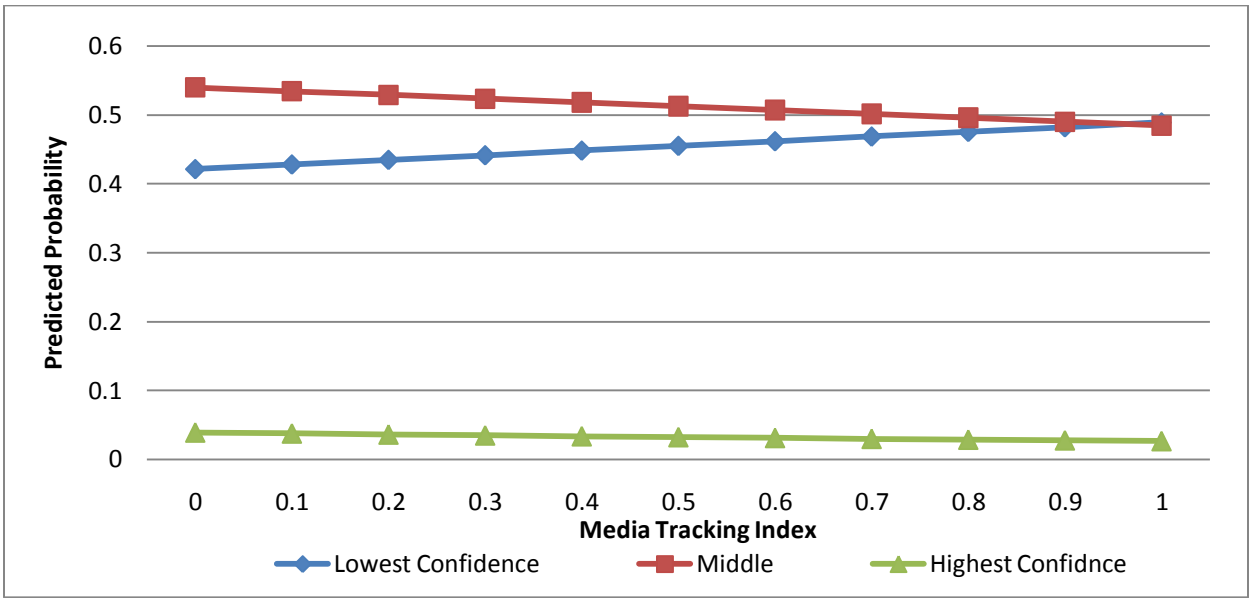


Figure 4.1 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Overall Model

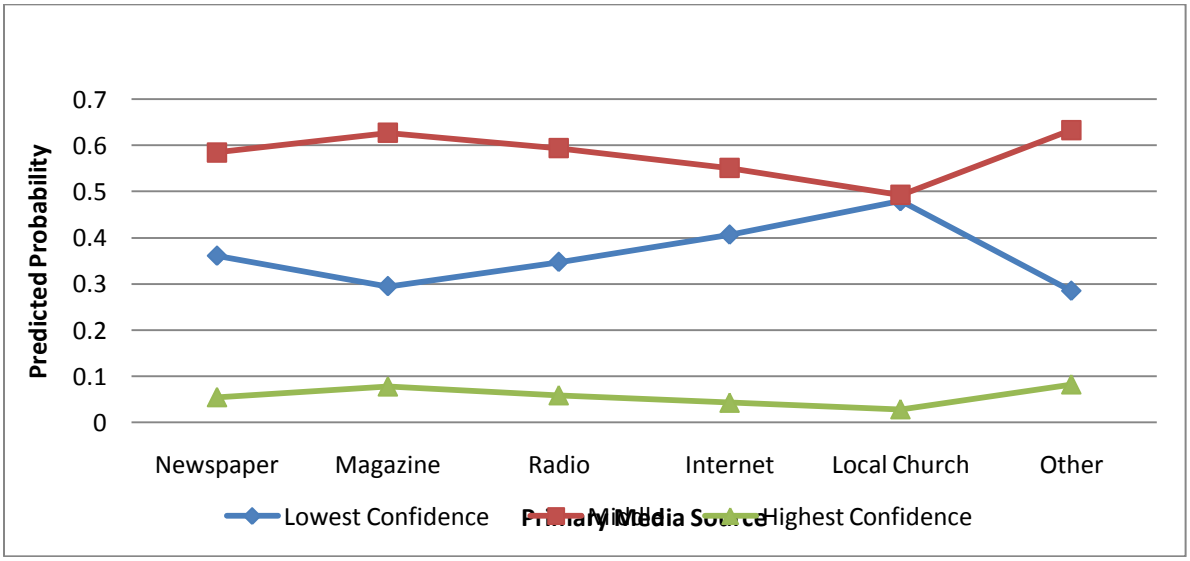


Figure 4.2 Probability curve showing the effect of Media Source on Consumers Confidence about Food Safety for the Overall Model

4.4.1.2 Non Differentiators

For the segment Non-Differentiators, the number of observations was 1375, and the log likelihood estimate indicated that the model was significant at greater than 99 percent level of confidence. The Media Tracking index was not significant in the model (Table 4.5A).

The coefficients for the media sources Local Church and Other were significant. Local Church had a positive sign for its coefficient in model, while the coefficient for Other media sources was negative. This indicated that, relative to a person who used television as his or her primary media source, a person who used the local church as the primary media source had higher confidence in food safety, and a person who specified his or her primary media source as "other" had lower confidence.

The household age variables also showed a significant impact on consumer confidence. The coefficients for all household age categories except the last category, 60 years and over, had a significant and negative effect. This suggested that, relative to the base category of 30 years or lower, if a person was in the age categories of 30 through 39 years, 40 through 49 years or 50 through 59 years, he or she would be less confident in food safety.

The coefficients for the household income categories $30,000-$49,000 and $75,000 and over were positive and significant. The base category here was a household income of $30,000 or lower. This result suggested that if a person was in a higher income category, it increased his or her confidence about the safety of food.

If household size was two, three, or four members, the probability of a person within this household having confidence in safety of food decreased, relative to the person with a household size of one member. Additionally, a person's confidence in the safety of food increased if the person had earned a bachelor's degree or a post graduate degree, relative to a person who had

only graduated from high school. Lastly, females were more concerned about food safety than males were.

Figure 4.3 presents the predicted probabilities for the continuous variable MTI over consumer confidence for the segment Non-differentiators. There was very little variation in the probability for consumer confidence to change due to a change in MTI, although there was a high probability for a person to be low in confidence about food safety.

The predicted probabilities for the various media source within the segment Non-Differentiators are shown in Figure 4.4. This segment had a relatively higher percentage of the population using the television as their primary media source than the general population did. One should note that the people who specified a source other than the listed sources had a higher probability of being low in their confidence than those people who specified one of the listed sources.

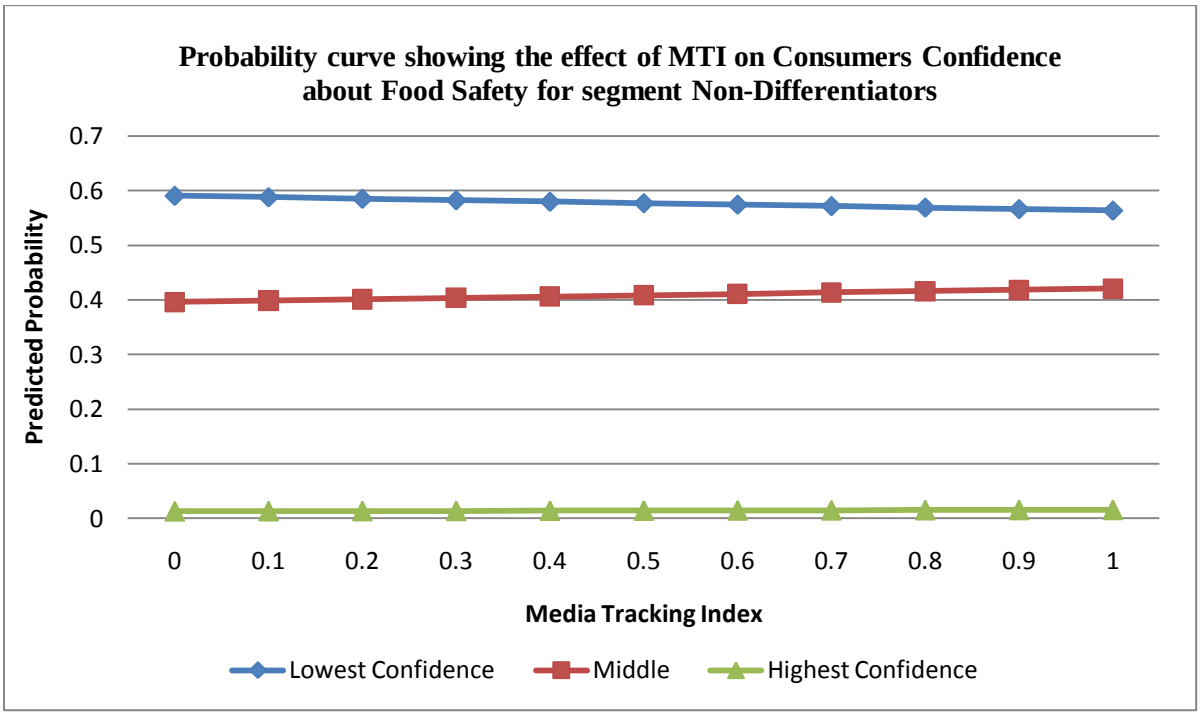


Figure 4.3 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Segment Non-Differentiators

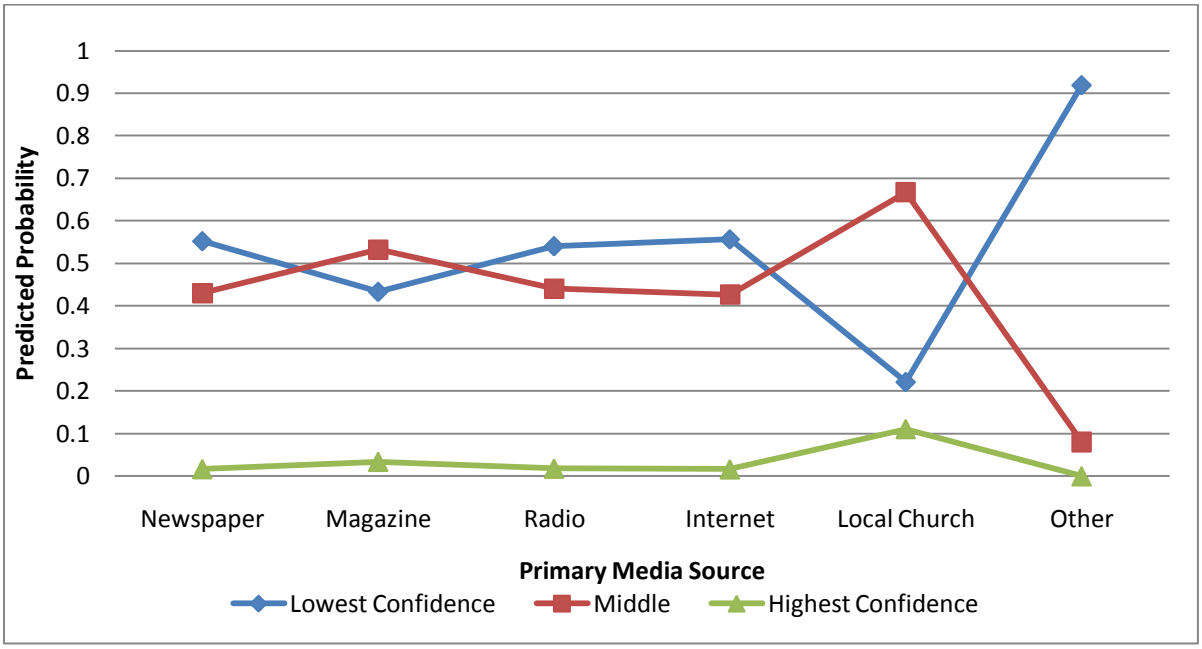


Figure 4.4 Probability curve showing the effect of Media Source on Consumers Confidence about Food Safety for the Segment Non-Differentiators

4.4.1.3 Predestinarians/Disciplined

The segment Predestinarians/Disciplined had 1492 observations, and the ordered probit model for this segment was significant at a greater than 99 percent level of confidence. The Media Tracking Index did not have a significant effect on consumers' confidence in the safety of food (Table 4.5A).

Only the East North Central region had a significant and positive effect. This implied that, relative to the New England region, a person from the East North Central region was more confident in the safety of food. Additionally, the media sources Newspaper, Radio and Other had a significant and positive effect. This meant that, relative to the television users, the people who listed newspaper, radio or other specific media as their primary media source were more confident in the safety of food. Furthermore, a person with a household income between $50,000

and $75,000 was more confident in the safety of food, compared to the base category of people with household incomes lower than $30,000.

The level of education also had some effect on consumers' confidence regarding food safety in this segment. The coefficients for Grade School, 2-year college degree, 4-year college degree, and post graduate degree were all positive and significant. This meant that, relative to a person who graduated from high school, people with education levels of grade school, 2-year college degree, 4-year college degree, or post graduate degree were more confident about the safety of food.

Figure 4.5 presents the predicted probabilities for the continuous variable MTI over consumer confidence for the Predestinarians/Disciplined segment. For all three categories, there was not much variation in the probability of a person being confident. However, as opposed to the first segment, Non-Differentiators, the probability of a person being in the highest confidence category or the middle confidence category was much higher.

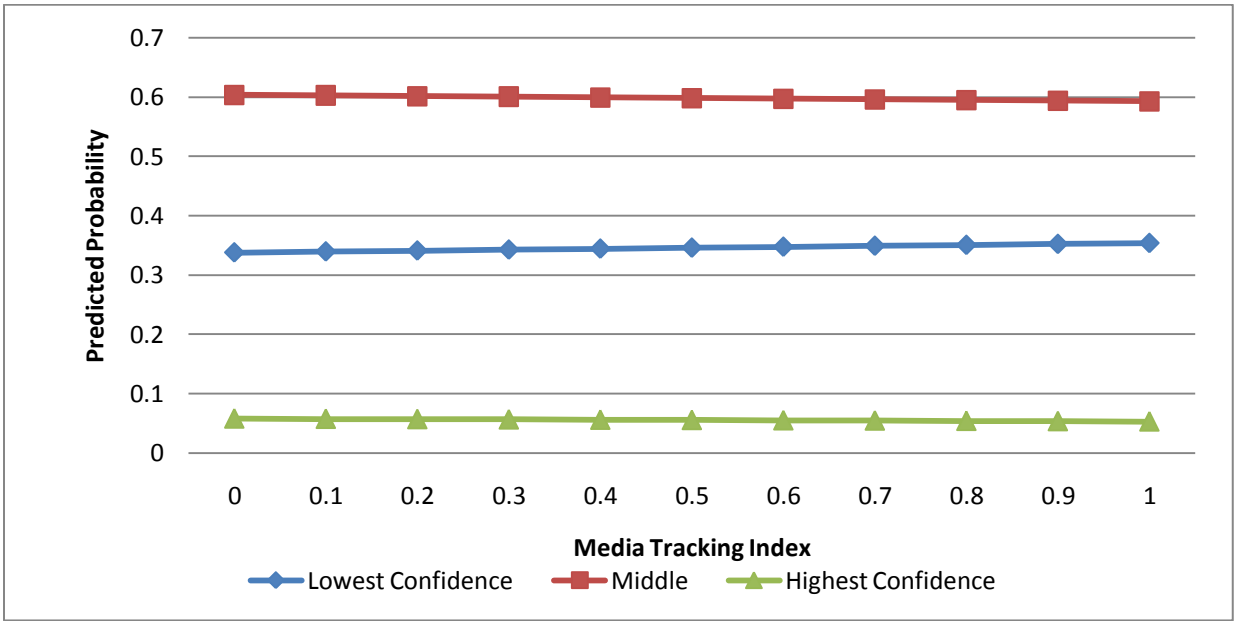


Figure 4.5 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Segment Predestinarians/Disciplined

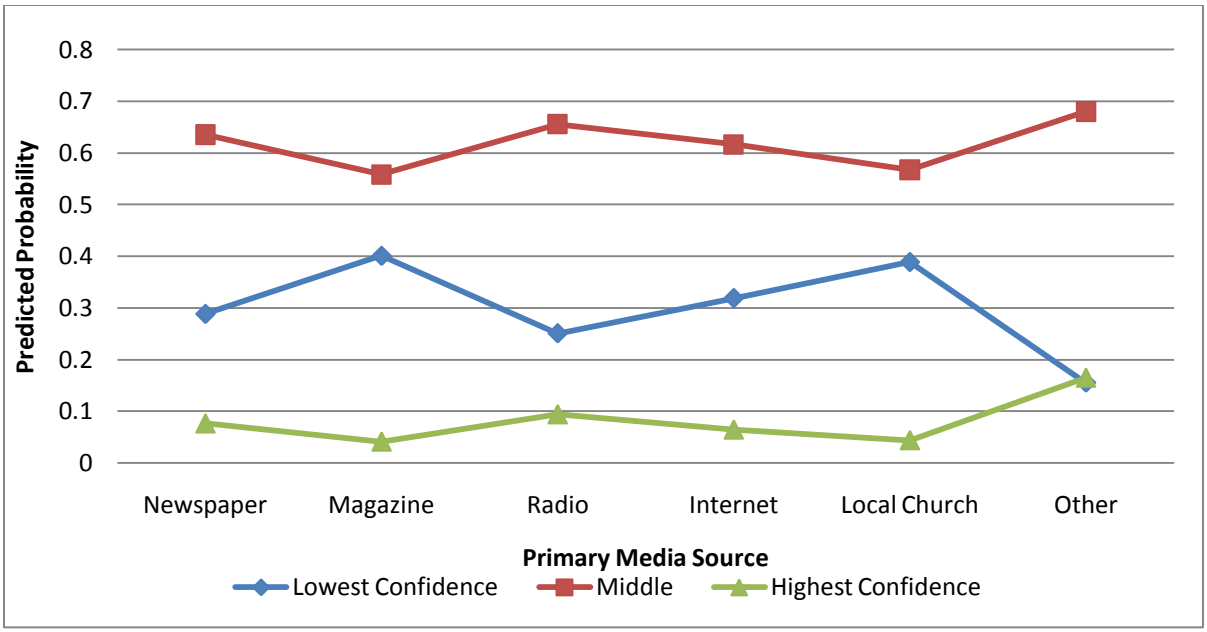


Figure 4.6 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Segment Predestinarians/Disciplined

The population sample in the segment Predestinarians/Disciplined indicated relatively higher use of newspapers as their primary media source, compared to the general population. Figure 4.6 shows that the probability of people with newspaper, radio and other specific sources of being in middle and highest confidence categories were higher.

4.4.1.4 Afraid

The ordered probit model for the third segment, Afraid, was significant at a greater than 99 percent level of confidence as indicated by the log likelihood statistic. Like the previous segment, the coefficient for the Media Tracking Index was not significant in this segment.

The coefficients of the dummy variables Newspaper, Internet, and Other specified sources were significant. Newspaper and Internet had a positive sign, while Other specified source had a negative sign. Therefore, relative to people who used the television as their primary media source, people who used the newspaper and the internet as their primary media source were more

confident about the safety of food, and people who used other specified sources as their primary media source were less confident.

The dummy variable coefficient for the household age category 40 through 49 years had a significant and negative effect. This can be explained as, relative to the household age category 30 or lower, a person in the category 40 through 49 was less confident about the safety of food. Additionally, people in the household income categories of $50,000 - $75,000 and $75,000 and over were more confident in the safety of food, relative to people in the household income category of $30,000 and lower.

Household size also had a significant and negative effect on consumers' confidence in the safety of food. People with household sizes of three members and four members were less confident about the safety of food than people with a household size of one member. Relative to people who graduated from high school, people with some high school education were more confident about the safety of food. Females were less confident about the safety of food than males.

Figure 4.7 presents the predicted probabilities for the continuous variable MTI over consumer confidence for the segment Afraid. As expected from the segment's name, the probability of a person being in the lowest confidence category was very high. Although the probability of person being in the lowest confidence category increased slightly with an increase in MTI, there was not much variation. The probability curve shows that the probability of people in this segment being low in confidence was very high and was not affected by changes in media coverage.

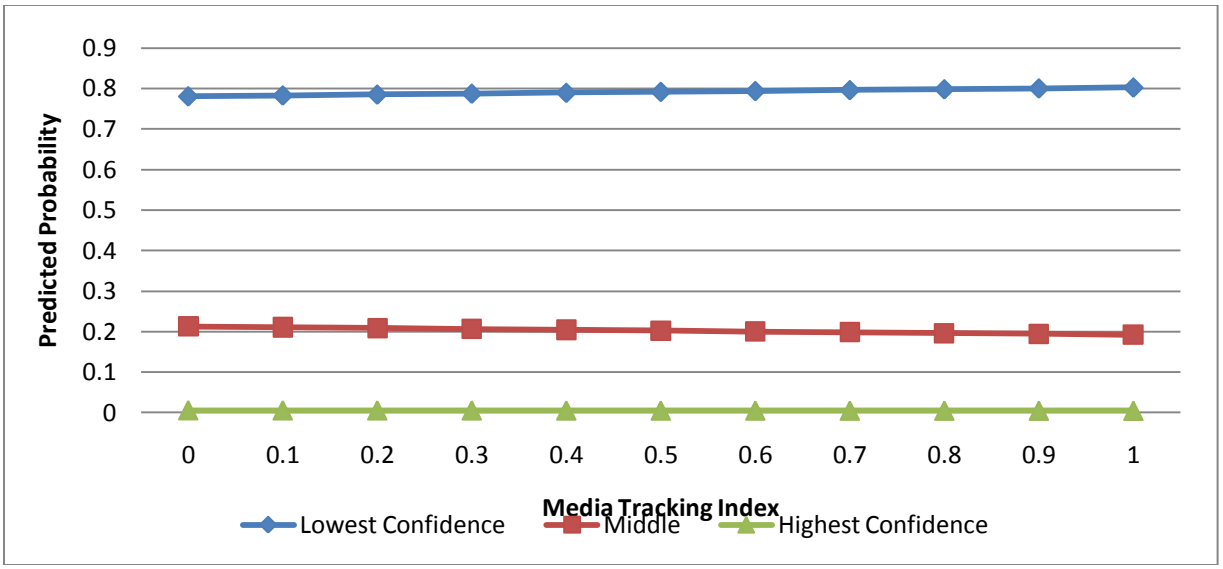


Figure 4.7 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Segment Afraid

Figure 4.8 presents the probability curves for media sources within the segment Afraid. A majority of the people within this segment indicated the television as their primary media source. Additionally, most of the people who indicated another specified media source as their primary source had a very high probability of being in the lowest confidence category.

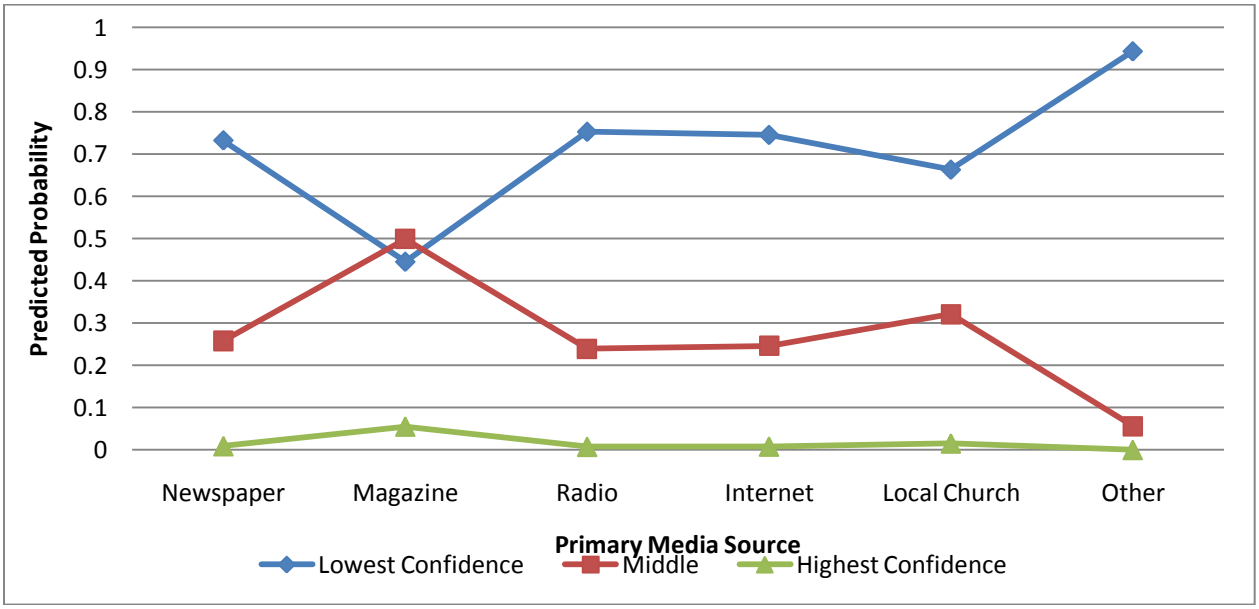


Figure 4.8 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Segment AfraidAfraid

4.4.1.5 Trendy and Adventurists

The log likelihood statistic for the Trendy and Adventurists segment indicated that the model was significant at a greater than the 99 percent level of confidence. The continuous variable for Media Tracking Index (MTI) was significant and negative, which meant that a larger MTI value decreased consumer confidence in food safety, as measured by the ordered probit model's index function.

Amongst all regions, only the Mountain region had a coefficient that was significant and positive, implying that a person residing in the Mountain region tended to be more confident compared to a person residing in the New England region. Amongst primary media sources, Magazines had a significant and positive effect. Therefore, if a person indicated that his or her primary media source was magazines, he or she tended to be more confident in food safety than a person who used the television primarily. Additionally, a person within the household age category of 30 through 39 years was less confident about the safety of food, relative to a person within the household age category of 30 years or less.

Household size had a negative and significant effect in the model. A person who had two, four, or five members within his or her household was less confident in the safety of food, relative to a person who had only a single member in his or her household. A person who had a post graduate degree was more confident in the safety of food, relative to a person who graduated from college, and females were less confident in food safety than males.

Figure 4.9 presents the predicted probabilities for the continuous variable MTI over consumer confidence for the Trendy and Adventurist segment. MTI had a negative and significant effect on consumer confidence regarding food safety in this segment. One should note that the probability curve for being in the highest confidence and middle confidence categories

was going down with an increase in MTI, while the curve for lowest confidence was going up. This indicated that people who were in the segment Trendy and Adventurists became less confident about food safety as the media coverage increased.

The population of consumers with television as their primary media source was higher in the segment Trendy and Adventurist, relative to the general population. For all the media sources, the probability of a person being in the middle or highest confidence category was higher (Figure 4.10).

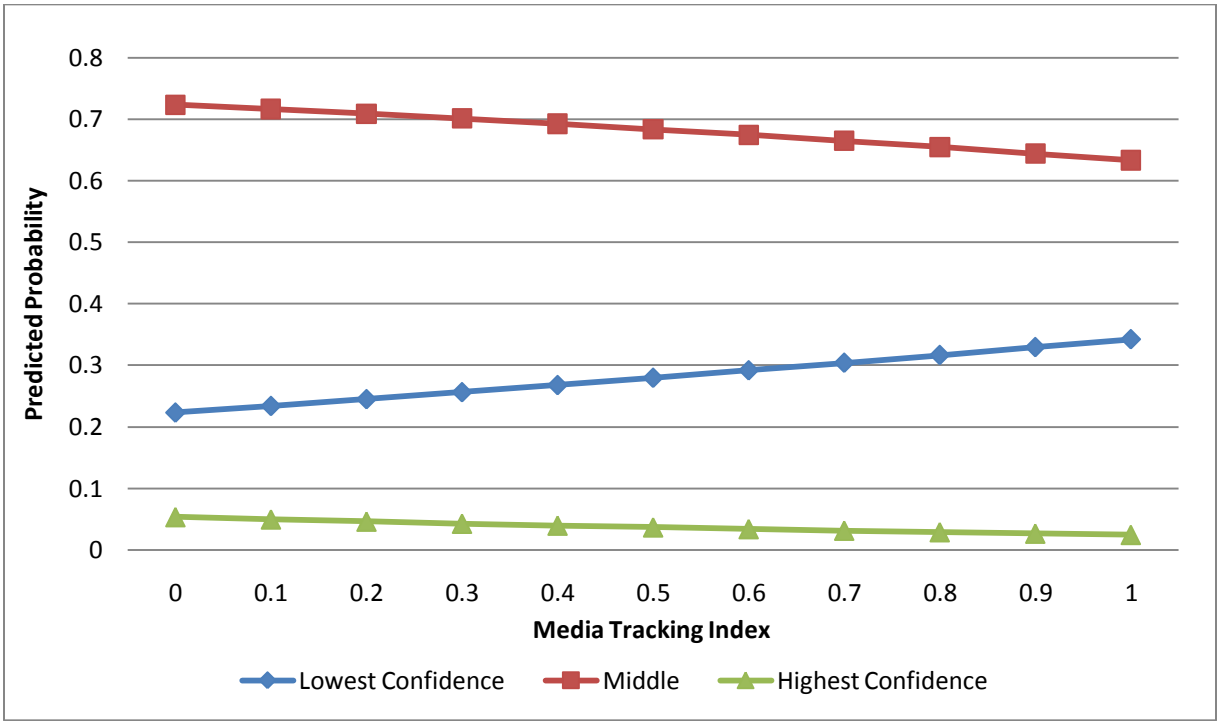


Figure 4.9 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Segment Trendy and Adventurists

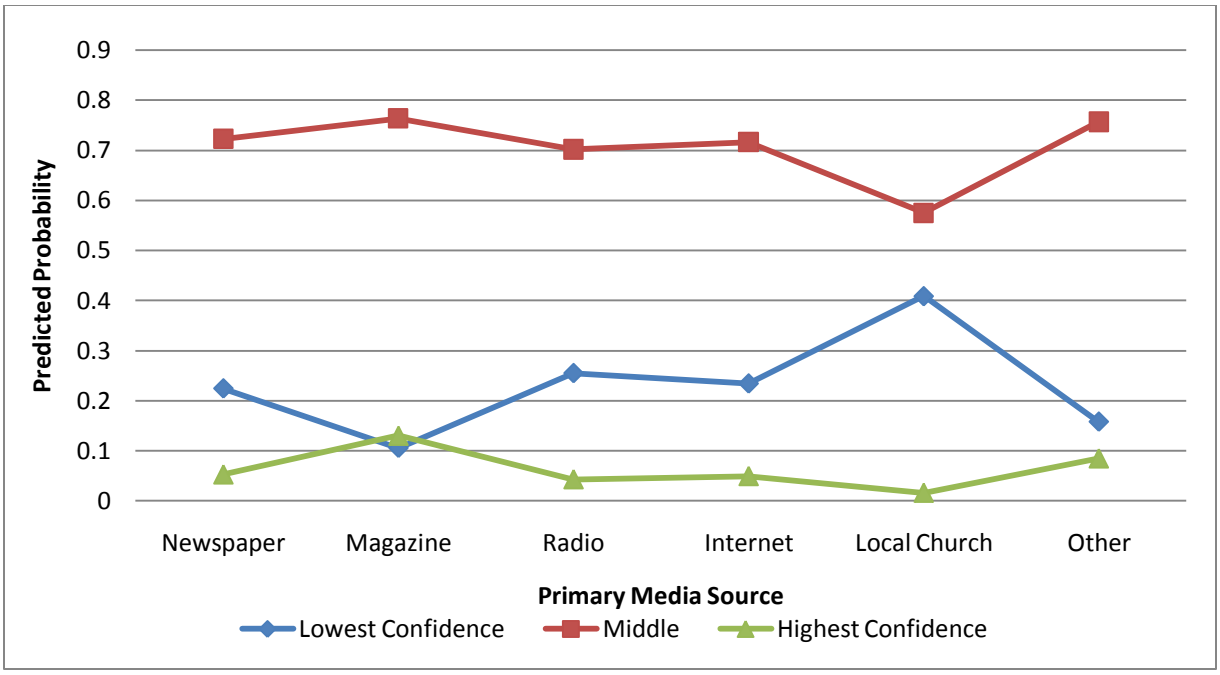


Figure 4.10 Probability Curve Showing the effect of Media Source on Consumers Confidence about Food Safety for the Segment Trendy and Adventurists

4.4.1.6 Freedom Seekers

The model for the segment Freedom Seeker was significant at a greater than 99 percent level of confidence. The continuous variable for Media Tracking Index (MTI) was significant and negative, meaning that an increase in the Media Tracking Index decreased consumer confidence in food safety (Table 4.6).

Only the South Atlantic region had a negative and significant effect. This meant that if a person resided in the South Atlantic region, he would be less confident in food safety, compared to a person residing in the New England region. If a person used the newspaper and other specified media sources as his or her primary media source for information, he or she would be more confident about food safety, relative to a person using the television as his or her primary media source.

A person within the household age category 50 through 59 years was less confident in food safety, compared to a person within the younger household age category of 30 years or less. If a person's household income was over $75,000 dollars, he or she was more confident about the safety of food, relative to a person with a household income of lower than $30,000. A household size of five or more members had a negative and significant impact on consumer confidence regarding food safety. Therefore, a person with a household size of five or more members would be less confident in food safety, as compared to a person who had only a single person in his or her household.

For the segment Freedom Seeker, education had a positive and significant effect. If a person had earned a 2-year college degree, 4-year college degree, or post graduate degree, he or she was more confident about food safety, relative to a person who graduated from high school. Females in this segment were less confident about food safety than males were.

Figure 4.11 presents the predicted probabilities for the continuous variable MTI over consumer confidence for the segment Freedom Seeker. MTI had a significant and negative effect on consumer confidence regarding food safety in this segment. As displayed by the figure, the probability of a person being less confident about food safety was low when MTI was 0, but the probability of being less confident increased with the increase in MTI. On the other hand, the probability of being highly confident or medium confident decreased with increases in media coverage.

A higher percentage of the population within the segment Freedom Seeker used the internet or newspapers as their primary media source, compared to general population. The probability of a person within the segment Freedom Seeker being in the lowest confidence category was lower for all media sources, except for the local church (Figure 4.12).

Figure 4.11 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Segment Freedom Seeker

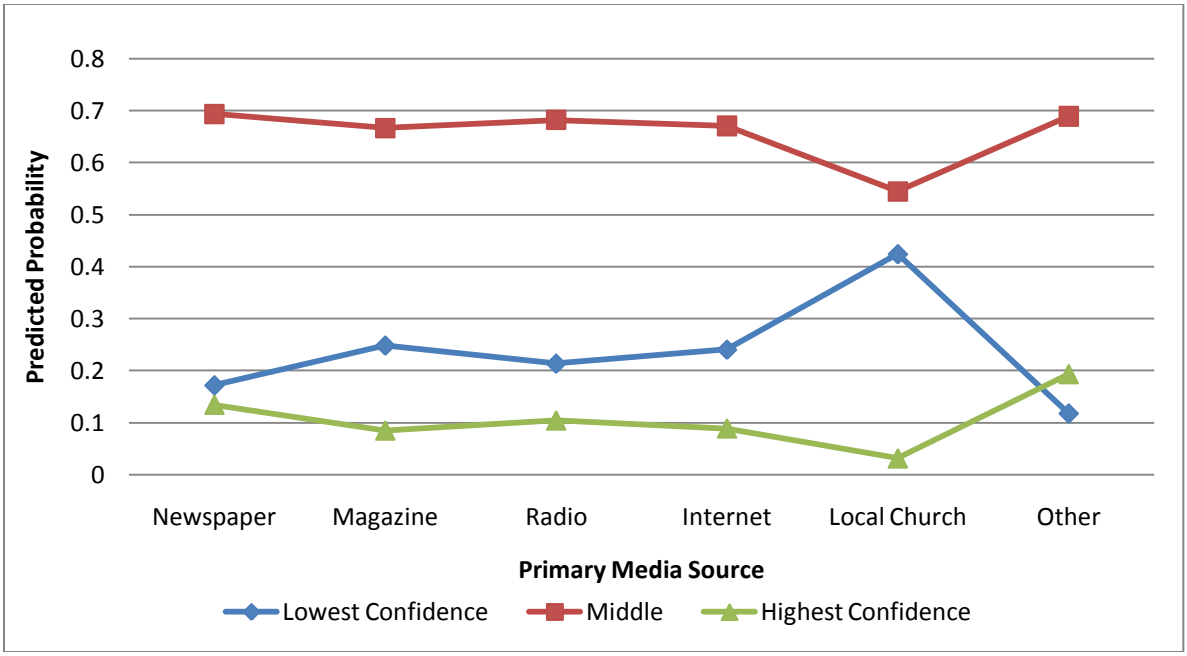


Figure 4.12 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Segment Freedom Seeker

4.4.1.7 Life Planners/Freedom Seekers

The log likelihood statistic indicated that the model for the segment Life Planner/Freedom Seeker was significant at a greater than the 99 percent level of confidence. The explanatory variable Media Tracking Index was not significant for this segment (Table 4.6).

In this segment, the media sources Newspaper, Radio, Internet and Other specified sources had a positive and significant effect in the model. Consequently, people who indicated Newspaper, Radio, Internet and Other specified sources as their primary media source for information were more confident about food safety, compared to people who indicated television as their primary media source.

The higher education categories of a 4-year college degree and a post graduate degree had a significant and positive effect. If a person who had earned a 4-year college degree or post graduate degree, he or she was more confident about food safety, as compared to a person who had graduated high school. Additionally, in this segment, people who said that they were never married were more confident about food safety, relative to people who indicated that they were currently married. Females in this segment were also less confident about food safety than males were.

Figure 4.13 presents the predicted probabilities for the continuous variable MTI over consumer confidence for the segment Life Planner/Freedom Seeker. Although MTI did not have a significant effect, the change in the probability curve was evident with increases in media coverage for each category.

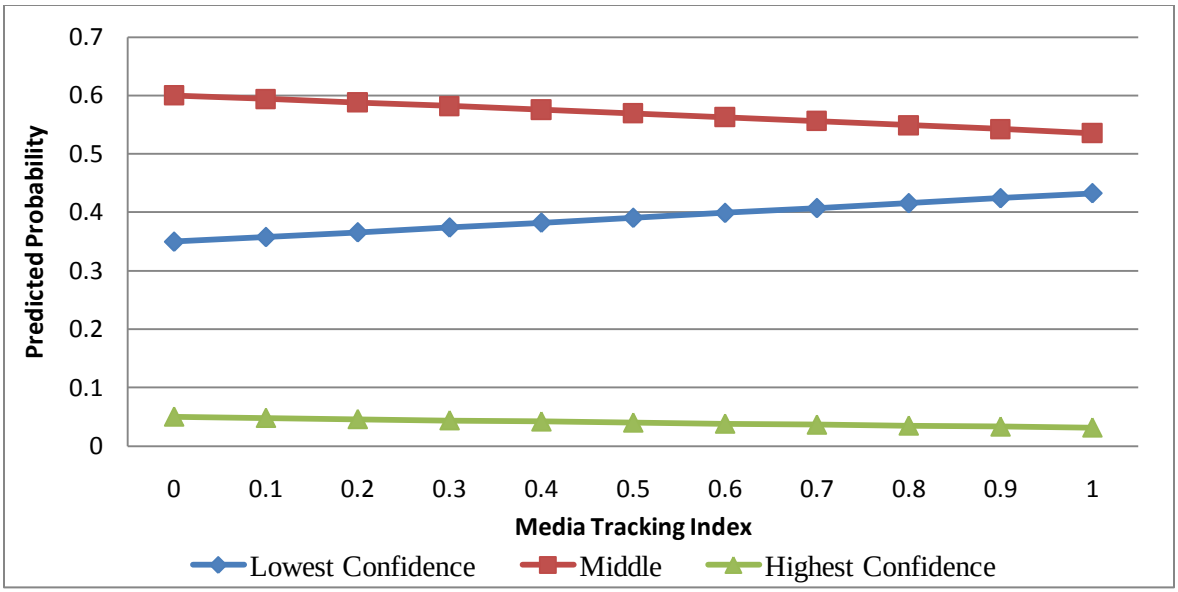


Figure 4.13 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Segment Life Planner/Freedom Seeker

There were a higher percentage of internet users in the segment Life Planner/Freedom Seeker, as compared to the general population. As can be seen in Figure 4.14, people who relied on newspapers, the radio, the internet and other specific sources had a higher probability of being in the middle or highest confidence categories..

