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Theory of Planned Behavior Analysis and Organic Food Consumption of American Consumers

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Abstract

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MBA, The Royal University of Agriculture, 2011

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Dissertation Submitted in Partial Fulfillment

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Psychology

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Abstract

The majority of organic foods consumed by Americans are sourced internationally, which has global-reaching implications on health, economics, and sustainability. Current research findings show that environmental devastation and negative health outcomes have resulted from unsustainable, nonorganic agricultural practices; including herbicides, pesticides, and overcultivation. However, there is a lack of quantitative research on factors that motivate Americans to consume organic food. Based on the theory of planned behavior, this quantitative study employed an online survey to examine the role of attitudes, subjective norms, descriptive norms, and perceived behavioral control on the intention and behavior of American consumers to consume organic foods. Additional descriptors of willingness to pay and perceived product attributes were also measured. Theory of planned behavior and American Organic Consumption questionnaires were completed by 276 adult consumers in the United States. Multiple regression analyses were performed to identify relationships and create predictive models between constructs of a modified theory of planned behavior, sociodemographics, and organic consumption. Key findings revealed that a modified theory of planned behavior, which included descriptive norms, predicted intent to consume organics stronger than the nonmodified theory of planned behavior. Attitudes, perceived behavioral control, and descriptive norms were significant predictors of intention to consume organics. Health was perceived as the major product attribute for organic consumption and low willingness to pay was perceived as the major barrier. This study has implications for positive social change such that it contributes to understanding motivational factors behind American's food choices and consumption, which can be used to modify and target consumer behaviors and market campaigns.

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Chapter 1: Introduction to the Study

Introduction

New foods are constantly added in the modern American food-chain and consumer meal choices have grown increasingly complicated. Consumers now face an overwhelming amount of information through various media and marketing campaigns regarding what to eat (Hansen, Mukherjee, & Thomsen, 2011). The average consumer is faced with a myriad of information through which they must sift to make a decision.

Americans do not have deeply-rooted food traditions or eating habits like many other cultures (Milne, Winzer, Brembeck, & Bordin, 2011). Government legislation has been the R1995; Timmins, 2010). Such legislation has waged several political *food wars* (Nestle, 2007). This, alongside many media and marketing *food fads*, have led to confusion and anxiety in consumers when facing decisions about what to eat (Bublitz, Peracchio, & Block, 2010; Nestle, 2007). Not only are there many new directives about what may kill the consumer or prolong their life, new product attributes (e.g., organic, local, Fair Trade, Rain Forest Alliance) are constantly introduced to the modern food-chain making it more complex.

The topic of this study was to examine the role of the theory of planned behavior (Ajzen, 1991) in the context of modern American food consumption, specifically, people's attitudes and behaviors concerning organics. Organic food is defined as foods that are grown without using synthetic additives such as chemical pesticides and fertilizers, and from seeds that are not genetically modified (Smith-Spangler et al., 2012).

In this chapter I briefly summarize the research on this topic by exploring the theoretical framework of the theory of planned behavior (Ajzen, 1991); as well as the social, health, and economic concerns addressed by organic production and consumption. Additionally, I explore

purpose of this research, outline gaps in previous research, present my own research questions and hypotheses, and define commonly used terms used throughout the dissertation.

Background

Researchers have shown that environmental devastation and negative health outcomes have resulted from unsustainable, nonorganic, agricultural practices, including herbicides, pesticides, and over-cultivation (Pretty, 1995; Smith-Spangler et al., 2012). The demand for cheap nonorganic (i.e., conventional) foods has also led to the exploitation of producers and other agricultural workers in the food industry around the world (Smith-Spangler et al., 2012). Existing empirical literature related to attitudinal and behavioral measurements as related to organic consumption is characterized by three notable factors:

1. It is primarily tested within the European market for a theoretical understanding of consumption behavior (Shepherd, Magnusson, & Sjoden, 2005; Steg & Velk, 2009; Urban, 2012). American research is often motivated by the practical concerns of marketers, government, or retailers (Bartels & Reinders, 2010; Timmins, 2010).
2. When the theoretical models are applied in organic markets, they are designed for specific examples of organic consumption and this research does not have ambitions towards theoretical generalizability of the organic market (Urban, 2012).
3. In the context of food decision making in Europe and the United States, attitudes and behavior often clash as consumers hold generally positive attitudes about organic foods, yet are not consuming them due to several reasons, primarily price and availability (Jolly, 1991; Petty, 1995; Timmins, 2010; Urban, 2012).

Much qualitative and quantitative European-based research has been published, which has provided an ample literature base (Bartels & Reinders, 2010; Shepherd et al., 2005; Steg & Velk, 2009; Timmins, 2010). However, little quantitative research has been conducted to examine the rationale of people's food choices with organics as it is related to attitudes, behaviors, and product attributes in the modern food-chain in the United States.

Problem Statement

There was a gap in the literature for contemporary social psychological based research on American's attitudes and behaviors concerning organic food consumption (Bartels & Reinders, 2010; Sparks & Shepherd, 1992). As previously mentioned, a growing global population and food shortage and nutritional crisis, food-related disease, negative health implications of an evolving and complex food chain, along with environmental devastation from overcultivation and processing of crops, it is important to understand how and why individuals make their food choices (Bartels & Reinders, 2010; Shepherd et al., 2005; Steg & Velk, 2009; Timmins, 2010). A United Nations estimate of global population in 2014 was approximately 7.5 billion people, with an estimated forecast between 9.3 and 12.6 billion people globally in 2100 projected, after which population rates will gradually level off and then decline (UN News Center, 2014). These types of projections have lead some analysts to question the sustainability of further population growth, highlighting the pressures on the environment, energy resources, and food supplies (Carrington, 2014; Gerland et al., 2014). The underpinning of this study is attitudes and behaviors toward organic consumption that can allude to how and why individuals in the United States make sustainable choices and enact proenvironmental behavior.

Purpose of Study

The first purpose of this quantitative study was to test the role of constructs of the theory of planned behavior (TPB; Ajzen, 1991) on the intent of Americans to consume organic food. These constructs include attitudes toward organics, subjective norms, and perceived behavioral control. For this study, attitudes have been defined as affective judgments toward consuming organic food; specifically, positive or negative affective evaluations of the behavioral outcome, consuming organics (Ajzen, 1991, p. 191). Subjective norms are defined as subjectively perceived normative pressures from other individuals (Ajzen, 1991, p.195) and how individuals should behave based on group approval of a particular behavior (Cialdini, Reno, & Kallgren, 1990). Perceived behavioral control is a construct based on an extension of Bandura's (1977) self-efficacy theory, which suggests that an individual's expectations related to a behavior affect motivation and execution of that behavior.

The second purpose of the study was to incorporate descriptive norms into the TPB framework and subject this extension to an empirical test. Descriptive norms are defined as people's perceptions of what is commonly done in specific situations; it signifies what most people do, without assigning judgment (Cialdini et al., 1990). A review of the literature disclosed the importance of the role of consumer's willingness to pay for organics and in what product attributes consumers find value. Therefore, a third purpose was to seek additional insight on American consumer's past behaviors related to consumption of organics through examining respondents' willingness to pay for such a good and what attributes associated with organics they find the most value in. These variables provided important insight to help articulate the results of the analysis of the theory of planned behavior variables.

The constructs within the TPB framework, and the extension of descriptive norms, were subjected to an empirical test; one with the inclusion of descriptive norms, and one without to see if descriptive norms offer any additional predictability. This was a quantitative study where correlations between the dependent variables (intention to consume organics and past behavior) and independent variables (attitudes, subjective norms, descriptive norms, perceived behavioral control, and sociodemographic variables) were explored. The first multiple regression looked at the independent variables of the modified TPB ability to predict intention to consume organics. A second multiple regression was run to look at the dependent variable (past behavior) along with the same independent variables to explore how intent to consume organics explains respondents' past purchase behavior.

Research Questions and Hypotheses

Descriptive Questions

1. For respondents who consume organics, at what price markup (if any) does willingness to pay effect intention to consume?

2. What organic product attribute do organic consumers consider most influential in their intent to consume?

Inferential Questions

Research Question 1: After controlling for organic consumption frequency, do the constructs of the theory of planned behavior (attitudes, subjective norms, and perceived behavioral control) predict intention to consume organics among American consumers?

$H_0$1: The constructs of the TPB do not predict intention to consume organics after controlling for organic consumption frequency.

$H_1$1: The constructs of the TPB do predict intention to consume organics after controlling for organic consumption frequency.

Research Question 2: Does the inclusion of descriptive norms in the TPB model increase explained variance of intention to consume organics?

$H_0$2: The inclusion of descriptive norms in the TPB model does not increase explained variance of intention to consume organics.

$H_1$2: The inclusion of descriptive norms in the TPB model does increase explained variance of intention to consume organics.

Research Question 3: After controlling for organic consumption frequency, do the constructs of the theory of planned behavior predict past behavior consumption?

$H_0$3: The constructs of the TPB do not predict past behavior consumption after controlling for organic consumption frequency.

$H_1$3: The constructs of the TPB do predict past behavior consumption after controlling for organic consumption frequency.

Research Question 4: Do gender, education, income, and/or age predict intention to consume organics in the next month?

$H_0$4: Gender, education, income, and/or age do not add predictive power to the intention to consume organics in the next month.

$H_1$4: Gender, education, income, and/or age do add predictive power to the intention to consume organics in the next month.

Theoretical Framework

The theoretical framework for this study was the TPB (Ajzen, 1991). This theory began as the theory of reasoned action (Ajzen & Fishbein, 1980), which was developed to predict an

individual's intentions of engaging in a behavior, given a particular situation. The purpose of this theory was to relate attitudes and other motivational factors to behavioral intention and actual behavior. According to the theory, behavioral intentions are influenced by the individual's attitude about the chances that the behavior (or choice) they exhibit will have the expected outcome, given their subjective assessment of risks and benefits of the outcome (Ajzen, 1991). The TPB has been used to predict and elucidate a range of health-related behaviors and intentions such as substance abuse, smoking, and breastfeeding (Mohan & Dutta-Bergman, 2005; Sniehotta, 2009).

This theory asserts that behavioral achievement relies on both motivation and ability (Ajzen, 1991). The TPB proposes that "planned" behavior is a result of intention to behave and perceived behavioral control; the intention to behave results from a function of attitudes and subjective norms. Descriptive norms were added to the framework as an extension, aiming towards better explanation of organic food consumption. By including descriptive norms to the TPB framework, it was hypothesized that descriptive norms would increase the predictive power of the model and significantly affect consumer intention (Urban, 2012). Subjective norms, which are included in the original TPB (Ajzen, 1991), only cover one of the many facets of norms. Injunctive (social) norms explain what ought to be done according to others, and neglect other types of norms such as descriptive norms, what others do, and moral norms, what is right to do (Armitage & Conner, 2001; Urban, 2012). In a meta-analysis by Armitage and Conner (2001), injunctive norms were found to have the weakest effect or even no effect on intention (Cowan & McCarthy, 2006). Improper conceptualization and measurement of normative influences is responsible for explaining that of the three predictors of intention, social norms are found to have

the weakest effect (Armitage & Conner, 2001; Urban, 2012) or no effect on intention (Conner, Norman, & Bell, 2002; Mahon, Cowan, & McCarthy, 2006; Terry & O'Leary, 1995).

Lastly, the assumptions in the TPB are that evaluations of its constructs are based on respondents' self-reporting of their own attitudes, subjective norms, and perceived behavioral control (Ajzen, 1985; Ajzen, 1991). TPB has been applied to over 1,000 empirical applications; several of these applications have shown to explain significant relationships between the constructs of TPB and intention and actual consumption of specified goods (Ajzen, 2012). It is commonly used in health-related behavior and consumption behavior of various goods and services (Ajzen, 2012). The explanatory power of the TPB in these applications is comparatively high to alternative theories; empirical models based on TPB explain as much as 39% of variability of intention and 27% variability of behavior according to the latest meta-analysis of TPB by Ajzen (2005) and Armtage and Conner (2001). This theory was an appropriate framework for this research because it sought to relate attitudes and other motivational factors to both behavioral intention and actual behavior. Each of the constructs that comprise the TPB framework in this study have been measured to understand American consumers' attitudes, as well as the motivational factors important in consumer behavioral intention. This resulted in an empirical explanation of consumer behavioral intention and past consumption behavior of organics, which can be taken as a smaller piece of consumer's overall behavioral intention towards health, environment, and socially responsible food goods.

Limitations of the design of this study should also be acknowledged. This study focused on an explanation of intention to consume organic food and not on actual consumption behavior. Although behavioral intention may be assumed to predict behavior quite well under reasonable assumptions, the results from this study were generalized only to the prediction of intention to

consume organic food and not to the actual consumption of organic food (Urban, 2012). The study sought to understand what predictors motivate people to consume organic goods. The rationale for studying behavioral intention is that my study is grounded in TPB. TPB was designed to study behavioral intention and understand the predictors behind intention to act on a particular behavior. Past purchase behavior is also examined under the TPB and compared to behavioral intent to strengthen the results of the TPB model as it pertains to organic consumption.

Nature of the Study

This quantitative study employed the survey method. Quantitative survey research is consistent with measuring attitudes and behaviors, which was the primary focus of this study. Previous researchers conducting similar research testing the TPB for other health behaviors, as well as researchers conducting related social behavioral research for organic consumption in the European markets, have employed the survey method (Sniehotta, 2009; Steg & Vlek, 2009; Timmins, 2010; Urban, 2012). Researchers have used various versions of a TPB questionnaire on organic food consumption behavior in foreign markets (Arvola et al., 2008; Courneya, 1994; Dean et al., 2008; Thogersen, 2009).