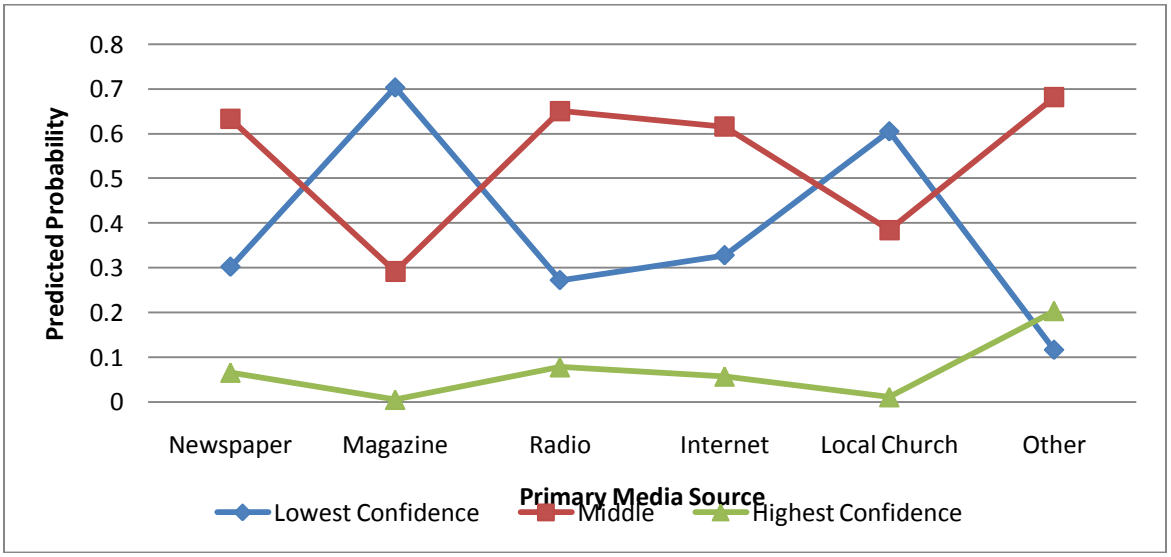


Figure 4.14 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Segment Life Planner/Freedom Seeker

4.4.1.8 Life Planners

The model for the Life Planner segment was significant at a greater than the 99 percent level of confidence, based on the log likelihood statistic. The continuous variable for MTI was significant and negative, meaning that as the Media Tracking Index increased, consumer confidence in food safety decreased (Table 4.6).

For the segment Life Planner, the East North Central and Pacific regions had a positive and significant effect. A person residing in the East North Central or Pacific regions was more confident about food safety, relative to a person living in the New England region. Additionally, the media sources Newspaper, Radio and Other specified sources had a positive and significant effect. People who used these sources as their primary media source for information were more confident about food safety, compared to people who indicated the television as their primary media source.

The higher education categories 4-year college degree and post graduate degree had a significant and positive effect in the model. A person who had earned either of these two degrees was more confident about food safety, as compared to a person who had graduated from high school. Females in this segment were less confident about food safety as compared to males.

Figure 4.15 presents the predicted probabilities for the continuous variable MTI over consumer confidence for the segment Life Planner. MTI had a significant and negative effect for this segment. When the media coverage was zero, there was a higher probability of a person being confident about food safety, but as the media coverage increased, people became less confident.

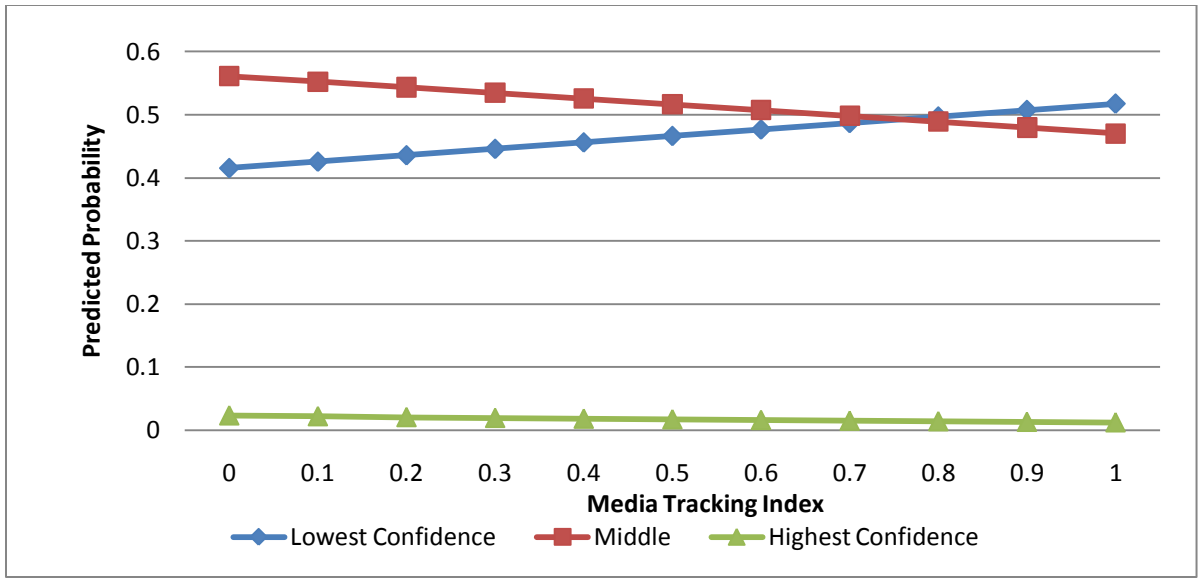


Figure 4.15 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Segment Life Planner

In Figure 4.16, the predicted probabilities for the different media sources for the segment Life Planner were plotted. As can be observed, there was a higher probability of a person being in the middle confidence than in lowest confidence category, for all media sources. For this segment, there were a higher percentage of consumers whose primary media source was newspapers, compared to the general population.

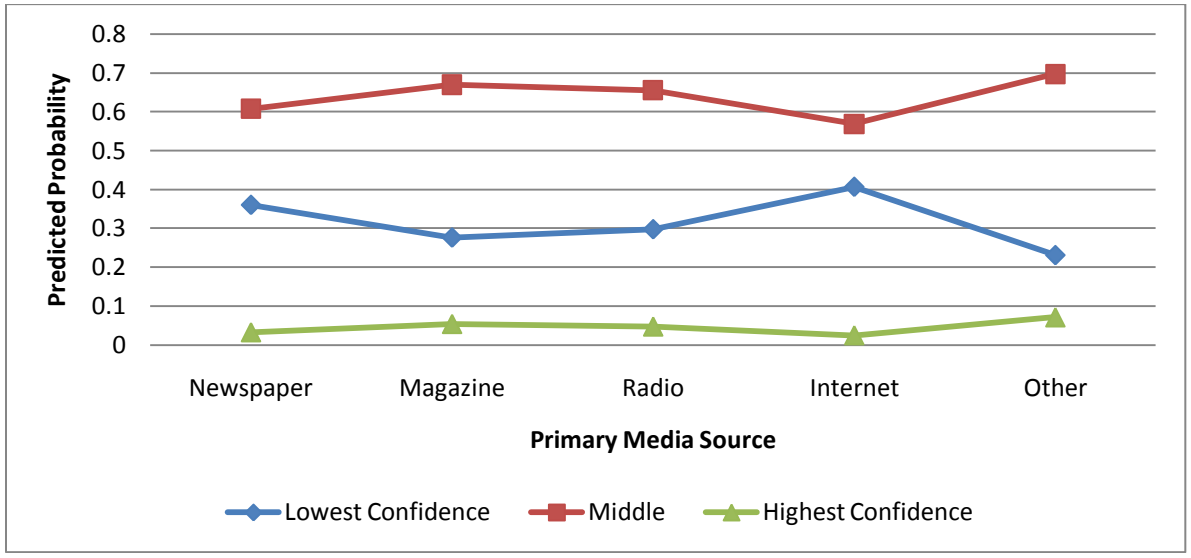


Figure 4.16 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Segment Life Planner

4.4.1.9 Predestinarians/Optimists

The log likelihood statistic indicated that the model for the segment Predestinarians/Optimists was significant at a greater than the 99 percent level of confidence. The continuous variable for MTI was not significant.

For this segment, Newspaper and Radio had a significant and positive effect. A person who used these sources as his or her primary media source was more confident about food safety, relative to a person who relied on the television.

Household age showed a significant impact on consumer confidence. The coefficients for the household age categories 40 through 49, 50 through 59 years, and 60 or over had were negative. A person in one of these household age categories was less confident about food safety than a person with a household age of 30 or less.

For the segment Predestinarians/Optimists, higher education had a positive effect. A person with some college education, an Associate's degree, a Bachelor's degree or a post graduate degree was more confident in food safety, compared to a person who graduated from high school. Additionally, people who indicated that they were never married or that they were divorced or widowed were more confident about food safety than people who were currently married. As was generally the case, females in this segment were less confident about food safety than males were.

Figure 4.17 presents the predicted probabilities for the continuous variable MTI over consumer confidence for the segment Predestinarians/Optimists. MTI did not have a significant effect on this segment. However, there was not much change in the probability of a person's confidence level with a change in media coverage the probability of being in the lowest confidence category was always higher than the probability of being in the other two.

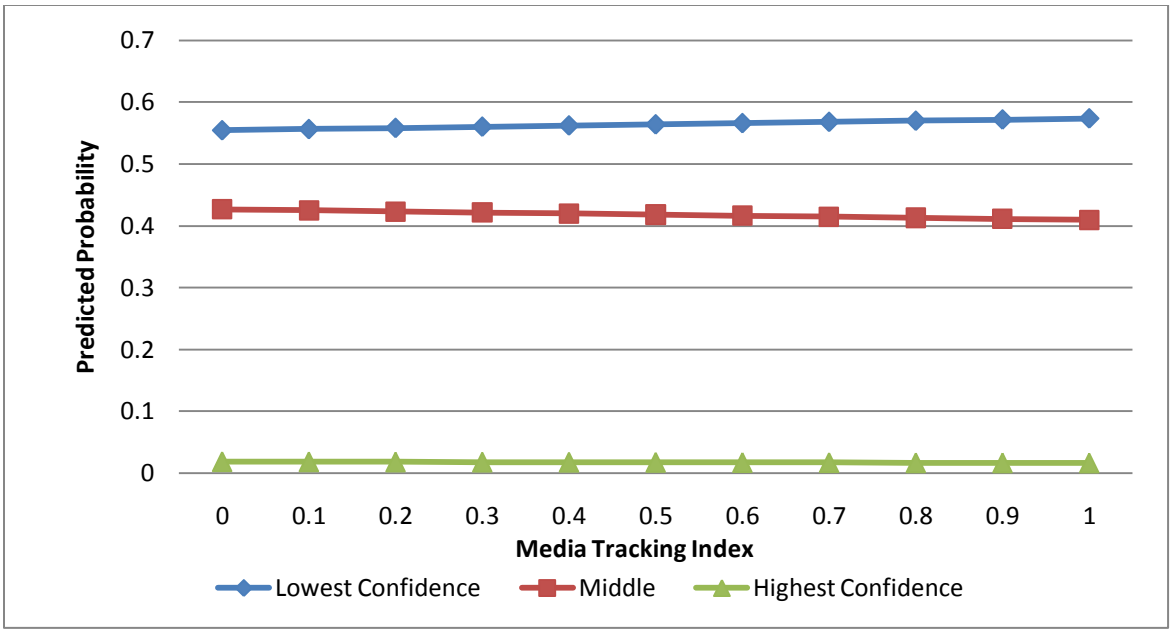


Figure 4.17 Probability Curve Showing the effect of MTI on Consumers Confidence about Food Safety for the Segment Predestinarians/Optimists

Figure 4.18 shows the predicted probabilities for each media source on consumer confidence for the segment Predestinarians/Optimists. No trends in the data were evident. Most of the population in this segment recorded television as their primary media source.

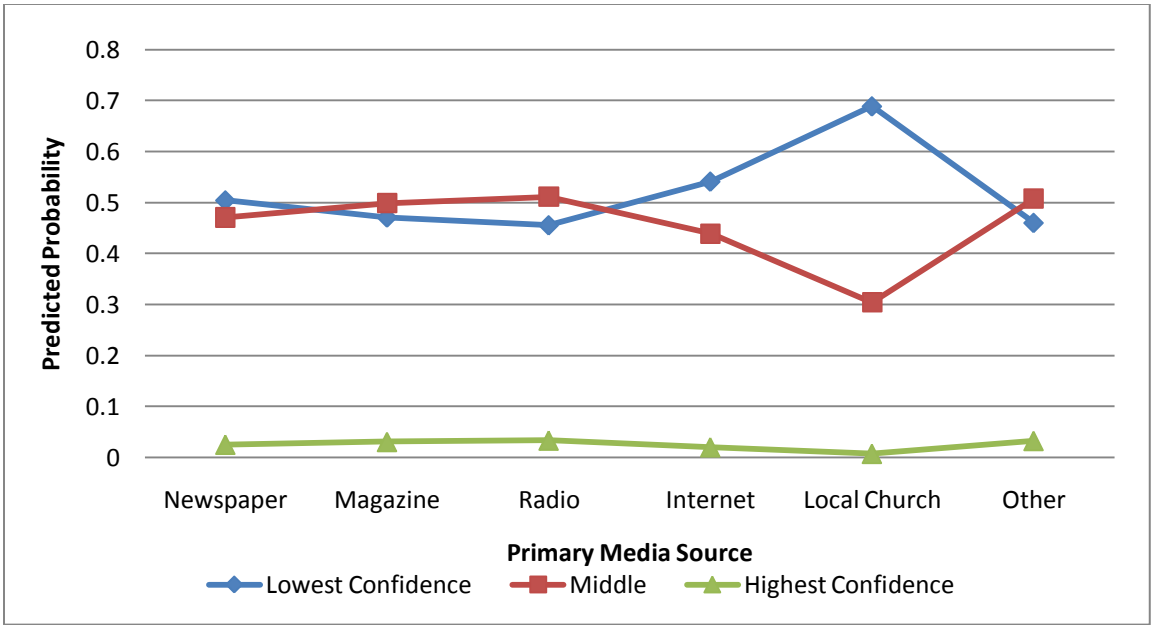


Figure 4.18 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Segment Predestinarians/Optimists

4.4.1.10 Marginal Effects

By definition, marginal effects across all categories of dependent variable must sum to zero - since the probabilities must sum to one (Cranfield and Magnusson, 2003). When interpreting marginal effects for a continuous variable, all other things equal, a unit change in the explanatory variable will result in an increase or decrease in the predicted probability equal to the size of the marginal effect. In the case of a categorical dummy variable, the marginal effect is the change in the predicted probability based on whether the observation falls in that category or not. Since while calculating marginal effects all the remaining variables assume their average values, the marginal effect shows the change in the predicted probability for each category for an average respondent (Long, 1997). Due to the large number of explanatory variables for each segment and ease of understanding, the marginal effects for each segment are explained together by comparing among segments. Marginal effects for the variables which are significant in the model are explained below, and the tables showing marginal effects for each segment are included in the appendix B.

The explanatory continuous variable MTI was significant in the overall model and in the segments Trendy and Adventurists, Freedom Seekers, and Life Planners. The lower categories of the dependent variable have a positive sign for the marginal effects, while the higher categories have negative signs across all the segments. The marginal effects for MTI imply that increase in media coverage of the food safety events decreases the probability that a subject's response will fall in the higher categories for the dependent variable. This is consistent with the finding that MTI negatively impacts consumer confidence in food safety. For example, if a person is in the segment Trendy and Adventurists lists Category 5 of the dependent variable, an additional unit increase in the media coverage will result in decreasing that person's probability of being

confident and of being in Category 5 by 0.0587, holding all other variables constant at their mean.

The continuous variable Age was only significant in the segment Predestinarians/Disciplined. The marginal effects indicate that the probability of a person to be confident decreases with the increase in age, while the probability of being low in confidence about food safety increases.

The region East North Central had a significant effect in the Overall model and in the segment Life Planner. For both the models the marginal effects indicate that when a person is living in this region, the probability of him/her being low in confidence decreases while the probability of being high in confidence about safety of the food increases relative to a person living in New England region of the country. The region West North Central had a significant effect in the Overall model and in the segment Predestinarians/Disciplined. The marginal effects could be interpreted as when a person resides in these regions the probability of him/her being low in confidence decreases while the probability of being high in confidence increases relative to a person living in New England region of the country. For example the probability of being Not Confident at all declines by 0.0537 for person living in West North Central region relative to a person living in the New England region within the segment Predestinarians/Disciplined, holding all other variables at their means.

The region South Atlantic had a significant effect in the segment Freedom Seeker. The marginal effects for this region suggest that if a person resides in this region the probability of being him/her being completely confident decreases and being low in confidence increases relative to a person residing in the New England region. The regions East South Central and West South Central are only significant for the Overall model. The marginal effects for these two

regions were interpreted as, if a person resides in the East South Central region the probability of being him/her being high in confidence decreases and being low in confidence increases relative to a person residing in the New England region. While if the person lives in the West South Central region the probability of being him/her being high in confidence increases and being low in confidence decreases relative to a person residing in the New England region.

The Mountain region had a significant effect in the Overall model and in the segment Trendy and Adventurist. For both the models the marginal effects indicate that when a person is living in this region, the probability of him/her being low in confidence decreases while the probability of being high in confidence increases relative to a person living in the New England region of the country. The Pacific region had a significant effect in the Overall model and in the segment Life Planner, and had a similar effect as of Mountain region. For both the models the marginal effects indicate that when a person is living in this region, the probability of him/her being low in confidence decreases while the probability of being high in confidence increases relative to a person living in New England region of the country.

Newspaper had significant effect for overall model and segments Predestinarians/Disciplined, Afraid, Freedom Seeker, Life Planner/Freedom Seeker, Life Planner, and Predestinarians/Optimists. Marginal effects for these segments can be interpreted as if a person used Newspaper as his/her primary media source the probability of him/her being low in confidence decreases while the probability of being high in confidence increases relative to a person who uses Television as primary media source. Magazine had a significant effect for overall model and segment Trendy and Adventurists, similar to a person with newspaper as primary media source, if a person uses magazine as his/her primary media source the probability of him/her being low in confidence decreases while the probability of being high in confidence

increases relative to a person who uses Television as primary media source. For instance, the of probability of being completely confident increases by 0.0194 for a person who uses Newspaper as his/her primary media source compared to a person who uses television as his/her primary media source within the segment Freedom Seeker, holding all other variables at their means.

Radio also had a similar effect for overall model and segments Predestinarians/Disciplined, Life Planner/Freedom Seeker, Life Planner, and Predestinarians/Optimists. If a person is using Radio as his/her primary media source the probability of him/her being low in confidence decreases while the probability of being high in confidence increases relative to a person who uses Television as primary media source. Same with the Internet for the overall model and in the segments Afraid and Life Planner/Freedom Seeker, if a person is using Internet as his/her primary media source the probability of him/her being low in confidence decreases while the probability of being high in confidence increases relative to a person who uses Television as primary media source.

Local church was only significant for the segment Non-Differentiators, and according to the marginal effects if a person is using Radio as his/her primary media source the probability of him/her being low in confidence decreases while the probability of being high in confidence increases relative to a person who uses Television as primary media source. The persons who used Other sources than listed in questionnaire had a significant effect in for overall model and all segments except Trendy and Adventurists, and Predestinarians/Optimists. For these segments except for the Afraid segment the marginal effects can be interpreted as, if a person is using a source other than listed in questionnaire as his/her primary media source the probability of him/her being low in confidence decreases while the probability of being high in confidence increases relative to a person who uses Television as primary media source. While for the Afraid

segment if a person is using a source other than listed in questionnaire as his/her primary media source the probability of him/her being low in confidence increases while the probability of being high in confidence decreases relative to a person who uses Television as primary media source.

The household age category 30 through 39 years had a significant effect in overall model and in the segments Non-Differentiators, and Trendy and Adventurists. Marginal effects for these segments can be interpreted as if a person is within household age category 30 through 39 years the probability of him/her being low in confidence increases while the probability of being high in confidence decreases relative to a person who is within household age category under 30 years. The household age category 40 through 49 years had a significant effect in overall model and in the segments Non-Differentiators, Afraid, and Predestinarians/Optimists. So if a is within household age category 40 through 49 years the probability of him/her being low in confidence increases while the probability of being high in confidence decreases relative to a person who is within household age category under 30 years . Similar are the marginal effects interpretation for the household age categories 50 through 59 years and over 60 years. Category 50 through 59 years was significant for overall model and the segments Non-Differentiators, Freedom Seeker, and Predestinarians/Optimists. Category over 60 years had significant effect for overall model and segment Predestinarians/Optimists. For example in the segment Trendy and Adventurists, the probability of being in category 5 of confidence scale declines by 0.0266 for household age category 30 through 39 years than household age category under 30 years, holding all other variables at their means.

The household income category $30,000 to $49,999 had a significant effect in the overall model and for the segments Non-Differentiators and Predestinarians/Optimists. According to the

marginal effects, if a person was within the household income category $30,000 to $49,999, the probability of him or her being low in confidence decreased, while the probability of that person being high in confidence increased relative to a person who was within the household income category under $30,000. For the category $50,000 to $74,999, the overall model and the segments Predestinarians/Disciplined and Afraid had a significant effect. For the category $75,000 and over the overall model and the models for the segments Non-Differentiators, Afraid, Freedom Seeker, and Predestinarians/Optimists had a significant effect. The marginal effects for these two categories can be interpreted the same way as the category $30,000 to $49,999. For example in the segment Predestinarians/Optimists, the probability of being in category 4 of consumer confidence scale increases by 0.0217 for household income $30,000 to $49,999 than household income under $30,000, holding all other variables at their means.

The household size of two members had a significant effect in the overall model and the segments Non-Differentiators, and Trendy and Adventurists. Marginal effects for these segments could be interpreted as if a person has household size of two members the probability of him/her being low in confidence increases, while the probability of being high in confidence decreases relative to a person with a single person in household. For household size of three members, the overall model and the segments Non-Differentiators, Afraid, and Life planner have the significant effect. For household size of four members overall model, segments Non-Differentiators, Afraid, and Trendy and Adventurists had a significant effect, and for the household size of five or more members the overall model and segments Trendy and Adventurists and Freedom Seeker have a significant effect. The marginal effects for household size with three, four, and five or more members could be explained in a same way as marginal effects for household size with two members. For instance in the segment Life Planner, the

probability of being Not confident is 0.0614 higher for household size of three members than household size of single member, holding all other variables at their means.

The education grade school had a significant effect for overall model and the segment Predestinarians/Disciplined. From the marginal effects it could be interpreted, a person with the grade school level education increases his/her probability of being highly confident, and decreases the probability of being low in confidence relative to a person who graduated from the high school. For education level some high school, only segment Afraid had significant effect. For the education level some high school-no college the overall model and the segment Predestinarians/Optimists had a significant effect. For education level Associate's degree the overall model, segments Predestinarians/Disciplined, Freedom Seeker, and Predestinarians/Optimists had a significant effect. For Bachelor's degree the overall model, Non-Differentiators, Predestinarians/Disciplined, Freedom Seeker, Life Planner/Freedom Seeker, Life Planner, and Predestinarians/Optimist had a significant effect. For the Post graduate degree except the segment Afraid every segment had a significant effect. The marginal effect for all these education levels could be explained in a similar way as of grade school education. For example in the segment Freedom Seeker, the probability of being in category 5 of confidence scale is 0.045 higher for Bachelor's degree than high school graduation, holding all other variables at their means.

A person who is never married and is in the segment Life planner/Freedom Seeker and Predestinarians/Optimists increases his/her probability of being highly confident and decreases the probability of being low in confidence relative to a person who is currently married.

Also for all the segments being females increases probability of being less confident and increases the probability of being high in confidence relative to males in the respective segments.

For instance in the segment Afraid, the probability of being in lowest confidence category increases by 0.0953 for females than males, holding all other variables at their means.

4.4.2 Consumers Attitude towards Preparedness of Food System

This section discusses the ordered probit results for consumers' attitude toward preparedness of food system. As described earlier CSFTP is a aggregated variable of two preparedness questions and is scaled from 2 to 12. Several alternative specifications of the model was estimated, relating CFSTP to different combination of explanatory variables. The final model used to estimate CFSTP is specified as:

$$CFSTPi = \beta 1MTI + \beta 2Age + \beta 3Region2 + \beta 4Region3 + \beta 5Region4 + \beta 6Region5 + \beta 7Region6 + \beta 8Region7 + \beta 9Region8 + \beta 10Region9 + \beta 11Mediasource2 + \beta 12Mediasource3 + \beta 13Mediasource4 + \beta 14Mediasource5 + \beta 15Mediasource6 + \beta 16Mediasource7 + \beta 17Hage2 + \beta 18Hage3 + \beta 19Hage4 + \beta 20Hage5 + \beta 21Hincome2 + \beta 22Hincome3 + \beta 23Hincome4 + \beta 24Hsize2 + \beta 25Hsize3 + \beta 26Hsize4 + \beta 27Hsize5 + \beta 28Race2 + \beta 29Race3 + \beta 30Race4 + \beta 31Race5 + \beta 32Education1 + \beta 33Education2 + \beta 34Education4 + \beta 35Education5 + \beta 36Education6 + \beta 37Education7 + \beta 38Maritalstatus2 + \beta 39Maritalstatus3 + \beta 40Gender2$$

where, CFSTP is the aggregated variable measuring consumer attitudes regarding preparedness of U.S. food system to deal with food safety/defense events, *i* represent the each segment for which model has been calculated. $\beta 1$ through $\beta 40$ are the estimated coefficients representing the estimated change in *CFSTP* given a unit change in associated explanatory variable, holding all other variables constant.

Table 4.6A and 4.6B shows the results for the ordered probit model with the dependent variable being the aggregated variable measuring respondent's attitudes regarding how prepared we are for food safety/defense events compared to one year ago. The model has used the same independent variables as in the consumer confidence model and the log likelihood statistic indicated that the model for each segment except for segments Life Planner/Freedom Seeker and Predestinarians/Optimists were significant at greater than 99 percent confidence, whereas model

for segment Life Planner/Freedom Seeker was significant at 95 percent confidence level. The model for the segment Predestinarians/Optimists was not significant.

Table 4.6A Ordered Probit Model for each Segment to Measure Consumers Attitude toward Preparedness of the Food Supply Chain

Variables	General	NonDifferentiators	Predestinarians / Disciplined	Afraid
MTI	-0.282***	-0.467***	-0.159	-0.159
Age	0.001	-0.010*	0.006	-0.004
Region[c]				
Middle Atlantic	0.057	0.009	-0.111	0.315**
East North Central	0.094**	-0.057	-0.002	0.366**
West North Central	0.163***	-0.116	0.136	0.338**
South Atlantic	0.065	-0.076	-0.107	0.380***
East South Central	0.026	-0.257	-0.107	0.285*
West South Central	0.159***	0.012	0.153	0.195
Mountain	-0.043	-0.052	-0.413**	0.142
Pacific	0.090*	0.015	-0.021	0.216
Primary Media Source[c]				
Newspaper	0.071**	0.102	0.204***	0.007
Magazines	-0.003	1.873***	-0.002	-1.113
Radio	-0.049	-0.310**	0.108	-0.042
Internet	-0.106***	-0.058	-0.057	-0.152**
Local Church	-0.038	0.038	-0.472	-0.514
Other (Specify)	-0.225*	-0.328	-0.501*	-0.484
Household Age[c]				
30 through 39 Years	-0.166***	-0.211*	-0.280*	-0.226
40 through 49 Years	-0.242***	-0.014	-0.452***	-0.374*
50 through 59 Years	-0.286***	0.046	-0.314	-0.278
60 Years and Over	-0.300***	0.092	-0.390	-0.326
Household Income[c]				
$30,000 - $49,999	-0.001	-0.025	0.043	-0.049
$50,000 - $74,999	0.000	-0.031	0.028	-0.082
$75,000 and Over	-0.007	-0.121	0.128	-0.041
Household Size[c]				
2 Members	0.011	-0.070	0.082	-0.041
3 Members	0.069*	-0.038	0.203*	0.004
4 Members	0.049	-0.001	0.139	-0.196
5 or More Members	0.109**	0.127	0.068	0.019
Race[c]				
Black/African-American	0.157***	0.038	-0.020	0.477***
Asian or Pacific Islander	0.275***	0.155	0.089	0.460*
American Indian, Aleut Eskimo	-0.014	-0.123	0.087	-0.831*
Other	0.058	0.489**	-0.114	0.214
Education[c]				
Grade School	0.213	1.508*	0.215	0.399
Some High School	-0.025	0.147	-0.039	-0.306*
Some College-no degree	-0.114***	-0.006	-0.103	-0.163**
Graduated College –Associate's Degree (2 years)	-0.089**	0.052	-0.167	-0.236**

Table 4.6A Contd.

Graduated College- Bachelor's Degree (4 years)	-0.122***	-0.168*	-0.081	-0.201**
Post Graduate Degree	-0.162***	0.006	-0.161	-0.290**
Marital Status[c]				
Never Married	-0.010	-0.202**	0.034	0.142
Divorced, Widowed, Separated	-0.012	-0.121	-0.023	-0.013
Gender[c]				
Female	-0.152***	-0.258***	-0.068	0.097
Log Likelihood	-26152.27	-2976.68	-3198.15	-2644.82
Numeber of observation	12236	1375	1492	1335
LR chi2(40)	267	85.93	67.83	76.21
Prob > chi2	0	0	0.0039	0.0005
Pseudo R2	0.0051	0.0142	0.0105	0.0142

*: significant at 0.10 level, **: significant at 0.05 level, ***: significant at 0.01 level

C The selected reference variables are: region1- New England; mediause1- Television; householdage1- under 30 year; householdincome1- under $30,000; housemembers1- 1, race1 – white, education1- High school, marital status - Currently Married.

Table 4.6B Ordered Probit model for each Segment for Consumers Attitude toward Preparedness of the Food Supply Chain

Variables	Trendy and Adventurists	Freedom Seekers	Life Planners/ Freedom Seekers	Life Planners	#Predestinarians/ Optimists
MTI	-0.210	-0.393**	-0.269	-0.496***	-0.024
Age	0.012**	0.007	-0.021***	0.000	0.003
Region[c]					
Middle Atlantic	0.009	-0.044	0.284*	-0.078	0.112
East North Central	0.111	-0.042	0.234	-0.021	0.142
West North Central	0.183	0.080	0.384**	0.044	0.201
South Atlantic	0.037	0.019	0.263	-0.096	0.108
East South Central	-0.053	-0.165	0.347*	0.093	0.070
West South Central	0.022	0.278**	0.340*	0.165	0.169
Mountain	-0.130	-0.024	0.125	0.039	0.006
Pacific	0.099	0.025	0.256	-0.075	0.265
Primary Media Source[c]					
Newspaper	0.087	-0.008	0.017	0.087	-0.080
Magazines	0.240	0.377	-0.525	-0.694**	-0.223
Radio	0.002	0.016	-0.132	-0.107	-0.045
Internet	0.083	-0.167***	-0.107	-0.141**	-0.080
Local Church	0.594	0.173	-5.837	No Obs.	0.476
Other (Specify)	-0.120	-0.333	0.825**	-0.352	-0.173
Household Age[c]					
30 through 39 Years	-0.069	-0.144	0.253*	-0.226	-0.173
40 through 49 Years	-0.217*	-0.207	0.154	-0.165	-0.122
50 through 59 Years	-0.427**	-0.424**	0.363	-0.176	-0.182
60 Years and Over	-0.569**	-0.391	0.697**	-0.291	-0.178
Household Income[c]					
$30,000 - $49,999	-0.104	-0.044	0.058	0.042	-0.061
$50,000 - $74,999	-0.088	-0.045	0.041	-0.107	0.061
$75,000 and Over	-0.178**	0.010	-0.026	-0.058	0.002

Table 4.6B Contd.

Household Size[c]					
2 Members	0.022	-0.023	0.098	0.134	0.016
3 Members	0.121	0.138	0.198*	0.124	-0.003
4 Members	0.094	-0.092	0.213*	0.137	0.038
5 or More Members	0.062	0.186	0.110	0.284**	0.140
Race[c]					
Black/African-American	0.068	0.178	0.013	0.141	0.155
Asian or Pacific Islander	0.307**	0.181	0.172	0.299*	0.114
American Indian, Aleut Eskimo	0.331	-0.356	0.299	0.429	0.259
Other	0.099	0.006	0.034	-0.080	-0.122
Education[c]					
Grade School	-0.631	0.640	No Obs.	No Obs.	0.227
Some High School	-0.294*	0.307	0.347	0.249	0.225
Some College-no degree	-0.227***	-0.035	0.058	-0.219**	-0.022
Graduated College –Associate's Degree (2 years)	-0.163*	0.015	-0.024	-0.157	0.006
Graduated College- Bachelor's Degree (4 years)	-0.275***	0.094	0.011	-0.225**	0.017
Post Graduate Degree	-0.273***	0.014	-0.019	-0.246***	-0.115
Marital Status[c]					
Never Married	0.041	-0.054	0.084	-0.068	0.056
Divorced, Widowed, Separated	0.058	-0.112	0.207**	0.044	-0.017
Gender[c]					
Female	-0.175***	-0.237***	-0.058	-0.148**	-0.234
Log Likelihood	-3699.24	-3278.81	-2689.12	-3701.63	-3376.81
Numeber of observation	1815	1564	1274	1808	1573
LR chi2(40)	72.75	68.58	60.33	68.26	34.98
Prob > chi2	0.0012	0.0033	0.0158	0.0019	0.6956
Pseudo R2	0.0097	0.0103	0.0111	0.0091	0.0052

*: significant at 0.10 level, **: significant at 0.05 level, ***: significant at 0.01 level

[C] The selected reference variables are: region1- New England; mediause1- Television; householdage1- under 30 year; householdincome1- under $30,000; housemembers1- 1, race1 – white, education3- High school, marital status - Currenly Married.

4.4.2.1 Overall/General Model

The overall model for variable CFSTP measuring respondent's attitudes regarding how prepared we are for food safety/defense events compared to one year ago was significant at greater than 99 percent of confidence level. The continuous explanatory variable Media Tracking Index (MTI) was negative and significant at 1 percent significance level. This indicated that with increase in the media coverage, respondent's attitude that the United States food system was not prepared to deal with food safety events grows (Table 4.6A).

In the model East North Central, West North Central, West South Central and Pacific regions had a positive direction and were significant. This meant that relative to the base region of New England respondents in these four regions believed that our food system was better prepared to deal with the food safety events as compared a year before. In the model media source Newspaper had a positive and significant impact, while Internet and Other specified media source had a significant and negative impact on the consumers' attitude regarding the preparedness of food system in dealing with the food safety events. This suggested that relative to the consumers with Television as primary media source the consumers who listed Newspaper as their primary media source believed that our food system was better prepared to deal with the food safety events than it was a year ago. However consumers with Internet and Other specified information sources believed that our food system was not better prepared to deal with the food safety events than it was a year ago, relative to the consumers who rely on television as their primary media source.

Consumers through all household age categories relative to the household age category of Under 30 years had a significant and negative impact on consumer's attitude regarding the preparedness of the food system in dealing with food safety events. This could be interpreted as, relative to the consumers in household age category of Under 30 years, the consumers in all the higher household age categories believed that our food system was not as prepared to deal with food safety events as it was a year ago.

The household size of three members and five or more members had a negative and significant effect on consumer's attitude regarding the preparedness of our food system to handle the food safety/defense events, meaning relative to a consumer with the household size of single member the consumers in these two categories believe that our food system was not prepared to

deal with the food safety/defense events than it was a year ago. Consumer's education also affected their attitude regarding preparedness of food system, in the model relative to the consumers who graduated from high school the consumer's with some college, Associate degree, Bachelor's degree or post graduate degree believed that our food system was not prepared to deal with the food safety/defense events than it was a year ago. Furthermore relative to the male respondents female respondents believed that our food system was not better prepared to deal with food safety events than it was a year ago.

The predicted probabilities for effect of Media Tracking Index on the consumers attitudes regarding how prepared we are for food safety/defense events compared to one year ago are plotted in figure 4.19. The probability of a person believing that United States food system is not prepared to deal with food safety events grows with the increase in media coverage.

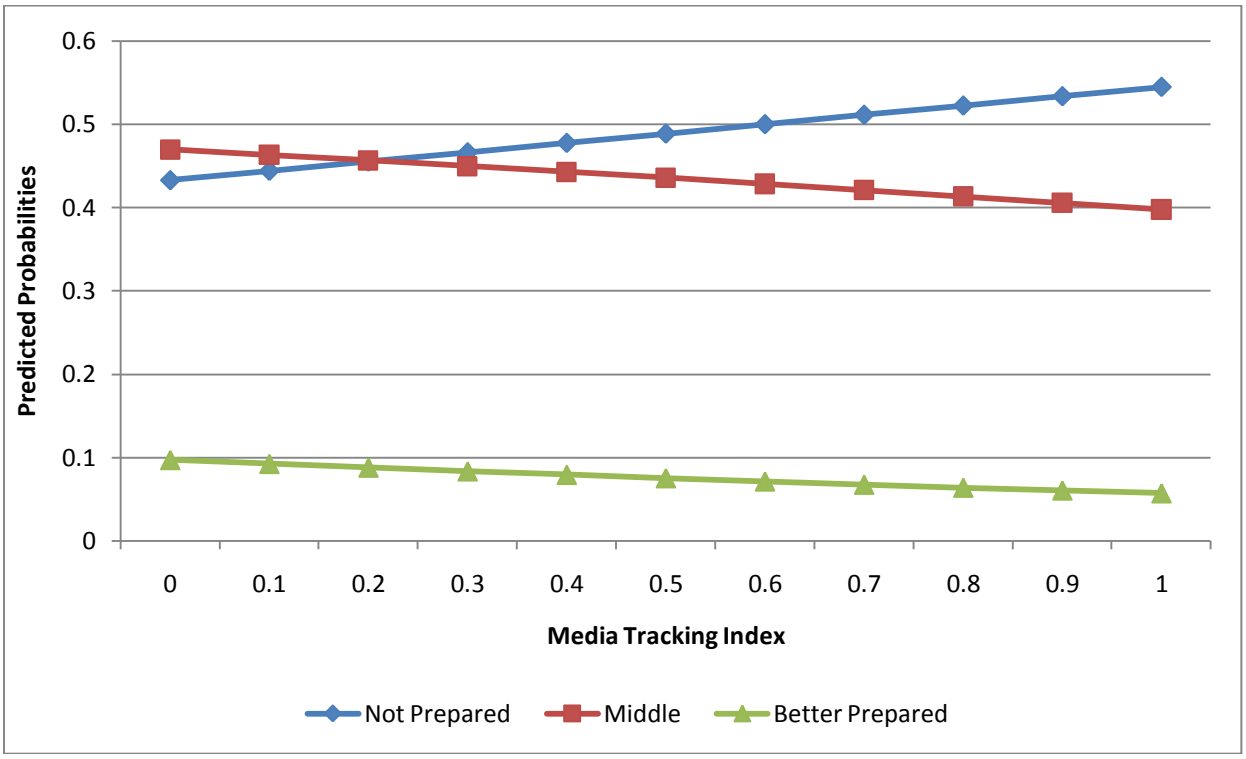


Figure 4.19 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Overall Model

Over half of the total respondents had indicated that they used television as their primary information source. The predicted probabilities relative to the television are plotted in the figure 4.20. As can be observed the predicted probabilities were almost the same for all media sources except for the other specified media source relative to television.