In this study, sociodemographics, subjective norms, descriptive norms, attitudes toward organic consumption, perceived behavioral control about food choice, past purchase behavior, and intention to consume organics were measured using a 27-item survey. TPB and American Organic Consumption Questionnaires used for this study were adapted from a similar study conducted by Urban (2012) in the Czech Republic. Most of Urban's survey questions were aligned in a similar manner to the questions in this study, and the questions that are not applicable were adapted in context to American consumers. Urban also studied the inclusion of

descriptive norms and past behavior in the Czech market for proenvironmental behavior in his modified TPB construct, which was adapted to American's organic consumption for the study's research purposes. As modeled in Urban's (2012) study, measures of latent constructs (e.g., subjective norms, attitudes, perceived behavioral control, and intention) were adopted from Ajzen (1991), where the target behavior is defined as the respondent's intention to buy organic food in the next month. All measurement items for the TPB construct used in this study have been previously employed in studies on organic food consumption to measure attitudes and subjective norms (Thogersen, 2009; Urban, 2012).

To better measure organic consumption versus nonorganic consumption, a control variable of organic consumption frequency (the percentage of organic consumption in the last 30 days) was included. This control variable was necessary so that results were not skewed by a participant being classified as an *organic consumer* because they bought organics only a few times in the last month by chance, opportunity, or accident. Therefore, this control variable was important to distinguish between respondents who made one or two organic purchases as a matter of circumstance and those who made a deliberate attempt to consume primarily organic foods.

The target population was adult American consumers. Inclusion criteria required that respondents were of a minimum age of 18 years and had Internet access. In this non-experimental design, the survey materials were available to any American adult with Internet access. This study aimed to examine the breadth of a naturally occurring behavioral phenomenon in the organic food-chain. Nonprobability sampling was used to recruit a convenience sample via the Internet, where members of the population were chosen based on their relative ease of access,

through university networking in the Walden University participant pool, professional and personal connections through LinkedIn, email snowballing, and social media outlets.

Due to the broad nature of the sample, it was unlikely that the restriction of Internet access significantly impacted the sample, requiring purposive or quota sampling. Using G* Power 3.1, the *t* test was selected with linear multiple regression, fixed model, single regression coefficient. The type of power analysis was left under a priori. A two-tailed test with an effect size of .5, *p*-value at .05, 8 predictors, and power at the suggested .80 was used in previous studies (Mohan & Dutta-Bergman, 2005; Sniehotta, 2009; Urban, 2012). For this study, these suggested test parameters indicated a sample size of 123 respondents. Multiple linear regression analysis was a fitting analytical strategy because it attempted to model the relationship between two or more explanatory variables and the response variable (consumer behavior) by fitting a linear equation to the survey data. Multiple regression analysis was used in research questions 1-4 to test the relationships between the TPB constructs, the addition of descriptive norms to the constructs and TPB, as well as age, gender, education, and income. Research Question 5 was included in the multiple regression as a modified portion of the TPB. Research Questions 6 was analyzed using descriptive statistics (e.g., percentages, mean, median, and/or mode, as appropriate).

Definitions

Attitudes: Attitudes are affective judgments on the behavior (intention to consume organic food). Positive or negative affective evaluations of the behavioral outcome (Ajzen, 1991, p. 191).

Descriptive norms: Descriptive norms describe people's perception of what is commonly done in specific situations; it signifies what most people do, without assigning judgment (Cialdini et al., 1990).

Intention to consume organic food: Intention to consume organic food refers to individual's desire to seek, purchase, and eat organic food.

Organics: USDA Organic" or "Certified Organic": The item must have an ingredients list and the contents should be 95% or more certified organic, meaning free of synthetic additives like pesticides, chemical fertilizers, and dyes, and must not be processed using industrial solvents, irradiation, or genetic engineering, according to the USDA. The remaining 5% may only be foods or processed with additives on an approved list (USDA, 2013).

Organic consumption frequency: Organic consumption frequency refers to the total percentage of goods which are purchased organically in the month.

Perceived behavioral control: This term is based on an extension of Bandura's (1977) self-efficacy theory, which suggests that an individual's expectations related to a behavior affect motivation and execution of that behavior.

Past purchase behavior: Behavior the individual has typically executed in the past in regards to their consumption of goods is known as past purchase behavior.

Product attributes: Product attributes are features of a product as faced by the consumer, configurable characteristics of a product or its components.

Proenvironmental behavior: Proenvironmental behavior refers to behavior that harms the environment as little as possible or even benefits the environment.

Sociodemographic variables: These are socioeconomic characteristics of a population expressed statistically, such as age, sex, education level, income level, marital status, occupation, religion, birth rate, death rate, average size of a family, etc.

Subjective norms: Subjective norms, also known as injunctive norms, are subjectively perceived normative pressures from other individuals (Ajzen, 1991, p.195) and how individuals should behave based on group approval of a particular behavior (Cialdini, Reno, & Kallgren, 1990).

Sustainable agriculture: Sustainable agriculture can be defined as farming techniques for food or other plant or animal products which are conducted using techniques that protect the environment, public health, and animal welfare (Timmins, 2010).

Sustainable behavior: Having sustainable behavior is to live in a manner that does not jeopardize future generations (EPA, 2011). For this research, sustainable behavior was used in terms of protecting multiple species of vegetation and livestock (biodiversity), reducing pollution from farming, and protecting the nutrients and safety of food.

Willingness to pay: This term describes the additional amount (if any) of a premium an individual is willing to pay additionally for a product.

Assumptions

As previously stated, the assumptions in the TPB are that attitudes, subjective norms, and perceived behavioral control are based on personal evaluations of attitudinal, normative, and control beliefs (Ajzen, 1985, 1991). The TPB assumes that “being neither capricious nor frivolous, human social behavior can be best described as following along lines of more or less well-formulated plans" and that "human beings usually behave in a sensible manner; that they

take account of available information and implicitly or explicitly consider implications of their actions" (Ajzen, 1985, p. 11–12).

Two assumptions which were important to take into consideration while administering the survey were that people have preferences which influence their action (preference proposition) and an assumption that people choose those actions that satisfy their preferences to the maximum degree, taking into account constraints (utility maximization proposition). Additionally, the effect of external conditions on behavior was difficult to measure directly, but it could be approximated under reasonable assumptions. Therefore, it is assumed that consumers had a certain degree of familiarity with the situation and could judge the difficulty or easiness of that behavior before consumption, by perceived behavioral control (PBC). The degree to which PBC approximates real control over behavior is an empirical question.

Scope and Delimitations

Specific aspects of the research problem which were addressed in the study were the exploratory variables of what consumers find important/unimportant in their decision to consume organic foods, what types of foods were more likely to be consumed organically, and most importantly, how the average consumer uses psychological and environmental cues to make this decision through application of the TPB. This specific focus was chosen because little research has been conducted from a social psychology perspective on the consumption of organic foods as well as the generalizability of organics rather than specific products. A self-report survey was used to collect data on American consumers' attitudes of food choices, preferences on product attributes, consumption behavior, and demographics. Given that this self-report survey was conducted online, it broadened the reach of the survey; however, it did limit respondents to Internet users.

The study was limited to United States residents. The decision to limit the geographic scope of the survey was a matter of the gap in the research, resource limitations, and convenience. The sample size was adequate to collect new information but not exhaustive due to constrained resources. The study excluded American respondents under the age of 17 due to ethical considerations in collecting data from minors, as well as relevance of the data. The questions regarding consumerism were directed towards the decision making of adult populations. Data collected from minors was not necessary because the study focused on the reoccurring decision making of adult consumers. The research used closed-ended questions to improve both efficiency and effectiveness of the data and its quantitative analysis.

Limitations

Generalizing to the entire adult American population in such a small sample posed one limitation. More importantly, the smaller sample size increased the sampling error and decreased the power of statistical tests. This limitation was addressed by using G*Power software to assist in determining the smallest possible sample size to still achieve acceptable standards of error. The second possible limitation of the study was derived from the simplicity of the TBP measurement tool. This measurement tool used indicator questions; that is, questions that provided measurement for the facets of the TPB and its additional modified variables. This was a limitation because the simplicity of the tool may not pick up on all the variables influencing the decision-making of consumers and the complexities of the organic market. Finally, because the data were cross-sectional, the relevance for testing a causal relationship was lower than that of longitudinal or experimental data (Urban, 2012). Limitations due to the design of the study should also be acknowledged. The study was designed to focus on an explanation of intent to consume organic food and not on the actual consumption behavior. Although behavioral

intention may be assumed to predict behavior quite well under reasonable circumstances, these results could be, strictly speaking, generalized only to the prediction of intention to consume organic food and not to the actual consumption of organic food. Additionally, the survey design left open the possibility of skewed demographics due to its snowball sampling method through the Walden participation pool, email, and social media outlets such as Facebook, LinkedIn and Twitter. It was possible that many respondents could have participated from a particular region in the country or represent a limited range of age, education, or income.

Bias that could have influenced the study outcomes was a respondent bias in wishing to please, where respondents could exaggerate their behaviors for the purpose of social desirability in order to please both themselves and the researcher (Ajzen & Fishbein, 1980). This was minimized by emphasizing the anonymity of participation, as well as the importance of the data in the research results in the consent form. Further potential bias could be explained by untested causal factors (variables) that would provide more explanation in testing the TPB and the intention to buy organics. This is known as an excluded variable bias (Ajzen & Fishbein, 1980). There is no solution for an excluded variable bias when testing this type of data. However, the modified model of TPB with its inclusion of descriptive norms, willingness to pay, and past purchase behavior decreased the risk of such bias.

Significance

This study contributed to filling the gap identified in the problem statement by addressing an under-researched area in the modern food-chain. The original contribution of this study was using the TPB to understand organic food consumption among American consumers and fill the gap which exists in knowledge of decision-making determinants of organic food consumption in the United States. The results of this study provided insight into modern American consumers'

attitudes and behaviors towards organic food consumption. The application of the TPB (Ajzen, 1991) helped inform new decision-making frameworks behind organic, local, and socially responsible consumption and provided rationale for the relationships among attitudes, perceived behavioral control and subjective norms. Additional factors of descriptive norms and past behavior were added to the model to test for significance and relationships. This information ultimately was helpful in finding new ways to promote more socially responsible food production and consumption (Steg & Velk, 2009; Timmins, 2010).

Results of this study may aid private industry and public policymakers in understanding consumer perceptions and motivations towards organic and conventional foods in order to support healthier and more sustainable food choices. A growing population remains a serious concern to global development and food production. Food consumption is an essential factor in addressing population growth (Pretty, 1995). Results of this study may also support the knowledge of key players in the organic food-chain. This knowledge can be supplemented from a social behavioral perspective, rather than financial and economic, thus allowing for positive social change towards a higher demand for organic foods, resulting in a higher demand for more sustainable production methods (Gullien-Royo, 2009; Jolly, 1991; Pretty, 1995; Shepherd et al., 2005; Timmins, 2010).

Summary

This study of organic consumerism provides insights into the factors that explain organic food consumption in the United States using a modified version of the TPB. According to a literature review, increased organic food consumption may lead to improved health, environmental, and ecological sustainability, and most importantly, other proenvironmental behaviors such as recycling and/or public transit. Dissemination of this research to the

sustainability and proenvironmental community can help them to gain knowledge to improve their programs and outreach in the United States and beyond. This research used many contexts from previous professional and academic literature reviewed in the next chapter, and is likely to inspire further research.

Chapter 2: Literature Review

Introduction

The average consumer is faced with a myriad of nutritional, food, and economic information they must sift through to make a decision about how and what to consume. Given countless articles, blogs, marketing campaigns, and nutrition programs, consumers have entered a period of confusion and anxiety when approaching this simple decision due to overwhelming amounts of information. Many marketing strategies have intended to purposefully confuse consumers, such as labeling the foods *All Natural* with the aim to pass the product as an organic or giving the perceived benefit of health (Timmins, 2010). This study tested the role of the constructs of the TPB (Ajzen, 1991) on intent of Americans to consume organic food. These constructs include attitudes toward organics, subjective norms, and perceived behavioral control. The second purpose of the study was to incorporate descriptive norms into the TPB framework and subject this extension to an empirical test. Urban's (2012) study showed that the inclusion of descriptive norms greatly improved the predictive power to the TPB.

A review of the literature in this chapter highlights the importance of the role of consumers' willingness to pay for organics and what product attributes consumers find value. These variables have also been examined as a third purpose, in order to offer additional insight to their roles on explaining intention to consume organics and past organic consumption behavior. The literature search and strategy will be explained in this chapter as well as a substantial review of the literature as it pertains to consumption behavior, the TPB, and organics.

Literature and Search Strategy

A search for peer-reviewed journal articles, dissertations, and research documents was used through the Walden Library search engines PsycINFO, PsycARTICLES, SAGE premier, and ProQuest Dissertations. Other web searches were conducted through Google Scholar, which

gave additional basis to topics of interest in the literature review. Key search terms were used to pull relevant articles from the library collections. Topic searches were also used in expanding the scope of the literature review for relevant information. Key search terms included *theory of planned behavior in consumerism, consumer behavior, organic consumption, social change theory of planned behavior, organic decision making*, and *choice in food chain*. Government websites such as the food and agriculture organization (FAO) also provided necessary data for building the background to the literature review. Current, peer-reviewed literature in the past five years was difficult to find, especially as it pertains to specifically the TPB and organics. Due to the limited results of literature, some searches were expanded to the last seven years.