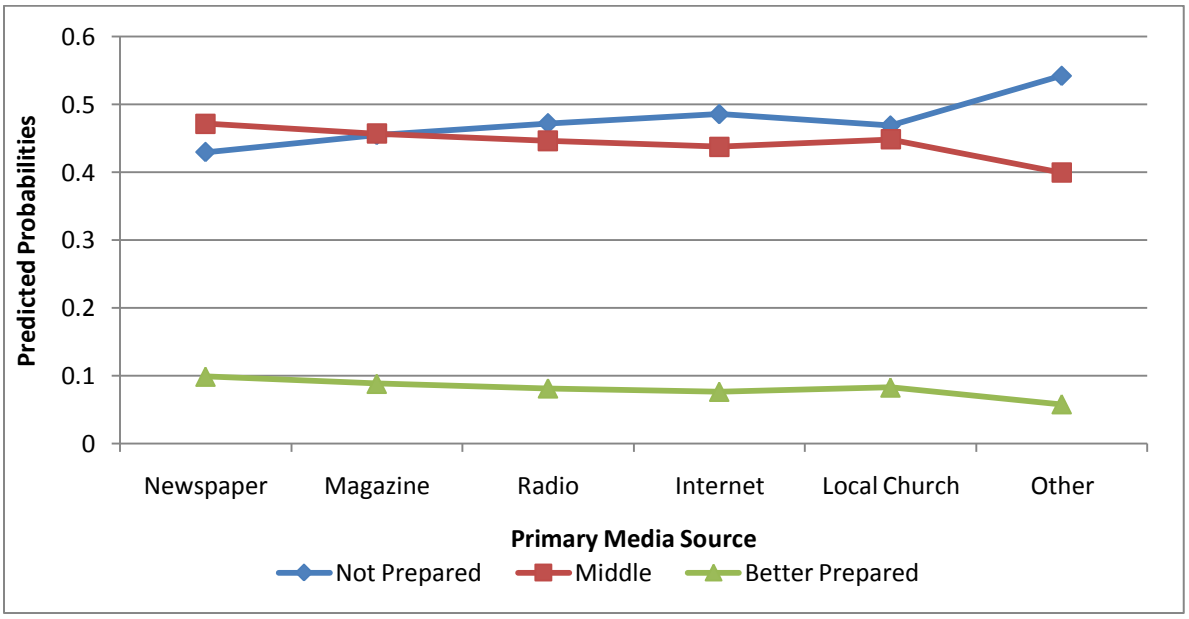


Figure 4.20 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Overall Model

4.4.2.2 Non-Differentiators

The ordered probit model for segment Non-Differentiators was significant at greater than 99 percent confidence level, also the continuous variable MTI was significant at greater than 99 percent confidence level and had a negative direction. This could be explained as, if the MTI value increases the consumer attitude regarding the preparedness of the food system to deal with food safety events increasingly changes that our food system is not better prepared to deal with the food safety events. Another continuous variable age had a significant and negative effect,

thus as the respondents age increases the attitude that our food system is better prepared for food safety events, changes to that it is not better prepared (Table 4.6A).

Relative to television as the primary media source, Magazines and Radio had a significant effect; Magazine had a positive effect, while Radio had a negative effect on consumer's attitude regarding the preparedness of the food system in dealing with food safety events. So consumers in the segment Non-Differentiators with Magazines as primary media source believed that our food system is better prepared to deal with food safety events than it was a year ago, relative to the consumers who used television as their primary media source, whereas consumers with radio as primary media source believed it's not prepared to deal with food safety/defense events.

Consumers within household age category 30 through 39 years relative to consumers within household age under 30 years believed that our food system is not prepared to deal with food safety events than it was a year ago.

Relative to consumers who have graduated from high school, consumers who had grade school education believed that our food system is better prepared to deal with the food safety events than it was a year ago, while consumers who had Bachelor's degree were unlikely to believe that.

Consumers who were never married relative to consumers who were currently married believed that our food system is not better prepared to deal with food safety events. Similarly relative to male respondents females believed that our food system is not better prepared to deal with food safety events than it was a year ago.

In figure 4.21 the predicted probabilities showing the effect of Media Tracking Index on consumers' attitudes regarding how prepared we are for food safety/defense events compared to

one year ago for the segment Non-Differentiators are plotted for the three super categories. A steep increase can be noticed for the probability of being Not Prepared, and a decrease can be noticed in the other two categories. The increase in media coverage increases a person's probability believing that our food system is not prepared for food safety/defense events. The figures with multiple outcomes are included in appendix C.

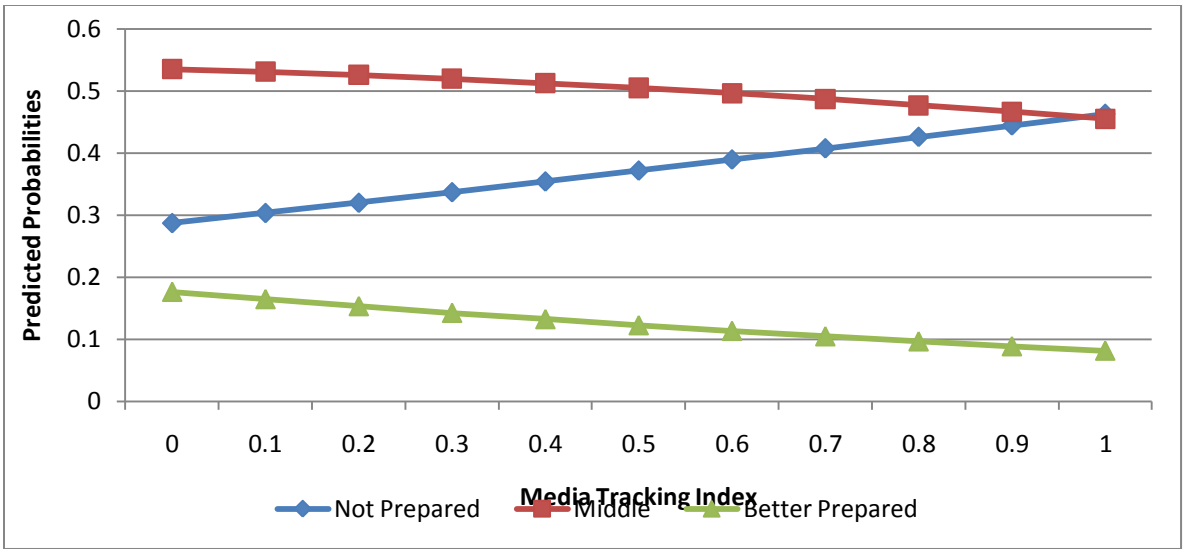


Figure 4.21 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Non-Differentiators

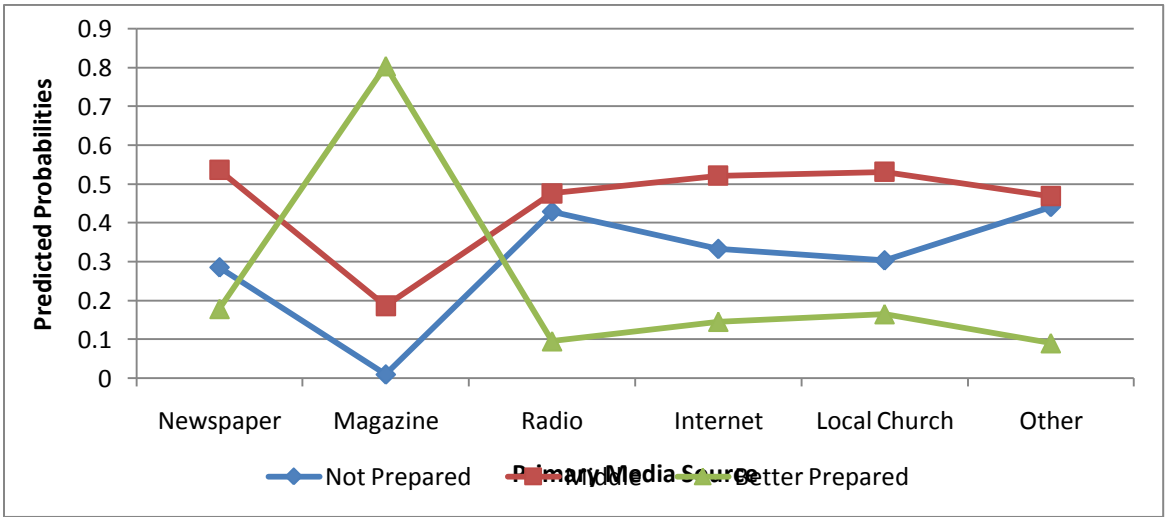


Figure 4.22 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Non-Differentiators

Predicted probabilities showing effect of media source on respondents attitudes regarding preparedness of our food system for food safety events within segment Non-Differentiators are shown in the figure 4.22. This segment had relatively a little bit higher population using television as media source than general population. The media sources magazine and radio had a significant effect in the model.

4.4.2.3 Predestinarians/Disciplined

The log likelihood statistic for the segment Predestinarians/Disciplined indicated that the model was significant at greater than the 99 percent level of confidence. The continuous variable for MTI was not significant in the model (Table 4.6A).

Only mountain region had a significant effect in the model relative to the New England region. The negative direction of the coefficient for Mountain region indicated that people residing in Mountain region of country believed that our food system is not prepared to deal with the food safety events than past year. Relative to the consumers with Television as the primary media source, consumers who listed Newspaper as their primary media source believed that our food system is better prepared to deal with food safety events than it was a year ago, whereas consumers who used Other specified sources as their primary source of information do not believe that our food system is prepared to deal with food safety/defense events.

Consumers within the household age categories 30 through 39 years and 40 through 49 years relative to the consumers within household age category Under 30 years believed that our food system is not prepared to deal with the food safety/defense events than it was a year ago. The consumers with the household size of three members relative to the consumers with a single member household size believed that our food system is better prepared to deal with food safety events than it was a year ago.

Figure 4.23 displays the predicted probabilities showing the effect of Media Tracking Index on respondent s attitudes regarding the preparedness of our food system in dealing with the food safety/defense events for the segment Predestinarians/Disciplined.

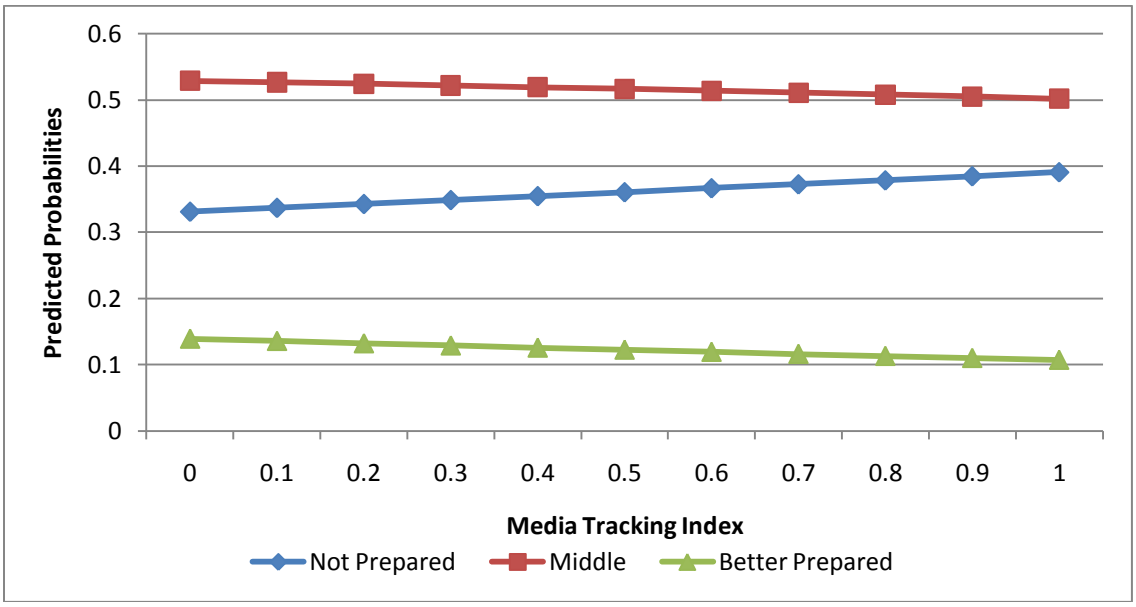


Figure 4.23 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Predestinarians/Disciplined

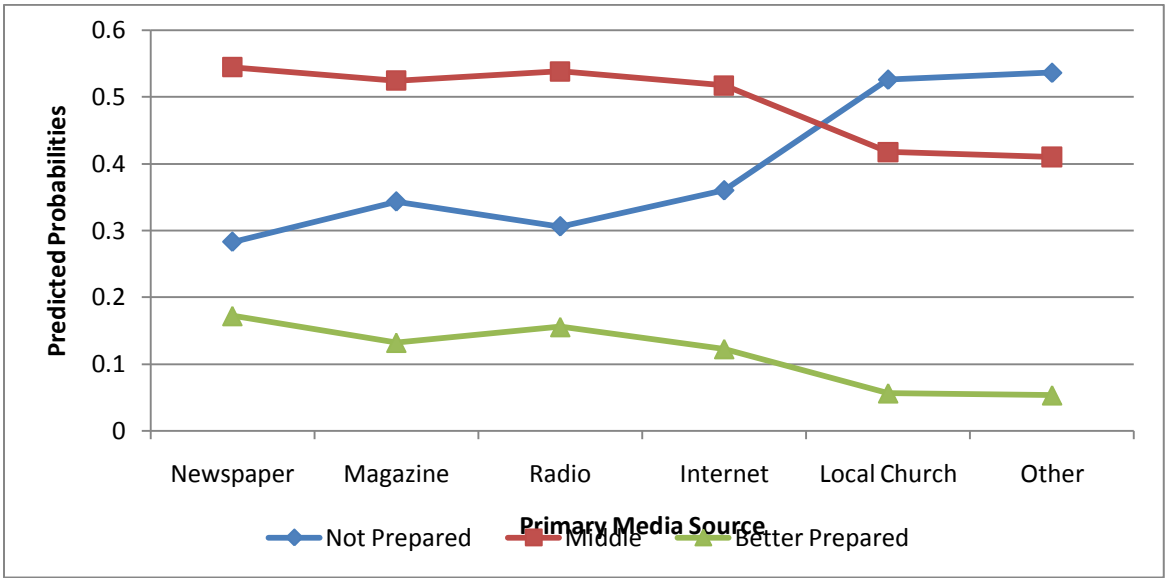


Figure 4.24 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Predestinarians/Disciplined

Predicted probabilities for different media sources have been plotted in figure 4.24 for the segment Predestinarians/Disciplined. Population in the segment Predestinarians/Disciplined indicated relatively higher use of Newspaper as primary media source than the general population. It can be observed, the probability for person with local church and Other specified sources as their primary media source believed that our food system is not prepared for food safety/defense events is higher than other media sources.

4.4.2.4 Afraid

The ordered probit model for the segment Afraid was significant at greater than 99 percent confidence level. However; the explanatory variable MTI was not significant in the model (Table 4.6A).

The coefficients for geographic regions of country Middle Atlantic, East North Central, West North Central, South Atlantic, and East South Central were significant and positive in the model. Denoting relative to the consumers residing in the New England region of country consumers living in these five regions of the country believed that our food system is better prepared to deal with the food safety/defense events than it was a year ago.

Only the coefficient for the media source Internet was significant, relative to the consumers who use television as their primary media source consumers with Internet as primary media source believed that our food system is not better prepared to deal with the food safety events than it was a year ago. Similarly consumers within household age category 40 through 49 years relative to consumers within household age under 30 years believed that our food system is not better prepared to deal with the food safety/defense events than it was a year ago.

Relative to the consumers who had graduated from high school, the consumers with some high school education, some college, Associates degree, Bachelor's degree, and post graduate

degree believed that our food system is not better prepared to deal with the food safety/defense events than it was a year ago.

Similar to the probability of consumer confidence in the food safety for the Afraid segment, the probability of a person in the Afraid segment believing that our food system is not prepared for dealing with food safety/defense events was very high and does not vary much with change in media coverage (Figure 4.25).

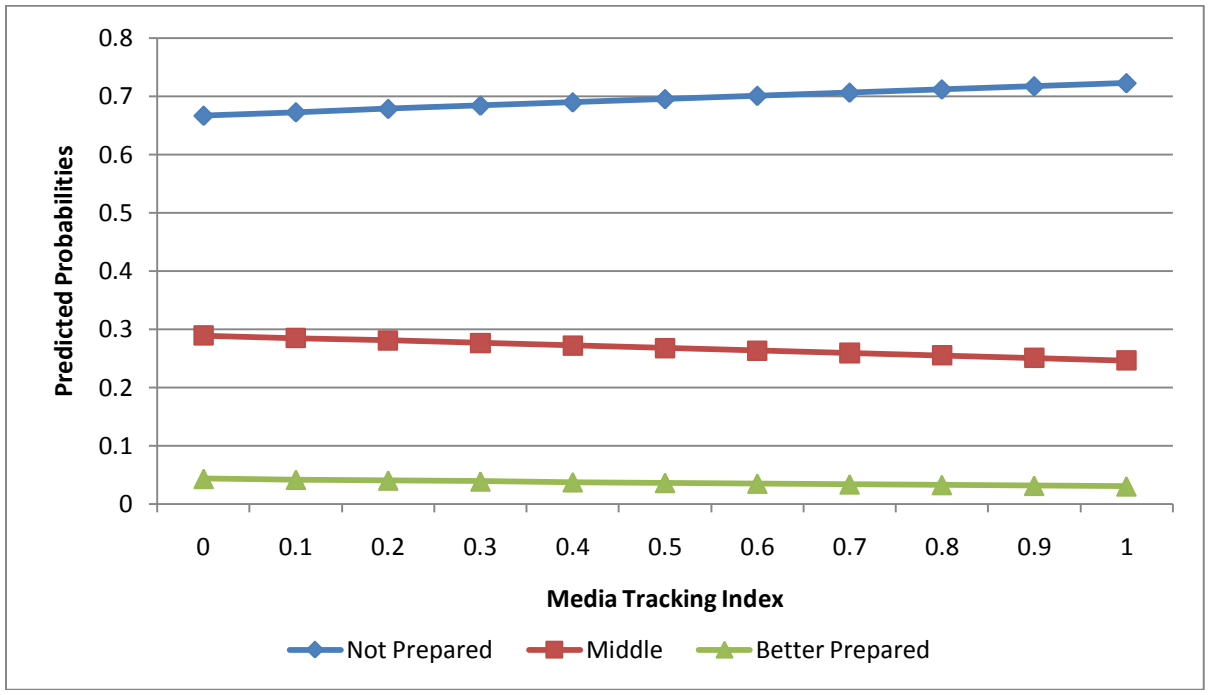


Figure 4.25 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for Segment Afraid

Also for all the media sources the probability of a person believing food system is not prepared for food safety/defense events is very high (Figure 4.26). The primary media source for this segment is television.

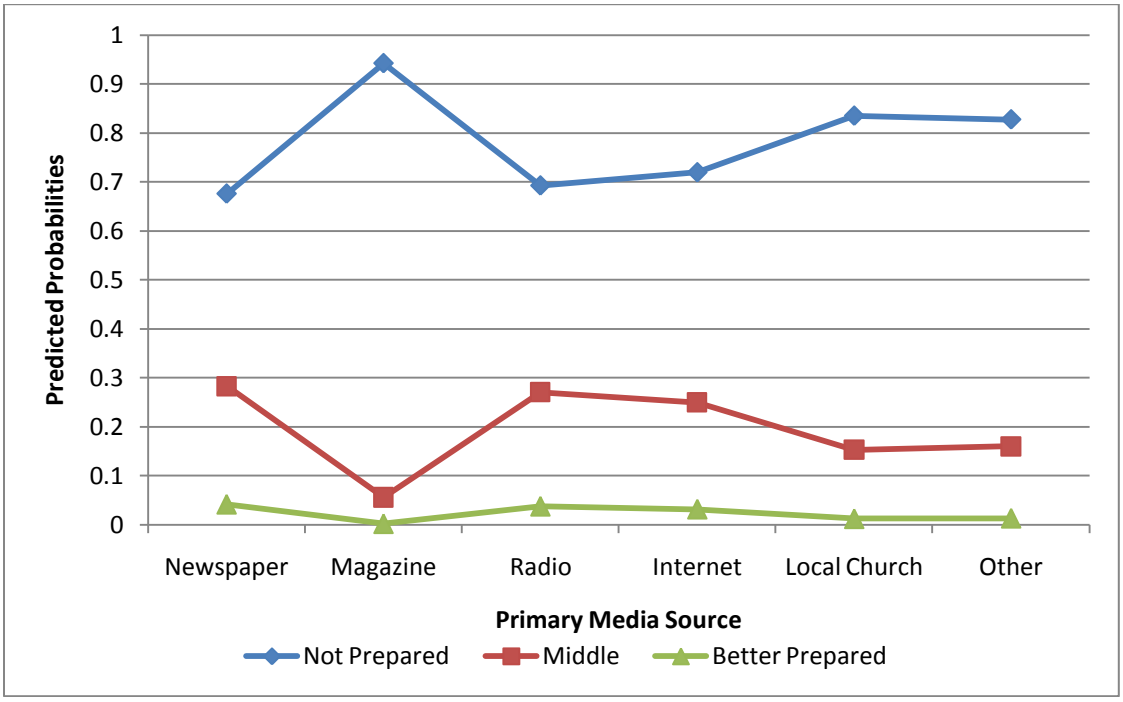


Figure 4.26 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Afraid

4.4.2.5 Trendy and Adventurists

The log likelihood statistic for the segment Trendy and Adventurists indicated that the model was significant at greater than 99 percent level of confidence. The continuous variable for MTI was not significant in the model (Table 4.6B).

The continuous variable age had a significant and positive effect in the model, with the increase in age consumers believed that our food system is better prepared to deal with food safety events than it was a year ago.

Consumers through all household age categories except for the 30 through 39 years, relative to the household age category of Under 30 years, had a significant and negative impact

on consumer's attitude regarding the preparedness of the food system in dealing with the food safety/defense events. This can be explained as, relative to the consumers in household age category of under 30 years, consumers in all the higher household age categories of 40 through 49 years, 50 through 59 years, and over 60 years believed that our food system is not better prepared to deal with the food safety/defense events than it was a year ago. Similarly relative to consumers with the household income less than $30,000, the consumers with household income over $75,000 believed that our food system is not better prepared to deal with food safety events than it was a year ago.

In the segment Trendy and Adventurists relative to consumers who had graduated from high school, consumers with some high school education, some college, Associates degree, Bachelor's degree, and post graduate degree believed that United States food system is not better prepared to deal with food safety events than it was a year ago. Also relative to male consumers females in the segment believed that United States food system is not better prepared to deal with food safety events than it was a year ago.

The Media Tracking Index (MTI) did not have a significant effect in the model, but it can be noted that the probability of a person believing our food system is not prepared for food safety/defense events below the middle category (Figure 4.27).

Majority of the people in the segment used television as their primary media source; however none of the media sources are significant relative to television (Figure 4.28).

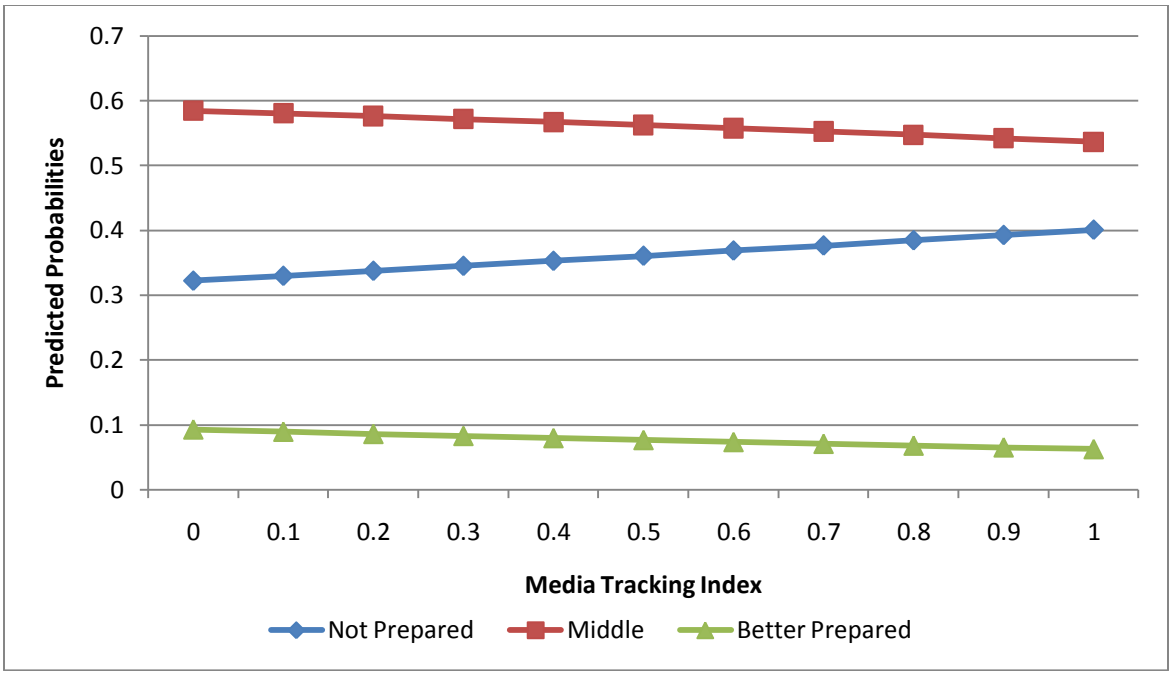


Figure 4.27 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Trendy and Adventurists

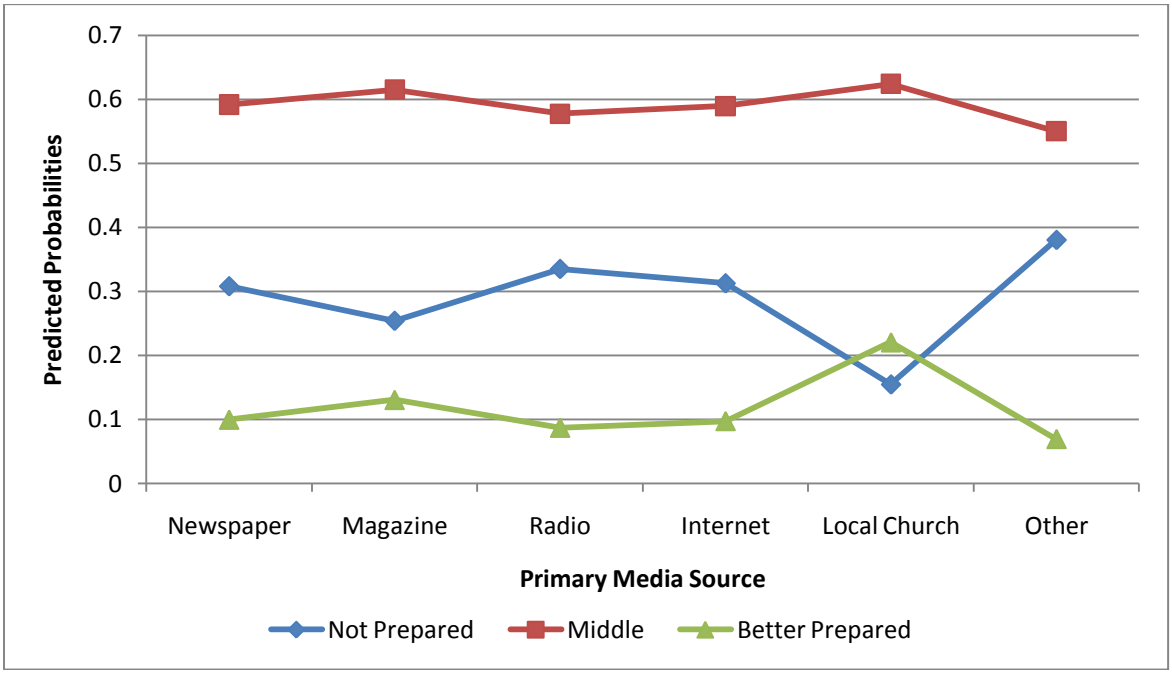


Figure 4.28 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Trendy and Adventurists

4.4.2.6 Freedom Seekers

The ordered probit model for the segment Freedom Seeker was significant at greater than 99 percent confidence level. The continuous explanatory variable Media Tracking Index (MTI) was negative and significant. This indicated that with the increase in media coverage, respondent's attitude that the United States food system is not better prepared to deal with food safety/defense events that it was a year ago grows (Table 4.6B).

Only West South Central region had a significant effect in the model relative to the New England region. The positive direction of the coefficient for West South Central region indicated that people residing in West South Central region of country believed that our food system is not better prepared to deal with the food safety/defense events than past year. Also only the coefficient for media source Internet was significant, relative to the consumers who used television as their primary media source, the consumers with Internet as their primary media source believed that our food system is not better prepared to deal with the food safety/defense events than it was a year ago.

Relative to the consumers within household age category under 30 years, the consumers within household age category 50 through 59 years believed that our food system is not better prepared to deal with the food safety/defense events than it was a year ago. Similar to household age, relative to the male respondents females in the segment believed that the United States food system is not better prepared to deal with the food safety events than it was a year ago.

For the segment Freedom Seeker, the continuous variable Media Tracking Index had a significant effect in the model. The predicted probability of a person believing our food system is not prepared for the food safety/defense events increases with the increase in media coverage (Figure 4.29)

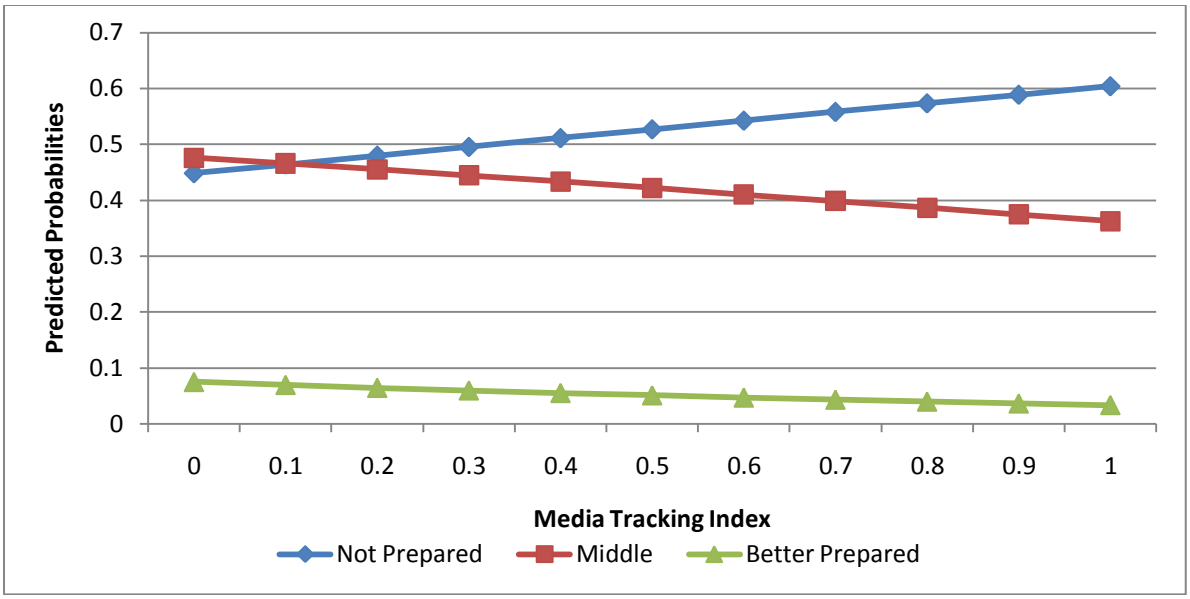


Figure 4.29 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Freedom Seeker

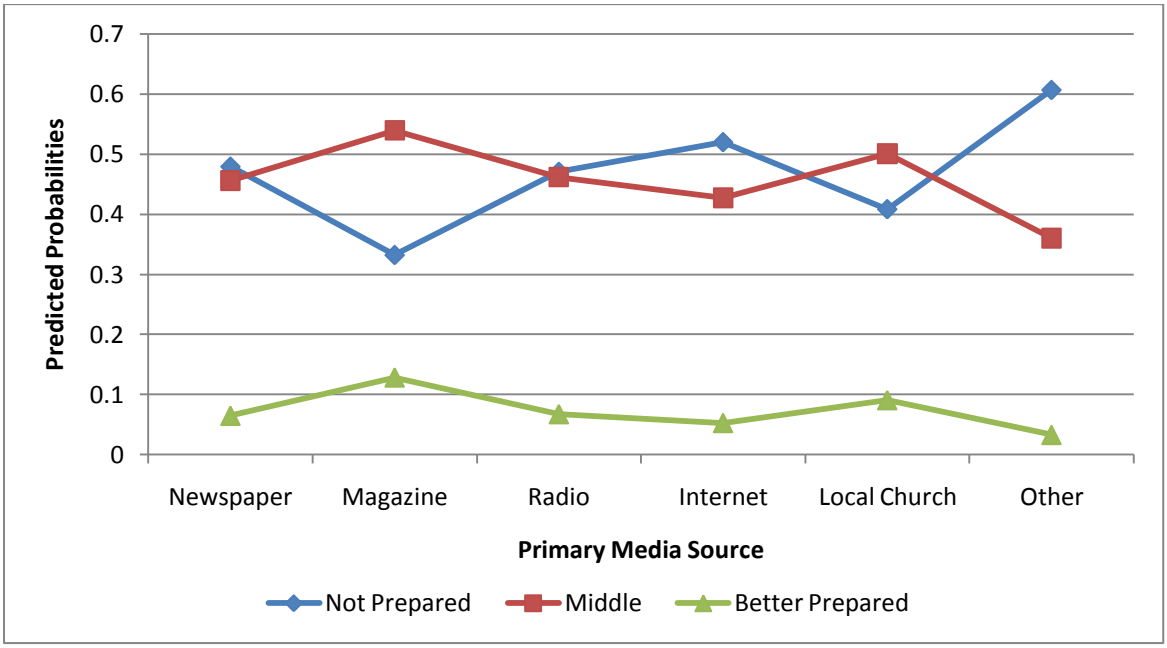


Figure 4.30 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Freedom Seeker

Percentage of the consumers who used Internet and Newspaper as their primary media source within this segment was higher with respect to the general population. Internet had a significant effect in the model and as can be noticed the probability of the consumers who believed that our food system is not prepared for the food safety/defense with internet as primary media source is more than 0.5.

4.4.2.7 Life Planners/Freedom Seekers

The model for the segment Life Planner/Freedom Seeker was significant at greater than 95 percent level of confidence. The important explanatory continuous variable MTI did not had a significant effect for the segment Life Planner/Freedom Seeker. Another continuous variable age had a significant and negative effect, thus as the respondents age increases the attitude that our food system is better prepared for the food safety/defense events, changes to that it is not better prepared (Table 4.6B).

In the model Middle Atlantic, West North Central, East South Central and West South Central regions had a positive direction and were significant. This means that relative to the base region of New England respondents in these four regions believed that our food system is better prepared to deal with the food safety/defense events as compared a year before. Among the primary media sources only the consumers who used Other specified media source believed that countries food system is better prepared to deal with food safety events as compared a year before.

Consumers within household age 30 through 39 years and over 60 years believed that the United States food system is better prepared to deal with the food safety events as compared a year before. In the same way the consumers with household size of three members and four members relative to the consumer with single member household size believed that our food

system is better prepared to deal with the food safety/defense events than it was a year ago. Also consumers who were divorced, widowed, or separated believed that our food system is better prepared to deal with the food safety/defense events than it was a year ago.

The Figure 4.31 presented predicted probabilities for the continuous variable MTI over consumer attitudes regarding preparedness of our food system to deal with food safety events for the segment Predestinarians/optimists. MTI did not have a significant effect on this segment, though the probability of a person in the segment believing our food system is not prepared is always higher.

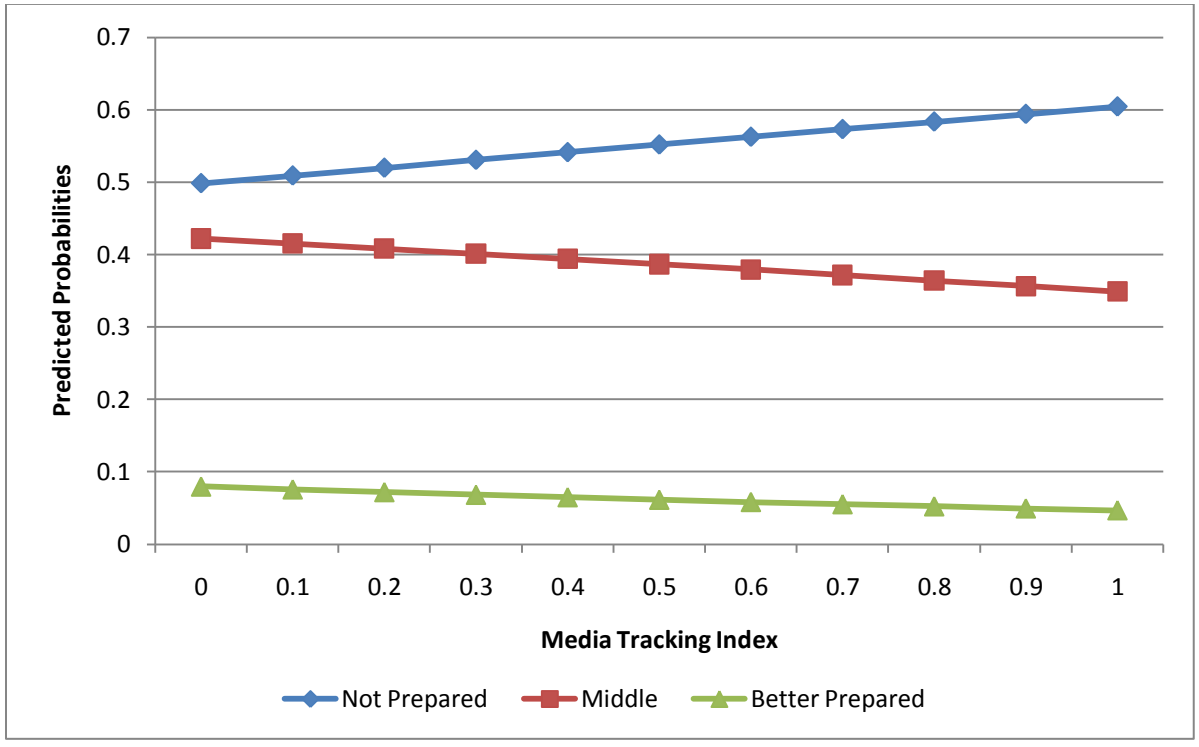


Figure 4.31 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Life Planners/Freedom Seekers

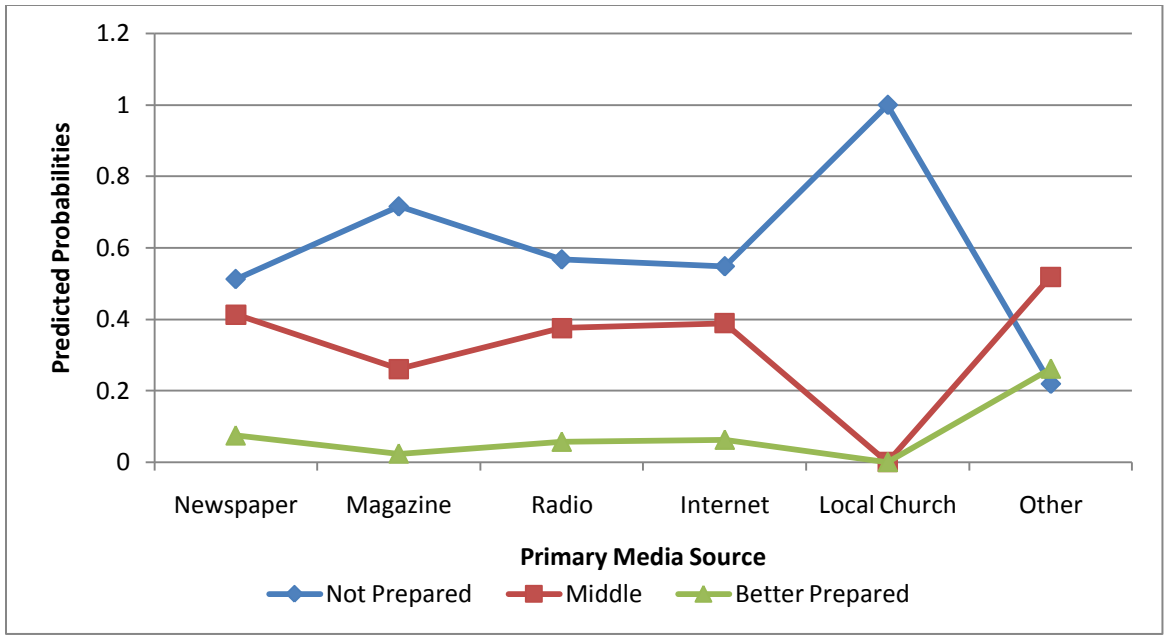


Figure 4.32 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Life Planners/Freedom Seekers

4.4.2.8 Life Planners

The log likelihood statistic for the segment Life Planner indicated that the model was significant at greater than the 99 percent level of confidence. The continuous explanatory variable Media Tracking Index (MTI) was negative and significant. This indicated that with the increase in the media coverage respondent's attitude that United States food system is not better prepared to deal with the food safety/defense events compared to a year before grows (Table 4.6B).

In the segment Life Planner consumers who indicated Internet and Magazines as their primary media source had a significant and negative impact on consumer's attitude regarding the preparedness of food system in dealing with the food safety/defense events. This suggested that consumers with Internet and Magazines as their primary information sources believed that our food system is not better prepared to deal with food safety events than it was a year ago, relative to the consumers who rely on television as their primary media source.

Consumers with household size of five or more members believed that our food system is not better prepared to deal with the food safety/defense events than it was a year ago, relative to the consumers with household size of single member. In the segment consumers' education also affected their attitude regarding preparedness of food system, in the model relative to the consumers who graduated from high school, the consumer's with some college, Bachelor's degree and post graduate degree believed that our food system is not better prepared to deal with the food safety/defense events than it was a year ago. As well relative to the male consumers female consumers in the segment believed that our food system is not better prepared to deal with the food safety events than it was a year ago.

Media Tracking Index had a significant effect in the segment Life Planner, the variability in the probability of a person being in one of the categories can be easily noticed in the probability curve plotted in the figure 4.33

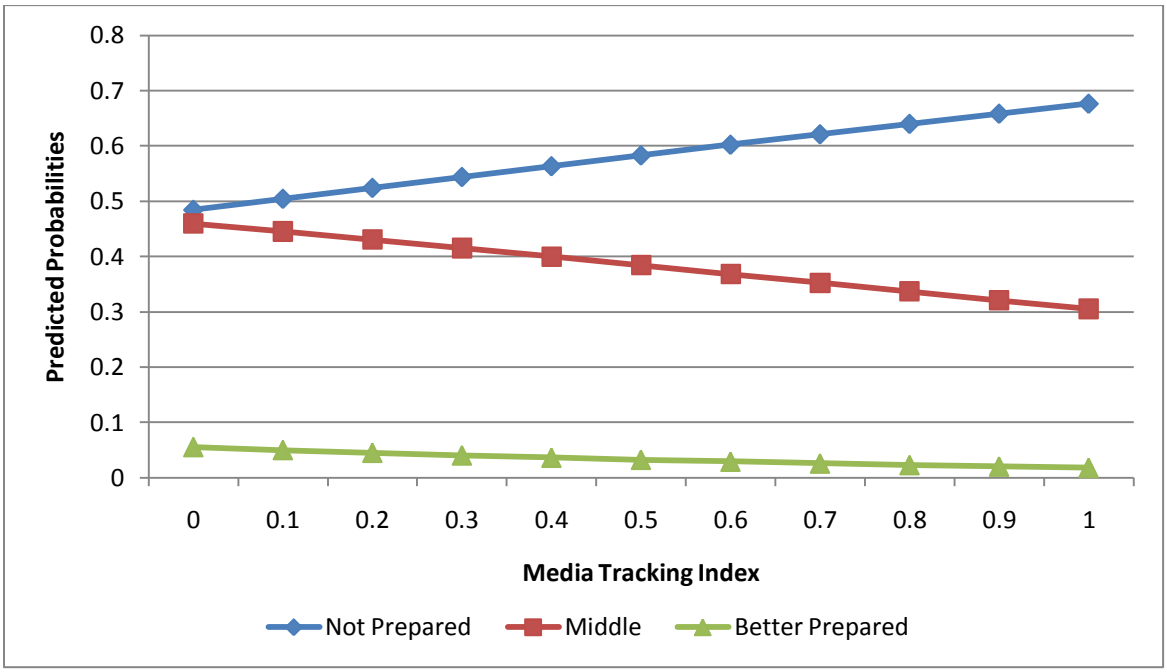


Figure 4.33 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Life Planners

The percentage of consumers with newspaper as primary media source was higher for the segment Life Planner than the general population. Although the probability of a person with newspaper as primary media source believing food system is not prepared was slightly higher than being in other categories, for other sources its much higher.

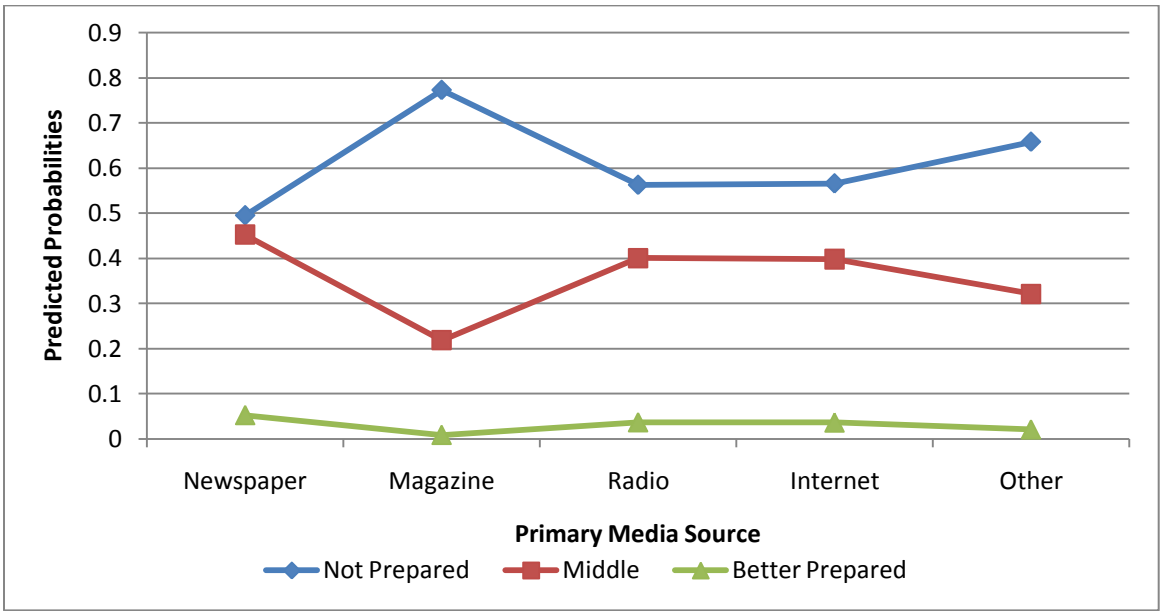


Figure 4.34 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Life Planners

4.4.2.9 Predestinarians/Optimists

The log likelihood statistic for the segment Predestinarians/Disciplined indicates that the model is not significant at all.

4.4.2.10 Marginal Effects

Similar to the results presented before, due to the large number of explanatory variables for each segment and ease of understanding, the marginal effects for each segment are explained together by comparing among the segments. Marginal effects for the variables which were significant in the model are explained below, and the tables showing marginal effects for each segment are included in the appendix D.

The MTI was significant in the overall model and in the segments Non-Differentiators, Freedom Seeker, Life Planner. The lower categories of the dependent variable had a positive sign, while the higher categories had negative signs across all the segments. The marginal effects for the MTI imply that increase in media coverage of food safety events decreases the probabilities that a subject's response falls in the higher categories for the dependent variable. This is consistent with the finding that the MTI negatively impacts consumers' attitude towards preparedness of our food system in dealing with the food safety/defense events. For example, if a person in the segment Freedom Seeker indicates category 10 of the dependent variable, an additional unit increase in media coverage will result in decreasing that person's probability of believing that our food system is prepared to deal with food safety event and of being in the category 10 by 0.0158, holding all the other variables constant at their mean.

The continuous variable age was only significant in the segment Non-Differentiators, Trendy and Adventurists, Life Planner/Freedom Seeker. For the segments Non-differentiators and Life Planner/Freedom Seeker the marginal effects indicates that the probability of a person to believe that our food system is prepared to deal with the food safety events decreases with the increase in age, while the probability of believing that our food system is not prepared to deal with the food safety events increases with the increase in age. While for the segment Trendy and Adventurists the probability of believing that our food system is prepared to deal with the food safety events increases with increase in age, and probability of that our food system is not prepared to deal with the food safety events decreases with increase in age, holding all other variables constant at their mean.

The Middle Atlantic region had a significant effect in the segments Afraid and Life Planner/Freedom Seeker. The marginal effects for both of these segments can be interpreted as,

the consumers' attitude regarding preparedness of food system that our food system is prepared for the food safety/events increases if the person is living in either of these regions compared to a person living in New England region. For East North Central region the overall model and the segment Afraid had a significant effect. For West North Central the overall model and the segments Afraid, Life Planner/Freedom Seeker had a significant effect. For South Atlantic region only segment Afraid had a significant effect. For East South Central region the segments Afraid and Life Planner/Freedom Seeker had a significant effect. For West South Central region the overall model and the segments Freedom Seeker, Life Planner/Freedom Seeker had a significant effect. For the Pacific region only the overall model had significant effect. Marginal effects for all of these regions could be interpreted in a same way as of Middle Atlantic region. The Mountain region was significant in only the segment Predestinarians/Disciplined, the marginal effects for the segment are explained as, if a person is living in the Mountain region his probability of believing that our food system is not better prepared to deal with the food safety/defense events increases, relative to a person living in New England region. For instance in the overall model, the probability of being in category 8 of preparedness scale is 0.0119 higher for Pacific region than New England region, holding all other variables at their means.

The media source newspaper had a significant effect for the overall model and the segment Predestinarians/Disciplined; the marginal effects signify that if a person is using newspaper as his/her primary media source the probability of him/her believing that our food system is better prepared to deal with the food safety/defense events increases relative to a person who uses television as his/her primary media source. Magazines had a significant effect for segment Non-Differentiators and Life Planner, the marginal effects signify that if a person is using magazines as his/her primary media source the probability of him/her believing that our

food system is not prepared to deal with the food safety/defense events increases relative to a person who uses television as his/her primary media source. Radio was significant only for the segment Non-Differentiators; the marginal effects for the segment could be explained in a same way as the Magazines. Also internet was significant for the overall model and the segments Afraid, Freedom Seeker, Life Planner, the marginal effects for them can be interpreted in a same way as for magazines. For example in the segment Afraid, the probability of being in category 6 of preparedness scale is 0.0143 lower for media source Internet than Television, holding all other variables at their means.

Household age category 30 through 39 years had a significant effect for the overall model, and the segments Non-Differentiators, Predestinarians/Disciplined, and Life Planner/Freedom Seeker. The marginal effects for the overall model and the segments Non-Differentiators, Predestinarians/Disciplined could be interpreted as, if a person is within household age category 30 through 39 years the probability of him/her believing that our food system is not prepared to deal with the food safety/defense events increases relative to a person within household age category under 30 years , while for segment Life Planner/Freedom Seeker the marginal effects can be interpreted as if a person is within household age category 30 through 39 years the probability of him/her believing that our food system is better prepared to deal with the food safety/defense events increases relative to a person within household age category under 30 years. For instance in the segment Life Planner/Freedom Seeker, the probability of being in category 10 of preparedness scale is 0.0114 higher for household age category 30 through 39 years than under 30 years, holding all other variables at their means.

Household age category 40 through 49 years had a significant effect for the overall model, and the segments Predestinarians/Disciplined, Afraid, and Trendy and Adventurists. The

marginal effects for the overall model and the segments can be interpreted as, if a person is within household age category 40 through 49 years the probability of him/her believing that our food system is not prepared to deal with the food safety/defense events increases relative to a person within household age category under 30 years . Household age category 50 through 59 years had a significant effect for the overall model, and the segments Trendy and Adventurist, and Freedom Seeker. The marginal effects for the overall model and the segments can be interpreted as, if a person is within household age category 50 through 59 years the probability of him/her believing that our food system is not prepared to deal with the food safety/defense events increases relative to a person within household age category under 30 years.

Household age category over 60 years had a significant effect for the overall model, and the segments Trendy and Adventurist, and Life Planner/Freedom Seeker. The marginal effects for the overall model and the segment Trendy and Adventurists can be interpreted as, if a person is within household age category over 60 years the probability of him/her believing that our food system is not prepared to deal with the food safety/defense events increases relative to a person within household age category under 30 years, while if the person is in the segment Life Planner/Freedom Seeker the probability of him/her believing that our food system is better prepared to deal with the food safety/defense events increases relative to a person within the household age category under 30 years.

Only household income category over $75,000 had a significant effect for the segment Trendy and Adventurist. The marginal effects can be explained as, if a person is with household income of over $75,000 his/her probability of believing that our food system is better prepared to deal with the food safety/defense events decreases relative to a person with household income under $30,000. For example, the probability of being in the outcome 5 is 0.0136 higher for

household income over $75,000 than household income under $30,000, holding all other variables at their means.

The household size of three members had a significant effect in the overall model and the segments Predestinarians/Disciplined and Life Planner/Freedom Seeker. The marginal effects indicate that, if a person is with the household size of three members his/her probability of believing that our food system is better prepared to deal with the food safety/defense events increases relative to a person with single member in household. The household size of four members had a significant effect for Life Planner/Freedom Seeker and can be interpreted in a same way as household size of three members. For example in the segment Predestinarians/Disciplined, the probability of being in the outcome 3 of the preparedness scale is 0.0128 lower for household size of three members than household size of single member, holding all other variables at their means.

The household size of five or more members had a significant effect in the overall model and segment Life Planner. The marginal effects for the overall model and the segment Life Planner indicate that if a person is with the household size of five or more members his/her probability of believing that our food system is better prepared to deal with the food safety/defense events increases relative to a person with single member in household.

The education level grade school had only significant effect in the segment Non-Differentiators. The marginal effects indicate that, if a person had grade school level education his/her probability of believing that our food system is better prepared to deal with the food safety/defense events increases relative to a person who graduated from high school. As oppose to it, if a person has some high school education and is in the segment Afraid and Trendy and Adventurists, his/her probability of believing that our food system is not prepared to deal with

the food safety/defense events increases relative to a person who graduated from high school. The category some college education was significant in the overall model, and the segments Afraid, Trendy and Adventurists and Life Planner, the marginal effects can be interpreted in a same way as category some high school education. Education category Associate's degree had significant effect for the overall model and the segment Afraid, and Trendy and adventurists, it can be also be interpreted in a same way as some high school education. Education category Bachelor's degree had significant effect for the overall model and the segment Afraid, Trendy and adventurists, and Life planner it can be also be interpreted in a same way as some high school education. Education category post graduate degree had significant effect for the overall model and the segment Afraid, Trendy and adventurists, and Life planner it can be also be interpreted in a same way as some high school education. For instance in the segment Life Planner, the probability of being in outcome 9 is 0.0124 lower for Post graduate degree than high school graduation, holding all other variables at their means.

Females had a significant effect for the overall model and the segments Non-Differentiators, Trendy and Adventurists, Freedom Seeker, and Life Planner. The probability of females believing that our food system is not prepared to deal with the food safety/defense events increases relative to the males in these segments. For example in the segment Freedom Seeker, the probability of being in outcome 7 is 0.0188 lower for females than males, holding all other variables at their means.

CHAPTER 5: SUMMARY AND CONCLUSION

5.1 Introduction

The increasing incidents of food recall events are affecting consumers' confidence in the safety of food and changing their attitude towards preparedness of the food system. Previous research has shown that food safety/defense events affect consumer confidence in food safety and consumer attitude towards preparedness of the food system (Kinsey *et al.*, 2009). The loss of consumer confidence has resulted in reduction of demand for food products and economic loss (De Jonge *et al.*, 2004). These food safety incidents and terrorist attacks have raised questions about preparedness of our food system (Degeneffe *et al.*, 2006). For a long time consumers look toward government and food industry to make sure the food they consume is safe (FSIS). Government has established several agencies to make sure the food products distributed for consumption are safe. Also food industry has been stepping up and trying to make sure food is safe by improving handling, manufacturing and distributing practices.

Even though food industry and various government agencies are making an effort to control food safety incidents, with the increase in trade, food products and knowledge of new pathogens the number of food scare events are on rise (FSIS). These food scare events are catching eye of new age media. The mass media industry today is much bigger than the mass media industry a decade ago and has a greater outreach and impact, and as the previous studies have suggested media plays an important role in altering consumer confidence over the food safety issues (Kalaitzandonakes *et al.*, 2004). The main purpose of this study was to measure the impact of mass media coverage on consumers' confidence in food safety and attitude toward preparedness of the U.S. food supply chain. The study also investigated the role of different mass

media outlets and consumer demographics in altering consumer confidence and attitude toward preparedness of the U.S. food supply chain.

The specific objectives of this study were 1) to estimate media agenda-setting effects on consumer confidence in the safety of the U.S. food supply chain, and 2) to analyze how the agenda-setting effect varies across consumer segments. To accomplish these objectives, survey data were collected using a nationwide Continuous Food Safety Tracking (CFST) survey developed by researchers at University of Minnesota and Louisiana State University AgCenter. The survey was conducted online by an online consumer participant's pool of Taylor Sofres Nelson Company. The CFST survey data was collected on a weekly basis. To estimate the effect of mass media the data for media article count was collected on a daily basis at Louisiana State University AgCenter using academic version of LexisNexis.

The study used 67 weeks of survey data with 12,236 observations collected from May 5th, 2008 to August 2009. Cluster analysis was used to segment individuals in eight different segments based on their responses to characteristic statements in the CFST survey. The Kinsey et al. (2009) study identified two primary indicators of consumer's confidence. The first measures consumer's current confidence in the safety of U.S. food system, and the second measures their belief regarding how better prepared the food system is regarding food safety relative to a year ago. These two indicators used as ordered dependent variables in the study were created after factor analyzing six questions from the survey. The first dependent variable created by using four questions measures consumers confidence in safety of the food. The second variable created by using the two remaining questions measuring consumers' attitude towards preparedness of U.S. food supply chain than it was a year before. An ordered probit regression analysis was used to measure the effect of mass media coverage and other explanatory variables including media

sources on the consumers' confidence in the food safety and attitude towards preparedness of our food system.

5.2 Results

In the Continuous Food Safety Tracking (CFST) survey the country was divided into nine geographic regions. The survey data was collected from these nine geographic regions. More than fifty six percent of our respondents had household age of 50 years or more. Over thirty three percent of the respondents had a household income of over $75,000 or more. Twenty seven percent of our respondents had a household size of one member and forty percent had two members. Around ninety percent of the survey respondents were white. The survey response was weighted toward female respondents, in that nearly eighty percent were female. Around twenty eight percent of the respondents had some college education and no degree. Over fifty five percent of the respondents listed television as their primary media source.

This study followed a two-step approach, hierarchical cluster analysis followed by partition clustering. Factor analysis was used to create seven factors from the consumer characteristic statements. The factor scores obtained for the seven factors in the factor analysis were used as input scores in the cluster analysis. The eight identified segments were named as Non Differentiators, Predestinarians/Disciplined, Afraid, Trendy and Adventurists, Freedom Seeker, Life Planner/Freedom Seeker, Life Planner, Predestinarians/Optimists.

Two separate models were developed to measure the change in consumer confidence and consumer attitudes regarding the preparedness of the United States food supply across each identified segment. The study found that media coverage had a significant and negative effect on consumer confidence for the overall model, and in segments titled Trendy and Adventurists, Freedom Seeker, and Life Planner in national food supply chain. In other words, an increase in

mass media coverage about food safety events leads to a decline in consumer confidence in the U.S. food supply chain.

Over fourteen percent of respondents listed newspaper as their primary media source. Newspapers had a significant and negative effect on consumer confidence for the overall model and the segments titled Predestinarians/Disciplined, Afraid, Freedom Seeker, Life Planner/Freedom Seeker, Life Planner, and Predestinarians/Optimists. Indicating that if a person is using Newspapers as his/her primary media source the probability of him/her having low confidence decreases, while the probability of being high in confidence increases relative to a person who uses Television as their primary media source. Around twenty five percent of the respondents listed Internet as their primary media source. Internet was significant and had a negative effect for the overall model and in the segments Afraid and Life Planner/Freedom Seeker, if a person is using Internet as his/her primary media source the probability of him/her being low in confidence decreases while the probability of being high in confidence increases relative to a person who uses Television as primary media source.

The results for respondents' primary media sources were interpreted relative to television coverage. Television is an audio visual media information source. Unlike print media the visual transmission for television is expected to be more effective. The results indicate that using television as primary media source increases the probability of falling in the lower confidence range. Respondents for the segments identified in the study had different major primary media sources which were used to characterize the respondents in the segment. In the segment titled Afraid, the majority of people indicated television as their primary media source and throughout the survey period they remained in the lower confidence range. While the segment titled Freedom Seekers and Life Planner/Freedom Seekers have a higher percentage of people

indicating use of internet and newspapers as their primary media source. Use of internet and newspapers as primary media source decreases the probability of falling in the lower confidence range.

For the model to measure consumers' attitudes towards the preparedness of food system, MTI was significant in the overall model and in the segments Non-Differentiators, Freedom Seeker, and Life Planners. In other words, an increase in mass media coverage about food safety events strengthens consumer belief that the nation is not prepared for safety of its food supply system. As mentioned before, over fourteen percent of the respondents listed newspaper as their primary media source. The media source newspaper had a significant and positive effect relative to television, for the overall model and the segment Predestinarians/Disciplined model. If a person is using newspaper as his/her primary media source, the probability of him/her believing that our food system is better prepared to deal with the food safety/defense events increases relative to a person who uses television as his/her primary media source. Around a quarter of the respondents listed Internet as their primary media source. Internet was significant and had a positive effect for the overall model and the segments Afraid, Freedom Seeker, Life Planner. Meaning that if a person is using Internet as his/her primary media source the probability of him/her believing that our food system is better prepared to deal with the food safety/defense events decreases relative to a person who uses television as his/her primary media source.

Most of the media sources have a similar effect on consumers' attitude towards preparedness of the food system, like they have on consumer confidence. Similar to consumer confidence television also negatively affects consumers' attitude towards preparedness of U.S. food supply chain. In the segment titled Afraid television is the primary media source for most of the respondents in the segment. The results indicate that using television as primary media

source increases the probability of believing that the U.S. food supply is not prepared against terrorist attack or accidental contamination. Segment titled Freedom Seeker was characterized with most of the respondents in the segment using internet and newspapers. The results show that using internet and newspapers as primary media sources for information increases respondents probability of believing that U.S. food supply is better prepared to deal with terrorist attack or accidental contamination.

The results of the study imply that increase in media coverage has a negative effect on consumer confidence and consumer attitude towards preparedness of U.S. food system. Therefore the results support the hypothesis of an agenda setting effect. Also media sources like television increases the probability of a person being in low confidence range relative to other sources of media and believe that the U.S. food system is not prepared to deal with terrorist attack or accidental contamination.

5.3 Implications

The findings of this study are important and helpful for government agencies and private companies to understand the magnitude of consumer response to mass media, and for adjusting their response to food safety incidents and determining the economic downturn in the sale of their products and for how long into the future. The consumer segments developed in the study can be used for integrating better risk communication strategies directed toward a specific consumer segment.

5.4 Limitations and Future Research

The sample of respondents obtained for this study is not representative the sample is skewed towards female respondents. Around ninety percent of respondents are white. Some studies have indicated that media coverage has a residual effect on consumer confidence and

have recommended use of time lag to capture the accurate effect of media coverage on consumer confidence(Verbeke and Ward, 2001). This study did not use time lag to capture the effect of media coverage on consumers' confidence. Future research will focus on determining the time lag to accurately measure effect of media coverage. Also this study did not differentiate between negative media coverage and positive media coverage. Future research can also explore what is the dollar value economic effect of mass media coverage of food safety incidents on the product sales and economy.

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APPENDIX A: PROBABILITY CURVE SHOWING THE EFFECT OF MTI AND MEDIA SOURCE ON CONSUMERS CONFIDENCE

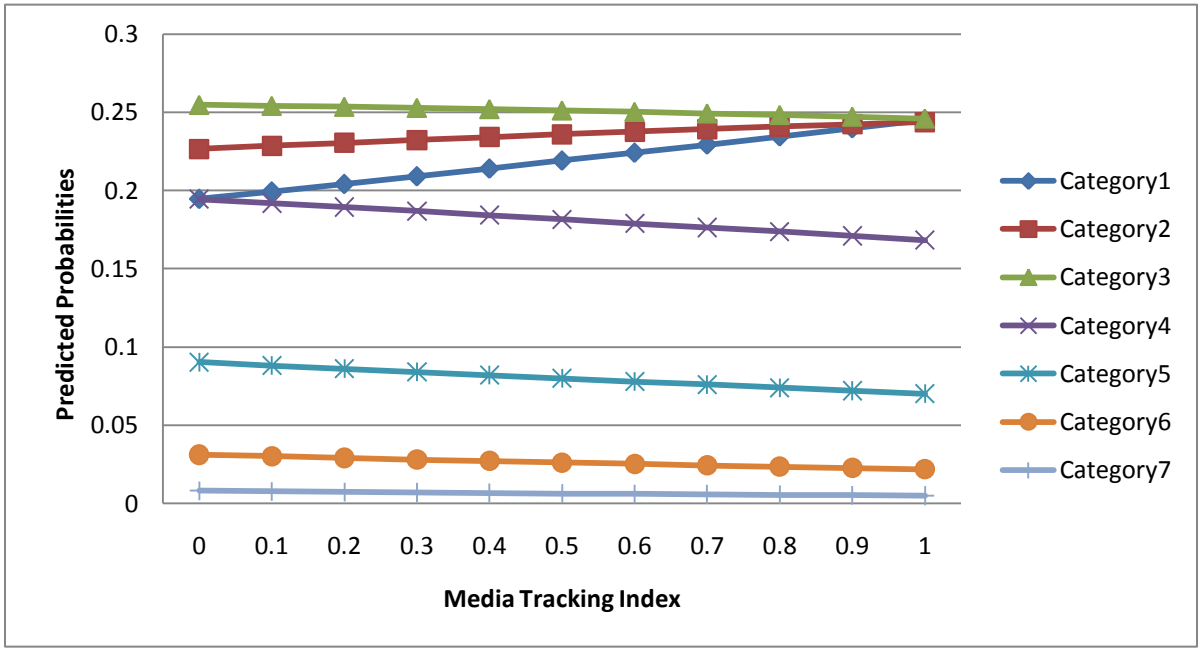

Figure A.1 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Overall Model

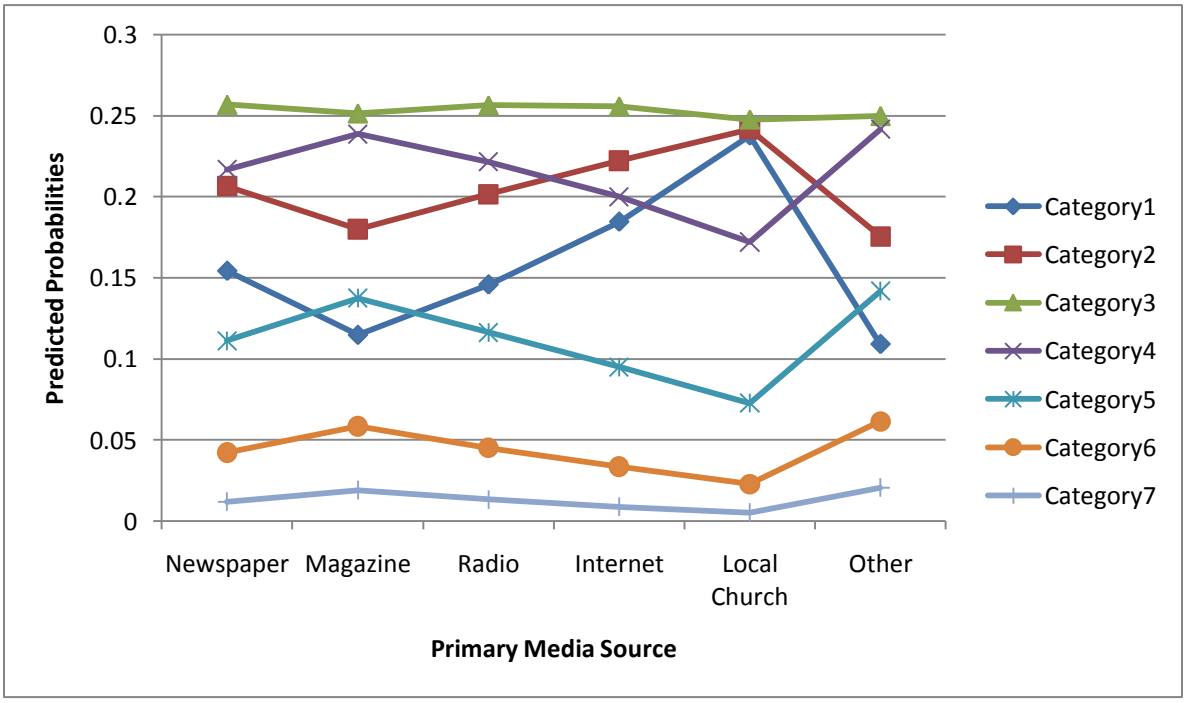

Figure A.2 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Overall Model

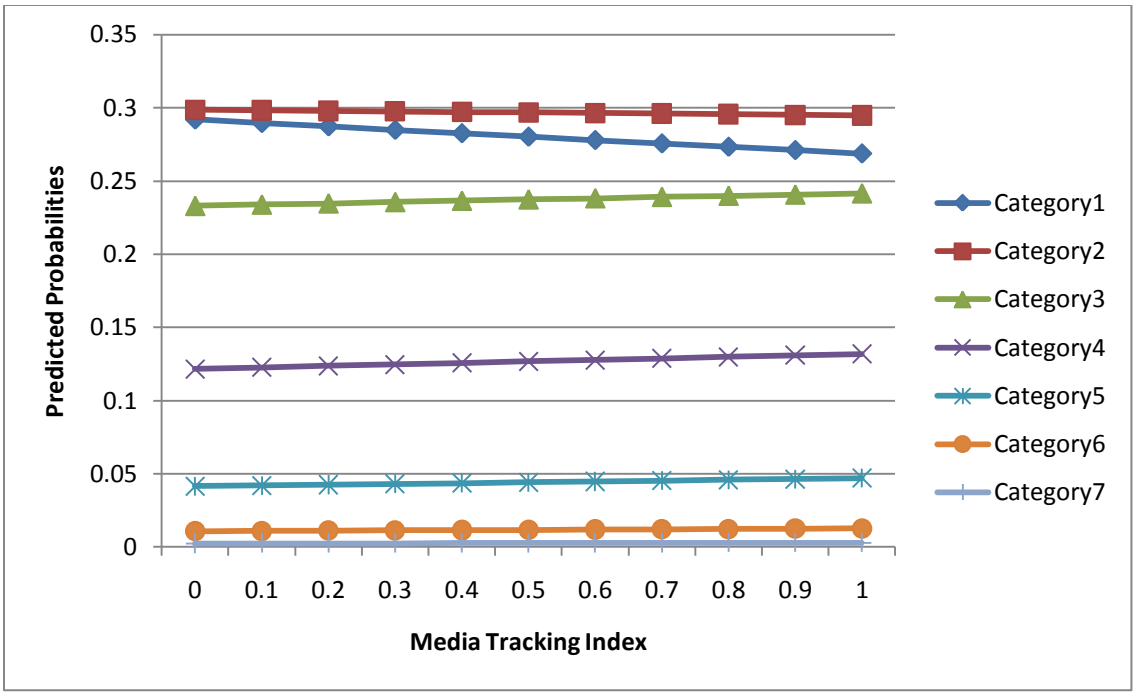

Figure A.3 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Segment Non-Differentiators

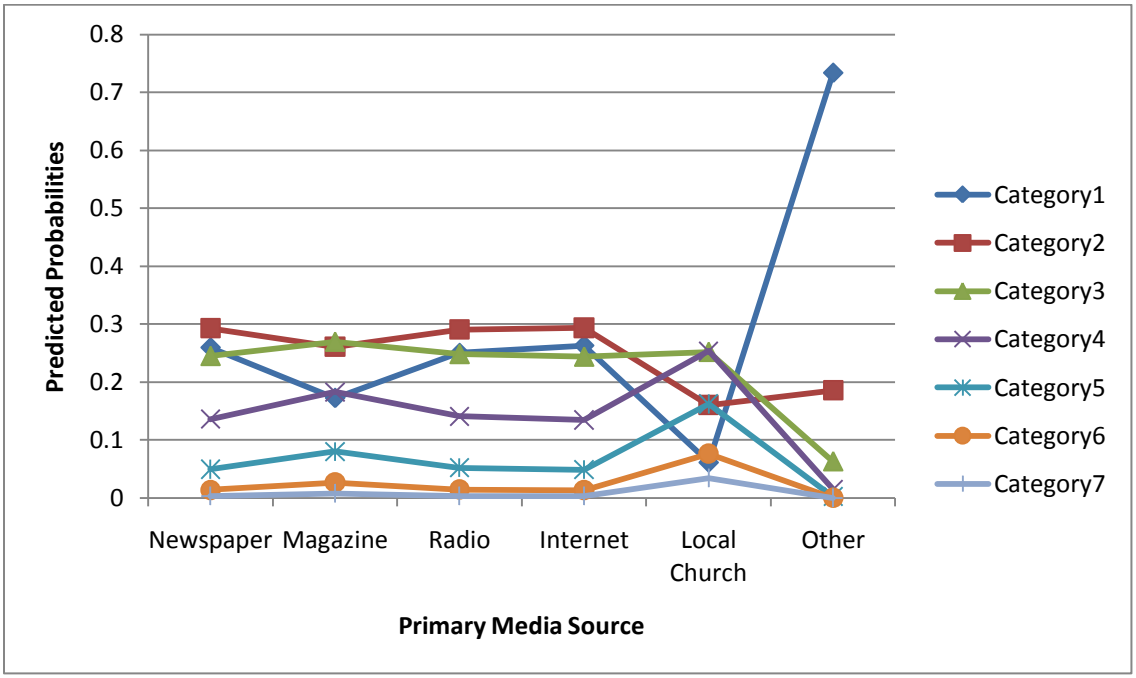

Figure A.4 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Segment Non-Differentiators

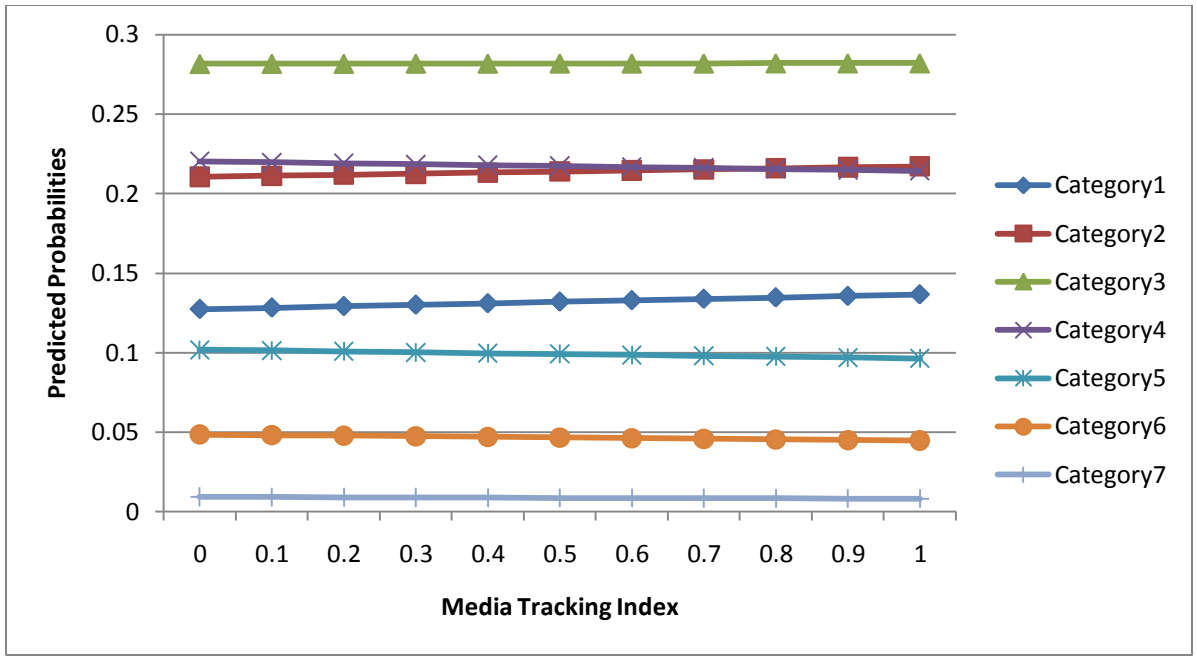

Figure A.5 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Segment Predestinarians/Disciplined