Theory of Planned Behavior

Background

The TPB (Ajzen, 1991) attempts to relate attitudes, social norms, and perceived behavioral control to behavioral intention and actual behavior. Discussion of motivational factors towards behavioral intent and behavior has deep roots in social psychology. La Piere (1934) showed in experiments that the link between attitudes and behavior is not necessarily as strong as theorized, when he demonstrated that local's verbally expressed attitudes towards foreigners were not always manifested in actual behavior. Skepticism towards the attitude-behavior link grew in the mid 1900's when empirical studies continued to show a weak link solely between attitudes and behaviors through studies on marketing and commercialism (Wicker, 1969). Wicker (1969) proposed that the concept of attitudes as being predictors of behavior be abandoned altogether. Individually, attitudes are generally poor predictors of behaviors. However, they can be good predictors under particular circumstances. A meta-analysis by Glasman and Albarracin (2006)

showed that the attitude-behavior association is stronger when attitudes are accessible (easy to recall) and remain stable over time.

The TPB proposed by Ajzen (1985; 1991) began as a direct extension of the theory of reasoned action (Ajzen & Fishbein, 1980) and used elements of previous attitudinal theories and their critiques. TPB borrows from learning theory and uses the notion that overt behavior does not automatically follow from attitudes, but must be positively or negatively reinforced through the learning process (Doob, 1947; Eisman, 1955). The TPB suggests that planned behavior (i.e. behavior that is at some point reflected on by the performed) is a function of the intention to act and perceived behavioral control. The intention to act is, in turn, a function of attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991; Urban, 2012). A graphic representation of the TPB is displayed in Figure 1 on the next page.

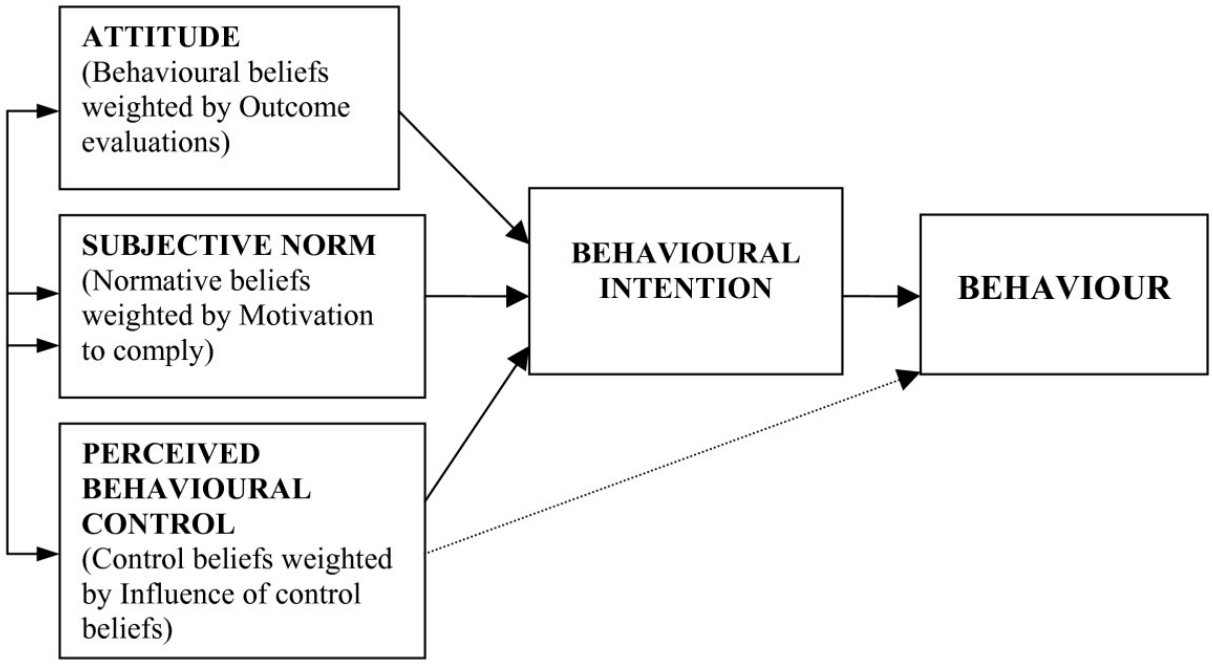

Figure 1. *Ajzen's (2005) Conceptual Model of TPB.*

Unlike other attitudinal theories which assume cognitive, conative, and affective dimensions of attitude, the TPB reserves the term attitude for affective judgments only. Therefore, attitudes are conceptualized as a positive or negative affective evaluation of behavioral outcomes within the TPB framework (Ajzen, 1991, p. 191). This restriction in the TPB can prove advantageous because it provides a clear operational definition of attitudes (Ajzen 2005, p. 21).

Applications of the Theory of Planned Behavior

As previously mentioned, the TPB has been applied to over 1,000 empirical applications (complete bibliography in Ajzen, 2012). The majority of the more recent applications have been in the health field and several applications on travel behavior (Ajzen, 2012). Out of the 1,000 applications, there were several applications of the TPB to consumption behavior ranging from recycling, to water, medications, dieting, alcohol, and smoking, but not general organic food

consumption. Several other applications covered diverse topics such as leisure activities, social deviance, political participation, and school performance (Ajzen, 2012).

One common theme found in the studies outlined by Ajzen (2012) as well as further studies applying the TPB, is that nearly all of them used a modified or extended form of TPB. In regards to consumption, especially proenvironmental behavioral consumption, there have been several applications of the TPB, all which were also modified or extended versions, to explain recycling behavior (Nigbur, Lyons, & Uzzell, 2010; Mannetti, Pierro & Livi, 2004), environmental conservation (Kaiser, 2006), and energy use (Abrahamse & Steg, 2009). Organic food consumption of specific foods has also been previously studied using the TPB (Arvola et. al. 2008; Dean, Raats, & Shepherd, 2012; Garcia & de Magistris, 2007; Thogerson, 2009).

Dean et al. (2012) used the TPB to examine the intention to buy organic tomatoes and tomato sauce. The authors amended the TPB to also include moral norms and self-identity to increase predictability. The study was comprised of approximately 500 people for both organic tomatoes and tomato sauce examinations. Multiple regression analysis showed that both moral norms and self-identity "added significantly to the prediction of intention over and above the other variables, even when the effect of past behavior was included" (Dean et al. 2012, p. 6). Garcia and de Magistris (2007) used qualitative methods to look at the TPB and how it relates to farm tourism supply and demand in Slovenia. Through 42 semistructured interviews with farmers as well as open ended questionnaires sent to 220 farmers and 220 potential tourists, the authors concluded that perceived behavioral control was the most common interrelation to intention, (intention to participate in farm tourism) because the occurrence of farm tourism is primarily based on the needs and opportunities and not the needs of the consumer or the tourist (Garcia & de Magistris, 2007). The authors stated that "…supply is only selectively influenced

by (perceived) demand since farm tourism providers stick to extant idea/image of farm tourism and they are not putting it in question. In this way, they also affect tourism demand since they shape a specific construct/image of farm tourism which attracts only some types of tourists." (Garcia & Magistris, 2007, p. 348). However, their study did not draw any concrete conclusions on the interrelations about the other factors of the TPB and farm tourism supply and demand and left both the results and recommendations sections fairly vague, expressing the need for more quantitative analysis with a larger sample on the TPB as it applies to farm tourism.

Clearly, the explanatory power of the TPB is diverse in both its application and predictive power of different variables. On average, the TPB in empirical models can explain as much as 39% of variability of intention and 27% of variability of behavior (Armitage & Conner, 2001). However, the explanatory power of the TPB towards organic consumption varies greatly. The predictive model of intention to consume specific organic foods varied between 24% in the case of the intention to consume organic vegetables over the next week (Cook et al., 2002). While the explained variance of intention to consume organic tomatoes and processed organic sauce varied 83% (Thogersen, 2009). Tarkianen and Sundqvist (2005) found the TPB to explain 82% for the consumption of organic bread and flour.

Tarkiainen and Sundqvist (2005) also used a modified TPB model to test the predictive power to consume different types of organic goods. The relationships between subjective norms and attitudes and intention to buy organic food were studied by applying structural equation modeling. Tarkiainen and Sundqvist tested their model on 198 Finnish consumers and found that their modified model offered better predictive data than the original model, after comparing results. Their results imply that using the TPB in the context of organic food consumption, the role of subjective norms differs from the original TPB. When modifying their TPB model, the

researchers used two control variables, how regularly the respondent consumed organic food in a 30-day defined timeframe and a measured concept of health consciousness. They postulate that when buying organic food, subjective norms affected the buying intention indirectly through attitude formation. Based on their results, the conclusion can be drawn that Finnish consumers' intent to buy organic food can be predicted through their attitudes ($R^2 = 0.558$). The predictive power can be increased further through subjective norms ($R^2 = 0.374$).

Tarkiainen and Sundqvist (2005) also found that behavioral intentions reliably predict self−reported behavior ($R^2 = 0.824$). Overall, their modified model of TPB fit the data much better than the original model. However, their research had several limitations; such as, it generalized the results to organic food as a whole when the study only concerned organic bread and flower products. Therefore, their results cannot truly explain consumer behavior for all organic goods. Also, the researches only collected data from one retail channel. This limits the findings because different retail stores have different characteristics such as product variance and prices, resulting in different consumption behavior between stores (Tarkiainen & Sundqvist, 2005).

Based on the literature review, discussion and applications of TPB in the United States are relatively limited as most of the revealed research takes place primarily within European Union. This study pulls heavily from a previous application of the TPB by Urban (2012) in the Czech Republic who included descriptive norms into the TPB framework to test its ability to offer better predictive power on intent and behavior. The purpose of the study by Urban was to examine the variables of a modified TPB on organic consumption within the Czech Republic. The study included descriptive norms as an additional predictor of behavioral intention, to see how people seek to gain approval of others and avoid stigma. Admittedly, Urban stated that the

effect of descriptive norms is more indirect as they are “perceptions of what other people do and therefore may be used to infer other people's attitudes and norms” (Urban, 2012, p. 101). Urban predicted that descriptive norms would provide greater predictive power for the TPB because imitation of the behavior of others can serve to gain recognition as a group member by others or, in the case of organic consumption, to simply “adjust an individual's perception of reality” (Urban, 2012, p. 102). Pre-existing data from the year 2011 was used from 253 Czech participants. Structural equation modeling was used to analyze the data. The analysis revealed that descriptive norms and past behavior were the best predictors of intention to consume organics. The entire TPB model Urban used also proved relevant to the intention to consume with a p-value of 0.003 and explaining as much as 44% of the variability in intention (Urban, 2012).

Although this study is closely modeled from Urban’s (2012) study, new data were collected to reflect contemporary impressions on the TPB variables and multiple regression was the analytic test utilized as opposed to structural equation modeling. Structural equation modeling posed difficulty for Urban as there was no rule of thumb for the sample size needed to run the model, but was chosen based on its ease of evaluating measurement errors (Urban, 2012). Assessment of the model fit in structural equation modeling is still a bit controversial among researchers; some argue that the fit indices do not add any new information besides that which can be learned from the chi-squared statistics (McIntosh, 2007). Others argue that there is too strict of a reliance on fit indices, which can hide poor fit models and lead to misinterpretation of results (Hayduk, Cummings, Boadu, Pazderka-Robinson, & Boulianne, 2007). Since there seems to be no established mathematical ground for the fit indices, multiple regression analysis was used for this study instead.

In Urban's (2012) study, when consumers were asked to indicate associations that come to mind when considering organic food, 31% indicated that organics is food without chemicals, 24% healthy food, 12% environmentally friendly food, 11% natural food, and 9% safe food. This denotes a high frequency of salient beliefs related to the health and quality attributes of organic food among Czech consumers. These results are typical to the world-wide data toward organic food consumption (Boccaletti, 2008). However, the Czech consumers in Urban's study did rate the importance of health-related attributes relative to the importance of environmental attributes much higher than consumers in other European countries such as Norway, Netherlands, Sweden, France, and Italy (OECD, 2011), but comparable to consumer data from Canada, Australia, and Mexico (OECD, 2011). The United States was not included in this data collection by OECD and thus, reflects a gap in knowledge on American consumer's attitudes, norms, and behavior of organic consumption.

Decision Making in Food Consumption

Americans do not have deeply rooted food traditions or eating habits like many other cultures (Milne et al., 2011). Government legislation has been the primary directive in influencing American's food traditions and individual dietary goals (Petty, 1995; Timmins, 2010). Such legislation has waged several political "food wars" (Nestle, 2007). This, alongside many media and marketing "food fads," has led to confusion and anxiety in consumers when facing what to eat (Bublitz et al., 2010; Nestle, 2007). Not only are there many new directives to what may kill the consumer or prolong their life, new product attributes (e.g., organic, local, Fair Trade, Rain Forest Alliance) are constantly being introduced to the modern food chain, making the modern food chain ever complex.

Making decisions, no matter how big or small, significant or insignificant, conscious or unconscious, is a continuous and evolving process in an individual's life. From waking up until sleep, humans are in a constant state of experience and sensation. These stimuli of experience and sensation provoke information processing, which leads to attitude formation, and ultimately decision making and the acted behavior. A pioneer for much preliminary groundwork for contemporary decision-making models was Herbert Simon (1976) who focused on how individuals make rational choices. His theory was developed over the course of 50 years in his book *Administrative Behavior (*1976), which has had four revisions. This literature review is based on his 1976 copy, which was the last edition with actual content revisions. Simon developed a framework for decision making that he coined as operational, administrative choice. He believed this choice should be efficient and practical to implement under a set of coordinated means (Simon, 1976).

In this framework, Simon (1976) noted that when individuals make decisions they tend to choose from a number of alternatives. In order to make an operational, administrative choice, they must direct their choice towards a pre-determined goal (coordinated means). In doing so, the individual must analyze the alternatives and their respective consequences (Simon, 1976). Simon's (1976) framework illustrates how individuals make decisions typically in a conscious manner. This process can be undertaken in the sub-conscious; however, the evaluative process of consequences is more brash and based on intrinsic processing. Simon's review of decision making does not quite touch on all the factors of decision making such as the conscious or unconscious aspect or how the consequences resulting from the decision may be intended or unintended.

Conversely, Woodside and Brasel (2011) examined the motivators of unconscious consumer behavior in what they called "branding environments" or decision-making environments directed at consumers. After surveying 23 consumers on their attitudes and beliefs, they placed the consumers into a synthetic branding environment and observed their behavior such as the participant searching for the good, how they react to marketing materials, how they inspect the good, and their overall body language. The article did not state how participants were recruited or the conditions of the experimental branding environment. Their research findings supported the theory that a multiple method, several qualitative approaches such as ethnography, interviews, and a semi-structured experiment are necessary to gain enough data on the relevant thinking processes that occur in consumers both consciously and unconsciously, and that happen in the different phases of the decision-making process- from search, to selection, to purchase and consumption (Woodside & Brasel, 2011). They found that when the participants were surveyed, their answers to attitude based questions varied differently depending on how the questions were framed. The researchers applied multiple phrasings of questions to acquire the respondent's conscious and unconscious thoughts/beliefs/attitudes.

Woodside and Brasel (2011) revealed three factors of consumer perception related to decision making; behaviors, attitudes, and beliefs (BAB). The order of these concepts was demonstrated in their study, as they demonstrated in a marketing scheme that behavior precedes an attitude; then the consumer develops the belief. This contradicts Simon (1976) and other original decision-making theories where individuals act their beliefs, meaning that belief precedes behavior. Woodside and Brasel (2011) argued that consumer behavior occurs unconsciously and mostly through emotional cues, similar to heuristics. They found that their participants preferred to believe that their conscious preferences and values would drive their

attitudes and behavior, however when tested in the branding environment the participants tended to act first, and then justify their behavior by creating new attitudes and beliefs. This study has a relevant association to decision making and the TPB as it addressed some of the elements considered in the theory, especially on beliefs, norms, attitudes, and behavior.

Kahneman and Tversky (2000) proposed that humans have several modes of decision making and information processing, including psychological where the individual examines choices in the context of needs, values, or preferences which they have or want, or cognitive where the decision-making process is integrated into interaction with one's environment and continuous. In regards to food consumption, one may argue that eating and nutrition is a cognitive process to sustain life and satisfy hunger. However, with so many options for food venues, dietary choices, and marketing it could also be considered a psychological process where individuals must now also process information and develop attitudes towards their preferences and values alongside their needs. For example, organic, generic, cheap, or producer Fair-Trade (socio-economically sustainable) food products. In regards to the modern agribusiness industry, it is clear these two choice processes must go hand-in-hand, and each mode does not have to be mutually exclusive.

Regardless of the mode of the decision making it can be regarded as a problem-solving activity completed by a solution which is reasoned to be satisfactory by the decision maker (Kenji & Shadlen, 2012). Kenji and Shadlen argued that decision making can be either a reasoning or emotional process, rendering it rational or irrational based on explicit assumptions or tacit assumptions. They noted that evaluating the consequences, as previously stated, is conducted through a cost-benefit analysis where the investment or risk is weight against the return or positive/negative outcomes in relation to the individual's goals. The authors' model and

explanation is closely tied to rational choice theory which is a framework for understanding both social and economic behavior, interpreting it as acting on the origin of wanting more for less (Arrow, 1987). The model states that ultimately individuals will use their desire for desiring more to instrumental rationality (Arrow, 1987; Friedman, 1953). Instrumental rationality involves the search for the option of obtaining the most cost effective means to achieve a specific outcome, without hindering the merit of the goal (Friedman, 1953).

In regards to food consumption, this would translate to consumers wanting to purchase as much food as possible in the cheapest way possible. Yet, the factor of hindering the merit of the goal is the subjective aspect of the theory, which makes the rationality different for each individual. Going back to Kahneman and Tversky's (2000) notion of meeting values and preferences in decision making, may conflict with the instrumental rationality which Friedman (1953) proposed. One may not be able to meet their values and preferences of food choices while still perusing the decision in the most extreme cost effective manner. Therefore, it is up to the individual where the sacrifices can be made and how many, in maintaining the merit of their goal.

Gullien-Royo (2009) examined the relationship between consumption of a reference group and the individual's subjective "well-being" in several impoverished Peruvian communities. The analysis used five difference consumption domains: food, housing, education, clothes, and healthcare. This article is relevant to the decision-making models and food chain consumerism based on her first consumption domain (food) and measuring how these consumers perceive the value and feelings of adequacy for relative consumption, quality of the good versus quantity. The methodology used in their study was similar to the approach to the methodology

used in this study, where the author used structured self-report surveys to measure the effects of perceived wellbeing and food consumption attributes as well as demographic variables.

Based on previous works, Gullien-Royo (2009) hypothesized that the participants in the study were likely to be influenced by the level of consumption in the community where they live when evaluating their situation and feelings of adequacy. After a multiple regression analysis, results revealed that there was a negative relationship of wellbeing and relative consumption on the individual for housing, clothing, and education (Gullien-Royo, 2009), meaning that the respondent did compare the quality of their goods to their immediate social standards (their community). However, relative consumption had no influence on the subjective wellbeing of the respondent's gage of food and healthcare. Their immediate community had no effect on their feelings of adequacy (Gullien-Royo, 2009). Holding these findings as true, it would challenge other theorists (Simon, 1976; Arrow, 1987; Friedman, 1953; Kahneman & Tversky, 2000), meaning that the model of decision making, attitude development, and behavior would vary depending on the good (or choice) in question. Yet, this research only studied the perceptions and attitudes of participants in impoverished Peruvian communities and lacks scope of Western or American consumerism. It may be noted that there are limitations in this research due to the narrow subject pool.

With a better focus on Western consumerism, Weir and Calverley (2002) examined the potential for organic foods in European markets. The authors looked at European consumer demand for organic products and where opportunities lie in the market for expansion. In a qualitative study, the authors observed consumer behavior, which can at times add more validity than the adopted method of self-report survey. Using these observations Weir and Calverley identified factors which determined purchasing behavior through attitudes, thus locating organic

market barriers. They then implemented a survey to collect demographic data trends in order to identify the type of consumers who purchase organics. They used multiple regression analysis to classify the consumers and their demographic traits. Much like this study, the authors then profiled the consumers and exposed their motives and attitudes for purchasing organics alongside their willingness to pay for such a product. Their research found that the main barrier to the consumption of organic goods in Denmark was the willingness to pay and that the main consumers were female of mid-to high income levels aged 30-55 (Weir & Calverley, 2002). The only gap in this research is its focus on European consumers as opposed to American. Potential socioeconomic and cultural differences between Europeans and Americans may limit the broader applicability of this research.

Shepherd et al. (2005) did a similar study on decision making and organic consumption, where they found a discrepancy between Swedish consumer attitudes and behaviors on organics. After analyzing survey analysis using a method that was not identified by the authors, results showed that consumers do not consider "organically produced" to be an important purchase criterion. Data analysis also showed that organic foods are not perceived to surpass conventional foods in two of the top-rated product attribute qualities, taste and shelf life. This expectation that organic will not surpass conventional foods in Sweden is also due to the consumer response that willingness to pay for the premium prices of organics is too low in comparison to the difference in margin between organics and conventional foods. However, the consumers rated health risks/benefits a top quality of the product even though they were not acting on it. Health benefits of organics were more strongly related to consumer attitudes than environmental benefits (Shepherd et al., 2005). The article set a precedent for this present study and the expected

findings on American consumer's attitudes and behaviors related to TPB in the organic food chain.

A previous study by Donahue (2011) examined American attitudes, beliefs, and behaviors on organic banana consumption. A consumer survey of American consumers was chosen as the method to initially gauge the potential for expanding the market for Peruvian organic bananas in the United States. The online survey was designed to provide potential insights into American consumers' demographic characteristics and their willingness to buy organic or free-trade bananas. The survey's link was subjected to snowball sampling through a series of promotional emails and also advertised on internet discussion forums like Facebook, Twitter, and LinkedIn. While this method did not gather completely random results, which will be discussed in the next paragraph, it was able to identify general perceptions among people likely disposed to purchasing organic fruit who responded to the survey. The data collected from the consumer survey was subjected to a statistical analysis to identify demographic characteristics contributing to the decision to purchase organic and fair-trade characteristics for fruit. This analysis was conducted using a logit model whose parameters were estimated using LIMDEP (Donahue, 2011).

The statistical analysis identified women aged 30-45 in $75,000+ household incomes as the sociodemographic group who was most likely to consume organic bananas and who had the most positive attitudes and beliefs on organic and fair trade products (Donahue, 2011). A total of 273 persons participated in the survey. Survey participants tended to have achieved a higher level of education and were more affluent than the general U.S. population. For example, 37% of the participants had a post-graduate degree and 26% had households that were earning over $100,000 per year (Donahue, 2011). Consequently, the survey sample may not be a

representative of the general US population, whose average household income in 2010 was $50,221 in 2009 and about 9.4% had post-graduate degrees (US Department of Commerce, 2014). The average age of the survey participants did align with the average age of the U.S. consumers in 2009. The average age of U.S, consumers in 2009 was 45-55 years of age and the average age of the survey participants calculated to approximately 44 years of age (Donahue, 2011; US Department of Commerce, 2014).

Proenvironmental Behavior

Since the 1970s there has been a focus in social research on individual behavior as a precursor of environmental problems (Urban, 2012). Maloney and Ward (1973) gave a portrayal of an ecological crisis, which had been caused by maladaptive human behavior and argument that these crises can be resolved by changing this behavior was an originator to many subsequent studies on responsible environmental behaviors in social science. The term *responsible environmental behavior* and similar terms (e.g. environmental, proenvironmental, green behavior etc.) have been used since then to denote behaviors that contribute to the solution of environmental problems (Cook & Berrenger, 1981; Lipsey, 1977; Maloney & Ward, 1973). The application of proenvironmental behavior in research has been expanded over the years to include not only consumption-related activities, but other types of behaviors which have direct and indirect effects on the environment (Stern, 2000; Urban 2012). Stern (2000) outlined four main types of proenvironmental behaviors that can be distinguished analytically and empirically: environmental activism, non-activist behavior, behavior in organizations, and private-sphere environmentalism. Environmental activism consists of active involvement in environmental organizations and participation in environmental demonstration. Non-activist behavior in the public sphere included non-activist support of the environmental movement and also active and

passive environmental citizenship. Behavior in organizations is behavior which influences organizations and environmental stewardship. Private-sphere environmentalism consists of all activities which people do in the private sphere and which have some environmental effect.

According to Stern (2000) the first three pro-environmental behaviors can actually have a very large environmental effect if they succeed, because they potentially influence many other individuals (e.g., establishing a legal ban or introducing taxes on environmentally harmful activities can potentially affect a large number of people). The last one, private-sphere environmentalism, has a subtle effect at the individual level but becomes important when aggregated over many individuals. Organic food consumption is an example of private-sphere environmentalism, specifically green consumerism. Two issues are important with respect to private-sphere environmentalism. The first is the problem of the reduction of environmental responsibility. The second problem is due to the fact that private-sphere environmentalism needs to be aggregated over many individuals before it can have any actual effect on the environment.

Organics

Organic Foods

Organic foods are foods that are grown without using synthetic additives such as chemical pesticides and fertilizers, and seeds that are not genetically modified (Smith-Spangler et al., 2012). Organic foods have been an aspiring product due to consumer's growing attention to food safety, health, sustainability, and fair-trade issues. The message of organics and what they stand for is spread through consumer education, media initiatives, health consciousness movements, and global emergencies. Growing and eating organically used to be the only option for consumption. Yet, with advancements in technology and science producers are able to grow superior crops with higher yields through "conventional agriculture", which has become a social

norm in Western culture, leaving organics as a specialty item. Resulting from conventional production methods, environmental devastation and health implications arose from the unsustainable, non-organic, agricultural practices including herbicides, pesticides, and over-cultivation (Jolly, 1991; Pretty, 1995; Timmins, 2010; Urban, 2012). Sir David King stated during his recent lecture at the Royal Agricultural College that, “food production has doubled since World War 2 and cross border trade has seen a 12-fold increase” (King, 2010). He explained that it is increasingly important to manage the environment for the ecosystem to sustainably return and that"…we are currently facing once of the largest challenges civilization has seen because it requires a collective response between nations" (King, 2010).

In the case of the organics exchange, this challenge of sustainability will require development on the side of producers and relies on demand for organics from American consumers. The European Union, unlike the United States, already has a strong demand in this area. Currently, the governments of developing nations are taking interest in the care of the environment in many sectors including retail, banking, agriculture, infrastructure, etc. All are the result of the tried KYOTO protocol and of the mass media that helps to open new areas of environmental interest to the people (King, 2010; Timmins, 2010).

Organic Consumption

Current research findings show that environmental devastation and negative health outcomes have resulted from unsustainable, non-organic, agricultural practices, including herbicides, pesticides, and over-cultivation (Pretty, 1995; Smith-Spangler et al., 2012). The demand for cheap non-organic (i.e., conventional) foods has also led to the exploitation of producers and other agricultural workers in the food industry around the world (Smith-Spangler

et al., 2012). Existing empirical literature related to attitudinal and behavioral measurements as it relates to organic consumption has three notable factors:

1. It is primarily tested within the European market for a theoretical understanding of consumption behavior.
2. American research is often motivated by the practical concerns of marketers, government, or retailers.
3. When the theoretical models are applied in these markets, they are designed for specific examples of organic consumption and this research does not have ambitions towards theoretical generalizability of the organic market.

(Bartels & Reinders, 2010; Shepherd et al., 2005; Steg & Velk, 2009; Timmins, 2010; Urban, 2012).