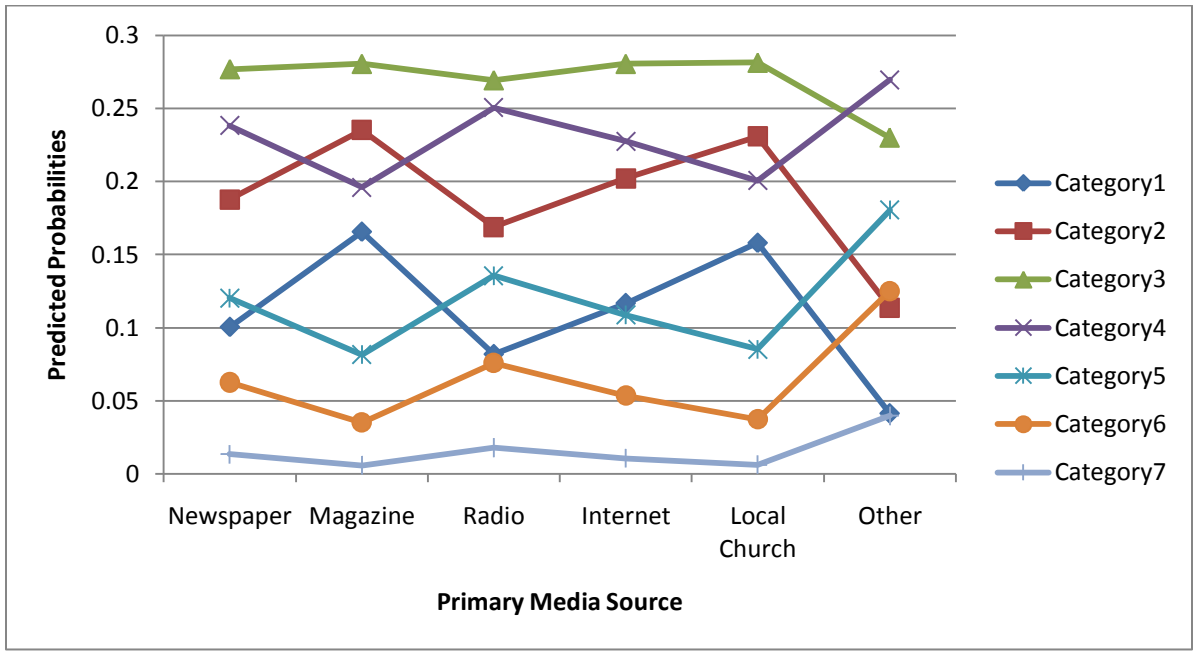

Figure A.6 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Segment Predestinarians/Disciplined

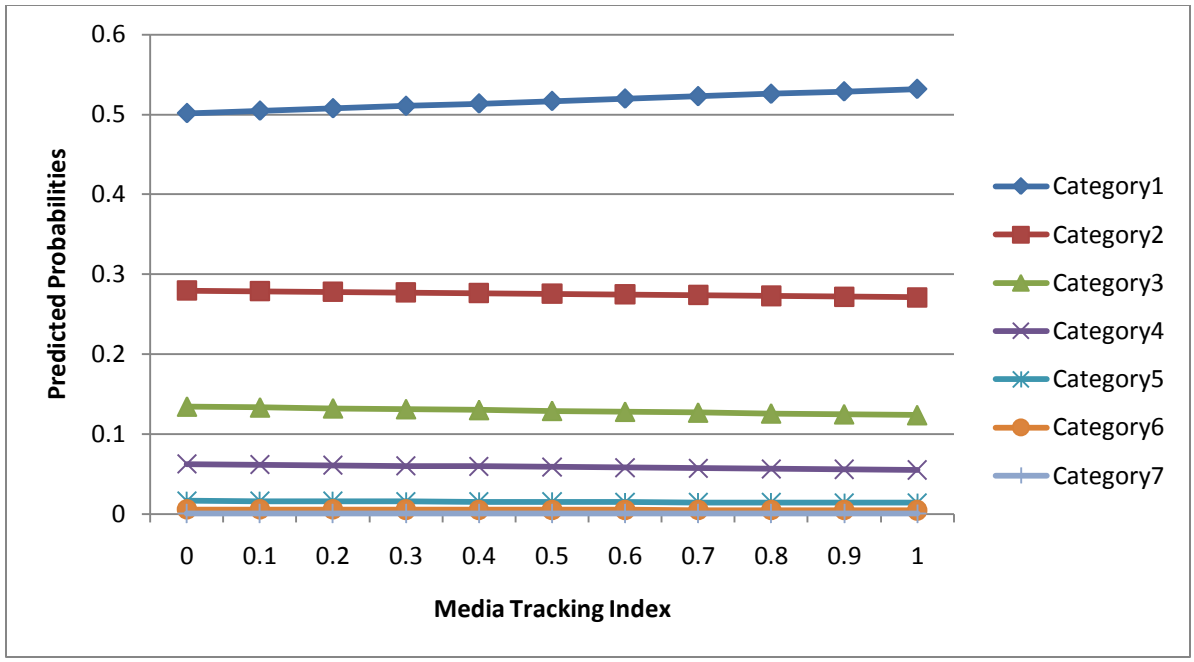

Figure A.7 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Afraid

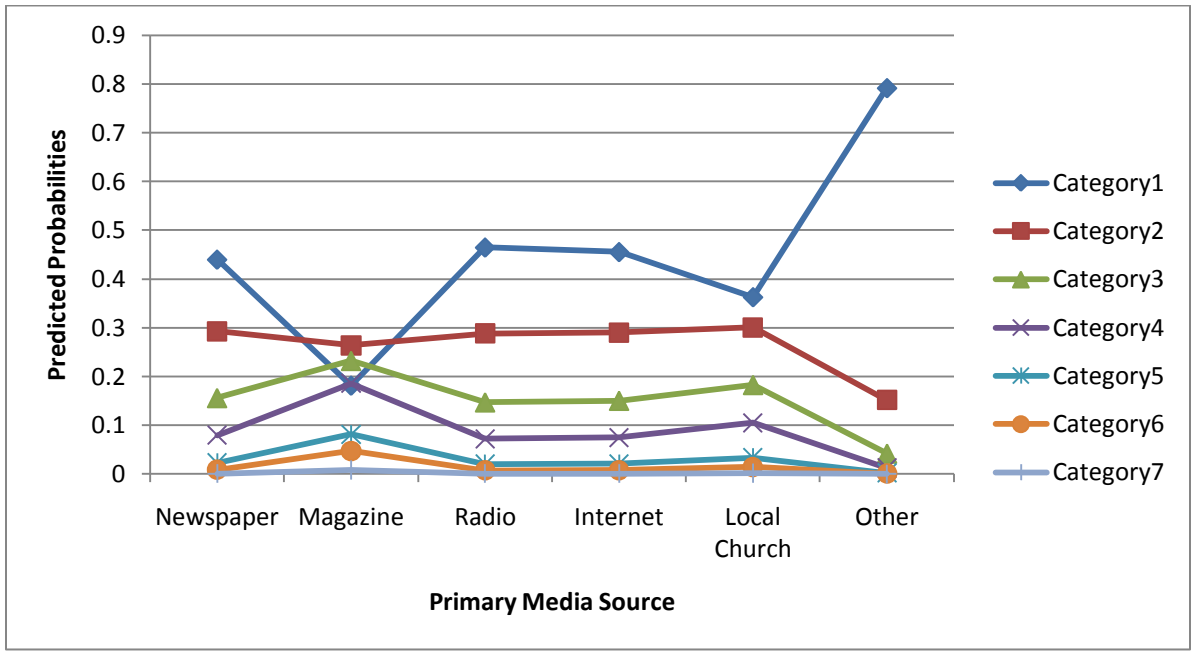

Figure A.8 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Segment Afraid

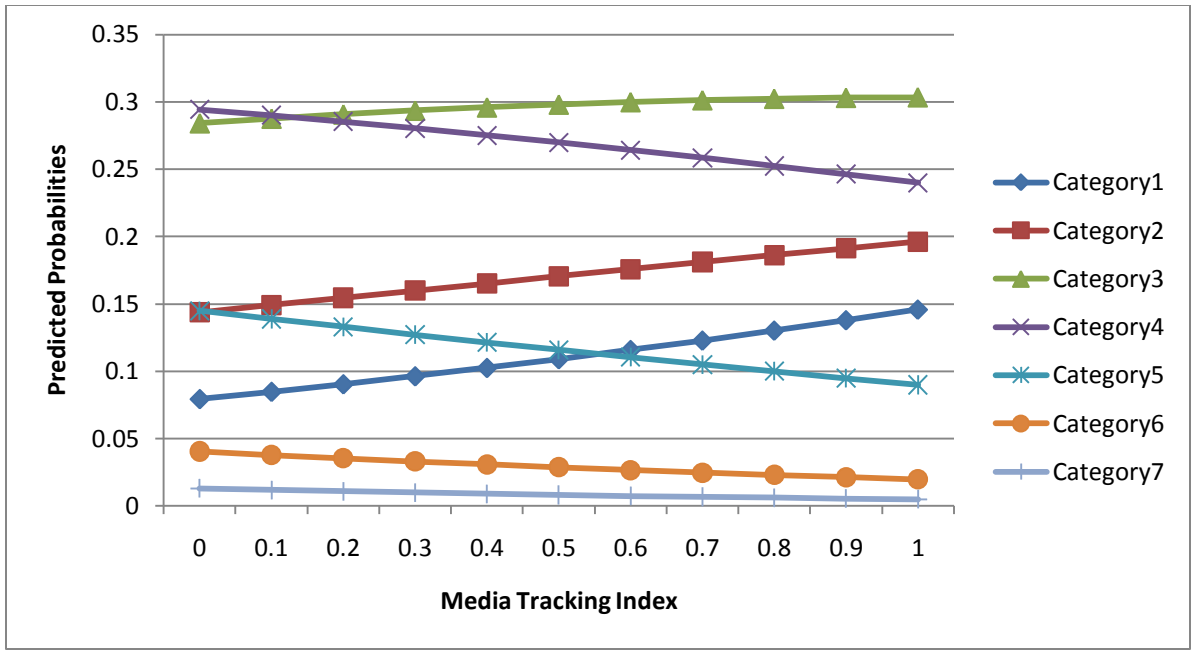

Figure A.9 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Segment Trendy and Adventurists

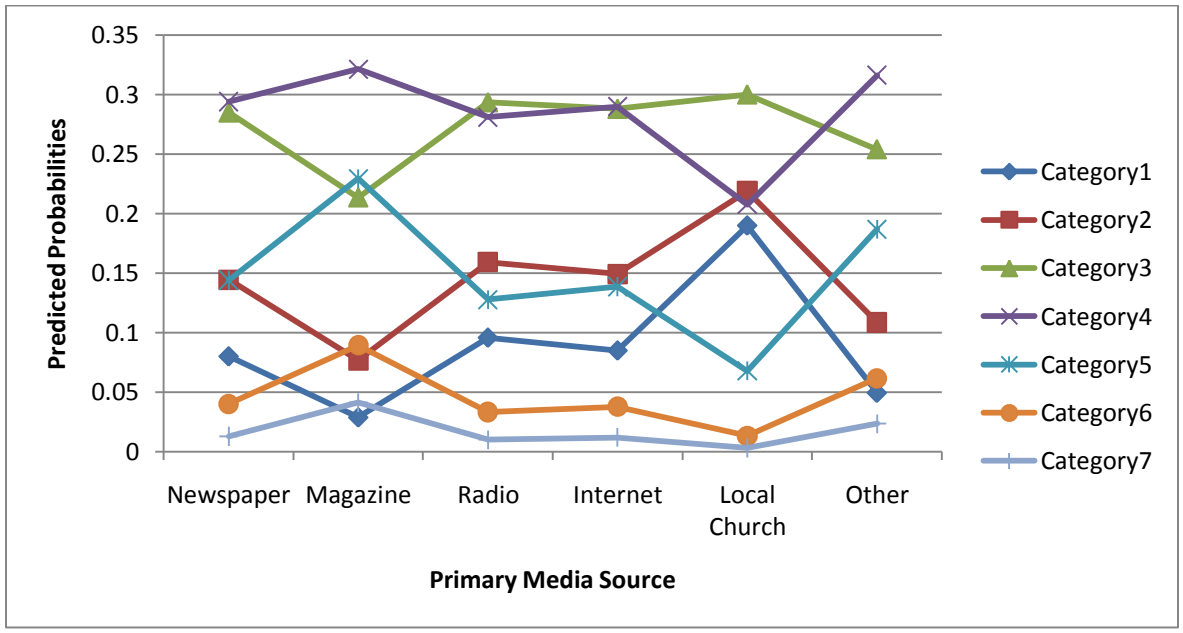

Figure A.10 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Segment Trendy and Adventurists

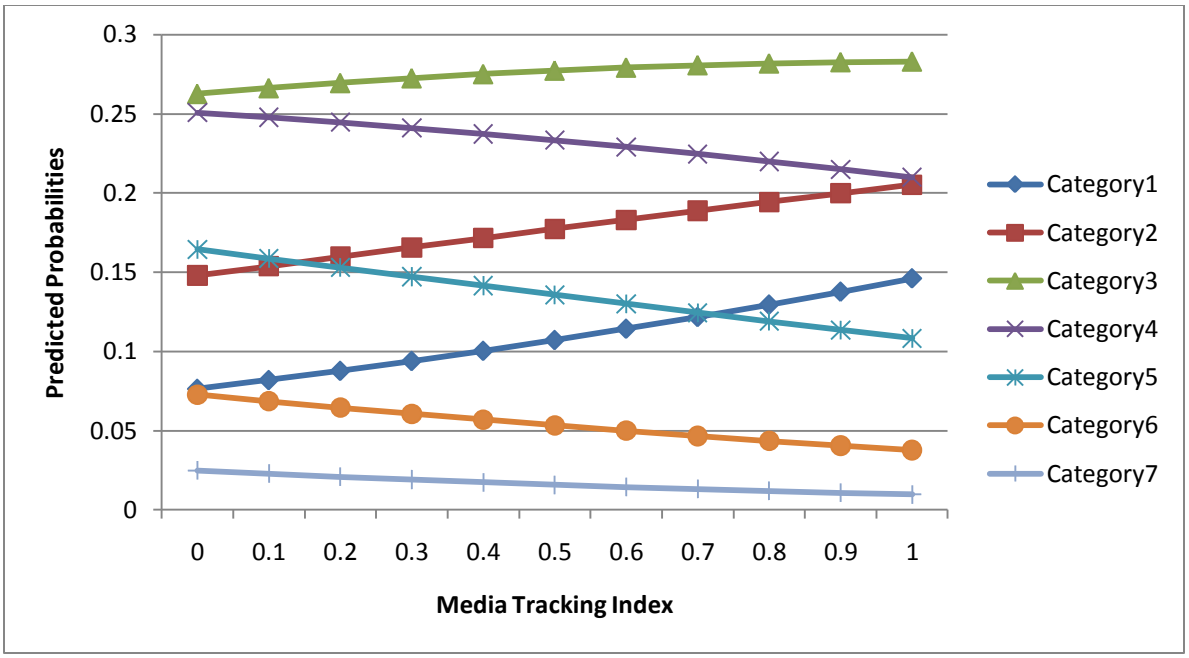

Figure A.11 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Segment Freedom Seeker

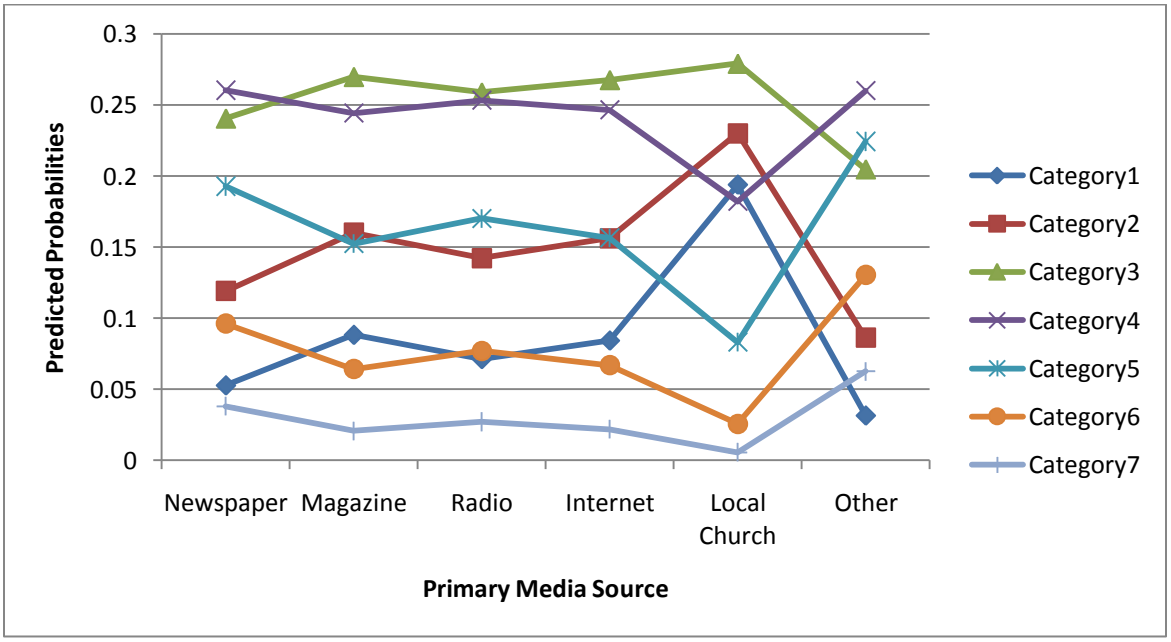

Figure A.12 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Segment Freedom Seeker

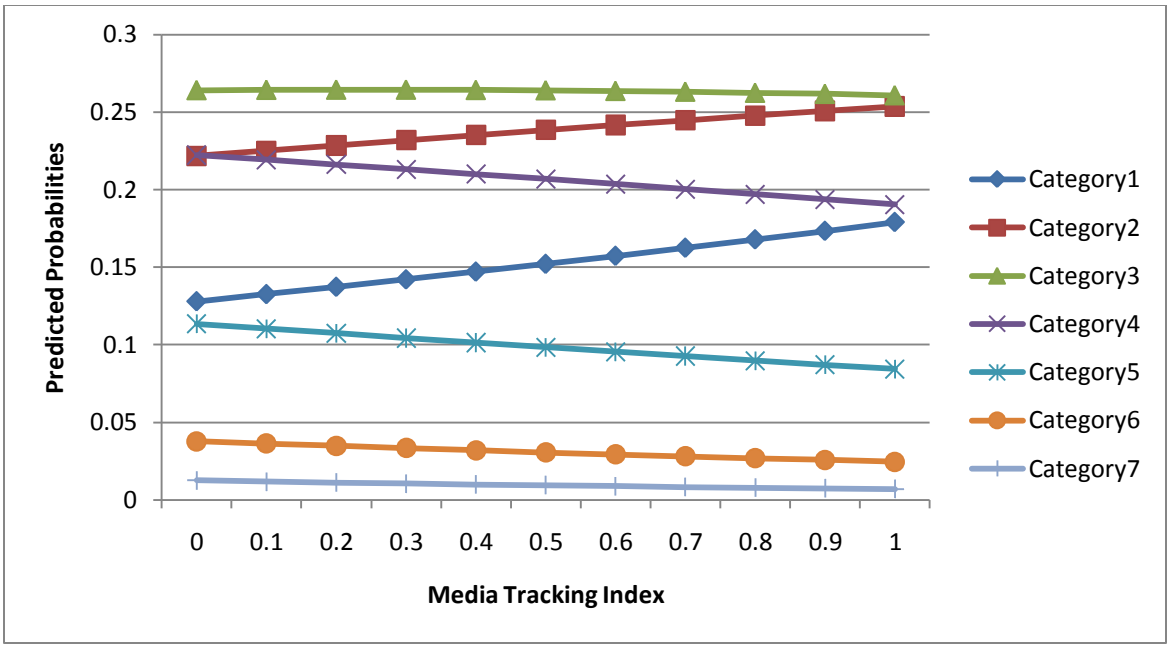

Figure A.13 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Segment Life Planner/Freedom Seeker

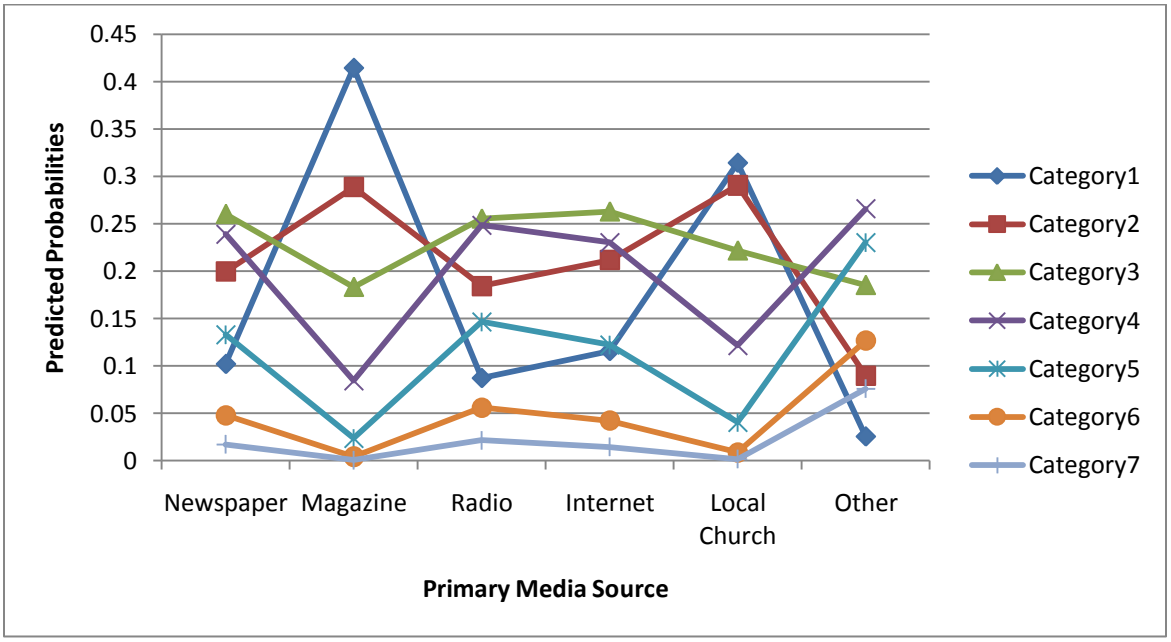

Figure A.14 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Segment Life Planner/Freedom Seeker

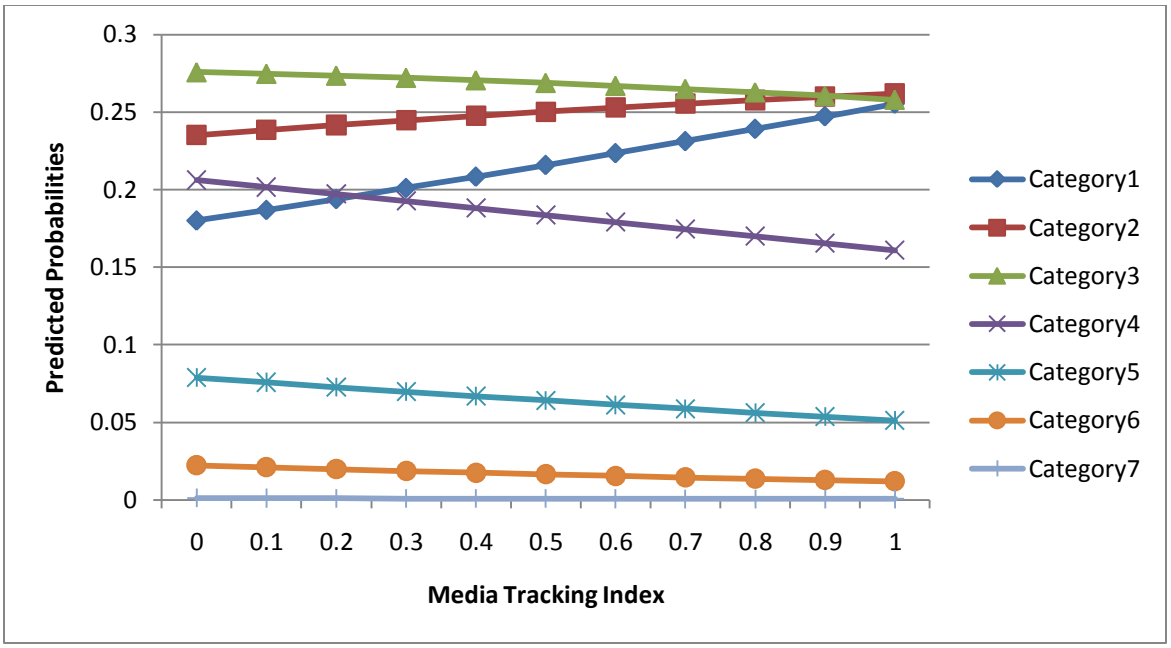

Figure A.15 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Segment Life Planner

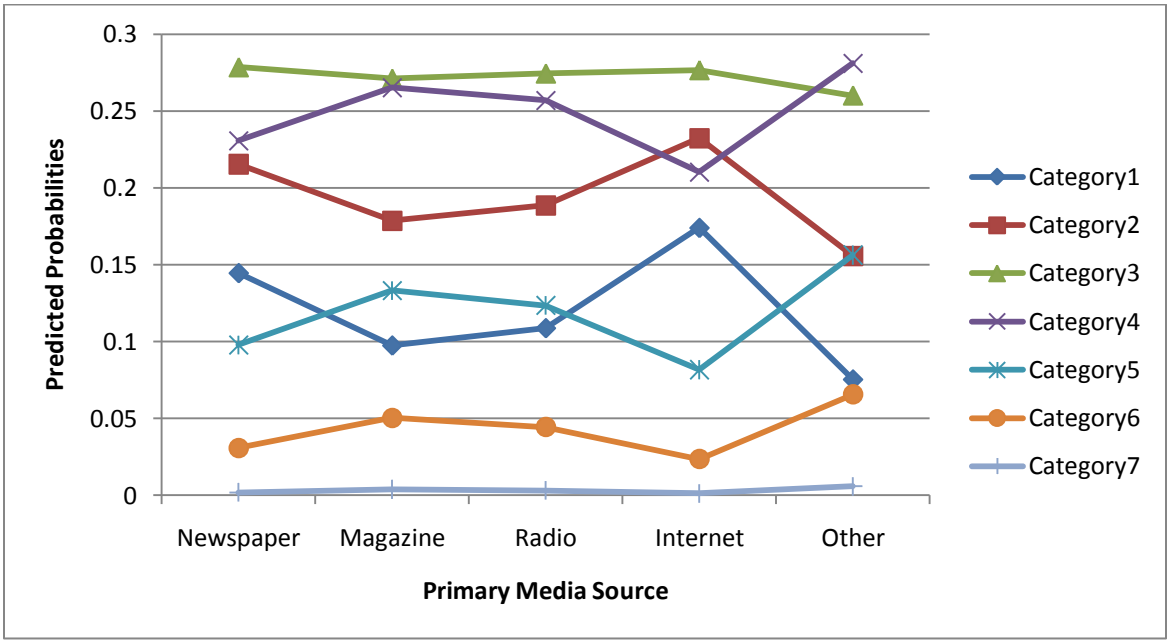

Figure A.16 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Segment Life Planner

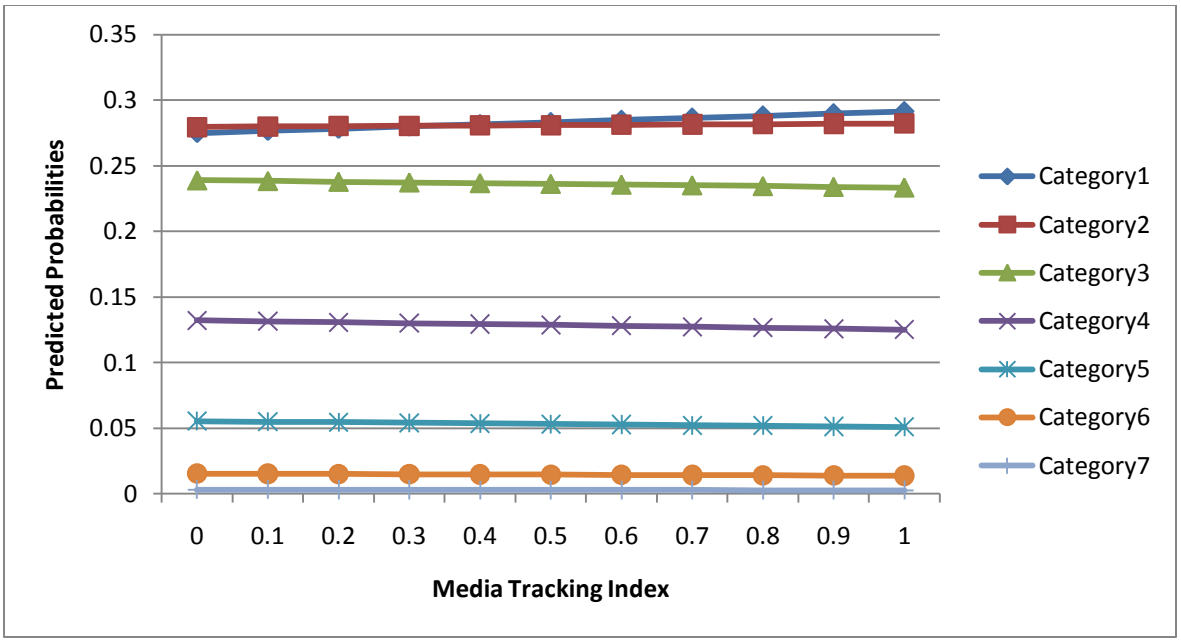

Figure A.17 Probability Curve Showing the Effect of MTI on Consumers Confidence about Food Safety for the Segment Predestinarians/Optimists

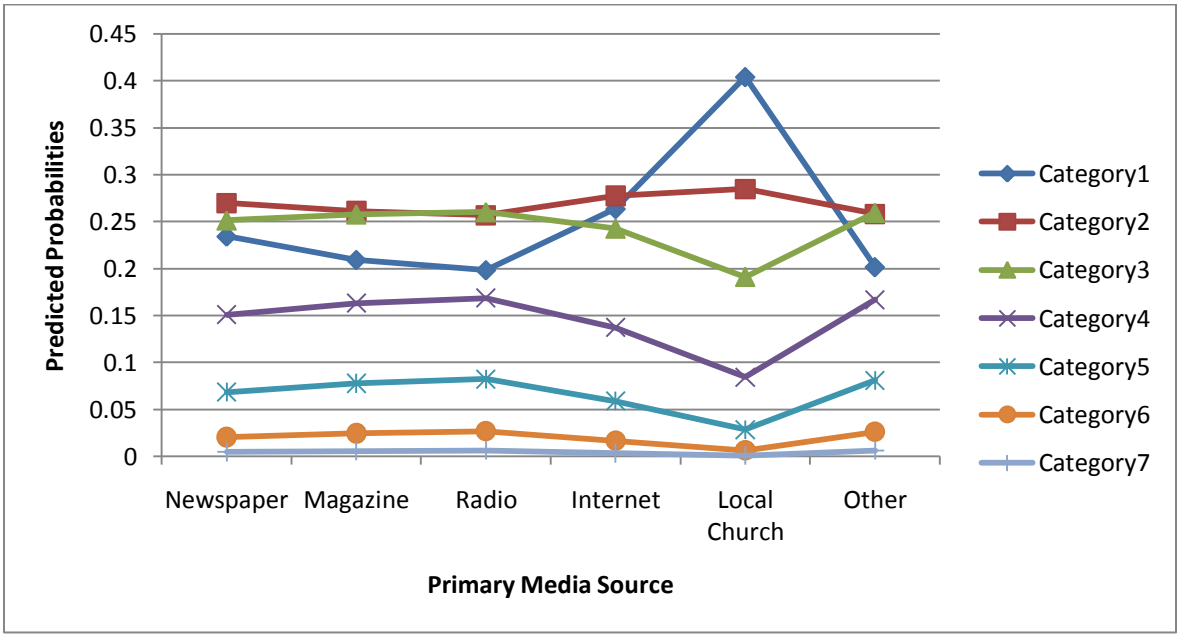

Figure A.18 Probability Curve Showing the Effect of Media Source on Consumers Confidence about Food Safety for the Segment Predestinarians/Optimists

APPENDIX B: MARGINAL EFFECTS FOR CONSUMERS CONFIDENCE ABOUT FOOD SAFETY

Table B.1 Marginal Effects for Consumers Confidence for Overall Model

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
MTI	0.0483	0.0189	-0.0067	-0.0257	-0.0211	-0.0102	-0.0034
Age	0.0006	0.0002	-0.0001	-0.0003	-0.0003	-0.0001	0.0000
Middle Atlantic	0.0059	0.0023	-0.0009	-0.0031	-0.0025	-0.0012	-0.0004
East North Central	-0.0243	-0.0102	0.0028	0.0131	0.0111	0.0055	0.0019
West North Central	-0.0423	-0.0192	0.0036	0.0230	0.0205	0.0105	0.0038
South Atlantic	0.0119	0.0045	-0.0018	-0.0063	-0.0051	-0.0024	-0.0008
East South Central	0.0450	0.0148	-0.0083	-0.0232	-0.0176	-0.0081	-0.0026
West South Central	-0.0245	-0.0104	0.0028	0.0132	0.0113	0.0056	0.0020
Mountain	-0.0336	-0.0148	0.0033	0.0182	0.0159	0.0081	0.0029
Pacific	-0.0471	-0.0211	0.0042	0.0256	0.0226	0.0116	0.0042
NewsPaper	-0.0584	-0.0270	0.0045	0.0319	0.0288	0.0149	0.0055
Magazines	-0.0892	-0.0503	-0.0023	0.0491	0.0513	0.0294	0.0120
Radio	-0.0611	-0.0299	0.0031	0.0335	0.0314	0.0167	0.0063
Internet	-0.0253	-0.0104	0.0031	0.0136	0.0115	0.0057	0.0020
Local Church	0.0341	0.0115	-0.0061	-0.0177	-0.0136	-0.0063	-0.0020
Other (Specify)	-0.0952	-0.0550	-0.0038	0.0523	0.0558	0.0325	0.0134
30 through 39 Years	0.0544	0.0180	-0.0099	-0.0281	-0.0214	-0.0099	-0.0032
40 through 49 Years	0.0883	0.0272	-0.0174	-0.0449	-0.0334	-0.0151	-0.0048
50 through 59 Years	0.1059	0.0321	-0.0210	-0.0535	-0.0397	-0.0180	-0.0057
60 Years and Over	0.1053	0.0354	-0.0185	-0.0542	-0.0419	-0.0196	-0.0064
$30,000 - $49,999	-0.0214	-0.0088	0.0026	0.0115	0.0097	0.0048	0.0016
$50,000 - $74,999	-0.0232	-0.0096	0.0028	0.0125	0.0105	0.0052	0.0018
$75,000 and Over	-0.0397	-0.0164	0.0048	0.0213	0.0180	0.0089	0.0031
2 Members	0.0254	0.0097	-0.0037	-0.0135	-0.0109	-0.0052	-0.0018
3 - 3 Members	0.0401	0.0138	-0.0069	-0.0209	-0.0162	-0.0075	-0.0024
4 - 4 Members	0.0437	0.0148	-0.0078	-0.0226	-0.0174	-0.0080	-0.0026
5 - 5 or More Members	0.0430	0.0144	-0.0078	-0.0223	-0.0170	-0.0078	-0.0025

Table B.1 Marginal Effects for Consumers Confidence for Overall Model

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
Black/African-American	0.0588	0.0183	-0.0116	-0.0300	-0.0223	-0.0101	-0.0032
Asian or Pacific Islander	0.0927	0.0246	-0.0209	-0.0458	-0.0323	-0.0141	-0.0043
American Indian, Aleut Eskimo	-0.0189	-0.0080	0.0021	0.0102	0.0087	0.0043	0.0015
Other	0.0264	0.0093	-0.0045	-0.0138	-0.0107	-0.0050	-0.0016
Grade School	-0.1404	-0.1001	-0.0301	0.0717	0.0987	0.0670	0.0332
Some High School	0.0082	0.0031	-0.0012	-0.0044	-0.0035	-0.0017	-0.0006
Some College-no degree	-0.0184	-0.0074	0.0024	0.0098	0.0082	0.0040	0.0014
Graduated College –Associate's Degree (2 years)	-0.0360	-0.0158	0.0035	0.0195	0.0170	0.0086	0.0031
Graduated College- Bachelor's Degree (4 years)	-0.0754	-0.0340	0.0064	0.0409	0.0365	0.0188	0.0068
Post Graduate Degree	-0.1089	-0.0584	0.0000	0.0595	0.0602	0.0339	0.0136
Never Married	-0.0291	-0.0123	0.0033	0.0157	0.0134	0.0067	0.0023
Divorced, Widowed, Separated	0.0005	0.0002	-0.0001	-0.0002	-0.0002	-0.0001	0.0000
Female	0.0717	0.0332	-0.0054	-0.0390	-0.0354	-0.0184	-0.0068

Table B2 Marginal Effects for Consumers Confidence for Segment Non-Differentiators

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
MTI	-0.0236	-0.0034	0.0088	0.0103	0.0054	0.0019	0.0005
Age	0.0011	0.0002	-0.0004	-0.0005	-0.0003	-0.0001	0.0000
Middle Atlantic	-0.0108	-0.0016	0.0040	0.0048	0.0025	0.0009	0.0003
East North Central	-0.0031	-0.0004	0.0011	0.0013	0.0007	0.0002	0.0001
West North Central	-0.0856	-0.0215	0.0287	0.0416	0.0245	0.0094	0.0030
South Atlantic	0.0328	0.0039	-0.0125	-0.0140	-0.0072	-0.0024	-0.0007
East South Central	0.0136	0.0017	-0.0051	-0.0058	-0.0030	-0.0010	-0.0003
West South Central	0.0225	0.0027	-0.0085	-0.0096	-0.0049	-0.0017	-0.0005
Mountain	-0.0659	-0.0148	0.0228	0.0313	0.0179	0.0067	0.0021
Pacific	-0.0039	-0.0006	0.0014	0.0017	0.0009	0.0003	0.0001
Newspaper	-0.0317	-0.0056	0.0115	0.0143	0.0078	0.0028	0.0008
Magazines	-0.1155	-0.0371	0.0348	0.0594	0.0377	0.0153	0.0053

Table B2 Marginal Effects for Consumers Confidence for Segment Non-Differentiators