Similar to the findings of Timmins (2010) as well as Steg and Velk (2009), the book, *Closing the Food Gap*, by Winne (2009) indicated that there has been a growing number of studies conducted identifying human health hazards associated with the increased use of food additives and other chemicals in the US. He also pointed out two other related trends of the loss of farmland due to suburban sprawl and heart disease being the number one killer in the US. Recently the American government has formed a Senate select committee on nutrition being chaired by senators George McGovern and Bob Dole. This is a bipartisan team who continue to work on improving US nutrition standards and food safety. These government officials note the downward trend in family farming and an increase in the use of pesticides and other growth chemicals as the reason for the increase in demand for organics (Winne, 2009).

Winne (2009) illustrated through his book that organics are currently targeted at well-educated and privileged consumers in the US. He believes that the force behind the organic

movement was something more fundamental than scientific research and the setting of national standards. The reason for targeting this group is that organics tend to be more costly to produce than conventional foods and this group is seen as the one most able to pay the extra cost for organics. With growing complexity in the food chain, consumers are becoming more educated and making more informed food choices. Consumers prefer certain segments of products to be organic more than others; therefore, there is a variable organic supply segmentation of products as illustrated below in Table 1.

Table 1

Segmentation of the World Market of Organic Products (FAO, 2013)

Product	%
Fruits and vegetables	36.0
Prepared beverages	19.9
Milk	16.8
Beverages	10.8
Bread and grains	10.6
Meat, chicken and fish	5.0
Others	0.9

To give perspective to the power and growth of the world organics market, in base estimations collected from diverse studies and industrial sources, the world sales of organic food retail were reckoned to be approximately 34 billion USD in 2011; in 2012 these sales approached 44 billion USD. This shows that in nearly one decade the market had grown more than 200% compared to 2002, most of these organic sales being in the fruits and vegetables sector as seen in Table 1 (FAO, 2013). Although the growth in exports decelerated slightly at the beginning of

2000, it has still proven energetic by growing more than 53% between 2009 and 2014 (IFOAM, 2014).

It is evident that there is a burst of new interest in food. The newly emerging organics grocer Whole Foods sold $5.6 million in 2005. The organic lifestyle does not seem to be a fad and has continued well into 2010 and is still growing (Winne, 2009). "It's a value system and a belief system, penetrating into mainstream" (Winne, 2009, p.17). It is estimated that the 98% of the sales of organic-certified products took place in developed countries. North America and Europe account for the greatest percentage of retail sales. Just behind them are Japan, Australia and New Zealand (IFOAM, 2014). Though the developing countries represent at present only a fraction of the sales of organic products, in some developing countries the consumption of organic food products is enlarging constantly, particularly in the new emergent economies of Asia (Singapore, Malaya, Chinese, the Republic of Korea) and Latin America (Argentina, Brazil, Chile). In these countries, organic sales are predominantly concentrated in the large cities, and the buyers tend to be of high social classes (IFOAM, 2014). The developed countries absorb most of the imports of organic bananas. Europe, North America and Japan together represent 99% of the of the world's organic imports. In 2006, Europe alone represented more than the half of the worlds' imports. According to estimates, in 2007 the retail value of organic banana sales approached $800 million (IFOAM, 2014).

Attitudes and Beliefs in Consumerism

Salient beliefs, attitudes, behaviors, and motivations in regards to consumption of grocery products were examined by Gbadamosi (2009), where he discovered that women were the habitual consumers in this retail market. Low-income women were the least loyal to brands in grocery products. They are however, loyal to value-range brands, which they believe are similar

to manufacturer brands. This gives inclination that these consumers have price-driven attitudes, and value-for-money is a key motivator. At the same time, these same consumers are also sensitive to sales promotions and marketing campaigns between products and stores. This confirms the incidence of lack of alignment between TPB variables of attitudes and behavioral intent in their grocery consumption and the lack of marketing penetration of organic products towards these majority consumers.

Thorgersen (2002) proposed that the propensity of environmentally friendly behavior can evolve into different sustainable consumption patterns. He used the TPB as a basis for what he refers to as the "spillover effect". Thorgersen proposed that spillover is likely if behaviors are perceived as relevant and similar to the individual, such as behaving responsibly towards the environment and its moral importance (Thorgersen, 2002). This is a likely explanation for how the individuals in the community who do participate in the city's other pro-social activities are the same individuals who are inclined to attend the farmer's markets or buy organics at the supermarket. Thorgersen's research relates to how social groups can have important effects on attitude formation and development in individuals. An individual's social identification is essential in attitude formation and maintenance. Many times certain views and behaviors are synonymous with certain social groups, such as being environmentally or health conscious. We label ourselves based upon the group, which we associate the most, leading us to take on the role, behaviors, and views that this group endorses (Thorgersen, 2002). However, many times our true ideologies and desires are not how we actually behave. This situation is where we can see a struggle between the importance of the individual in contrast to the social group, such as struggling between being health/environmentally conscious or price/value conscious.

In a study by Millikin (2003), results showed when consumers experience an unexpected price encounter; they employ three methods to reduce dissonance (tension) regarding pricing. One method to reduce dissonance which consumers use was the strategy of constant information, which is where the consumer will engage in bias to support their previous beliefs on the product or substitute products. Other times consumers may change their attitude towards the unexpected price by reevaluating the price in relation to other products of higher or lower quality and their prices. Finally, consumers could use trivialization where they lessen the importance of cost (money) and shopping around for a better deal to go with the original product regardless of the unexpected price (Millikin, 2003).

Consumption and Physiological Factors

Hunger is a biological need; however, consumption (purchase and eating of a particular good) is not regulated by biological factors alone. Studies show that social and environmental factors govern consumption to a considerable extent (Dabone, Delisle, & Receveur, 2013). Given the research in this literature review, three key environmental factors have been reviewed in multiple works for explaining consumption: the availability of food, learned preferences and habits, and stress (Dabone et al., 2013). These factors were important to consider when developing the survey questions for the TPB and its extension. Learned preferences and habits relate back to the discussion on attitude formation and evaluation concerning food consumption. For example, some individuals may be fond of eating calf brain, eel, grasshopper, or dog meat as they are delicacies in many regions of the world while others may find these foods repulsive. Others may prefer pizza, chicken, apples, chips, or ice cream. These preferences are acquired through learning processes. People from different cultures have very different patterns of food consumption (Fonte, 2013). In a cultural melting pot such as the United States, this has had very

different implications on organic consumption compared to the many studies conducted in Europe.

Conclusions

The TPB has been applied in a diverse range of areas and has received considerable empirical support, especially when applied to organic consumption. According to the TPB, behavior can be explained from behavioral intent, where intent can be explained from attitudes, social norms, and perceived behavioral control. There has been significant groundwork laid on the importance of understanding consumption, particularly organic consumption. In this chapter, I synthesized the peer-reviewed literature to outline the barriers to organic consumption, understand organic attributes, and availability of organic goods. Researchers have previously looked at TPB concepts in organics such as attitudes, perceived behavioral control, and social norms, which set a benchmark of comparable metrics for this study.

With an exponentially growing and changing food chain in the United States, in addition to health, food security, environmental, and biodiversity concerns, the importance of exploring how and why decision making in food consumption is made is a high importance. This type of data could help retailers, health care providers, and public policy professionals, growers, and consumers to assist in socially responsible decision making. One key point expressed throughout this chapter is the gap in the literature on a quantitative research, especially as it pertains to organic consumption and the TPB. In Chapter 3, the quantitative design and method of the research to study organic consumption in American consumers and an amended TPB will be described.

Chapter 3: Methodology

Introduction

The first purpose of the study was to test the role of constructs of the TPB (Ajzen, 1991) on intent of Americans to consume organic food. These constructs include attitudes toward organics, subjective norms, and perceived behavioral control. The second purpose of the study was to incorporate descriptive norms into the TPB framework and subject this extension to an empirical test. A review of the literature highlighted the importance of the role of consumers' willingness to pay for organics and what product attributes consumers find value. Willingness to pay and product attributes was also examined as a third purpose, in order to offer additional insight to their roles on explaining intention to consume organics and past organic consumption behavior. This chapter will cover the survey research methodology and design rationale, sampling procedures, data collection, instruments, validity, and ethical considerations.

Research and Design Rationale

To collect the data, the survey method was used. Surveys are an effective and efficient way of collecting data on large samples like the participants of interest for this research study. The survey method was useful because it can be used to measure willingness to pay and compare it to other data given by the respondents, such as sociodemographic data, through multivariate analysis to identify links in consumer behaviors and attitudes. Data were collected in a specific manner to avoid temporal, learning, and segment biases using choice modeling through online survey. Choice modeling was the preferred measurement tool because it makes the frame of reference explicit to respondents via the inclusion of an array of attributes and product alternatives (Akiva & Lerman, 1989). It can analyze the choice behavior of individuals who face discrete economic alternatives and can be best implemented by self-report survey. Using choice

modeling to determine willingness to pay for organics, in combination with Likert scale for measuring attitudes on sustainable agriculture, and socio-demographic information, the research problem was thoroughly addressed.

In similar studies, measurement of attitudes was done through self-reporting, implicit association tests, and observation (Greenwald et al., 2002). In these studies, explicit attitudes were measured directly from the participant. They were evaluated through self-report surveying, questionnaires, and interviewing. Participants divulged their positive or negative thoughts, feelings, or actions towards certain stimuli, stimuli in this study would be organics. As previously explained, survey design choice for measuring attitudes, norms, perceived behavioral control and intention in this study was consistent with research designs past and present needed to advance knowledge in the discipline. However, it is always questionable whether participants in self-reports gave valid and reliable responses due to their unconscious associations also known as *implicit stereotype* (Greenwald et al., 2002). According to Greenwald et al. (2002), "…implicit attitudes are introspectively unidentified (or inaccurately identified) traces of past experience that mediate favorable or unfavorable feeling, thought, or action toward social objects" (p.5). Implicit attitudes can be measured by researchers through priming techniques, psychoanalysis, observation, and implicit association tests where respondents are not directly asked to reveal their attitudes, therefore eliminating an element of bias of the participant answering in favor of social desirability (Nosek, 2007). However, data collection on implicit attitudes is an impractical and timely approach to collecting data for this particular research due to the large number of participants needed, as well as the less sensitive nature of the survey.

Methodology and Sampling Procedures

This study used a nonprobability sampling method, specifically convenience sampling, because it provided an ease of access to target population. Participants were asked to encourage other individuals in their network to participate in the survey, leading to snowball sampling (Berg, 2006). Snowball sampling helped to include a more representative population and expand the network and proximity of the survey throughout the United States. Members of the target population of interest, adults who are citizens of the United States, were contacted based on their relative ease of access, through university networking, professional and personal connections. Participants were also recruited through social media outlets such as Facebook, LinkedIn, and Twitter in order to reach a more diverse range of participants beyond the Walden participant pool. Social media recruiting was also chosen to reach a more diverse demographic. Sampling solely from the Walden participant pool and snowballing from those respondents could skew the demographics in terms of education and age. Similar to the Walden participant pool, the respondents recruited through social media were also be asked to encourage their peers to participate, leading to further snowball sampling. This type of sampling was cost effective and efficient to implement, especially in such a board target sample. Purposive sampling was not necessary because as long as the respondent meets the requirements of being 18 years of age or older and a consumer of goods in the United States, they were representative of the target population. Due to the board nature of the sample, it was unlikely that the restriction of Internet access significantly impacted the sample. However, there was the risk that the study's approach could affect the reliability of the sample through research bias such that the people who were approached to participate in the study as well as respondents who volunteered opposed to those

who do not, may differ in unknown but important ways making the sample notable, but not entirely representative of the general American public (Frankfort-Nachmias & Nachmias, 2008).

One advantage of probability sampling was that it tends to be more representative of a population and reduces sampling bias. This does not necessarily mean that nonprobability sampling is not representative of a population, but it does mean that nonprobability samples cannot rely on the rational probability theory (Trochim, 2006). The second advantage with a probability sample was that the researcher can know the odds that they have represented the population and have an estimate of the confidence intervals. Nonprobability samples are much more difficult to determine if the population is represented well (Groves, Presser, & Dipko, 2004). The only reason researchers sometimes use nonprobability sampling is when probability sampling is not feasible to do random sampling for the specific data needed (Trochim, 2006). The research problem and research questions for this study were addressed using probability sampling.

The survey was distributed online in the form of a self-report questionnaire. The first question ensured that the respondent was an American consumer (a resident of the United States), the second ensured they are an adult (18+ years old), and the questions that followed measured the respondents' attitudes, norms, perceived behavioral control, past purchasing behaviors, intent to consume in the future, and sociodemographic characteristics. Since the survey was cross-sectional, it only provided a snapshot of organic consumerism.

Using G*Power 3.1, the *f*-test was selected with linear multiple regression, fixed model, R-square deviation from zero. The type of power analysis was left under *a priori.* Additional criteria entered was for a two-tailed test with an effect size of .15, *p*-value at .05, 11 predictors, and power at the suggested .8 because this was similar criteria used in previous studies (Mohan

& Dutta-Bergman, 2005; Sniehotta, 2009; Urban, 2012). For this study, these suggested test parameters indicated a sample size of 123 respondents.

Procedures for Recruitment, Participation, and Data Collection

Participants were recruited through the Walden University participant pool and through postings on social media outlets, Facebook, LinkedIn, and Twitter. Participants reached through these primary sources were asked to refer their friends, family, and colleagues to the study resulting in a "snowballing" sampling method**.** Participants were categorized by zip code to evaluate if diversity of demographic and geographic range across the United States were achieved. Zip codes of each participant were important in the socio-demographic survey to illustrate where the respondents are living and consuming from, as the geographic location of the respondent could affect their responses within the survey. Internet access was necessary as well as access to various web-based forums to recruit participants. Participants read a consent form before entering the survey to acknowledge their willingness to participate and status as an adult U.S. resident. Participants were able to exit the survey at any time upon which they were presented with a Thank You page and my contact information in case they were to have any questions or want a copy of the results.

Instrumentation

This quantitative study employed the survey method. Quantitative survey research was consistent with measuring attitudes and behaviors, which were the primary focuses of this study. Previous researchers conducting similar research testing the TPB for other health behaviors, as well as researchers conducting related social behavioral research for organic consumption in the European markets, have employed the survey method (Sniehotta, 2009; Steg & Vlek, 2009; Timmins, 2010; Urban, 2012). Researchers have used various versions of a TPB questionnaire

on organic food consumption behavior in foreign markets (Arvola et al., 2008; Courneya, 1994; Dean et al., 2008; Sparks & Shepherd, 1992; Thogersen, 2009; Thogersen & Olander, 2006). In this study, sociodemographics, subjective norms, descriptive norms, attitudes toward organic consumption, perceived behavioral control about food choice, past purchase behavior, and intention to consume organics were measured using a 27-item survey from a similar study conducted in the Czech Republic (Urban, 2012). Each construct was measured with several themed questions. Social Norms were measured with two questions labeled as: (a) Other's Opinion Valued Personal Consumption and (b) Others of Importance Personal Consumption. Descriptive Norms were measured with two questions labeled as: (a) Others of Importance Think of My Consumption and (b) Other's Opinion Valued Approve of My Consumption. Attitudes were measured with five questions labeled as: (a) Buying Organics Bad/Good, (b) Buying Organics Non-Beneficial/Beneficial, (c) Buying Organics Disadvantageous/Advantageous, (d) Buying Organics Unreasonable/Reasonable, and (e) Buying Organics Not Right/Right. Perceived Behavioral Control was measured with two questions labeled as: (a) Buying Organics Difficult/Easy and (b) Buying Organics Internal/External Choice. The sociodemographic variables measured were age, gender, education, and income.

The results of Urban's (2012) use of SEM to test the TPB model with organic consumption in the Czech proved acceptable, but not ideal. The chi-square test was significant with a *p*-value of 0.003 on the whole model. However, this present study used multiple regression analysis as it was suggested by Urban that the model's parameters were too loose. The total model tested by Urban explains as much as 44% variability of intention to consume organics in the Czech. Urban's (2012) study found higher statistical significance when looking at individual dependent variables, where attitudes and subjective norms had a positively statistically

significant effect on intention. Most of Urban's survey questions were aligned in a similar manner to be replicated for this present study, and the questions that were not worded applicably were adapted, such as questions that mentioned Czech Republic were changed to United States.

Urban (2012) also studied the inclusion of descriptive norms and past behavior in the Czech market for pro-environmental behavior in his modified TPB construct, which was also reproduced to American's organic consumption for this study's research purposes. Measures of latent constructs (e.g., subjective norms, attitudes, perceived behavioral control, and intention) were adopted from Ajzen (1991), where the target behavior is defined as the respondent's intention to buy organic food in the next month. All measurement items for the TPB construct used in this study have been previously employed in studies on organic food consumption to measure attitudes and subjective norms (Thogersen, 2009; Urban, 2012).

A TPB model 27- item questionnaire developed by Urban (2012) was used to examine American consumer's intention and behavior towards organic food consumption (see Appendix A). The same questions and wording, which Urban applied to Czech consumers in his survey, were applied to American consumers for this study. Questions from Donahue's (2011) survey on consumer perceptions of the consumption of organic bananas in the U.S. market were adapted for organics in general. Specific questions on product attributes, sociodemographics, and willingness to pay were used. This questionnaire was approved by the IRB at Utah State University and Royal Agricultural College, United Kingdom. Dr. Jan Urban was contacted at Prince Charles University for permission to replicate Urban's (2012) theory of planned behavior questionnaire. Donahue's (2011) survey has implied permission as it was a previous study conducted by this author.

Operationalization of Constructs

Measures of the TPB constructs, subjective norms, attitudes, perceived behavioral control, and intention, were adopted primarily from Ajzen (2002a). Bearing in mind the principle of correspondence of TPB constructs (Ajzen, 1991, 2005), that is, the requirement that all constructs are measured at the same level of generalizability with respect to target, action, context, and time, I have defined the target behavior as "a respondent's intent buying organic food in the next month" in the first regression, and "a respondent's past purchase behavior of organics in the last month" for the second regression.

Attitudes was defined as affective judgments toward consuming organic food; specifically, positive or negative affective evaluations of the behavioral outcome (Ajzen, 1991, p. 191). Urban (2012) formulated and tested in a pre-survey several semantic-differential scales that included both instrumental and experiential items as recommended by Ajzen (2002a), it was discovered in the pre-survey that respondents were hesitant to indicate their attitudes towards the consumption of organic food on experiential scales (pleasant-unpleasant, enjoyable-unenjoyable) because it seemed to them "weird" (Urban, 2012, p. 152). Respondents expressed no hesitation in indicating their answers in instrumental scales; therefore, experiential items were omitted from Urban's (2012) survey, which were adapted for this dissertation. However, it is worth consideration in future research why consumers are unwilling to evaluate organic food consumption on an experiential scale. The attitudinal measures used in this survey were replicated from Urban (2012) and consisted of five items, three which are more specific and two more general. General attitudes were measured on a 7-point Likert-type scale ranking the perception on the consumption of organics from "bad – good" and "not right – right". More specific attitudes were also measured on a 7-point Likert-type scale ranking the perception of the

consumption of organics from “non-beneficial– beneficial”, “non-advantageous – advantageous”, and “unreasonable- reasonable”

Subjective norms were defined as subjectively perceived normative pressures from other individuals (Ajzen, 1991, p.195) and how individuals should behave based on group approval of a particular behavior (Cialdini et al., 1990). Ajzen’s recommendations were followed and two indicators for subjective norms were included in the survey and measured on a 7 point Likert-type scale.

Descriptive norms were defined as people's perceptions of what is commonly done in specific situations; it signifies what most people do, without assigning judgment (Cialdini et al., 1990). Two indicators for descriptive norms were also included and measured on a 7 point Likert-type scale.

Perceived behavioral control is a construct based on an extension of Bandura’s (1977) self-efficacy theory, which suggests that an individual’s expectations related to a behavior affect motivation and execution of that behavior. This variable was measured with two items, one item which captures controllability or the perceived level of control that the respondent has over the consumption of organic food and the other which captures self-efficacy or perceived ability to purchase organic food, both of which are measured on a 7-point Likert-type scale.

The target *behavior* (independent variables) was measured in two different analyses; in the first it was defined as the respondent’s intention to buy organic food in the next month. In the second analysis, it was defined as the respondent’s actual consumption of organic food in the past month. As in Urban’s (2012) study, *intention to consume organic food* in the next month was measured by a single item, with respondents indicating their level of agreement with the statement “I intend to buy organic food in the next month” on a 7-point Likert scale. The use of

the single item precludes me from estimating measurement error of the intention scale. Similarly, *past purchase behavior* was measured by a single item on a Likert- scale with agreement to the statement "I have purchased organic food in the past month" (Urban, 2012).

Willingness to pay was defined at the maximum amount of money a person would be willing to pay in order to receive specific organic product (Akiva & Lerman, 1989). Data were collected in a specific manner to avoid temporal, learning, and segment biases using choice modeling through online survey. It was then possible to gauge in a percentile ranking how much more the participant would pay for an organic product in comparison to its conventional counterpart (i.e. 0%, 5-10%, 10-15%, 15-20%, etc.). Choice modeling was the preferred measurement tool because it "makes the frame of reference explicit to respondents via the inclusion of an array of attributes and product alternatives" (Akiva & Lerman, 1989, p. 3).

Product attribute importance was defined as what qualities in food products consumers consider most important such as price, taste, organic, shelf life, etc. (Shepherd et al., 2005). This variable was measured by choice modeling.

Sociodemographic information was collected to provide essential target market data to a consumer profile. Socio-demographic data included the respondent's household income level, age, sex, and highest level of education. Then using regression analysis, important associations were made between certain sociodemographics and the TPB constructs and descriptive statistics used to divulge extra explanatory information on willingness to pay and product attributes. Household income, age, and level of education were measured on an incremental scale whereas gender was measured as male/female. Household income included five categories: (a) $0-$20,000; (b) $20,000-$50,000; (c) $50,000-$75,000; (d) $75,000-$100,000 and (e) $100,000. Age included four categories: (a) 18-24; (b) 25-39 (c) 40-64; and (d) 65+. Level of education

included five categories: (a) High school; (b) Some college; (c) Bachelors; (d) Post-graduate; and (e) None of the above.

Organic consumption frequency was defined as the total percentage of goods which are purchased organically in the month and were measured on the following five categories: (a) 0%; (b) 1-20%; (c) 20-50%; (d) 50-75%; and (e) 75-100%.

Data Analysis and Plan

In this study, the intent to consume organics in the next month (DV), controlled by frequency to consume organics variable, was examined to determine if attitudes (IV), perceived behavioral control (IV), social norms (IV), attitudes (IV), and descriptive norms (IV) significantly correlate with the DV. Demographics included consumer information such as age (IV), income (IV), education (IV), and gender (IV). The DV was categorized into organic buyers and conventional (non-organic) buyers to see the effect of the changes in attitudes and demographics (IVs). Next, a second multiple regression was run with the same IVs, this time using past purchase behavior in the last month as the DV (yes/no to consuming organics in the past month). The use of the two multiple regressions aimed to show if the TPB applies to both past consumption and current consumption.

The assumptions of the multiple regression analysis were: (a) variables had a normal distribution; (b) there was a linear relationship between the independent and dependent variable; (c) the variance across independent variables was similar (homoscedasticity); and (d) there were no serious outliers, which would pull the model and distort the relationship (Pedhazur, 1997). In a third test, Cronbach's alpha was used to test the reliability of the scales.

Descriptive Questions

Research Question 1: For respondents who consume organics, at what price markup (if any) does willingness to pay effect intention to consume?

For descriptive Research Question 1, descriptive statistics were run on percentage increase in cost of organic goods (See Appendix B).

Research Question 2: What organic product attribute do organic consumers consider most influential in their intent to consume?

For descriptive Research Question 2, descriptive statistics were run on the perceived product attribute (See Appendix B).

Inferential Questions

Research Question 1: After controlling for organic consumption frequency, do the constructs of the theory of planned behavior (attitudes, subjective norms, and perceived behavioral control) predict intention to consume organics among American consumers?

$H_0$1: The constructs of the TPB do not predict intention to consume organics after controlling for organic consumption frequency.

$H_1$1: The constructs of the TPB do predict intention to consume organics after controlling for organic consumption frequency.

For hypothesis 1, multiple regression analysis was used to determine the correlation between the DV (intention to consume) and the IVs (social norms, perceived behavioral control, and attitudes)

Research Question 2: Does the inclusion of descriptive norms in the TPB model increase explained variance of intention to consume organics?

$H_0$2: The inclusion of descriptive norms in the TPB model does not increase explained variance of intention to consume organics.

$H_1$2: The inclusion of descriptive norms in the TPB model does increase explained variance of intention to consume organics.

For hypothesis 2, these results were determined from the first multiple regression looking at the correlation between the DV (intent to consume) and the IV (descriptive norms).

Research Question 3: After controlling for organic consumption frequency, do the constructs of the theory of planned behavior predict past behavior consumption?

$H_0$3: The constructs of the TPB do not predict past behavior consumption after controlling for organic consumption frequency.

$H_1$3: The constructs of the TPB do predict past behavior consumption after controlling for organic consumption frequency.

For hypothesis 3, multiple regression analysis was used to determine the correlation between the DV (past behavior) and the IVs (social norms, perceived behavioral control, and attitudes).

Research Question 4: Do gender, education, income, and/or age predict intention to consume organics in the next month?

$H_0$4: Gender, education, income, and/or age do not add predictive power to the intention to consume organics in the next month.

$H_1$4: Gender, education, income, and/or age do add predictive power to the intention to consume organics in the next month.

For hypothesis 4, these results were determined from the first multiple regression to determine the correlation between the DV (intent to consume) and IVs (gender, education, income, age).

Threats to Validity

Limitations of the design of this study should also be acknowledged. Although behavioral intention may be assumed to predict behavior quite well under reasonable assumptions, the results from this study could be generalized only to the prediction of intent to consume organic food and not to the actual consumption of organic food. The second analysis of the TPB construct in regards to past purchase behavior adds support to the study's design. The study sought to understand what the predictors are that motivate people to act of a particular behavior. The rationale for studying behavioral intention is that my study was grounded in TPB. TPB was designed to study behavioral intention and understand the predictors behind intention to act on a particular behavior.

When selecting and designing appropriate measurement scales, TPB and American Organic Consumption Questionnaires, the two most important factors considered were validity and reliability (DeVellis, 2012). If survey research, or any research for that matter, lacked these factors then the data was insignificant and not representative of any population. Validity was useful in proving that the measurement scale was measuring the intended variable and reliability proves consistency and dependability in the measurement scale (DeVellis, 2012). Psychometric measurements helped in survey design to measure psychological properties, which are intangible such as emotions, attitudes, and corresponding behaviors. These are typically reported by self-assessment (by the respondent). Answers by the respondent tended to be the most reliable, but face several challenges such as the respondent understanding of the variable which is being

measured (DeVillis, 2012). The survey was written in simple language to decrease any language barriers or confusion in answering the questions. Likert scale surveying is common in testing consumer behaviors and provides the respondent with a simple way to reply to the questionnaire.