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
Radio	-0.0393	-0.0075	0.0141	0.0180	0.0100	0.0036	0.0011
Internet	-0.0330	-0.0054	0.0121	0.0148	0.0079	0.0028	0.0008
Local Church	-0.2272	-0.1380	0.0174	0.1306	0.1199	0.0653	0.0320
Other (Specify)	0.4470	-0.1121	-0.1721	-0.1089	-0.0403	-0.0109	-0.0025
30 through 39 Years	0.1289	0.0064	-0.0505	-0.0504	-0.0243	-0.0079	-0.0022
40 through 49 Years	0.1497	0.0063	-0.0587	-0.0580	-0.0278	-0.0091	-0.0025
50 through 59 Years	0.1561	0.0037	-0.0617	-0.0590	-0.0278	-0.0089	-0.0024
60 Years and Over	0.1548	0.0076	-0.0604	-0.0604	-0.0292	-0.0096	-0.0026
$30,000 - $49,999	-0.0606	-0.0120	0.0216	0.0280	0.0156	0.0057	0.0017
$50,000 - $74,999	-0.0474	-0.0086	0.0172	0.0215	0.0118	0.0042	0.0013
$75,000 and Over	-0.0747	-0.0121	0.0274	0.0333	0.0179	0.0064	0.0019
2 Members	0.0559	0.0067	-0.0212	-0.0238	-0.0122	-0.0042	-0.0012
3 - 3 Members	0.0759	0.0060	-0.0295	-0.0308	-0.0152	-0.0050	-0.0014
4 - 4 Members	0.1154	0.0053	-0.0454	-0.0450	-0.0215	-0.0070	-0.0019
5 - 5 or More Members	0.0395	0.0040	-0.0152	-0.0165	-0.0083	-0.0028	-0.0008
Black/African-American	0.0619	0.0049	-0.0241	-0.0251	-0.0124	-0.0041	-0.0011
Asian or Pacific Islander	0.0795	0.0046	-0.0312	-0.0315	-0.0152	-0.0050	-0.0013
American Indian, Aleut Eskimo	-0.1051	-0.0316	0.0328	0.0532	0.0330	0.0132	0.0044
Other	0.1781	-0.0077	-0.0718	-0.0615	-0.0270	-0.0082	-0.0021
Grade School	-0.0146	-0.0024	0.0054	0.0065	0.0035	0.0012	0.0004
Some High School	0.0803	0.0040	-0.0316	-0.0314	-0.0151	-0.0049	-0.0013
Some College-no degree	-0.0257	-0.0041	0.0095	0.0114	0.0061	0.0021	0.0006
Graduated College –Associate's Degree (2 years)	-0.0116	-0.0018	0.0043	0.0051	0.0027	0.0010	0.0003
Graduated College- Bachelor's Degree (4 years)	-0.0637	-0.0116	0.0230	0.0290	0.0159	0.0057	0.0017
Post Graduate Degree	-0.1274	-0.0362	0.0404	0.0635	0.0390	0.0155	0.0052
Never Married	0.0082	0.0011	-0.0031	-0.0035	-0.0019	-0.0006	-0.0002
Divorced, Widowed, Separated	0.0243	0.0030	-0.0092	-0.0104	-0.0053	-0.0018	-0.0005
Female	0.0463	0.0084	-0.0167	-0.0211	-0.0115	-0.0041	-0.0012

Table B.3 Marginal Effects for Consumers Confidence for Segment Predestinarians/Disciplined

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
MTI	0.0090	0.0067	0.0006	-0.0059	-0.0054	-0.0038	-0.0011
Age	0.0020	0.0015	0.0001	-0.0013	-0.0012	-0.0009	-0.0002
Middle Atlantic	0.0017	0.0012	0.0001	-0.0011	-0.0010	-0.0007	-0.0002
East North Central	-0.0282	-0.0225	-0.0036	0.0187	0.0182	0.0135	0.0039
West North Central	-0.0537	-0.0478	-0.0130	0.0353	0.0387	0.0308	0.0097
South Atlantic	-0.0040	-0.0030	-0.0003	0.0026	0.0024	0.0017	0.0005
East South Central	0.0265	0.0179	-0.0001	-0.0171	-0.0146	-0.0099	-0.0026
West South Central	-0.0240	-0.0192	-0.0030	0.0159	0.0155	0.0115	0.0033
Mountain	-0.0291	-0.0239	-0.0045	0.0193	0.0193	0.0145	0.0043
Pacific	-0.0408	-0.0344	-0.0073	0.0270	0.0278	0.0213	0.0064
Newspaper	-0.0355	-0.0289	-0.0052	0.0235	0.0234	0.0175	0.0051
Magazines	0.0364	0.0234	-0.0013	-0.0233	-0.0192	-0.0128	-0.0033
Radio	-0.0509	-0.0456	-0.0126	0.0335	0.0369	0.0295	0.0093
Internet	-0.0152	-0.0117	-0.0014	0.0100	0.0095	0.0069	0.0019
Local Church	0.0289	0.0191	-0.0005	-0.0186	-0.0157	-0.0105	-0.0027
Other (Specify)	-0.0891	-0.0990	-0.0519	0.0512	0.0804	0.0777	0.0307
30 through 39 Years	0.0163	0.0115	0.0004	-0.0107	-0.0094	-0.0065	-0.0017
40 through 49 Years	0.0088	0.0064	0.0004	-0.0058	-0.0052	-0.0037	-0.0010
50 through 59 Years	-0.0031	-0.0023	-0.0002	0.0020	0.0019	0.0013	0.0004
60 Years and Over	-0.0192	-0.0144	-0.0014	0.0126	0.0117	0.0084	0.0023
$30,000 - $49,999	0.0025	0.0019	0.0001	-0.0017	-0.0015	-0.0011	-0.0003
$50,000 - $74,999	-0.0360	-0.0289	-0.0047	0.0238	0.0234	0.0173	0.0050
$75,000 and Over	-0.0195	-0.0149	-0.0017	0.0129	0.0120	0.0087	0.0024
2 Members	0.0170	0.0125	0.0009	-0.0112	-0.0101	-0.0071	-0.0020
3 - 3 Members	-0.0093	-0.0071	-0.0008	0.0061	0.0057	0.0041	0.0012
4 - 4 Members	0.0055	0.0040	0.0003	-0.0036	-0.0033	-0.0023	-0.0006
5 - 5 or More Members	0.0342	0.0227	-0.0006	-0.0220	-0.0186	-0.0125	-0.0032

Table B.3 Marginal Effects for Consumers Confidence for Segment Predestinarians/Disciplined

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
Black/African-American	0.0209	0.0144	0.0002	-0.0136	-0.0117	-0.0080	-0.0021
Asian or Pacific Islander	0.1468	0.0629	-0.0295	-0.0833	-0.0565	-0.0330	-0.0074
American Indian, Aleut Eskimo	0.0067	0.0048	0.0003	-0.0044	-0.0039	-0.0027	-0.0007
Other	-0.0152	-0.0119	-0.0017	0.0100	0.0097	0.0071	0.0020
Grade School	-0.1296	-0.2082	-0.2555	-0.1295	0.0548	0.2495	0.4185
Some High School	-0.0066	-0.0050	-0.0005	0.0043	0.0040	0.0029	0.0008
Some College-no degree	-0.0227	-0.0175	-0.0022	0.0150	0.0142	0.0103	0.0029
Graduated College –Associate's Degree (2 years)	-0.0348	-0.0289	-0.0057	0.0231	0.0234	0.0177	0.0053
Graduated College- Bachelor's Degree (4 years)	-0.0553	-0.0455	-0.0088	0.0365	0.0369	0.0280	0.0083
Post Graduate Degree	-0.0666	-0.0610	-0.0186	0.0434	0.0494	0.0403	0.0131
Never Married	-0.0179	-0.0141	-0.0020	0.0119	0.0114	0.0083	0.0024
Divorced, Widowed, Separated	-0.0007	-0.0005	0.0000	0.0005	0.0004	0.0003	0.0001
Female	0.0219	0.0173	0.0025	-0.0145	-0.0140	-0.0103	-0.0029

Table B.4 Marginal Effects for Consumers Confidence for Segment Afraid

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
MTI	0.0302	-0.0081	-0.0106	-0.0076	-0.0027	-0.0011	-0.0001
Age	0.0016	-0.0004	-0.0005	-0.0004	-0.0001	-0.0001	0.0000
Middle Atlantic	-0.0375	0.0093	0.0132	0.0098	0.0035	0.0015	0.0002
East North Central	-0.1001	0.0214	0.0352	0.0278	0.0104	0.0048	0.0005
West North Central	-0.0224	0.0057	0.0079	0.0058	0.0021	0.0009	0.0001
South Atlantic	-0.0846	0.0193	0.0298	0.0229	0.0084	0.0038	0.0004
East South Central	-0.0220	0.0056	0.0077	0.0057	0.0020	0.0009	0.0001
West South Central	-0.0469	0.0113	0.0165	0.0124	0.0045	0.0020	0.0002
Mountain	-0.0739	0.0164	0.0260	0.0202	0.0075	0.0034	0.0004
Pacific	-0.0917	0.0199	0.0323	0.0253	0.0094	0.0043	0.0005
Newspaper	-0.0748	0.0167	0.0263	0.0204	0.0075	0.0034	0.0004

Table B.4 Marginal Effects for Consumers Confidence for Segment Afraid

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
Magazines	-0.3262	-0.0141	0.1001	0.1249	0.0658	0.0418	0.0077
Radio	-0.0439	0.0104	0.0154	0.0117	0.0042	0.0019	0.0002
Internet	-0.0659	0.0159	0.0232	0.0175	0.0063	0.0028	0.0003
Local Church	-0.1449	0.0225	0.0508	0.0441	0.0178	0.0087	0.0011
Other (Specify)	0.2865	-0.1269	-0.0909	-0.0494	-0.0139	-0.0050	-0.0004
30 through 39 Years	0.0492	-0.0146	-0.0171	-0.0118	-0.0040	-0.0016	-0.0002
40 through 49 Years	0.1482	-0.0488	-0.0507	-0.0331	-0.0107	-0.0043	-0.0004
50 through 59 Years	0.1340	-0.0414	-0.0463	-0.0312	-0.0104	-0.0043	-0.0004
60 Years and Over	0.1010	-0.0279	-0.0353	-0.0251	-0.0087	-0.0037	-0.0004
$30,000 - $49,999	-0.0063	0.0017	0.0022	0.0016	0.0006	0.0002	0.0000
$50,000 - $74,999	-0.0625	0.0150	0.0220	0.0166	0.0060	0.0027	0.0003
$75,000 and Over	-0.1067	0.0234	0.0375	0.0293	0.0109	0.0050	0.0006
2 Members	0.0474	-0.0129	-0.0166	-0.0118	-0.0041	-0.0017	-0.0002
3 - 3 Members	0.0886	-0.0277	-0.0306	-0.0205	-0.0068	-0.0028	-0.0003
4 - 4 Members	0.1171	-0.0390	-0.0401	-0.0260	-0.0084	-0.0033	-0.0003
5 - 5 or More Members	0.0941	-0.0304	-0.0324	-0.0213	-0.0069	-0.0028	-0.0003
Black/African-American	-0.0182	0.0047	0.0064	0.0047	0.0017	0.0007	0.0001
Asian or Pacific Islander	-0.0204	0.0052	0.0072	0.0053	0.0019	0.0008	0.0001
American Indian, Aleut Eskimo	-0.0592	0.0133	0.0208	0.0161	0.0059	0.0027	0.0003
Other	-0.0694	0.0151	0.0244	0.0191	0.0071	0.0032	0.0004
Grade School	0.4940	-0.2784	-0.1326	-0.0613	-0.0159	-0.0054	-0.0004
Some High School	-0.1426	0.0233	0.0500	0.0428	0.0171	0.0083	0.0010
Some College-no degree	-0.0268	0.0070	0.0094	0.0068	0.0024	0.0010	0.0001
Graduated College –Associate's Degree (2 years)	-0.0327	0.0081	0.0115	0.0085	0.0030	0.0013	0.0001
Graduated College- Bachelor's Degree (4 years)	-0.0635	0.0151	0.0223	0.0169	0.0061	0.0027	0.0003
Post Graduate Degree	-0.0237	0.0060	0.0083	0.0061	0.0022	0.0009	0.0001
Never Married	-0.0657	0.0152	0.0231	0.0177	0.0065	0.0029	0.0003
Divorced, Widowed, Separated	0.0572	-0.0161	-0.0200	-0.0141	-0.0048	-0.0020	-0.0002

Table B.4 Marginal Effects for Consumers Confidence for Segment Afraid

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
Female	0.0953	-0.0208	-0.0336	-0.0263	-0.0098	-0.0044	-0.0005

Table B.5 Marginal Effects for Consumers Confidence for Segment Trendy and Adventurists

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
MTI	0.0572	0.0537	0.0301	-0.0477	-0.0587	-0.0244	-0.0103
Age	0.0012	0.0011	0.0006	-0.0010	-0.0012	-0.0005	-0.0002
Middle Atlantic	0.0017	0.0015	0.0009	-0.0014	-0.0017	-0.0007	-0.0003
East North Central	-0.0172	-0.0169	-0.0105	0.0141	0.0188	0.0081	0.0035
West North Central	-0.0205	-0.0208	-0.0136	0.0167	0.0233	0.0103	0.0046
South Atlantic	0.0113	0.0103	0.0054	-0.0094	-0.0111	-0.0045	-0.0019
East South Central	0.0460	0.0367	0.0136	-0.0380	-0.0383	-0.0144	-0.0056
West South Central	-0.0027	-0.0026	-0.0015	0.0022	0.0028	0.0012	0.0005
Mountain	-0.0343	-0.0368	-0.0271	0.0270	0.0424	0.0197	0.0092
Pacific	-0.0242	-0.0244	-0.0159	0.0197	0.0273	0.0120	0.0053
Newspaper	-0.0104	-0.0101	-0.0061	0.0086	0.0111	0.0047	0.0020
Magazines	-0.0612	-0.0775	-0.0772	0.0357	0.0960	0.0540	0.0303
Radio	0.0067	0.0062	0.0033	-0.0056	-0.0067	-0.0027	-0.0011
Internet	-0.0055	-0.0053	-0.0030	0.0046	0.0058	0.0024	0.0010
Local Church	0.1009	0.0658	0.0099	-0.0792	-0.0665	-0.0228	-0.0081
Other (Specify)	-0.0402	-0.0452	-0.0365	0.0302	0.0532	0.0259	0.0126
30 through 39 Years	0.0284	0.0249	0.0119	-0.0237	-0.0266	-0.0106	-0.0043
40 through 49 Years	0.0349	0.0300	0.0138	-0.0290	-0.0320	-0.0126	-0.0051
50 through 59 Years	0.0282	0.0245	0.0116	-0.0235	-0.0262	-0.0104	-0.0042
60 Years and Over	0.0203	0.0182	0.0092	-0.0170	-0.0196	-0.0079	-0.0033
$30,000 - $49,999	-0.0019	-0.0018	-0.0010	0.0016	0.0020	0.0008	0.0004
$50,000 - $74,999	0.0078	0.0071	0.0038	-0.0065	-0.0077	-0.0032	-0.0013
$75,000 and Over	0.0068	0.0063	0.0035	-0.0057	-0.0069	-0.0029	-0.0012

Table B.5 Marginal Effects for Consumers Confidence for Segment Trendy and Adventurists

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
2 Members	0.0215	0.0197	0.0104	-0.0180	-0.0213	-0.0087	-0.0036
3 - 3 Members	0.0070	0.0064	0.0034	-0.0058	-0.0069	-0.0028	-0.0012
4 - 4 Members	0.0443	0.0363	0.0146	-0.0368	-0.0382	-0.0146	-0.0057
5 - 5 or More Members	0.0366	0.0305	0.0129	-0.0304	-0.0322	-0.0124	-0.0049
Black/African-American	0.0398	0.0325	0.0130	-0.0330	-0.0341	-0.0130	-0.0051
Asian or Pacific Islander	0.0478	0.0379	0.0137	-0.0395	-0.0394	-0.0148	-0.0057
American Indian, Aleut Eskimo	0.0614	0.0458	0.0135	-0.0501	-0.0470	-0.0171	-0.0064
Other	-0.0095	-0.0093	-0.0057	0.0079	0.0103	0.0044	0.0019
Grade School	-0.0585	-0.0731	-0.0711	0.0356	0.0901	0.0497	0.0274
Some High School	0.0175	0.0154	0.0074	-0.0147	-0.0164	-0.0065	-0.0026
Some College-no degree	0.0128	0.0117	0.0062	-0.0107	-0.0127	-0.0052	-0.0022
Graduated College –Associate's Degree (2 years)	0.0149	0.0133	0.0067	-0.0125	-0.0143	-0.0058	-0.0024
Graduated College- Bachelor's Degree (4 years)	-0.0162	-0.0157	-0.0094	0.0134	0.0173	0.0074	0.0032
Post Graduate Degree	-0.0432	-0.0468	-0.0353	0.0334	0.0541	0.0255	0.0121
Never Married	0.0108	0.0099	0.0053	-0.0090	-0.0108	-0.0044	-0.0018
Divorced, Widowed, Separated	0.0167	0.0150	0.0077	-0.0139	-0.0162	-0.0066	-0.0027
Female	0.0362	0.0364	0.0239	-0.0294	-0.0410	-0.0181	-0.0081

Table B.6 Marginal Effects for Consumers Confidence for Segment Freedom Seeker

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
MTI	0.0593	0.0588	0.0317	-0.0328	-0.0577	-0.0401	-0.0192
Age	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Middle Atlantic	0.0372	0.0330	0.0139	-0.0216	-0.0323	-0.0209	-0.0093
East North Central	0.0184	0.0173	0.0083	-0.0105	-0.0169	-0.0113	-0.0052
West North Central	0.0044	0.0043	0.0022	-0.0025	-0.0042	-0.0029	-0.0014
South Atlantic	0.0553	0.0474	0.0185	-0.0323	-0.0464	-0.0295	-0.0130
East South Central	0.0519	0.0426	0.0146	-0.0307	-0.0417	-0.0257	-0.0110

Table B.6 Marginal Effects for Consumers Confidence for Segment Freedom Seeker

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
West South Central	0.0021	0.0020	0.0011	-0.0011	-0.0020	-0.0014	-0.0007
Mountain	0.0120	0.0114	0.0056	-0.0068	-0.0112	-0.0076	-0.0035
Pacific	0.0005	0.0005	0.0003	-0.0003	-0.0005	-0.0003	-0.0002
Newspaper	-0.0423	-0.0475	-0.0325	0.0199	0.0466	0.0363	0.0194
Magazines	0.0017	0.0017	0.0009	-0.0009	-0.0016	-0.0011	-0.0005
Radio	-0.0163	-0.0172	-0.0105	0.0085	0.0169	0.0124	0.0062
Internet	-0.0035	-0.0035	-0.0019	0.0019	0.0034	0.0024	0.0011
Local Church	0.1074	0.0718	0.0103	-0.0631	-0.0711	-0.0398	-0.0156
Other (Specify)	-0.0556	-0.0728	-0.0645	0.0150	0.0708	0.0655	0.0416
30 through 39 Years	0.0150	0.0142	0.0069	-0.0085	-0.0139	-0.0094	-0.0043
40 through 49 Years	0.0403	0.0355	0.0148	-0.0235	-0.0348	-0.0224	-0.0100
50 through 59 Years	0.0749	0.0622	0.0225	-0.0436	-0.0609	-0.0383	-0.0168
60 Years and Over	0.0735	0.0674	0.0318	-0.0410	-0.0661	-0.0446	-0.0210
$30,000 - $49,999	-0.0093	-0.0095	-0.0053	0.0051	0.0093	0.0066	0.0032
$50,000 - $74,999	0.0037	0.0037	0.0019	-0.0021	-0.0036	-0.0025	-0.0012
$75,000 and Over	-0.0208	-0.0214	-0.0124	0.0111	0.0210	0.0151	0.0074
2 Members	0.0094	0.0093	0.0049	-0.0052	-0.0091	-0.0063	-0.0030
3 - 3 Members	0.0255	0.0233	0.0105	-0.0147	-0.0228	-0.0150	-0.0068
4 - 4 Members	0.0160	0.0150	0.0072	-0.0092	-0.0147	-0.0098	-0.0045
5 - 5 or More Members	0.0457	0.0384	0.0140	-0.0270	-0.0375	-0.0234	-0.0101
Black/African-American	-0.0048	-0.0049	-0.0027	0.0026	0.0048	0.0034	0.0016
Asian or Pacific Islander	0.0272	0.0243	0.0103	-0.0159	-0.0237	-0.0154	-0.0068
American Indian, Aleut Eskimo	-0.0258	-0.0287	-0.0193	0.0125	0.0283	0.0217	0.0114
Other	-0.0014	-0.0014	-0.0008	0.0008	0.0014	0.0010	0.0005
Grade School	-0.0546	-0.0714	-0.0631	0.0150	0.0695	0.0641	0.0406
Some High School	0.0296	0.0261	0.0108	-0.0173	-0.0256	-0.0164	-0.0073
Some College-no degree	-0.0155	-0.0158	-0.0091	0.0083	0.0156	0.0111	0.0054
Graduated College –Associate's Degree (2 years)	-0.0379	-0.0432	-0.0303	0.0175	0.0425	0.0334	0.0181

Table B.6 Marginal Effects for Consumers Confidence for Segment Freedom Seeker

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
Graduated College- Bachelor's Degree (4 years)	-0.0431	-0.0458	-0.0286	0.0218	0.0450	0.0335	0.0172
Post Graduate Degree	-0.0642	-0.0739	-0.0540	0.0272	0.0724	0.0591	0.0334
Never Married	-0.0075	-0.0075	-0.0042	0.0041	0.0074	0.0052	0.0025
Divorced, Widowed, Separated	-0.0002	-0.0002	-0.0001	0.0001	0.0002	0.0002	0.0001
Female	0.0381	0.0403	0.0248	-0.0195	-0.0395	-0.0292	-0.0148

Table B.7 Marginal Effects for Consumers Confidence for Segment Life Planner/Freedom Seeker

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
MTI	0.0475	0.0340	0.0004	-0.0305	-0.0304	-0.0146	-0.0064
Age	0.0006	0.0004	0.0000	-0.0004	-0.0004	-0.0002	-0.0001
Middle Atlantic	0.0036	0.0026	0.0000	-0.0023	-0.0023	-0.0011	-0.0005
East North Central	0.0137	0.0094	-0.0002	-0.0087	-0.0085	-0.0040	-0.0017
West North Central	-0.0544	-0.0476	-0.0094	0.0350	0.0423	0.0228	0.0112
South Atlantic	0.0366	0.0239	-0.0017	-0.0231	-0.0216	-0.0099	-0.0042
East South Central	0.0177	0.0119	-0.0005	-0.0112	-0.0107	-0.0050	-0.0021
West South Central	-0.0244	-0.0188	-0.0015	0.0158	0.0168	0.0084	0.0038
Mountain	-0.0305	-0.0242	-0.0026	0.0197	0.0216	0.0109	0.0051
Pacific	-0.0222	-0.0171	-0.0013	0.0144	0.0152	0.0076	0.0034
Newspaper	-0.0400	-0.0324	-0.0041	0.0259	0.0289	0.0148	0.0070
Magazines	0.2783	0.0609	-0.0810	-0.1325	-0.0844	-0.0307	-0.0105
Radio	-0.0538	-0.0468	-0.0090	0.0347	0.0417	0.0224	0.0110
Internet	-0.0308	-0.0231	-0.0013	0.0199	0.0207	0.0102	0.0046
Local Church	0.1778	0.0625	-0.0426	-0.0951	-0.0673	-0.0260	-0.0093
Other (Specify)	-0.1121	-0.1391	-0.0791	0.0498	0.1233	0.0920	0.0651
30 through 39 Years	-0.0031	-0.0022	0.0000	0.0020	0.0020	0.0010	0.0004
40 through 49 Years	0.0068	0.0048	0.0000	-0.0044	-0.0043	-0.0021	-0.0009
50 through 59 Years	0.0233	0.0159	-0.0005	-0.0148	-0.0143	-0.0067	-0.0029

Table B.7 Marginal Effects for Consumers Confidence for Segment Life Planner/Freedom Seeker

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
60 Years and Over	0.0200	0.0137	-0.0004	-0.0127	-0.0123	-0.0058	-0.0025
$30,000 - $49,999	0.0132	0.0091	-0.0002	-0.0084	-0.0082	-0.0039	-0.0017
$50,000 - $74,999	0.0080	0.0056	0.0000	-0.0051	-0.0050	-0.0024	-0.0010
$75,000 and Over	-0.0123	-0.0089	-0.0002	0.0079	0.0080	0.0038	0.0017
2 Members	0.0152	0.0107	0.0000	-0.0097	-0.0096	-0.0046	-0.0020
3 - 3 Members	0.0378	0.0242	-0.0021	-0.0237	-0.0219	-0.0100	-0.0042
4 - 4 Members	0.0418	0.0263	-0.0027	-0.0261	-0.0239	-0.0108	-0.0045
5 - 5 or More Members	0.0183	0.0123	-0.0006	-0.0116	-0.0111	-0.0052	-0.0022
Black/African-American	0.0787	0.0424	-0.0103	-0.0474	-0.0397	-0.0171	-0.0067
Asian or Pacific Islander	0.0407	0.0248	-0.0033	-0.0253	-0.0227	-0.0102	-0.0042
American Indian, Aleut Eskimo	-0.0346	-0.0286	-0.0041	0.0224	0.0255	0.0132	0.0062
Other	0.0980	0.0482	-0.0159	-0.0575	-0.0461	-0.0192	-0.0074
Grade School							
Some High School	-0.0514	-0.0457	-0.0097	0.0331	0.0407	0.0221	0.0110
Some College-no degree	0.0074	0.0052	0.0000	-0.0047	-0.0047	-0.0022	-0.0010
Graduated College –Associate's Degree (2 years)	-0.0118	-0.0088	-0.0004	0.0076	0.0078	0.0038	0.0017
Graduated College- Bachelor's Degree (4 years)	-0.0467	-0.0364	-0.0033	0.0301	0.0325	0.0163	0.0075
Post Graduate Degree	-0.0862	-0.0793	-0.0202	0.0541	0.0708	0.0400	0.0209
Never Married	-0.0434	-0.0349	-0.0042	0.0280	0.0311	0.0159	0.0074
Divorced, Widowed, Separated	-0.0058	-0.0042	-0.0001	0.0037	0.0037	0.0018	0.0008
Female	0.0422	0.0327	0.0028	-0.0272	-0.0292	-0.0146	-0.0067

Table B.8 Marginal Effects for Consumers Confidence for Segment Life Planner

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
MTI	0.0705	0.0307	-0.0130	-0.0451	-0.0301	-0.0121	-0.0009
Age	0.0005	0.0002	-0.0001	-0.0003	-0.0002	-0.0001	0.0000

Table B.8 Marginal Effects for Consumers Confidence for Segment Life Planner

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
Middle Atlantic	-0.0153	-0.0070	0.0026	0.0099	0.0068	0.0028	0.0002
East North Central	-0.0479	-0.0236	0.0065	0.0318	0.0228	0.0097	0.0008
West North Central	-0.0309	-0.0150	0.0044	0.0204	0.0145	0.0061	0.0005
South Atlantic	-0.0363	-0.0174	0.0054	0.0239	0.0168	0.0070	0.0005
East South Central	0.0331	0.0127	-0.0073	-0.0204	-0.0128	-0.0049	-0.0003
West South Central	-0.0310	-0.0150	0.0045	0.0205	0.0145	0.0061	0.0005
Mountain	-0.0542	-0.0287	0.0056	0.0367	0.0276	0.0121	0.0010
Pacific	-0.0543	-0.0280	0.0063	0.0364	0.0269	0.0117	0.0009
NewsPaper	-0.0626	-0.0317	0.0077	0.0417	0.0306	0.0132	0.0010
Magazines	-0.0965	-0.0631	-0.0024	0.0679	0.0606	0.0305	0.0029
Radio	-0.0909	-0.0554	0.0021	0.0633	0.0531	0.0256	0.0023
Internet	-0.0255	-0.0117	0.0042	0.0166	0.0114	0.0047	0.0003
Local Church							
Other (Specify)	-0.1189	-0.0861	-0.0135	0.0840	0.0836	0.0459	0.0049
30 through 39 Years	0.0183	0.0076	-0.0037	-0.0116	-0.0075	-0.0030	-0.0002
40 through 49 Years	0.0177	0.0074	-0.0035	-0.0112	-0.0073	-0.0029	-0.0002
50 through 59 Years	0.0568	0.0220	-0.0123	-0.0351	-0.0222	-0.0086	-0.0006
60 Years and Over	0.0623	0.0244	-0.0133	-0.0386	-0.0246	-0.0095	-0.0007
$30,000 - $49,999	-0.0036	-0.0016	0.0007	0.0023	0.0016	0.0006	0.0000
$50,000 - $74,999	-0.0062	-0.0027	0.0011	0.0040	0.0027	0.0011	0.0001
$75,000 and Over	-0.0216	-0.0094	0.0040	0.0138	0.0092	0.0037	0.0003
2 Members	0.0406	0.0171	-0.0078	-0.0257	-0.0170	-0.0067	-0.0005
3 - 3 Members	0.0614	0.0222	-0.0143	-0.0372	-0.0229	-0.0086	-0.0006
4 - 4 Members	0.0350	0.0136	-0.0075	-0.0217	-0.0137	-0.0053	-0.0004
5 - 5 or More Members	0.0391	0.0147	-0.0088	-0.0240	-0.0150	-0.0057	-0.0004
Black/African-American	0.0226	0.0090	-0.0048	-0.0141	-0.0090	-0.0035	-0.0002
Asian or Pacific Islander	0.0831	0.0255	-0.0222	-0.0480	-0.0278	-0.0099	-0.0006
American Indian, Aleut Eskimo	-0.0350	-0.0177	0.0045	0.0234	0.0170	0.0073	0.0006

Table B.8 Marginal Effects for Consumers Confidence for Segment Life Planner

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
Other	-0.0023	-0.0010	0.0004	0.0015	0.0010	0.0004	0.0000
Grade School							
Some High School	-0.0267	-0.0130	0.0038	0.0177	0.0126	0.0053	0.0004
Some College-no degree	-0.0301	-0.0140	0.0048	0.0196	0.0136	0.0056	0.0004
Graduated College –Associate's Degree (2 years)	-0.0392	-0.0195	0.0052	0.0261	0.0188	0.0080	0.0006
Graduated College- Bachelor's Degree (4 years)	-0.1090	-0.0537	0.0139	0.0716	0.0525	0.0228	0.0018
Post Graduate Degree	-0.1213	-0.0682	0.0075	0.0822	0.0661	0.0310	0.0028
Never Married	-0.0056	-0.0025	0.0010	0.0036	0.0024	0.0010	0.0001
Divorced, Widowed, Separated	-0.0018	-0.0008	0.0003	0.0011	0.0008	0.0003	0.0000
Female	0.0808	0.0437	-0.0073	-0.0547	-0.0420	-0.0189	-0.0016

Table B.9 Marginal Effects for Consumers Confidence for Segment Predestinarians/Optimists

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
MTI	0.0163	0.0029	-0.0054	-0.0070	-0.0046	-0.0017	-0.0005
Age	-0.0014	-0.0003	0.0005	0.0006	0.0004	0.0002	0.0000
Middle Atlantic	0.0379	0.0053	-0.0131	-0.0158	-0.0098	-0.0036	-0.0009
East North Central	-0.0145	-0.0027	0.0048	0.0063	0.0042	0.0016	0.0004
West North Central	-0.0500	-0.0117	0.0154	0.0227	0.0157	0.0062	0.0018
South Atlantic	0.0420	0.0060	-0.0145	-0.0175	-0.0110	-0.0040	-0.0010
East South Central	0.0750	0.0076	-0.0268	-0.0299	-0.0179	-0.0063	-0.0016
West South Central	-0.0320	-0.0067	0.0102	0.0142	0.0095	0.0037	0.0010
Mountain	0.0105	0.0017	-0.0035	-0.0045	-0.0029	-0.0011	-0.0003
Pacific	-0.0515	-0.0118	0.0160	0.0232	0.0159	0.0063	0.0018
Newspaper	-0.0510	-0.0116	0.0159	0.0230	0.0157	0.0062	0.0017
Magazines	-0.0689	-0.0189	0.0199	0.0323	0.0233	0.0096	0.0028
Radio	-0.0828	-0.0238	0.0232	0.0391	0.0287	0.0120	0.0036
Internet	-0.0179	-0.0034	0.0059	0.0078	0.0051	0.0020	0.0005

Table B.9 Marginal Effects for Consumers Confidence for Segment Predestinarians/Optimists

Variable	Not Confident	Category2	Category3	Category4	Category5	Category6	Confident
Local Church	0.1264	0.0046	-0.0471	-0.0468	-0.0262	-0.0088	-0.0021
Other (Specify)	-0.0767	-0.0219	0.0216	0.0362	0.0265	0.0111	0.0033
30 through 39 Years	0.0691	0.0075	-0.0245	-0.0278	-0.0168	-0.0060	-0.0015
40 through 49 Years	0.1542	0.0085	-0.0564	-0.0583	-0.0336	-0.0116	-0.0028
50 through 59 Years	0.1511	0.0118	-0.0544	-0.0587	-0.0347	-0.0122	-0.0031
60 Years and Over	0.1447	0.0239	-0.0479	-0.0614	-0.0399	-0.0152	-0.0042
$30,000 - $49,999	-0.0487	-0.0104	0.0155	0.0217	0.0146	0.0057	0.0016
$50,000 - $74,999	-0.0201	-0.0039	0.0065	0.0088	0.0058	0.0022	0.0006
$75,000 and Over	-0.0589	-0.0135	0.0182	0.0266	0.0183	0.0072	0.0020
2 Members	0.0126	0.0022	-0.0042	-0.0054	-0.0035	-0.0013	-0.0004
3 - 3 Members	0.0287	0.0043	-0.0098	-0.0121	-0.0076	-0.0028	-0.0007
4 - 4 Members	-0.0416	-0.0093	0.0130	0.0187	0.0128	0.0050	0.0014
5 - 5 or More Members	-0.0025	-0.0004	0.0008	0.0011	0.0007	0.0003	0.0001
Black/African-American	0.0846	0.0076	-0.0305	-0.0333	-0.0197	-0.0069	-0.0017
Asian or Pacific Islander	0.1937	-0.0044	-0.0737	-0.0664	-0.0352	-0.0113	-0.0026
American Indian, Aleut Eskimo	0.1924	-0.0046	-0.0733	-0.0658	-0.0349	-0.0112	-0.0026
Other	0.1056	0.0064	-0.0388	-0.0402	-0.0231	-0.0079	-0.0019
Grade School	0.7241	-0.2798	-0.2387	-0.1318	-0.0552	-0.0154	-0.0032
Some High School	0.0270	0.0039	-0.0093	-0.0113	-0.0071	-0.0026	-0.0007
Some College-no degree	-0.0485	-0.0097	0.0156	0.0213	0.0142	0.0055	0.0015
Graduated College –Associate's Degree (2 years)	-0.0729	-0.0187	0.0216	0.0337	0.0238	0.0097	0.0028
Graduated College- Bachelor's Degree (4 years)	-0.1163	-0.0338	0.0321	0.0549	0.0407	0.0172	0.0052
Post Graduate Degree	-0.1039	-0.0326	0.0275	0.0499	0.0378	0.0163	0.0050
Never Married	-0.1089	-0.0317	0.0301	0.0515	0.0380	0.0161	0.0049
Divorced, Widowed, Separated	-0.0520	-0.0105	0.0167	0.0230	0.0153	0.0059	0.0016
Female	0.0626	0.0147	-0.0193	-0.0284	-0.0196	-0.0078	-0.0022

APPENDIX C: PROBABILITY CURVE SHOWING THE EFFECT OF MTI AND MEDIA SOURCE ON CONSUMERS ATTITUDES REGARDING PREPAREDNESS OF U.S. FOOD SYSTEM TO DEAL WITH FOOD SAFETY

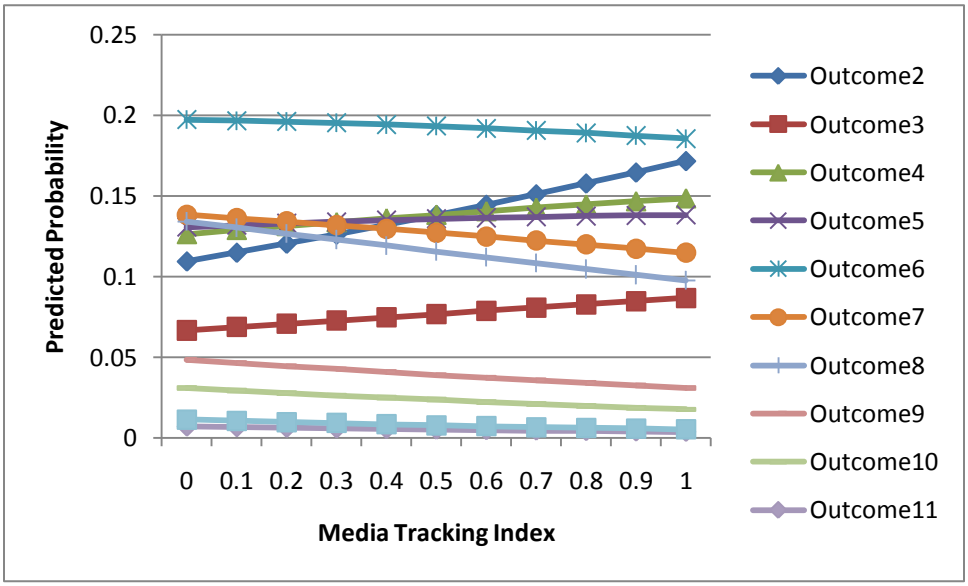

Figure C.1 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Overall Model

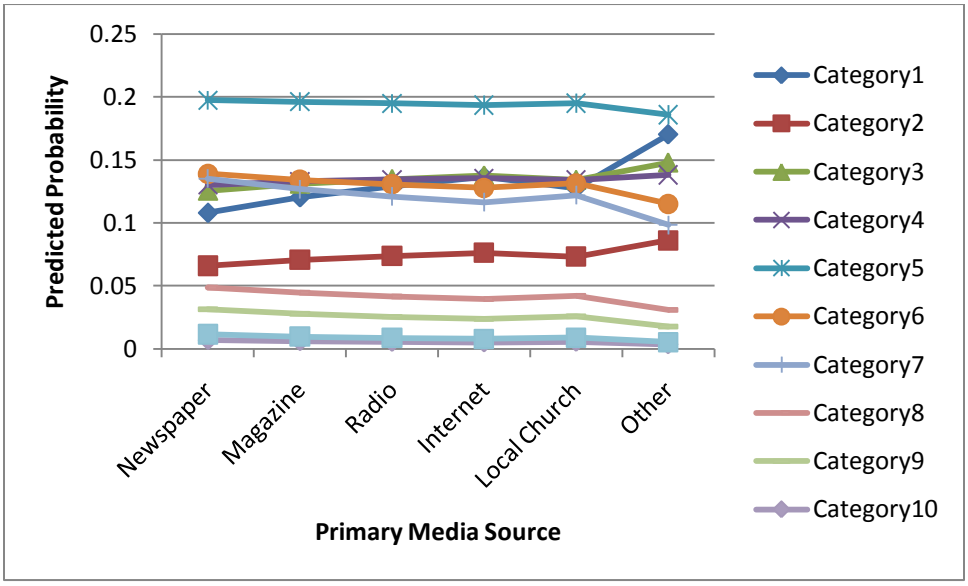

Figure C.2 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Overall Model

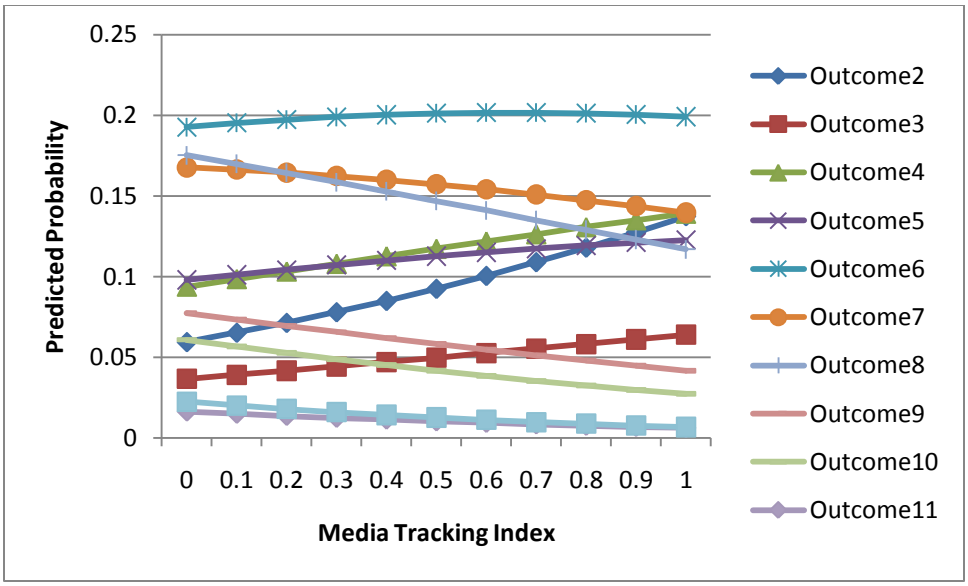

Figure C.3 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Non-Differentiators