Internal validity refers to the inferences regard the cause-effect or casual relationships (Gribbons & Herman, 1997). This is an important factor for quasi-experiments because they are focused on casual relationships, where the researcher attempts to control variables in a natural setting (therefore they do not have complete control and threaten internal validity). However, a natural setting is important not to skew data presented by the participants, thus minimizing the risk of external validity (Frankfort-Nachmias & Nachmias, 2008). External validity is a generalization of the results obtained from the sample and how they can be applied to the outside world (Gribbons & Herman, 1997). Although the model allowed for threats to external validity to be minimized, threats to internal validity can be enhanced by the design choice, (Frankfort-Nachmias & Nachmias, 2008). The study also posed a threat to internal validity due to the lack of randomization in the design choice; however, it still stands as the best application towards data collection in efficiency and effectiveness.

Ethical Procedures

IRB approval was sought from Walden University (approval number 12-09-15-0352293). Research ethics dictate that all researchers need to ensure all measures to protect the privacy of their subjects and maintain confidentiality of all the data collected. If any of this data is breached, it could put the participants at risk from the exposure of sensitive information. This most commonly happens when there is "linkability" between the data and individuals where information obtained from human subjects recorded in a manner that the subjects can be identified, in data collection methods such as using recordings, paperwork, or IP addresses (45

C.F.R. § 46.101(b)(2), 2009). This type of linkability can put the subjects at risk of criminal or civil liability or be otherwise damaging to the subject's financial standing, employability, or general reputation, (45 C.F.R. § 46.101(b)(2), 2009). This study posed minimal risk for both linkability to the subjects and the nature of the survey questions, which also conveyed minimal risk to damaging or sensitive information that could be exposed.

In survey research, ethical issues were addressed by upholding an individual's right to privacy, confidentiality, avoiding manipulation through openness, and bearing in mind the future welfare of the survey participants as well as others that may be affected by the survey (APA, 2010). This study's research was a target a population of American consumers residing in the United Stated who were 18 years of age or older. Informed consent was the first ethical consideration for protecting both survey participants and interview participants. Informed consent is a process of explaining the study to the participant and encouraging questions before the participant makes a decision about participating in the study (APA, 2010). The informed consent form was written so it was understandable to the participants, the language was simply written at a basic literacy level (minimum, 8th grade) to minimize risk of confusion or misunderstanding.

The web-based survey posed computer and information ethical issues such as data privacy/confidentiality, integrity of the data, intellectual property issues, and upholding professional standards (Elgesem 2002). Research ethics dictate that all researchers need to ensure all measures to protect the privacy of their subjects and maintain confidentiality of all the data collected. Privacy protection and confidentiality was achieved in my survey research methods through a combination of measures put in place. In the data collection stage, the data was collected in an anonymous environment. Data cleaning took place after the data collection

process had occurred, where all personally identifiable information, such as missing/blank answers from incomplete surveys were removed from data sets and each respondent was assigned a response number. SurveyMonkey offered a setting where IP address collection could be disabled to eliminate the risk of any personally identifiable information and ensure anonymity. Data collected in this survey was not highly-sensitive, but could disturb the respondents' privacy if breached, especially information on the respondent's income. Data will be stored for 5 years on a password protected file on an external hard drive and after 5 years all of the data will be permanently deleted.

Surveying helped to assess the research problem of the lack of quantitative research on factors that motivate Americans to consume organic food. Therefore, the results and analysis of this survey data add to the growing body of knowledge and academic theories of how consumers make their decisions on food, especially organic consumption, as well as how they perceive different attributes of the decision-making process such as price, value, benefits, perceptions of norms, and behavioral control and attitude. Examining American consumers' consumption was important because their consumption has a global impact since much of the food consumed by Americans is sourced internationally, making American consumerism a mode for global social change.

Summary

The purpose of the study was to examine the role of attitudes, subjective norms, and perceived behavioral control on intention and behavior of American consumers purchasing organic foods. The second purpose was to include descriptive norms and willingness to pay into the TPB framework and subject the inclusion to an empirical test. The third purpose was to seek additional insight on American consumers' past behaviors related to consumption of organics

through examining attributes associated with organics they find the most value in. Participants for this study were recruited through the Walden participant pool as well as social media. The primary participants were encouraged to refer others to the study. Data were analyzed using multiple regression analysis because it was appropriate to explain the associations between the IV, intention to consume organics, and the DVs, the TPB variables and socio-demographic variables. Results of the analyses are presented in Chapter 4, where descriptive statistics and details of the regression are reviewed.

Chapter 4: Analysis

Introduction

The main purpose of this study was to examine the role of TBD constructs (attitudes, subjective norms, and perceived behavioral control) and sociodemographics (age, income, gender, and education) on the intention to consume organics and past behavior of organic consumption among American consumers consuming organic foods. The original TPB was modified to include descriptive norms to test if this modification improved the model. Measuring the respondents' willingness to pay more and the respondents' perceived beneficial product attribute of organics was also added to the study and reported using descriptive statistics to provide deeper insight into motives. Reporting on the regression models in this chapter includes R-squared to describe the variance explained in the model, *p*-value to describe the significance of the model and its variables, confidence intervals, and using Cronbach's alpha to describe the reliability of the scale used in the TPB model. In this chapter, I will first review the results of the data collection, and then explain the details of the descriptive research questions and the multiple linear regression results of the inferential research questions.

Descriptive Research Questions

The descriptive research questions for this study were as follows:

1. For respondents who consume organics, at what price markup (if any) does willingness to pay effect intention to consume?

2. What organic product attribute do organic consumers consider most influential in their intent to consume?

Inferential Research Questions and Hypotheses

Research Question 1: After controlling for organic consumption frequency, do the constructs of the theory of planned behavior (attitudes, subjective norms, and perceived behavioral control) predict intention to consume organics among American consumers?

$H_0$1: The constructs of the TPB do not predict intention to consume organics after controlling for organic consumption frequency.

$H_1$1: The constructs of the TPB do predict intention to consume organics after controlling for organic consumption frequency.

Research Question 2: Does the inclusion of descriptive norms in the TPB model increase explained variance of intention to consume organics?

$H_0$2: The inclusion of descriptive norms in the TPB model does not increase explained variance of intention to consume organics.

$H_1$2: The inclusion of descriptive norms in the TPB model does increase explained variance of intention to consume organics.

Research Question 3: After controlling for organic consumption frequency, do the constructs of the theory of planned behavior predict past behavior consumption?

$H_0$3: The constructs of the TPB do not predict past behavior consumption after controlling for organic consumption frequency.

$H_1$3: The constructs of the TPB do predict past behavior consumption after controlling for organic consumption frequency.

Research Question 4: Do gender, education, income, and/or age predict intention to consume organics in the next month?

$H_0$4: Gender, education, income, and/or age do not add predictive power to the intention to consume organics in the next month.

$H_1$4: Gender, education, income, and/or age do add predictive power to the intention to consume organics in the next month.

Social Norms were measured with two questions labeled as: (a) Other's Opinion Valued and (b) Others of Importance Personal Consumption. Descriptive Norms were measured with two questions labeled as: (a) Others of Importance Think of My Consumption and (b) Other's Opinion Valued Approve of My Consumption. Attitudes were measured with five questions labeled as: (a)Buying Organics Bad/Good, (b) Buying Organics Non-Beneficial/Beneficial, (c) Buying Organics Disadvantageous/Advantageous, (d) Buying Organics Unreasonable/Reasonable and (e) Buying Organics Not Right/Right. Perceived Behavioral Control was measured with two questions labeled as: (a) Buying Organics Difficult/Easy and (b) Buying Organics Internal/External Choice. The sociodemographic variables measured were age, gender, education, and income.

Data Collection

Recruitment and data collection occurred via SurveyMonkey over 12 days from January 6, 2016 through January 17, 2016. A total of 309 participants were successfully recruited and qualified for the study. Qualifications included being a United States resident and being over 18 years of age. Four people attempted the survey but were disqualified because they were not a resident in the United States. Of the 309 qualified participants, 33 participants' data were excluded from analysis because they did not complete either questionnaire. In total, 276 participants responded to enough questions to be included in at least two analyses and were retained in the sample. However, some of the 276 participants did not respond to every question;

therefore, if any question that was included in the model was skipped by a participant that participant was removed from the sample for that particular model's analysis. Using G*Power analysis, I had determined that a sample of at least 123 participants was needed to provide a statistically significant analysis. This meant that the response rate, which varied depending on the question and was between 276- 217 respondents, was more than satisfactory for analysis.

A unique URL address to the SurveyMonkey landing page was used for each data collection source (Facebook, LinkedIn, Twitter, and the Walden Participant Pool) so that the response rate could be measured from each source. Nearly 85% (234) of participants accessed the study through Facebook or the link was snowballed to a secondary respondent from a Facebook respondent. The second highest percentage of participants was recruited from LinkedIn, where 15% (41) of the respondents accessed the study or the link was snowballed to a secondary respondent from a LinkedIn respondent. Zero respondents accessed the study from Twitter. One respondent accessed the study from the Walden Participant Pool.

The majority of data were collected on the opening day of the survey through the Facebook link. Of the 276 total responses, 125 responses (45%) were collected the first day, and all of these responses were from the Facebook link or Facebook link snowball. There were 37 responses the second day and 54 responses the third day, totaling 78% of the data collected in the first 3 days. The remaining 22% (60 participants) accessed the survey over the next 9 days through LinkedIn, Facebook, snowballing, or the Walden Participant Pool.

Descriptive and Demographic Characteristics of the Sample

The total number of respondents for the survey was 276. Of the 274 respondents who answered the question of if they had purchased organics in the past 30 days, 66% stated "Yes" they had consumed organics in the past 30 days, 34% stated "No" they had not consumed

organics in the past 30 days. Of the 276 respondents who answered the question of if they intended to purchase organics in the next 30 days, 67% indicated they *somewhat agree* to *strongly agree*; 33% responded *neutral* to *strongly disagree* in purchasing organics in the next 30 days. Pearson correlation was used in order to ensure consistency in the definition of an "organic consumer" and not have a respondent who responds as "highly likely" to consume organics in the next 30 days, but only buys 1 product or less than 25% of their goods organic skew the results of organic consumption. A Pearson correlation was run between those who had intentionally consumed organics in the past 30 days and those with the intent to consume organics in the next 30 days. The Pearson correlation was significant, r (274) = .69, p< .05. This shows that those who respond as more likely to consume organic goods in the next 30 days have actually consumed higher proportions of organic goods in the past. The percentage of organic food the respondents consumed in the past 30 days is shown in Figure 2.

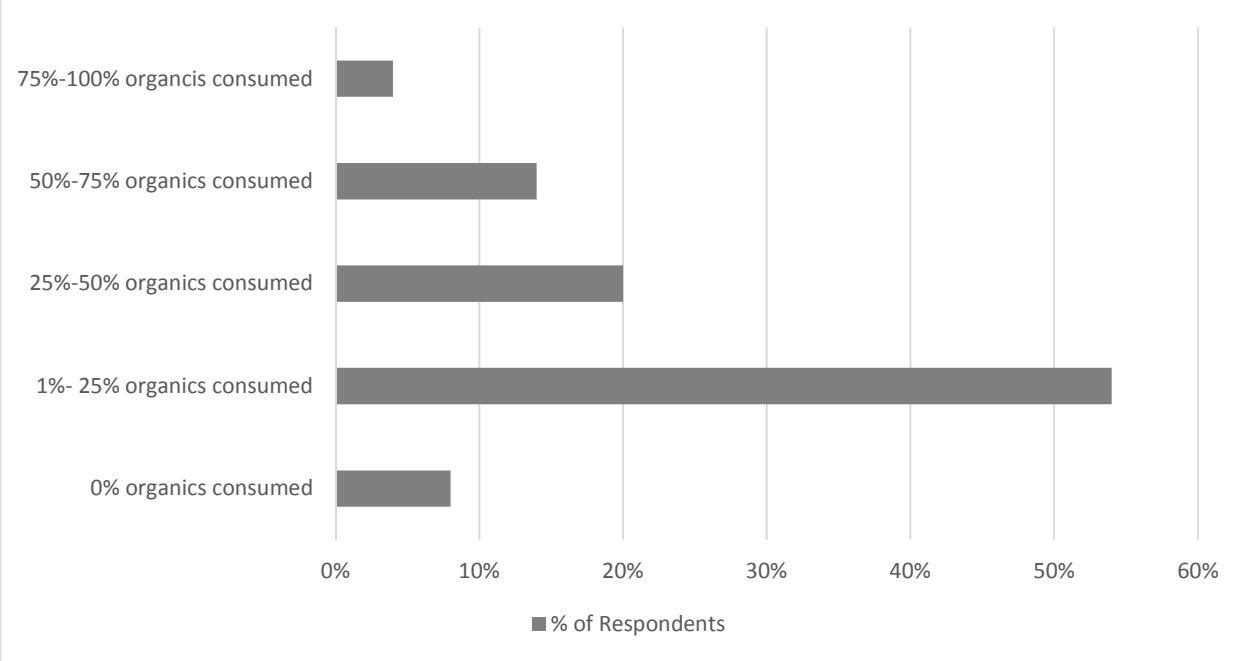

Figure 2. Percentage of organic food consumed in the past 30 days.

The data illustrated in Figure 2 were used to separate "organic consumers" from "nonorganic" consumers for the multiple regression analysis alongside the Pearson correlation. Organic consumers are considered those who reported that 50%-100% of the food that they consumed in the last 30 days was organic. Of the respondents (n = 275), 18% stated that half or more of the food they consumed in the last 30 days was organic, and 82% stated that they had consumed half or less organic food in the last 30 days.

As described above, the Pearson correlation, measuring percentage of organics consumed in the past 30 days, was correlated with intention and past behavior, r (274) = .69, p < .05, meaning that the greater intent to consume organic food, the higher the percentage of organic goods eaten in the past 30 days. This distinction is important to account for those respondents who may show high intent to consume organics, but only consume a small percentage of organic food overall.