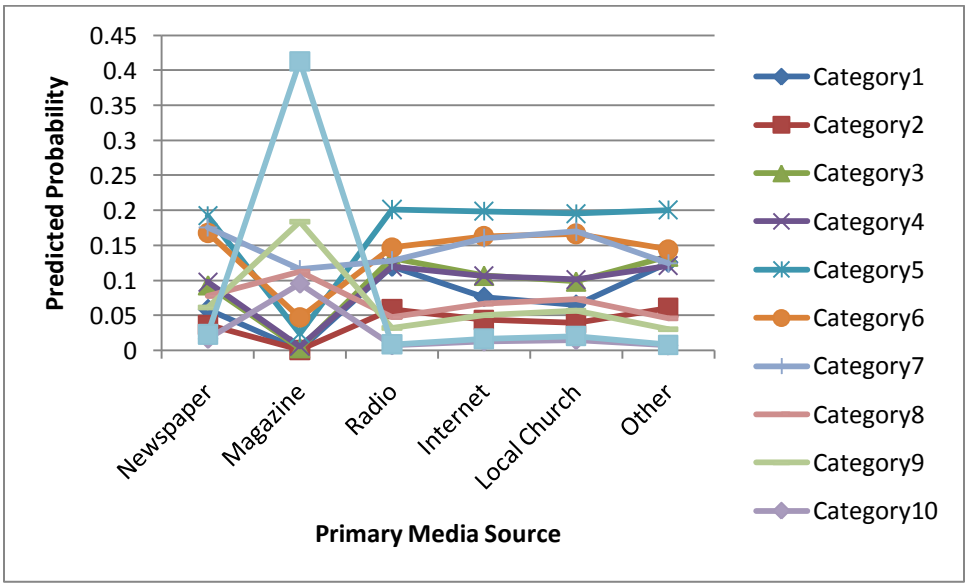

Figure C4 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Non-Differentiators

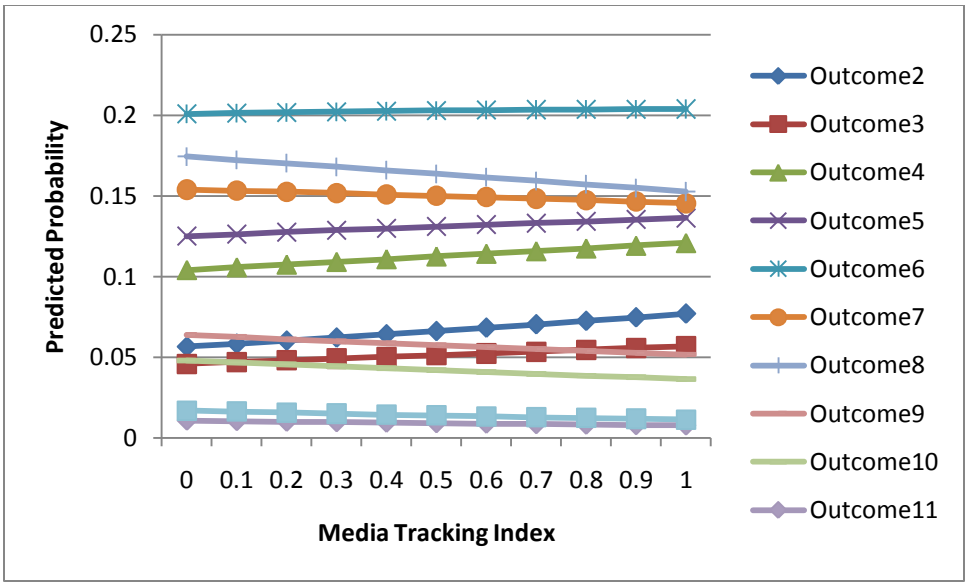

Figure C.5 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Predestinarians/Disciplined

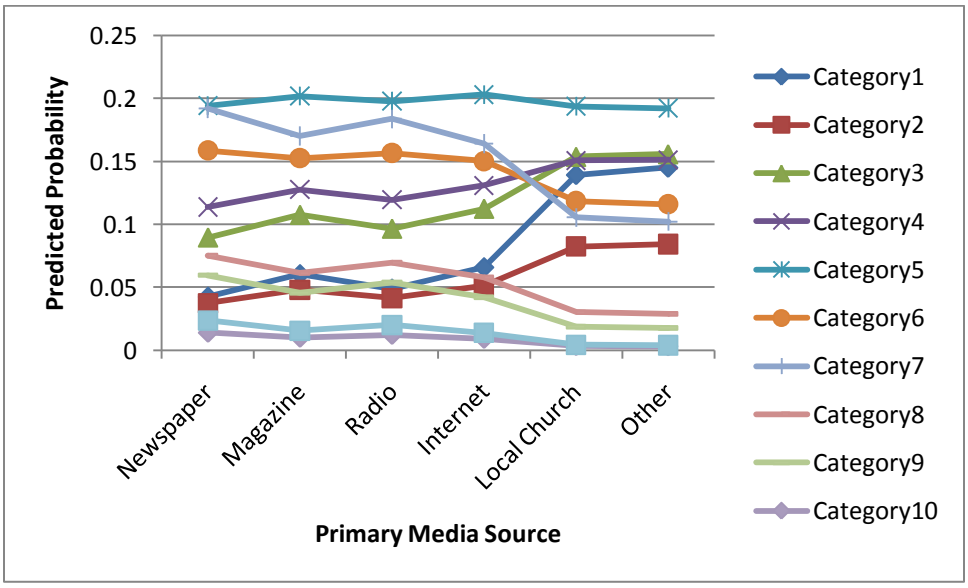

Figure C.6 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Predestinarians/Disciplined

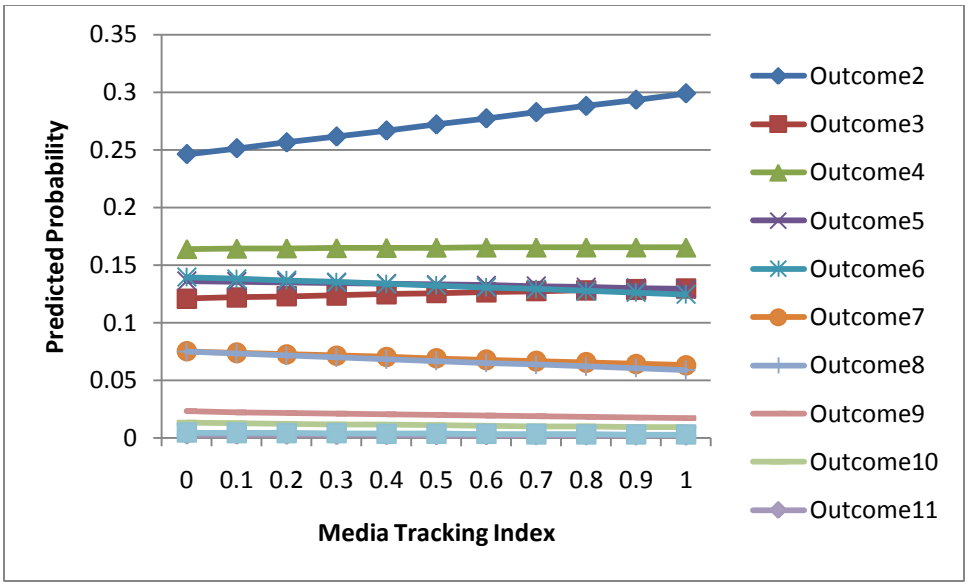

Figure C.7 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Afraid

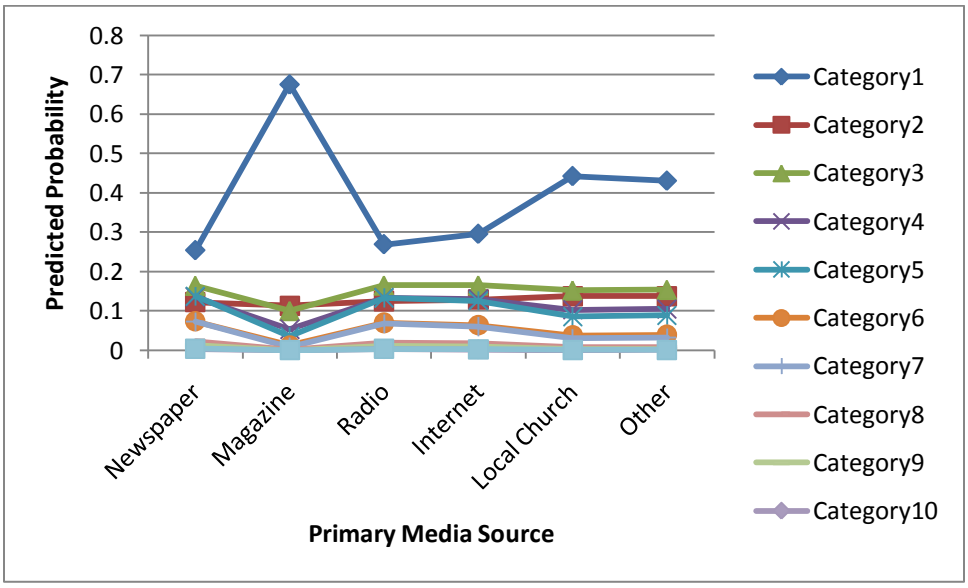

Figure C.8 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Afraid

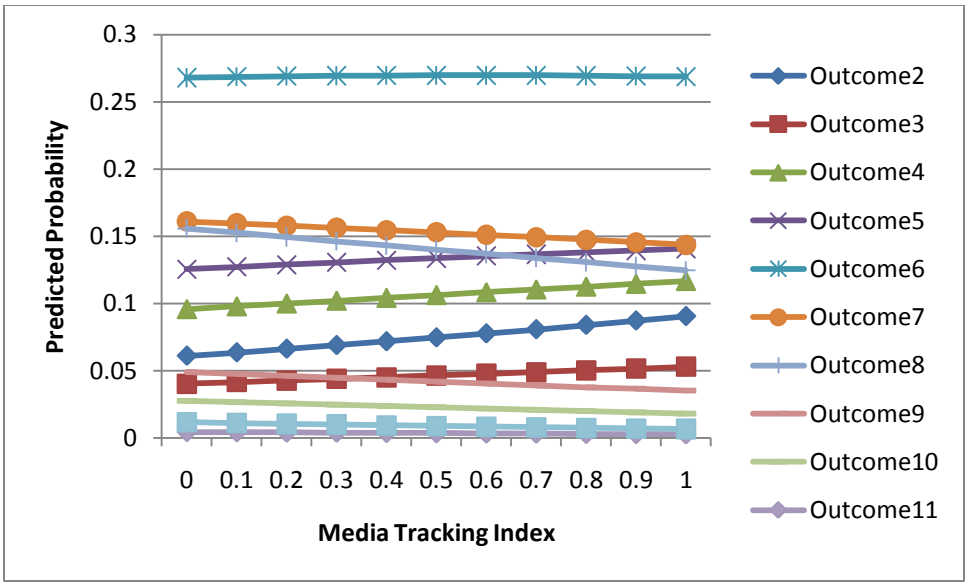

Figure C.9 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Trendy and Adventurist

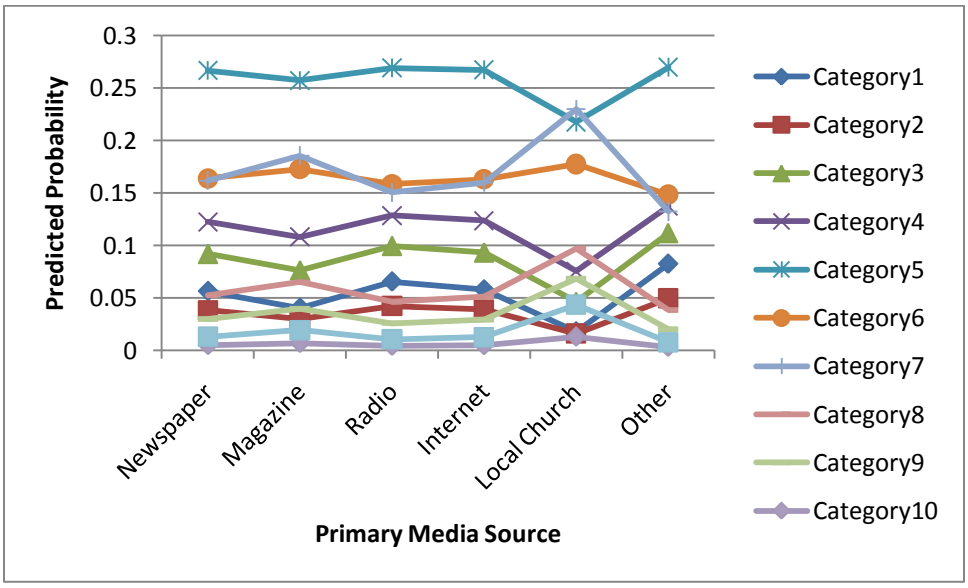

Figure C.10 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Trendy and Adventurist

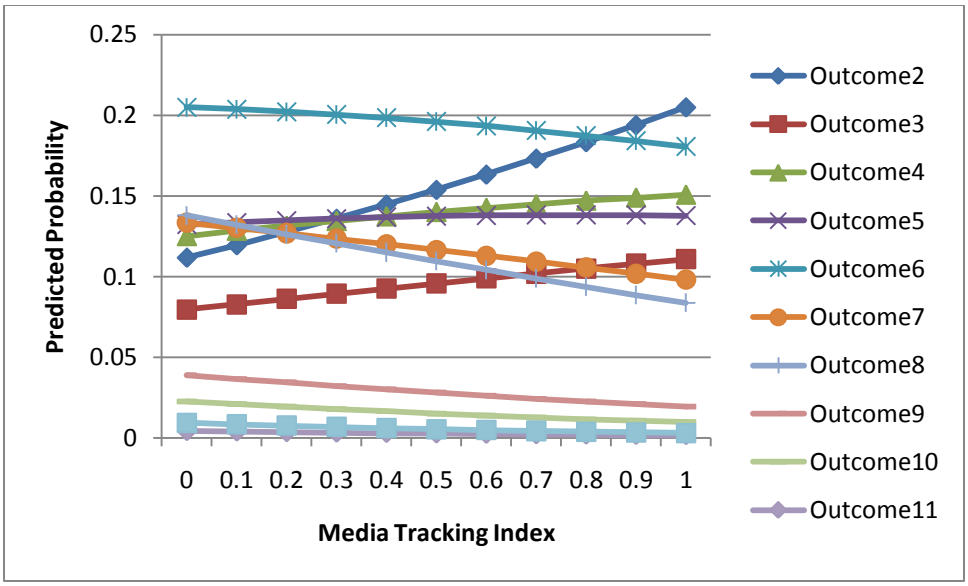

Figure C.11 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Freedom Seeker

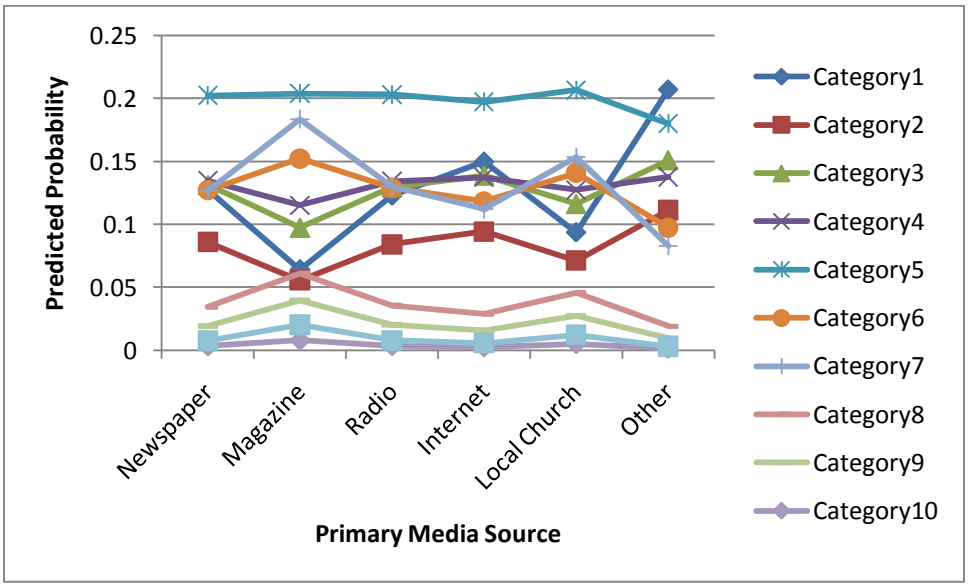

Figure C.12 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Freedom Seeker

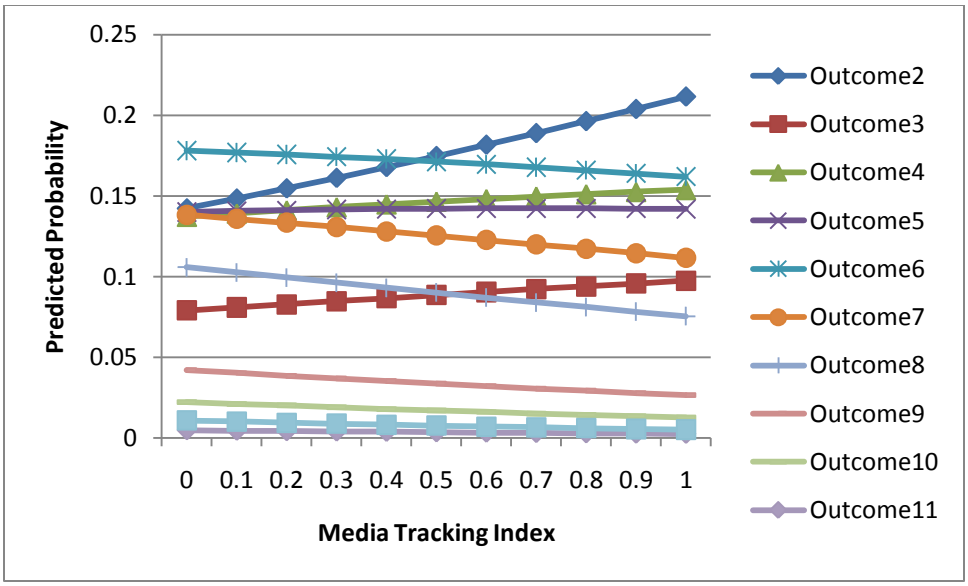

Figure C.13 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Life Planner/Freedom Seeker

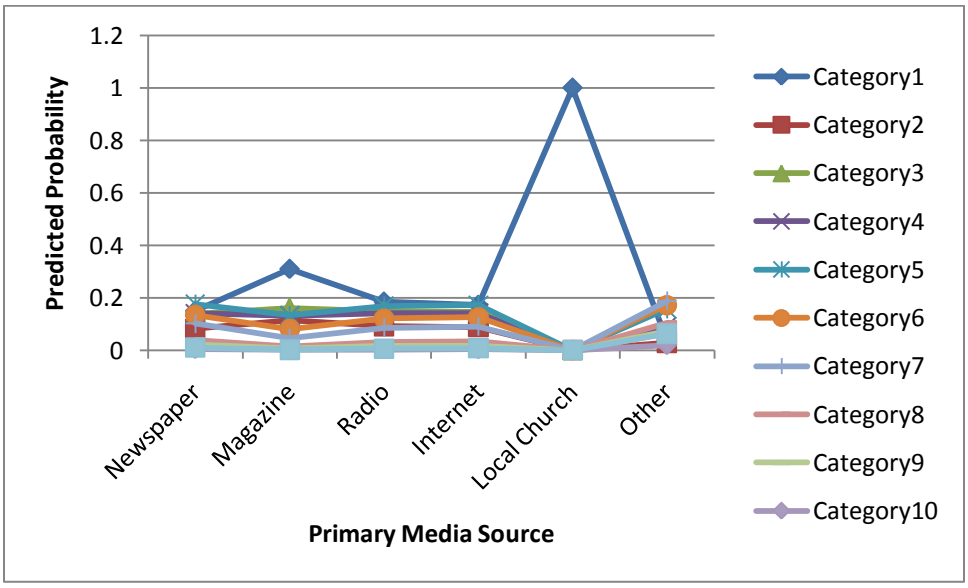

Figure C.14 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Life Planner/Freedom Seeker

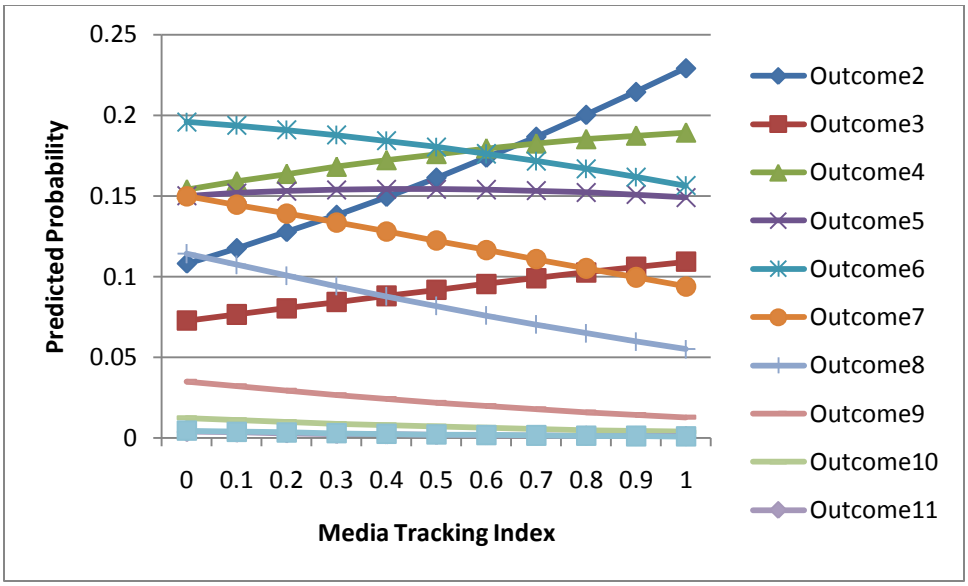

Figure C.15 Probability Curve Showing the Effect of MTI on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Life Planner

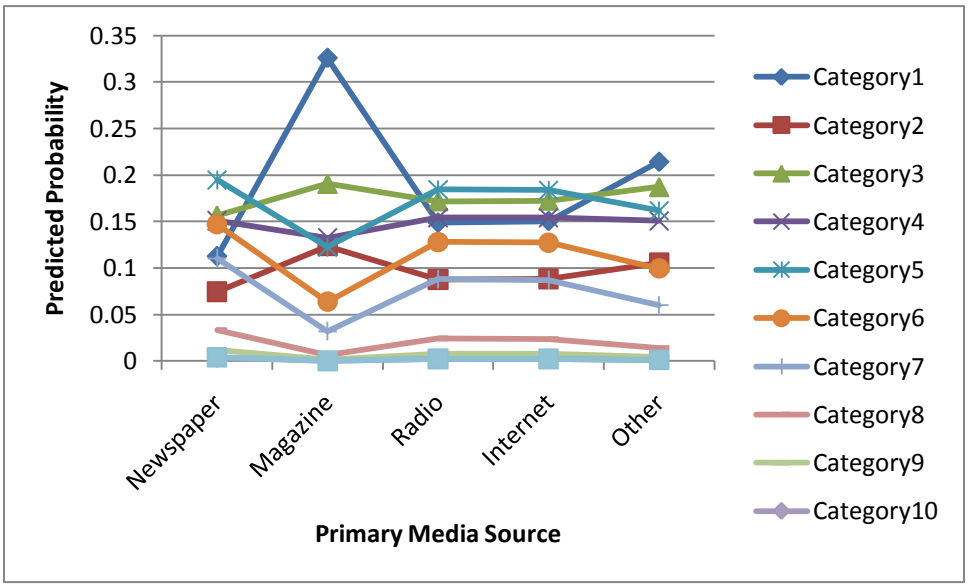

Figure C.16 Probability Curve Showing the Effect of Media Source on Consumers Attitudes Regarding Preparedness of U.S. Food System to Deal with Food Safety for the Segment Life Planner

APPENDIX D: MARGINAL EFFECTS FOR CONSUMERS ATTITUDES REGARDING PREPAREDNESS OF FOOD SYSTEM

Table D.1 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Overall Model

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
MTI	0.0562	0.0202	0.0244	0.0108	-0.0073	-0.0219	-0.0372	-0.0190	-0.0149	-0.0039	-0.0074
Age	-0.0002	-0.0001	-0.0001	0.0000	0.0000	0.0001	0.0001	0.0001	0.0000	0.0000	0.0000
Middle Atlantic	-0.0112	-0.0041	-0.0051	-0.0023	0.0013	0.0044	0.0076	0.0039	0.0031	0.0008	0.0016
East North Central	-0.0181	-0.0067	-0.0084	-0.0040	0.0019	0.0070	0.0125	0.0065	0.0052	0.0014	0.0027
West North Central	-0.0300	-0.0116	-0.0148	-0.0075	0.0020	0.0116	0.0216	0.0117	0.0095	0.0025	0.0051
South Atlantic	-0.0127	-0.0047	-0.0057	-0.0027	0.0014	0.0049	0.0086	0.0045	0.0036	0.0009	0.0018
East South Central	-0.0052	-0.0019	-0.0023	-0.0010	0.0006	0.0020	0.0035	0.0018	0.0014	0.0004	0.0007
West South Central	-0.0294	-0.0113	-0.0144	-0.0072	0.0022	0.0113	0.0210	0.0113	0.0092	0.0024	0.0049
Mountain	0.0088	0.0031	0.0037	0.0016	-0.0013	-0.0034	-0.0057	-0.0029	-0.0022	-0.0006	-0.0011
Pacific	-0.0172	-0.0064	-0.0080	-0.0038	0.0018	0.0067	0.0119	0.0062	0.0050	0.0013	0.0026
NewsPaper	-0.0137	-0.0051	-0.0063	-0.0029	0.0015	0.0053	0.0094	0.0049	0.0039	0.0010	0.0020
Magazines	0.0006	0.0002	0.0003	0.0001	-0.0001	-0.0002	-0.0004	-0.0002	-0.0002	0.0000	-0.0001
Radio	0.0101	0.0035	0.0042	0.0017	-0.0015	-0.0039	-0.0065	-0.0033	-0.0025	-0.0006	-0.0012
Internet	0.0219	0.0076	0.0090	0.0037	-0.0033	-0.0085	-0.0140	-0.0070	-0.0054	-0.0014	-0.0026
Local Church	0.0078	0.0028	0.0033	0.0014	-0.0011	-0.0030	-0.0051	-0.0026	-0.0020	-0.0005	-0.0010
Other (Specify)	0.0508	0.0159	0.0173	0.0054	-0.0103	-0.0192	-0.0289	-0.0137	-0.0102	-0.0025	-0.0046
30 through 39 Years	0.0353	0.0119	0.0136	0.0051	-0.0060	-0.0136	-0.0217	-0.0106	-0.0081	-0.0020	-0.0038
40 through 49 Years	0.0525	0.0172	0.0194	0.0070	-0.0095	-0.0201	-0.0314	-0.0153	-0.0116	-0.0029	-0.0054
50 through 59 Years	0.0623	0.0203	0.0228	0.0081	-0.0113	-0.0237	-0.0371	-0.0180	-0.0136	-0.0034	-0.0064
60 Years and Over	0.0634	0.0214	0.0247	0.0096	-0.0103	-0.0243	-0.0392	-0.0194	-0.0149	-0.0038	-0.0072
$30,000 - $49,999	0.0003	0.0001	0.0001	0.0001	0.0000	-0.0001	-0.0002	-0.0001	-0.0001	0.0000	0.0000
$50,000 - $74,999	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
$75,000 and Over	0.0015	0.0005	0.0006	0.0003	-0.0002	-0.0006	-0.0010	-0.0005	-0.0004	-0.0001	-0.0002
2 Members	-0.0022	-0.0008	-0.0010	-0.0004	0.0003	0.0009	0.0015	0.0008	0.0006	0.0002	0.0003

Table D.1 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Overall Model

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
3 Members	-0.0134	-0.0050	-0.0061	-0.0029	0.0015	0.0052	0.0092	0.0048	0.0038	0.0010	0.0019
4 Members	-0.0095	-0.0035	-0.0043	-0.0020	0.0011	0.0037	0.0064	0.0033	0.0026	0.0007	0.0013
5 or More Members	-0.0206	-0.0078	-0.0098	-0.0048	0.0018	0.0080	0.0144	0.0077	0.0061	0.0016	0.0032
Black/African-American	-0.0287	-0.0111	-0.0142	-0.0073	0.0019	0.0111	0.0207	0.0112	0.0091	0.0024	0.0049
Asian or Pacific Islander	-0.0467	-0.0192	-0.0257	-0.0144	0.0002	0.0176	0.0360	0.0205	0.0173	0.0047	0.0099
American Indian, Aleut Eskimo	0.0028	0.0010	0.0012	0.0005	-0.0004	-0.0011	-0.0018	-0.0009	-0.0007	-0.0002	-0.0004
Other	-0.0111	-0.0041	-0.0051	-0.0024	0.0012	0.0043	0.0076	0.0040	0.0032	0.0008	0.0016
Grade School	-0.0373	-0.0150	-0.0197	-0.0106	0.0012	0.0142	0.0280	0.0156	0.0129	0.0035	0.0072
Some High School	0.0051	0.0018	0.0022	0.0009	-0.0007	-0.0020	-0.0033	-0.0017	-0.0013	-0.0003	-0.0006
Some College-no degree	0.0234	0.0082	0.0096	0.0040	-0.0035	-0.0091	-0.0150	-0.0075	-0.0058	-0.0015	-0.0028
Graduated College –Associate's Degree (2 years)	0.0185	0.0064	0.0075	0.0030	-0.0029	-0.0072	-0.0117	-0.0058	-0.0045	-0.0011	-0.0022
Graduated College- Bachelor's Degree (4 years)	0.0252	0.0087	0.0103	0.0042	-0.0038	-0.0097	-0.0160	-0.0080	-0.0062	-0.0016	-0.0030
Post Graduate Degree	0.0347	0.0116	0.0133	0.0050	-0.0059	-0.0133	-0.0212	-0.0104	-0.0079	-0.0020	-0.0037
Never Married	0.0019	0.0007	0.0008	0.0004	-0.0003	-0.0008	-0.0013	-0.0007	-0.0005	-0.0001	-0.0003
Divorced, Widowed, Separated	0.0024	0.0009	0.0010	0.0004	-0.0003	-0.0009	-0.0016	-0.0008	-0.0006	-0.0002	-0.0003
Female	0.0287	0.0108	0.0136	0.0066	-0.0026	-0.0111	-0.0201	-0.0106	-0.0085	-0.0023	-0.0045

Table D.2 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Non-Differentiators

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
MTI	0.0627	0.0258	0.0474	0.0305	0.0199	-0.0189	-0.0556	-0.0386	-0.0394	-0.0127	-0.0210
Age	0.0014	0.0006	0.0010	0.0007	0.0004	-0.0004	-0.0012	-0.0008	-0.0009	-0.0003	-0.0005
Middle Atlantic	-0.0012	-0.0005	-0.0009	-0.0006	-0.0004	0.0004	0.0010	0.0007	0.0007	0.0002	0.0004
East North Central	0.0078	0.0032	0.0058	0.0036	0.0022	-0.0025	-0.0068	-0.0047	-0.0047	-0.0015	-0.0025

Table D.2 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Non-Differentiators

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
West North Central	0.0168	0.0066	0.0117	0.0072	0.0038	-0.0056	-0.0142	-0.0094	-0.0093	-0.0029	-0.0047
South Atlantic	0.0105	0.0042	0.0077	0.0048	0.0029	-0.0033	-0.0091	-0.0062	-0.0062	-0.0020	-0.0033
East South Central	0.0407	0.0150	0.0256	0.0146	0.0053	-0.0146	-0.0322	-0.0202	-0.0193	-0.0059	-0.0092
West South Central	-0.0015	-0.0006	-0.0012	-0.0008	-0.0005	0.0005	0.0014	0.0010	0.0010	0.0003	0.0005
Mountain	0.0073	0.0029	0.0053	0.0033	0.0020	-0.0023	-0.0063	-0.0043	-0.0043	-0.0014	-0.0022
Pacific	-0.0020	-0.0008	-0.0015	-0.0010	-0.0007	0.0006	0.0018	0.0012	0.0013	0.0004	0.0007
NewsPaper	-0.0129	-0.0055	-0.0103	-0.0069	-0.0051	0.0035	0.0118	0.0085	0.0089	0.0029	0.0050
Magazines	-0.0702	-0.0408	-0.0997	-0.0982	-0.1733	-0.1180	-0.0494	0.0427	0.1308	0.0814	0.3947
Radio	0.0509	0.0182	0.0305	0.0168	0.0047	-0.0186	-0.0390	-0.0239	-0.0225	-0.0068	-0.0104
Internet	0.0080	0.0032	0.0059	0.0038	0.0023	-0.0025	-0.0070	-0.0048	-0.0049	-0.0016	-0.0025
Local Church	-0.0050	-0.0021	-0.0039	-0.0025	-0.0018	0.0014	0.0045	0.0032	0.0033	0.0011	0.0018
Other (Specify)	0.0556	0.0194	0.0321	0.0172	0.0037	-0.0206	-0.0415	-0.0250	-0.0233	-0.0070	-0.0106
30 through 39 Years	0.0312	0.0120	0.0213	0.0128	0.0064	-0.0105	-0.0260	-0.0170	-0.0167	-0.0052	-0.0084
40 through 49 Years	0.0018	0.0007	0.0014	0.0009	0.0006	-0.0006	-0.0016	-0.0011	-0.0011	-0.0004	-0.0006
50 through 59 Years	-0.0060	-0.0025	-0.0046	-0.0030	-0.0021	0.0017	0.0054	0.0038	0.0039	0.0013	0.0021
60 Years and Over	-0.0119	-0.0050	-0.0093	-0.0061	-0.0043	0.0034	0.0107	0.0076	0.0079	0.0026	0.0043
$30,000 - $49,999	0.0035	0.0014	0.0026	0.0016	0.0010	-0.0011	-0.0030	-0.0021	-0.0021	-0.0007	-0.0011
$50,000 - $74,999	0.0042	0.0017	0.0031	0.0020	0.0013	-0.0013	-0.0037	-0.0026	-0.0026	-0.0008	-0.0014
$75,000 and Over	0.0165	0.0067	0.0122	0.0078	0.0048	-0.0051	-0.0144	-0.0099	-0.0100	-0.0032	-0.0053
2 Members	0.0095	0.0039	0.0070	0.0045	0.0028	-0.0029	-0.0083	-0.0057	-0.0058	-0.0019	-0.0031
3 Members	0.0052	0.0021	0.0038	0.0024	0.0015	-0.0016	-0.0045	-0.0031	-0.0032	-0.0010	-0.0017
4 Members	0.0002	0.0001	0.0001	0.0001	0.0001	-0.0001	-0.0002	-0.0001	-0.0001	0.0000	-0.0001
5 or More Members	-0.0157	-0.0067	-0.0128	-0.0086	-0.0066	0.0041	0.0145	0.0106	0.0112	0.0037	0.0063
Black/African-American	-0.0050	-0.0021	-0.0039	-0.0025	-0.0017	0.0015	0.0045	0.0032	0.0033	0.0011	0.0018
Asian or Pacific Islander	-0.0188	-0.0082	-0.0156	-0.0107	-0.0085	0.0046	0.0175	0.0130	0.0139	0.0047	0.0081
American Indian, Aleut Eskimo	0.0181	0.0070	0.0125	0.0075	0.0038	-0.0061	-0.0152	-0.0100	-0.0098	-0.0031	-0.0049

Table D.2 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Non-Differentiators

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
Other	-0.0459	-0.0223	-0.0464	-0.0359	-0.0387	0.0011	0.0444	0.0407	0.0491	0.0181	0.0358
Grade School	-0.0689	-0.0395	-0.0949	-0.0907	-0.1501	-0.0866	-0.0033	0.0646	0.1359	0.0721	0.2614
Some High School	-0.0178	-0.0078	-0.0149	-0.0102	-0.0081	0.0043	0.0166	0.0124	0.0133	0.0044	0.0077
Some College-no degree	0.0008	0.0003	0.0006	0.0004	0.0003	-0.0002	-0.0007	-0.0005	-0.0005	-0.0002	-0.0003
Graduated College –Associate's Degree (2 years)	-0.0068	-0.0028	-0.0053	-0.0035	-0.0024	0.0019	0.0061	0.0043	0.0045	0.0015	0.0024
Graduated College- Bachelor's Degree (4 years)	0.0239	0.0095	0.0170	0.0105	0.0059	-0.0078	-0.0204	-0.0137	-0.0137	-0.0043	-0.0070
Post Graduate Degree	-0.0008	-0.0003	-0.0006	-0.0004	-0.0002	0.0002	0.0007	0.0005	0.0005	0.0002	0.0003
Never Married	0.0294	0.0115	0.0204	0.0124	0.0066	-0.0098	-0.0247	-0.0163	-0.0162	-0.0051	-0.0082
Divorced, Widowed, Separated	0.0172	0.0068	0.0123	0.0076	0.0043	-0.0056	-0.0147	-0.0099	-0.0099	-0.0031	-0.0050
Female	0.0308	0.0135	0.0259	0.0179	0.0146	-0.0071	-0.0287	-0.0217	-0.0234	-0.0079	-0.0138

Table D.3 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Predestinarians/Disciplined

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
MTI	0.0189	0.0105	0.0169	0.0119	0.0046	-0.0075	-0.0214	-0.0124	-0.0121	-0.0033	-0.0062
Age	-0.0007	-0.0004	-0.0006	-0.0004	-0.0002	0.0003	0.0008	0.0004	0.0004	0.0001	0.0002
Middle Atlantic	0.0141	0.0076	0.0118	0.0079	0.0023	-0.0058	-0.0152	-0.0085	-0.0081	-0.0021	-0.0040
East North Central	0.0002	0.0001	0.0002	0.0001	0.0001	-0.0001	-0.0003	-0.0001	-0.0001	0.0000	-0.0001
West North Central	-0.0149	-0.0087	-0.0145	-0.0108	-0.0054	0.0054	0.0178	0.0109	0.0110	0.0030	0.0061
South Atlantic	0.0134	0.0072	0.0114	0.0077	0.0024	-0.0055	-0.0146	-0.0082	-0.0079	-0.0021	-0.0039
East South Central	0.0138	0.0073	0.0114	0.0076	0.0021	-0.0057	-0.0147	-0.0082	-0.0078	-0.0020	-0.0038
West South Central	-0.0166	-0.0097	-0.0162	-0.0121	-0.0061	0.0059	0.0199	0.0123	0.0124	0.0034	0.0068
Mountain	0.0643	0.0298	0.0421	0.0234	-0.0024	-0.0279	-0.0573	-0.0287	-0.0256	-0.0064	-0.0113
Pacific	0.0025	0.0014	0.0022	0.0016	0.0006	-0.0010	-0.0028	-0.0016	-0.0016	-0.0004	-0.0008

Table D.3 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Predestinarians/Disciplined

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
NewsPaper	-0.0220	-0.0129	-0.0216	-0.0163	-0.0085	0.0077	0.0265	0.0164	0.0167	0.0046	0.0093
Magazines	0.0002	0.0001	0.0002	0.0001	0.0000	-0.0001	-0.0002	-0.0001	-0.0001	0.0000	-0.0001
Radio	-0.0120	-0.0070	-0.0115	-0.0085	-0.0041	0.0044	0.0142	0.0087	0.0087	0.0024	0.0047
Internet	0.0069	0.0038	0.0060	0.0042	0.0014	-0.0028	-0.0077	-0.0044	-0.0042	-0.0011	-0.0021
Local Church	0.0793	0.0346	0.0466	0.0234	-0.0080	-0.0344	-0.0651	-0.0313	-0.0271	-0.0066	-0.0114
Other (Specify)	0.0855	0.0367	0.0490	0.0241	-0.0095	-0.0369	-0.0689	-0.0329	-0.0284	-0.0069	-0.0118
30 through 39 Years	0.0394	0.0197	0.0294	0.0181	0.0022	-0.0169	-0.0388	-0.0206	-0.0189	-0.0049	-0.0088
40 through 49 Years	0.0674	0.0321	0.0464	0.0271	0.0001	-0.0289	-0.0623	-0.0321	-0.0292	-0.0074	-0.0134
50 through 59 Years	0.0423	0.0217	0.0331	0.0212	0.0043	-0.0178	-0.0431	-0.0234	-0.0220	-0.0057	-0.0106
60 Years and Over	0.0498	0.0264	0.0411	0.0276	0.0082	-0.0201	-0.0527	-0.0297	-0.0285	-0.0076	-0.0145
$30,000 - $49,999	-0.0050	-0.0028	-0.0046	-0.0032	-0.0013	0.0020	0.0057	0.0034	0.0033	0.0009	0.0017
$50,000 - $74,999	-0.0033	-0.0018	-0.0030	-0.0021	-0.0008	0.0013	0.0037	0.0022	0.0021	0.0006	0.0011
$75,000 and Over	-0.0147	-0.0083	-0.0136	-0.0098	-0.0043	0.0056	0.0170	0.0101	0.0100	0.0027	0.0053
2 Members	-0.0097	-0.0054	-0.0088	-0.0062	-0.0025	0.0038	0.0111	0.0065	0.0063	0.0017	0.0033
3 Members	-0.0216	-0.0128	-0.0215	-0.0163	-0.0087	0.0074	0.0262	0.0164	0.0168	0.0047	0.0094
4 Members	-0.0153	-0.0089	-0.0148	-0.0110	-0.0054	0.0055	0.0182	0.0111	0.0112	0.0031	0.0061
5 or More Members	-0.0078	-0.0044	-0.0072	-0.0052	-0.0023	0.0029	0.0090	0.0054	0.0053	0.0015	0.0028
Black/African-American	0.0024	0.0013	0.0021	0.0015	0.0005	-0.0010	-0.0027	-0.0015	-0.0015	-0.0004	-0.0008
Asian or Pacific Islander	-0.0099	-0.0057	-0.0094	-0.0070	-0.0033	0.0037	0.0117	0.0071	0.0071	0.0019	0.0038
American Indian, Aleut Eskimo	-0.0097	-0.0056	-0.0093	-0.0068	-0.0032	0.0036	0.0115	0.0069	0.0069	0.0019	0.0038
Other	0.0148	0.0078	0.0122	0.0080	0.0021	-0.0062	-0.0157	-0.0087	-0.0082	-0.0021	-0.0040
Grade School	-0.0216	-0.0131	-0.0226	-0.0177	-0.0105	0.0068	0.0271	0.0175	0.0182	0.0052	0.0106
Some High School	0.0048	0.0026	0.0042	0.0029	0.0010	-0.0019	-0.0053	-0.0030	-0.0029	-0.0008	-0.0015
Some College-no degree	0.0128	0.0070	0.0110	0.0076	0.0025	-0.0052	-0.0140	-0.0080	-0.0077	-0.0020	-0.0039
Graduated College –Associate's Degree (2 years)	0.0221	0.0115	0.0177	0.0115	0.0027	-0.0093	-0.0230	-0.0126	-0.0118	-0.0031	-0.0057
Graduated College- Bachelor's Degree (4 years)	0.0100	0.0055	0.0087	0.0060	0.0020	-0.0040	-0.0110	-0.0063	-0.0061	-0.0016	-0.0031

Table D.3 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Predestinarians/Disciplined

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
Post Graduate Degree	0.0210	0.0111	0.0171	0.0112	0.0027	-0.0088	-0.0221	-0.0121	-0.0114	-0.0030	-0.0056
Never Married	-0.0040	-0.0022	-0.0036	-0.0026	-0.0011	0.0015	0.0045	0.0027	0.0026	0.0007	0.0014
Divorced, Widowed, Separated	0.0028	0.0016	0.0025	0.0017	0.0006	-0.0011	-0.0031	-0.0018	-0.0018	-0.0005	-0.0009
Female	0.0078	0.0044	0.0072	0.0052	0.0023	-0.0030	-0.0090	-0.0054	-0.0053	-0.0014	-0.0028

Table D.4 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Afraid

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
MTI	0.0512	0.0094	0.0026	-0.0061	-0.0146	-0.0121	-0.0165	-0.0066	-0.0044	-0.0011	-0.0019
Age	0.0014	0.0003	0.0001	-0.0002	-0.0004	-0.0003	-0.0005	-0.0002	-0.0001	0.0000	-0.0001
Middle Atlantic	-0.0935	-0.0212	-0.0105	0.0074	0.0255	0.0237	0.0350	0.0150	0.0105	0.0027	0.0052
East North Central	-0.1066	-0.0251	-0.0133	0.0075	0.0287	0.0274	0.0411	0.0178	0.0127	0.0033	0.0065
West North Central	-0.0979	-0.0234	-0.0127	0.0066	0.0263	0.0253	0.0382	0.0166	0.0119	0.0031	0.0060
South Atlantic	-0.1118	-0.0257	-0.0131	0.0085	0.0303	0.0284	0.0424	0.0182	0.0129	0.0034	0.0065
East South Central	-0.0838	-0.0195	-0.0101	0.0062	0.0228	0.0215	0.0320	0.0138	0.0097	0.0025	0.0049
West South Central	-0.0594	-0.0127	-0.0056	0.0055	0.0165	0.0148	0.0213	0.0089	0.0061	0.0016	0.0029
Mountain	-0.0439	-0.0091	-0.0037	0.0043	0.0123	0.0108	0.0154	0.0063	0.0043	0.0011	0.0020
Pacific	-0.0655	-0.0141	-0.0062	0.0060	0.0182	0.0164	0.0236	0.0099	0.0068	0.0017	0.0033
NewsPaper	-0.0021	-0.0004	-0.0001	0.0003	0.0006	0.0005	0.0007	0.0003	0.0002	0.0000	0.0001
Magazines	0.4203	-0.0093	-0.0645	-0.0816	-0.1016	-0.0605	-0.0640	-0.0204	-0.0117	-0.0026	-0.0041
Radio	0.0136	0.0024	0.0006	-0.0017	-0.0039	-0.0032	-0.0043	-0.0017	-0.0011	-0.0003	-0.0005
Internet	0.0501	0.0083	0.0014	-0.0065	-0.0143	-0.0115	-0.0152	-0.0059	-0.0039	-0.0009	-0.0017
Local Church	0.1874	0.0151	-0.0123	-0.0324	-0.0516	-0.0355	-0.0418	-0.0146	-0.0089	-0.0020	-0.0033
Other (Specify)	0.1757	0.0152	-0.0105	-0.0300	-0.0486	-0.0338	-0.0401	-0.0141	-0.0086	-0.0020	-0.0033
30 through 39 Years	0.0769	0.0111	0.0003	-0.0110	-0.0219	-0.0169	-0.0217	-0.0082	-0.0052	-0.0013	-0.0022
40 through 49 Years	0.1285	0.0171	-0.0010	-0.0191	-0.0364	-0.0275	-0.0349	-0.0130	-0.0083	-0.0020	-0.0034
50 through 59 Years	0.0930	0.0144	0.0016	-0.0126	-0.0264	-0.0208	-0.0273	-0.0105	-0.0068	-0.0017	-0.0029

Table D.4 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Afraid

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
60 Years and Over	0.1060	0.0182	0.0041	-0.0131	-0.0300	-0.0245	-0.0330	-0.0130	-0.0087	-0.0021	-0.0038
$30,000 - $49,999	0.0159	0.0028	0.0007	-0.0019	-0.0045	-0.0037	-0.0050	-0.0020	-0.0013	-0.0003	-0.0006
$50,000 - $74,999	0.0269	0.0046	0.0010	-0.0034	-0.0077	-0.0062	-0.0084	-0.0033	-0.0022	-0.0005	-0.0009
$75,000 and Over	0.0132	0.0024	0.0006	-0.0016	-0.0038	-0.0031	-0.0042	-0.0017	-0.0011	-0.0003	-0.0005
2 Members	0.0133	0.0024	0.0007	-0.0016	-0.0038	-0.0031	-0.0043	-0.0017	-0.0011	-0.0003	-0.0005
3 Members	-0.0013	-0.0002	-0.0001	0.0002	0.0004	0.0003	0.0004	0.0002	0.0001	0.0000	0.0000
4 Members	0.0660	0.0098	0.0006	-0.0093	-0.0188	-0.0146	-0.0189	-0.0072	-0.0046	-0.0011	-0.0019
5 or More Members	-0.0060	-0.0011	-0.0003	0.0007	0.0017	0.0014	0.0020	0.0008	0.0005	0.0001	0.0002
Black/African-American	-0.1290	-0.0350	-0.0232	0.0040	0.0324	0.0345	0.0557	0.0257	0.0191	0.0052	0.0107
Asian or Pacific Islander	-0.1244	-0.0339	-0.0225	0.0038	0.0312	0.0333	0.0538	0.0248	0.0185	0.0050	0.0103
American Indian, Aleut Eskimo	0.3131	0.0075	-0.0368	-0.0589	-0.0810	-0.0512	-0.0566	-0.0187	-0.0110	-0.0025	-0.0039
Other	-0.0638	-0.0143	-0.0069	0.0053	0.0176	0.0162	0.0237	0.0100	0.0070	0.0018	0.0034
Grade School	-0.1101	-0.0290	-0.0183	0.0046	0.0284	0.0293	0.0463	0.0210	0.0154	0.0041	0.0083
Some High School	0.1067	0.0132	-0.0021	-0.0165	-0.0302	-0.0224	-0.0279	-0.0102	-0.0065	-0.0015	-0.0026
Some College-no degree	0.0534	0.0092	0.0020	-0.0067	-0.0152	-0.0124	-0.0166	-0.0065	-0.0043	-0.0011	-0.0019
Graduated College –Associate's Degree (2 years)	0.0800	0.0115	0.0003	-0.0115	-0.0228	-0.0175	-0.0225	-0.0085	-0.0055	-0.0013	-0.0023
Graduated College- Bachelor's Degree (4 years)	0.0672	0.0105	0.0012	-0.0092	-0.0192	-0.0151	-0.0197	-0.0076	-0.0049	-0.0012	-0.0021
Post Graduate Degree	0.1000	0.0132	-0.0010	-0.0150	-0.0284	-0.0214	-0.0270	-0.0100	-0.0064	-0.0015	-0.0026
Never Married	-0.0441	-0.0090	-0.0035	0.0044	0.0124	0.0108	0.0153	0.0063	0.0043	0.0011	0.0020
Divorced, Widowed, Separated	0.0043	0.0008	0.0002	-0.0005	-0.0012	-0.0010	-0.0014	-0.0005	-0.0004	-0.0001	-0.0002
Female	-0.0318	-0.0054	-0.0011	0.0041	0.0091	0.0073	0.0098	0.0038	0.0025	0.0006	0.0011

Table D.5 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Trendy and Adventurists

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared

Table D.5 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Trendy and Adventurists

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
MTI	0.0267	0.0121	0.0211	0.0165	0.0043	-0.0160	-0.0316	-0.0149	-0.0104	-0.0019	-0.0059
Age	-0.0015	-0.0007	-0.0012	-0.0009	-0.0002	0.0009	0.0018	0.0009	0.0006	0.0001	0.0003
Middle Atlantic	-0.0011	-0.0005	-0.0009	-0.0007	-0.0002	0.0007	0.0013	0.0006	0.0004	0.0001	0.0002
East North Central	-0.0134	-0.0063	-0.0111	-0.0090	-0.0033	0.0080	0.0167	0.0081	0.0058	0.0011	0.0034
West North Central	-0.0208	-0.0100	-0.0182	-0.0154	-0.0073	0.0122	0.0274	0.0139	0.0101	0.0019	0.0061
South Atlantic	-0.0047	-0.0021	-0.0038	-0.0030	-0.0009	0.0028	0.0056	0.0027	0.0019	0.0003	0.0011
East South Central	0.0071	0.0031	0.0054	0.0041	0.0008	-0.0042	-0.0080	-0.0037	-0.0026	-0.0005	-0.0014
West South Central	-0.0028	-0.0013	-0.0022	-0.0018	-0.0005	0.0017	0.0033	0.0016	0.0011	0.0002	0.0006
Mountain	0.0181	0.0078	0.0131	0.0096	0.0007	-0.0108	-0.0195	-0.0088	-0.0060	-0.0011	-0.0032
Pacific	-0.0120	-0.0056	-0.0099	-0.0080	-0.0029	0.0071	0.0149	0.0072	0.0052	0.0010	0.0030
NewsPaper	-0.0105	-0.0049	-0.0087	-0.0071	-0.0025	0.0063	0.0131	0.0064	0.0045	0.0008	0.0026
Magazines	-0.0255	-0.0127	-0.0236	-0.0206	-0.0119	0.0146	0.0356	0.0187	0.0140	0.0027	0.0088
Radio	-0.0002	-0.0001	-0.0002	-0.0001	0.0000	0.0001	0.0002	0.0001	0.0001	0.0000	0.0000
Internet	-0.0103	-0.0047	-0.0083	-0.0067	-0.0022	0.0061	0.0125	0.0060	0.0043	0.0008	0.0024
Local Church	-0.0480	-0.0267	-0.0537	-0.0535	-0.0517	0.0192	0.0798	0.0505	0.0424	0.0088	0.0328
Other (Specify)	0.0168	0.0072	0.0121	0.0088	0.0006	-0.0100	-0.0180	-0.0081	-0.0055	-0.0010	-0.0029
30 through 39 Years	0.0090	0.0040	0.0069	0.0053	0.0010	-0.0054	-0.0103	-0.0048	-0.0033	-0.0006	-0.0018
40 through 49 Years	0.0305	0.0130	0.0217	0.0158	0.0008	-0.0180	-0.0323	-0.0145	-0.0098	-0.0018	-0.0052
50 through 59 Years	0.0666	0.0263	0.0416	0.0276	-0.0062	-0.0379	-0.0621	-0.0265	-0.0175	-0.0031	-0.0090
60 Years and Over	0.0910	0.0349	0.0546	0.0354	-0.0101	-0.0504	-0.0817	-0.0348	-0.0230	-0.0041	-0.0119
$30,000 - $49,999	0.0139	0.0061	0.0104	0.0079	0.0012	-0.0083	-0.0156	-0.0072	-0.0049	-0.0009	-0.0027
$50,000 - $74,999	0.0117	0.0052	0.0088	0.0067	0.0011	-0.0070	-0.0132	-0.0061	-0.0042	-0.0008	-0.0023
$75,000 and Over	0.0238	0.0105	0.0179	0.0136	0.0023	-0.0142	-0.0268	-0.0124	-0.0085	-0.0016	-0.0047
2 Members	-0.0027	-0.0013	-0.0022	-0.0017	-0.0005	0.0016	0.0033	0.0015	0.0011	0.0002	0.0006
3 Members	-0.0145	-0.0068	-0.0121	-0.0099	-0.0038	0.0086	0.0182	0.0089	0.0064	0.0012	0.0037
4 Members	-0.0114	-0.0053	-0.0094	-0.0076	-0.0028	0.0068	0.0142	0.0069	0.0049	0.0009	0.0029

Table D.5 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Trendy and Adventurists

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
5 or More Members	-0.0076	-0.0035	-0.0062	-0.0050	-0.0017	0.0045	0.0093	0.0045	0.0032	0.0006	0.0018
Black/African-American	-0.0083	-0.0039	-0.0069	-0.0055	-0.0019	0.0050	0.0103	0.0050	0.0035	0.0007	0.0020
Asian or Pacific Islander	-0.0316	-0.0160	-0.0300	-0.0267	-0.0169	0.0176	0.0453	0.0243	0.0185	0.0036	0.0119
American Indian, Aleut Eskimo	-0.0328	-0.0169	-0.0320	-0.0290	-0.0200	0.0177	0.0483	0.0266	0.0205	0.0040	0.0135
Other	-0.0118	-0.0056	-0.0099	-0.0081	-0.0032	0.0070	0.0149	0.0073	0.0053	0.0010	0.0031
Grade School	0.1239	0.0400	0.0554	0.0270	-0.0357	-0.0623	-0.0845	-0.0320	-0.0196	-0.0033	-0.0090
Some High School	0.0461	0.0183	0.0290	0.0191	-0.0047	-0.0265	-0.0431	-0.0182	-0.0119	-0.0021	-0.0060
Some College-no degree	0.0313	0.0135	0.0227	0.0168	0.0016	-0.0186	-0.0339	-0.0154	-0.0105	-0.0019	-0.0057
Graduated College –Associate's Degree (2 years)	0.0229	0.0098	0.0164	0.0119	0.0006	-0.0136	-0.0244	-0.0109	-0.0074	-0.0013	-0.0039
Graduated College- Bachelor's Degree (4 years)	0.0388	0.0165	0.0275	0.0199	0.0009	-0.0229	-0.0410	-0.0184	-0.0125	-0.0022	-0.0067
Post Graduate Degree	0.0406	0.0167	0.0271	0.0188	-0.0017	-0.0237	-0.0403	-0.0175	-0.0117	-0.0021	-0.0061
Never Married	-0.0052	-0.0024	-0.0041	-0.0033	-0.0009	0.0031	0.0062	0.0029	0.0021	0.0004	0.0012
Divorced, Widowed, Separated	-0.0072	-0.0033	-0.0058	-0.0046	-0.0014	0.0043	0.0087	0.0042	0.0030	0.0005	0.0017
Female	0.0210	0.0098	0.0175	0.0142	0.0054	-0.0124	-0.0263	-0.0129	-0.0092	-0.0017	-0.0054

Table D.6 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Freedom Seeker

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
MTI	0.0812	0.0324	0.0307	0.0122	-0.0158	-0.0329	-0.0575	-0.0228	-0.0158	-0.0032	-0.0083
Age	-0.0014	-0.0005	-0.0005	-0.0002	0.0003	0.0006	0.0010	0.0004	0.0003	0.0001	0.0001
Middle Atlantic	0.0093	0.0036	0.0034	0.0013	-0.0019	-0.0038	-0.0065	-0.0025	-0.0017	-0.0004	-0.0009
East North Central	0.0088	0.0035	0.0032	0.0012	-0.0018	-0.0036	-0.0061	-0.0024	-0.0017	-0.0003	-0.0009
West North Central	-0.0159	-0.0066	-0.0065	-0.0028	0.0027	0.0065	0.0119	0.0048	0.0034	0.0007	0.0019

Table D.6 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Freedom Seeker

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
South Atlantic	-0.0039	-0.0016	-0.0015	-0.0006	0.0007	0.0016	0.0028	0.0011	0.0008	0.0002	0.0004
East South Central	0.0372	0.0134	0.0117	0.0035	-0.0090	-0.0146	-0.0235	-0.0088	-0.0059	-0.0012	-0.0029
West South Central	-0.0502	-0.0226	-0.0237	-0.0123	0.0050	0.0205	0.0414	0.0181	0.0133	0.0029	0.0078
Mountain	0.0049	0.0019	0.0018	0.0007	-0.0010	-0.0020	-0.0034	-0.0014	-0.0009	-0.0002	-0.0005
Pacific	-0.0051	-0.0021	-0.0020	-0.0008	0.0010	0.0021	0.0037	0.0015	0.0010	0.0002	0.0005
NewsPaper	0.0017	0.0007	0.0006	0.0002	-0.0003	-0.0007	-0.0012	-0.0005	-0.0003	-0.0001	-0.0002
Magazines	-0.0620	-0.0301	-0.0334	-0.0195	0.0012	0.0248	0.0560	0.0260	0.0200	0.0044	0.0127
Radio	-0.0033	-0.0013	-0.0013	-0.0005	0.0006	0.0013	0.0023	0.0009	0.0007	0.0001	0.0003
Internet	0.0355	0.0137	0.0126	0.0046	-0.0075	-0.0142	-0.0241	-0.0094	-0.0065	-0.0013	-0.0033
Local Church	-0.0323	-0.0142	-0.0146	-0.0072	0.0040	0.0133	0.0258	0.0110	0.0080	0.0017	0.0045
Other (Specify)	0.0818	0.0261	0.0204	0.0031	-0.0228	-0.0305	-0.0451	-0.0159	-0.0103	-0.0020	-0.0048
30 through 39 Years	0.0316	0.0118	0.0105	0.0035	-0.0072	-0.0125	-0.0207	-0.0079	-0.0053	-0.0011	-0.0027
40 through 49 Years	0.0464	0.0168	0.0147	0.0044	-0.0111	-0.0182	-0.0294	-0.0111	-0.0074	-0.0015	-0.0037
50 through 59 Years	0.0998	0.0336	0.0277	0.0064	-0.0257	-0.0378	-0.0585	-0.0215	-0.0142	-0.0028	-0.0070
60 Years and Over	0.0845	0.0317	0.0288	0.0101	-0.0182	-0.0332	-0.0560	-0.0218	-0.0150	-0.0031	-0.0078
$30,000 - $49,999	0.0093	0.0036	0.0034	0.0013	-0.0019	-0.0037	-0.0064	-0.0025	-0.0017	-0.0004	-0.0009
$50,000 - $74,999	0.0095	0.0037	0.0035	0.0013	-0.0019	-0.0038	-0.0066	-0.0026	-0.0018	-0.0004	-0.0009
$75,000 and Over	-0.0020	-0.0008	-0.0008	-0.0003	0.0004	0.0008	0.0015	0.0006	0.0004	0.0001	0.0002
2 Members	0.0048	0.0019	0.0018	0.0007	-0.0009	-0.0019	-0.0034	-0.0013	-0.0009	-0.0002	-0.0005
3 Members	-0.0268	-0.0114	-0.0113	-0.0052	0.0041	0.0110	0.0205	0.0085	0.0061	0.0013	0.0033
4 Members	0.0198	0.0075	0.0068	0.0024	-0.0044	-0.0079	-0.0132	-0.0051	-0.0035	-0.0007	-0.0018
5 or More Members	-0.0347	-0.0152	-0.0156	-0.0077	0.0044	0.0142	0.0276	0.0118	0.0085	0.0018	0.0049
Black/African-American	-0.0331	-0.0146	-0.0149	-0.0073	0.0041	0.0136	0.0264	0.0113	0.0082	0.0017	0.0047
Asian or Pacific Islander	-0.0337	-0.0148	-0.0152	-0.0075	0.0042	0.0138	0.0269	0.0115	0.0083	0.0018	0.0047
American Indian, Aleut Eskimo	0.0885	0.0277	0.0213	0.0028	-0.0250	-0.0326	-0.0478	-0.0168	-0.0108	-0.0021	-0.0050
Other	-0.0012	-0.0005	-0.0005	-0.0002	0.0002	0.0005	0.0008	0.0003	0.0002	0.0000	0.0001
Grade School	-0.0889	-0.0478	-0.0578	-0.0397	-0.0141	0.0312	0.0905	0.0479	0.0398	0.0093	0.0295

Table D.6 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Freedom Seeker

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
Some High School	-0.0529	-0.0248	-0.0268	-0.0148	0.0032	0.0215	0.0458	0.0206	0.0155	0.0034	0.0094
Some College-no degree	0.0074	0.0029	0.0027	0.0011	-0.0015	-0.0030	-0.0051	-0.0020	-0.0014	-0.0003	-0.0007
Graduated College –Associate's Degree (2 years)	-0.0031	-0.0012	-0.0012	-0.0005	0.0006	0.0013	0.0022	0.0009	0.0006	0.0001	0.0003
Graduated College- Bachelor's Degree (4 years)	-0.0189	-0.0077	-0.0074	-0.0031	0.0034	0.0077	0.0138	0.0055	0.0039	0.0008	0.0021
Post Graduate Degree	-0.0028	-0.0011	-0.0011	-0.0004	0.0005	0.0011	0.0020	0.0008	0.0006	0.0001	0.0003
Never Married	0.0112	0.0044	0.0041	0.0016	-0.0023	-0.0045	-0.0078	-0.0031	-0.0021	-0.0004	-0.0011
Divorced, Widowed, Separated	0.0238	0.0092	0.0085	0.0031	-0.0050	-0.0096	-0.0163	-0.0064	-0.0044	-0.0009	-0.0023
Female	0.0463	0.0194	0.0193	0.0087	-0.0073	-0.0188	-0.0349	-0.0145	-0.0103	-0.0022	-0.0057

Table D.7 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Life Planner/Freedom Seeker

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
MTI	0.0639	0.0192	0.0192	0.0050	-0.0129	-0.0257	-0.0316	-0.0169	-0.0108	-0.0025	-0.0068
Age	0.0051	0.0015	0.0015	0.0004	-0.0010	-0.0020	-0.0025	-0.0013	-0.0009	-0.0002	-0.0005
Middle Atlantic	-0.0607	-0.0205	-0.0228	-0.0090	0.0088	0.0248	0.0340	0.0196	0.0132	0.0032	0.0092
East North Central	-0.0513	-0.0168	-0.0182	-0.0066	0.0083	0.0210	0.0279	0.0158	0.0104	0.0025	0.0071
West North Central	-0.0760	-0.0275	-0.0325	-0.0152	0.0075	0.0309	0.0460	0.0279	0.0195	0.0049	0.0145
South Atlantic	-0.0575	-0.0189	-0.0207	-0.0076	0.0091	0.0235	0.0314	0.0178	0.0119	0.0029	0.0081
East South Central	-0.0697	-0.0249	-0.0290	-0.0132	0.0076	0.0285	0.0416	0.0249	0.0173	0.0043	0.0127
West South Central	-0.0704	-0.0245	-0.0279	-0.0119	0.0089	0.0288	0.0408	0.0240	0.0164	0.0041	0.0118
Mountain	-0.0282	-0.0090	-0.0096	-0.0032	0.0049	0.0115	0.0149	0.0083	0.0054	0.0013	0.0036
Pacific	-0.0548	-0.0185	-0.0205	-0.0080	0.0080	0.0225	0.0307	0.0176	0.0118	0.0029	0.0082
NewsPaper	-0.0041	-0.0012	-0.0012	-0.0003	0.0008	0.0016	0.0020	0.0011	0.0007	0.0002	0.0004
Magazines	0.1565	0.0307	0.0197	-0.0091	-0.0427	-0.0535	-0.0528	-0.0243	-0.0140	-0.0031	-0.0074
Radio	0.0332	0.0092	0.0086	0.0014	-0.0075	-0.0130	-0.0151	-0.0078	-0.0049	-0.0011	-0.0029
Internet	0.0259	0.0076	0.0074	0.0017	-0.0055	-0.0103	-0.0124	-0.0066	-0.0041	-0.0010	-0.0026

Table D.7 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Life Planner/Freedom Seeker

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
Local Church	0.8481	-0.0820	-0.1402	-0.1409	-0.1763	-0.1344	-0.1007	-0.0392	-0.0204	-0.0042	-0.0096
Other (Specify)	-0.1222	-0.0538	-0.0745	-0.0503	-0.0176	0.0394	0.0891	0.0668	0.0541	0.0151	0.0539
30 through 39 Years	-0.0550	-0.0182	-0.0199	-0.0074	0.0087	0.0225	0.0302	0.0171	0.0114	0.0028	0.0078
40 through 49 Years	-0.0351	-0.0110	-0.0116	-0.0036	0.0064	0.0143	0.0182	0.0100	0.0065	0.0016	0.0043
50 through 59 Years	-0.0788	-0.0260	-0.0284	-0.0107	0.0122	0.0320	0.0431	0.0246	0.0165	0.0040	0.0114
60 Years and Over	-0.1365	-0.0486	-0.0574	-0.0276	0.0114	0.0531	0.0813	0.0505	0.0361	0.0092	0.0285
$30,000 - $49,999	-0.0135	-0.0041	-0.0042	-0.0012	0.0026	0.0055	0.0068	0.0037	0.0024	0.0006	0.0015
$50,000 - $74,999	-0.0096	-0.0029	-0.0030	-0.0008	0.0019	0.0039	0.0048	0.0026	0.0017	0.0004	0.0011
$75,000 and Over	0.0061	0.0018	0.0018	0.0005	-0.0012	-0.0025	-0.0030	-0.0016	-0.0010	-0.0002	-0.0006
2 Members	-0.0229	-0.0070	-0.0071	-0.0019	0.0045	0.0093	0.0115	0.0062	0.0040	0.0009	0.0025
3 Members	-0.0436	-0.0142	-0.0154	-0.0055	0.0071	0.0178	0.0236	0.0133	0.0088	0.0021	0.0059
4 Members	-0.0464	-0.0153	-0.0168	-0.0062	0.0073	0.0190	0.0254	0.0144	0.0096	0.0023	0.0065
5 or More Members	-0.0249	-0.0079	-0.0083	-0.0027	0.0044	0.0101	0.0131	0.0072	0.0047	0.0011	0.0031
Black/African-American	-0.0031	-0.0010	-0.0010	-0.0003	0.0006	0.0013	0.0016	0.0008	0.0005	0.0001	0.0003
Asian or Pacific Islander	-0.0374	-0.0124	-0.0136	-0.0051	0.0059	0.0154	0.0206	0.0117	0.0078	0.0019	0.0053
American Indian, Aleut Eskimo	-0.0604	-0.0215	-0.0250	-0.0112	0.0069	0.0248	0.0359	0.0214	0.0148	0.0037	0.0107
Other	-0.0079	-0.0024	-0.0025	-0.0007	0.0015	0.0032	0.0040	0.0022	0.0014	0.0003	0.0009
Grade School											
Some High School	-0.0683	-0.0249	-0.0295	-0.0139	0.0065	0.0279	0.0417	0.0253	0.0177	0.0044	0.0132
Some College-no degree	-0.0137	-0.0042	-0.0042	-0.0012	0.0027	0.0055	0.0069	0.0037	0.0024	0.0006	0.0015
Graduated College –Associate's Degree (2 years)	0.0057	0.0017	0.0017	0.0004	-0.0012	-0.0023	-0.0028	-0.0015	-0.0009	-0.0002	-0.0006
Graduated College- Bachelor's Degree (4 years)	-0.0026	-0.0008	-0.0008	-0.0002	0.0005	0.0010	0.0013	0.0007	0.0004	0.0001	0.0003
Post Graduate Degree	0.0044	0.0013	0.0013	0.0003	-0.0009	-0.0018	-0.0022	-0.0012	-0.0007	-0.0002	-0.0005
Never Married	-0.0193	-0.0060	-0.0062	-0.0019	0.0036	0.0078	0.0099	0.0054	0.0035	0.0008	0.0023
Divorced, Widowed, Separated	-0.0463	-0.0149	-0.0158	-0.0054	0.0080	0.0189	0.0246	0.0137	0.0090	0.0022	0.0060

Table D.7 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Life Planner/Freedom Seeker

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
Female	0.0135	0.0041	0.0042	0.0012	-0.0026	-0.0054	-0.0068	-0.0037	-0.0024	-0.0006	-0.0015

Table D.8 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Life Planner

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
MTI	0.1030	0.0385	0.0457	0.0103	-0.0288	-0.0548	-0.0664	-0.0274	-0.0114	-0.0038	-0.0050
Age	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0001	0.0000	0.0000	0.0000	0.0000
Middle Atlantic	0.0167	0.0060	0.0069	0.0013	-0.0049	-0.0087	-0.0103	-0.0042	-0.0017	-0.0006	-0.0007
East North Central	0.0045	0.0017	0.0020	0.0004	-0.0013	-0.0024	-0.0029	-0.0012	-0.0005	-0.0002	-0.0002
West North Central	-0.0089	-0.0034	-0.0041	-0.0010	0.0024	0.0048	0.0059	0.0025	0.0010	0.0003	0.0005
South Atlantic	0.0207	0.0075	0.0085	0.0016	-0.0061	-0.0107	-0.0126	-0.0051	-0.0021	-0.0007	-0.0009
East South Central	-0.0184	-0.0072	-0.0090	-0.0025	0.0047	0.0101	0.0128	0.0055	0.0023	0.0008	0.0011
West South Central	-0.0316	-0.0128	-0.0163	-0.0051	0.0076	0.0175	0.0229	0.0100	0.0043	0.0015	0.0020
Mountain	-0.0079	-0.0030	-0.0036	-0.0009	0.0021	0.0042	0.0052	0.0022	0.0009	0.0003	0.0004
Pacific	0.0161	0.0058	0.0067	0.0012	-0.0047	-0.0084	-0.0099	-0.0040	-0.0016	-0.0005	-0.0007
NewsPaper	-0.0176	-0.0068	-0.0083	-0.0021	0.0047	0.0095	0.0118	0.0050	0.0021	0.0007	0.0009
Magazines	0.1999	0.0439	0.0278	-0.0201	-0.0687	-0.0760	-0.0695	-0.0232	-0.0085	-0.0026	-0.0030
Radio	0.0234	0.0082	0.0092	0.0015	-0.0070	-0.0120	-0.0139	-0.0055	-0.0022	-0.0007	-0.0009
Internet	0.0307	0.0109	0.0124	0.0021	-0.0091	-0.0158	-0.0185	-0.0074	-0.0030	-0.0010	-0.0013
Local Church											
Other (Specify)	0.0879	0.0260	0.0242	-0.0019	-0.0294	-0.0402	-0.0415	-0.0152	-0.0058	-0.0018	-0.0022
30 through 39 Years	0.0511	0.0174	0.0187	0.0021	-0.0158	-0.0256	-0.0288	-0.0113	-0.0045	-0.0015	-0.0019
40 through 49 Years	0.0360	0.0127	0.0142	0.0023	-0.0108	-0.0185	-0.0214	-0.0085	-0.0035	-0.0011	-0.0015
50 through 59 Years	0.0383	0.0136	0.0153	0.0026	-0.0114	-0.0197	-0.0229	-0.0092	-0.0037	-0.0012	-0.0016
60 Years and Over	0.0642	0.0223	0.0247	0.0036	-0.0193	-0.0325	-0.0375	-0.0149	-0.0061	-0.0020	-0.0026

Table D.8 Marginal Effects for Consumers Attitudes Regarding Preparedness of Food System for Segment Life Planner

	Not Prepared	Outcome3	Outcome4	Outcome5	Outcome6	Outcome7	Outcome8	Outcome9	Outcome10	Outcome11	Better Prepared
$30,000 - $49,999	-0.0085	-0.0032	-0.0039	-0.0010	0.0023	0.0046	0.0056	0.0023	0.0010	0.0003	0.0004
$50,000 - $74,999	0.0229	0.0083	0.0095	0.0018	-0.0067	-0.0119	-0.0141	-0.0057	-0.0023	-0.0008	-0.0010
$75,000 and Over	0.0120	0.0045	0.0053	0.0012	-0.0033	-0.0064	-0.0077	-0.0032	-0.0013	-0.0004	-0.0006
2 Members	-0.0274	-0.0104	-0.0124	-0.0030	0.0075	0.0147	0.0180	0.0075	0.0031	0.0010	0.0014
3 Members	-0.0245	-0.0096	-0.0120	-0.0034	0.0063	0.0134	0.0170	0.0073	0.0031	0.0010	0.0014
4 Members	-0.0269	-0.0106	-0.0133	-0.0038	0.0068	0.0147	0.0189	0.0081	0.0035	0.0012	0.0016
5 or More Members	-0.0511	-0.0218	-0.0292	-0.0108	0.0102	0.0289	0.0403	0.0184	0.0082	0.0028	0.0040
Black/African-American	-0.0272	-0.0110	-0.0139	-0.0043	0.0065	0.0150	0.0196	0.0085	0.0037	0.0012	0.0017
Asian or Pacific Islander	-0.0523	-0.0228	-0.0311	-0.0121	0.0096	0.0298	0.0426	0.0198	0.0089	0.0031	0.0045
American Indian, Aleut Eskimo	-0.0686	-0.0318	-0.0461	-0.0211	0.0079	0.0395	0.0621	0.0307	0.0144	0.0052	0.0078
Other	0.0175	0.0062	0.0070	0.0012	-0.0052	-0.0090	-0.0105	-0.0042	-0.0017	-0.0006	-0.0007
Grade School											
Some High School	-0.0446	-0.0191	-0.0256	-0.0095	0.0089	0.0253	0.0353	0.0161	0.0071	0.0025	0.0035
Some College-no degree	0.0486	0.0168	0.0186	0.0026	-0.0148	-0.0246	-0.0282	-0.0112	-0.0045	-0.0015	-0.0019
Graduated College –Associate's Degree (2 years)	0.0352	0.0121	0.0133	0.0017	-0.0108	-0.0178	-0.0202	-0.0080	-0.0032	-0.0010	-0.0013
Graduated College- Bachelor's Degree (4 years)	0.0486	0.0174	0.0197	0.0035	-0.0143	-0.0251	-0.0294	-0.0119	-0.0049	-0.0016	-0.0021
Post Graduate Degree	0.0550	0.0189	0.0206	0.0027	-0.0168	-0.0277	-0.0315	-0.0124	-0.0050	-0.0016	-0.0021
Never Married	0.0145	0.0053	0.0061	0.0012	-0.0042	-0.0076	-0.0090	-0.0036	-0.0015	-0.0005	-0.0006
Divorced, Widowed, Separated	-0.0090	-0.0034	-0.0041	-0.0010	0.0025	0.0048	0.0060	0.0025	0.0010	0.0003	0.0005
Female	0.0291	0.0115	0.0143	0.0041	-0.0073	-0.0159	-0.0204	-0.0087	-0.0037	-0.0013	-0.0017

APPENDIX E: CFST CONFIDENCE AND PREPAREDNESS QUESTIONS

Consumer confidence questions used in ordered probit model:

- How concerned are you about the safety of the food that you buy?
- How concerned are you about a terrorist attack on the food system?
- How serious do you think the impact of a terrorist event regarding a common food product would be on your household?
- How concerned are you about food defense?

Consumer Preparedness questions used in ordered probit model:

- In thinking about food safety, that is the natural or accidental contamination of food, do you think the U.S. food supply is safer than it was a year ago?
- In thinking about food defense, do you think the United States is better prepared for a terrorist attack on the food supply than it was a year ago?

VITA

Abhishek Bharad graduated in 2007 from the Dr. Panjabrao Deshmukh Agricultural University in India. He received a degree in Bachelor of Sciences in Agriculture. In Fall 2008, he entered a master's program at the Department of Agricultural Economics & Agribusiness at the Louisiana State University. Mr. Bharad is currently a master's student at the Department of Agricultural Economics & Agribusiness, and he is scheduled to graduate in the Fall of 2010.