Demographic characteristics of the sample were reported for age (n = 275), gender (n = 272), education (n = 274), and household income (n = 270). Respondents who reported age showed that 4% were between 18-24 years old, 49.5% between 25-39 years old, 39.5% between 40-64 years old, and 7% were 65 years or older. There were more women (70%) than men (30%). Fifty-three percent of respondents reported post-graduate degrees, 27% bachelor's degrees, 15% had some college, 3% had technical degrees, 2% had a high-school education, and >1% had none of the above. This survey looked at household income level instead of individual income level since food tends to be acquired for the entire household as a shared expense. When looking at household incomes, $100,000+ was the most reported income by 53% of respondents. Incomes of $75,000-$100,000 were reported by 20% of respondents, $50,000-$75,000 by 13% of respondents, $25,000-$50,000 by 9% of respondents, and $0-$25,000 by 5% of respondents.

73% of the respondents had a higher household income than $75,000, which is not aligned with the most recent Census data reporting on 2015 household incomes. The average American's household income in 2015 was $79,263 where 61.5% of the Census sample made under $75,000 (United States Census Bureau, 2016). Zip codes were collected (n = 217) to ensure that respondents represented the demography of the United States. More respondents were from some states than others, particularly from Arizona, which accounted for nearly 30% of the respondents.

The United States Census Bureau (2016) stated that in 2015, the age distribution of the United States will be composed of 23% of the population under the age of 18, 62% between 18 – 64 years of age, and 15% 65 years and older. When looking at the age distribution for this study, a larger proportion of the sample is aged 18–64 years compared to the general U.S. adult population. The gender distribution was significantly more women than men (70% and 30%, respectively). This is disproportionate from the Census Bureau (2016), which reported that the population of the United States is 50.8% women and 49.2% men.

Descriptive Research Question Results

Research Question 1

I used three questions to examine a respondent's willingness to pay for organics. First, if the respondent had consumed organics in the past 30 days. Second, if the respondent was willing to pay more for organic food. Third, if the respondent was willing to pay more for organic food, they were asked to indicate the approximate maximum amount more they would be willing to pay for organic food compared to non-organic food, if say, the organic food ranged from $0.50 to $10.00. If the respondent had not consumed organic food in the past 30 days or was not willing to pay more for organics, they were asked to indicate their reason. Of the respondents

who had not consumed organics in the past 30 days (n = 97), 89 indicated reasons as shown in Table 2.

Table 2

Rationale for Not Buying Organics

Answer Options	Response Percent	Frequency
Not Available	3.4%	3
Too Expensive	46.1%	41
Undesired	19.1%	17
Do Not Believe in the Concept	16.9%	15
Other	14.6%	13

Organics as "too expensive" was the primary reason why respondents indicated they did not consume organics in the past 30 days. Reasons indicated as "Other" given by respondents on open-ended answers mostly related to not believing in the concept of organics. When asked if they were willing to pay more for organic food, 66% of participants indicated "yes" and 34% indicated "no". Of those respondents who indicated they were willing to pay more for organic food, the premium they were willing to way for organics varied, as shown in Table 3.

Of the respondents who indicated they were willing to pay more for organic food, the majority of respondents were willing to pay 5%-30% more for organics. Given that 34% of respondents were not buying organics because of unwillingness to pay or disbelief in the concept and 66% respondents were willing to pay a premium for these goods, a majority of respondents seemed to find value in organic product attributes, which were investigated in descriptive research question 2.

Table 3

Willingness to Pay for Organics

Answer Options	Response Percent	Frequency
Less than 5% more	2.2%	4
5%-10%	21.0%	38
10%-20%	30.4%	55
20%-30%	22.1%	40
30%-40%	9.9%	18
40%-50%	8.3%	15
50%-60%	2.2%	4
60%-70%	0.6%	1
70%-80%	0.6%	1
80%-90%	0.6%	1
90%- Double	1.7%	3
More than Double	0.6%	1

Research Question 2

The 66% of respondents (n = 181) who acknowledged buying organic food in the last 30 days were asked to indicate what organic product attribute was most influential in their intent to consume with the question, "What is your main reason for buying organic food?". The majority of respondents reported "Health" as the reason as shown in Table 4.

Table 4

Reasons for Buying Organic Food

Product Attributes	Percent	Frequency
Health	83.6 %	152
Environment	7.7 %	13
Social Responsibility to Producers	1.1 %	2
Taste	3.8 %	7
Other (please specify)	3.8 %	7

Respondents who indicated "Other" noted their reasons as, "all of the above", "it was on sale", "non-GMO", "my store only sells organic", "milk lasts longer", "just wanted grass fed", and "quality. Health compromised 83.6% of the respondents' reason for buying organic food. Understanding how the respondents perceive value and attributes in organics were further investigated through the inferential research questions, which took a deeper look into motivation, attitudes, and behavior by measuring responses on the TPB and sociodemographic questionnaires.

Inferential Research Question Results

Statistical Assumptions

One assumption for the regression analysis was that the variables had a linear relationship. The variables from all four regression modes showed linear relationships between the dependent variables and independent variables with groupings along the regression line (Appendix D). A second assumption, which pertains to homoscedasticity, was that the dependent variable exhibited similar amounts of variance across the range of values, which was also demonstrated in all four regression models (Appendix D). The third assumption was that the variables were normally distributed. Skewness and kurtosis were analyzed for each variable

shown in Table 5. Given that a symmetrical distribution has a skewness and kurtosis of zero, all of the variables were approximately normally distributed.

Multicollinearity tests were run for each IV in the four regression models where a VIF of 10 or more would assure multicollinearity between two variables, generating a stronger correlation than there should be (Nachmias & Nachmias, 2008). No VIF over 3.8 was detected in the TPB on Intent to consume model, meaning that there was little to no multicollinearity. In the Modified TPB on Intent to consume model, the highest VIF detected was 4.05, meaning that there was little to slight multi collinearity. The third regression model on the Modified TPB and Past consumption used the same IV's as the Modified TPB on Intent to consume, generating the same collinearity results. The final model on sociodemographics and Intent to Consume Organics showed no VIF over 1.07, meaning there was no multicollinearity in the sociodemographic variables.

Table 5

Skewness and Kurtosis of Regression Variables

Variable	Skewness	Skewness SE	Kurtosis	Kurtosis SE
Intent to Consume Organics	-.74	.15	-.68	.29
Important People Think	.56	.15	3.30	.29
Opinion Value Approval	.39	.15	-1.32	.29
Buying Bad/Good	-.81	.15	-.39	.29
Buying Non-beneficial/Beneficial	-1.13	.15	.78	.29
Buying Disadvantageous/Advantageous	-.85	.15	.37	.29
Buying Unreasonable/Reasonable	-.53	.15	-.33	.29
Buying Right/Not Right	-.53	.15	-.15	.29
Buying Difficult/Easy	-.75	.15	-.36	.29
Buying Internal/External	-1.05	.15	.22	.29
Opinion Value Action	-.18	.15	-.52	.29
People of Importance Action Buying	.01	.15	-.59	.29
Age	.31	.15	-.21	.29
Gender	-.89	.15	-1.22	.29
Education	-1.27	.15	.47	.29
Income	-1.21	.15	.83	.29
Previously Bought Individual	-.52	.15	-.39	.29

The largest standard deviation was 1.95 for the variables Opinion Value Approval (those whose opinions the respondent values, approve of organics) and Intent to Consume Organics. Sociodemographic variables had the smallest standard deviations as shown in Table 6.

Table 6

Standard Deviations of all Variables

Variable	N	Min	Max	Std Deviation
Intent to Consume Organics	276	1	7	1.95
Important People Think	276	1	7	.96
Opinion Value Approval	274	1	7	1.95
Buying Bad/Good	274	2	7	1.39
Buying Non-beneficial/Beneficial	276	1	7	1.61
Buying Disadvantageous/Advantageous	274	1	7	1.58
Buying Unreasonable/Reasonable	274	1	7	1.61
Buying Right/Not Right	276	1	7	1.49
Buying Difficult/Easy	276	1	7	1.73
Buying Internal/External	276	1	7	1.66
Opinion Value Action	276	1	7	1.54
People of Importance Action Buying	276	1	7	1.46
Age	275	1	4	.69
Gender	272	0	1	.46
Education	274	1	6	1.18
Income	270	1	4	.84
Previously Bought Individual	275	1	7	1.49

Research Question 1

Cronbach's alpha was conducted to test the reliability of the TPB scale replicated from Urban (2012). Cronbach's alpha was reported at .80, which indicated a high level of internal consistency in the scale (Frankfort-Nachmias & Nachmias, 2008) . Similar results were found when analyzing TPB constructs on past consumption behavior.

To determine the relative strength of the TPB constructs (attitudes, subjective norms, and perceived behavioral control) in predicting intention to consume organics, a standard multiple linear regression analysis was conducted to review the TPB model and its constructs on intent to consume as a whole. Standard multiple regression was used so that the predictor variables would be treated equally and entered at the same time. This method was best because it was unknown which predictor variables will create the best prediction equation. The criterion variable was intent to consume organics in the next 30 days and the potential predictors were: Other's Opinion Valued Personal Consumption, Others of Importance Personal Consumption, Buying Organics Bad/Good, Buying Organics Non-Beneficial/Beneficial, Buying Organics Disadvantageous/Advantageous, Buying Organics Unreasonable/Reasonable, Buying Organics Not Right/Right, Buying Organics Difficult/Easy, and Buying Organics Internal/External Choice. As mentioned previously, attributes of the TPB (social norms, attitudes, perceived behavioral control, and descriptive norms) were measured with multiple questions, resulting in several independent variables for each attribute. The sample size was 268, after accounting for missing data for this analysis.

The R-squared was calculated as .54 indicating that the model explained 54% of the variance. The F-test of overall significance was significant ($F = 33.64$, $p < .05$). The non-significant predictor variables for Social Norms were reported as Other's Opinion Valued Personal Consumption and Others of Importance Personal Consumption. Non-significant variable for Attitude were Buying Organics Bad/Good and Buying Organics Disadvantageous/Advantageous. The non-significant variables for Perceived Behavioral Control were Buying Organics Internal/External Choice and Buying Organics Difficult/Easy. However, the significant predictor variables for Attitude were Buying Organics Non-Beneficial/Beneficial,

(*B* = .25, 95% CI (.04, .45)), Buying Organics Unreasonable/Reasonable, (*B* = .5, 95% CI (.31, .68)), and Buying Organics Not Right/Right, (*B*=.24, 95% CI (.04, .44)) ($p < .05$). The significant predictor variable for Perceived Behavioral Control was Buying Organics Difficult/Easy, (*B* = .14, 95% CI (.02, .26)). Table 7 presents the results of the regression analysis (coefficients, significance, and confidence intervals) for research question 1.

Table 7

TPB Constructs on Intent to Consume Organics Regression

Variable	*B*	Significance	CI: Lower Bound	CI: Upper Bound
Social Norms				
Other's Opinion Valued Personal Consumption	.03	.71	-.14	.21
Others of Importance Personal Consumption	.01	.91	-.08	.09
Attitudes				
Buying Organics Bad/Good	-.01	.95	-.18	.17
Buying Organics Non-Beneficial/Beneficial	.25	.02	.04	.45
Buying Organics Disadvantageous/Advantageous	-.08	.46	-.27	.12
Buying Organics Unreasonable/Reasonable	.50	.00	.31	.68
Buying Organics Not Right/Right	.24	.02	.04	.44
Perceived Behavioral Control				
Buying Organics Difficult/Easy	.14	.03	.02	.26
Buying Organics Internal/External	-.10	.07	-.21	.01

Note. N = 268, R-squared = .54 ($p < .05$)

Research Question 2

Cronbach's alpha was conducted to test the reliability of the modified TPB scale replicated from Urban (2012). Cronbach's alpha was reported at .84, which indicated a high level of internal consistency in the scale.

To determine the relative strength of the TPB constructs (attitudes, subjective norms, and perceived behavioral control) and the addition of descriptive norms on intent to consume organics, a multiple linear regression analysis was conducted. Standard multiple regression was used so that the predictor variables would be treated equally and entered at the same time. This method was best because it was unknown which predictor variables will create the best prediction equation. Criterion variable was Intent to Consume organics in the next 30 days and the potential predictors were Others of Importance Think of My Consumption, Other's Opinion Valued Approve of My Consumption, Other's Opinion Valued Personal Consumption, Others of Importance Personal Consumption, Buying Organics Bad/Good, Buying Organics Non-Beneficial/Beneficial, Buying Organics Disadvantageous/Advantageous, Buying Organics Unreasonable/Reasonable, Buying Organics Not Right/Right, Buying Organics Difficult/Easy, and Buying Organics Internal/External Choice. The sample size was 268, after accounting for missing data for this analysis.

The R-squared was calculated as .63 indicating that the model explained 63% of the variance. The F-test of overall significance was significant ($F = 39.01$, $p < .05$). The non-significant predictor variables for Social Norms of Other's Opinion Valued Personal Consumption and Others of Importance Personal Consumption. Non-significant predictor variables for Attitude were Buying Organics Bad/Good, Buying Organics Disadvantageous/Advantageous, Buying Organics Not Right/Right, and Buying Organics

Difficult/Easy. However, the significant predictor variables Descriptive Norms were Others of Importance Think of My Consumption B = .32, 95% CI (.16, .49)) and Other's Opinion Valued Approve of My Consumption, B = .15, 95% CI (.00, .32)). The significant predicator variables for Attitude were Buying Organics Non-Beneficial/Beneficial, B = .19, 95% CI (.01, .38)) and Buying Organics Unreasonable/Reasonable, B = .47, 95% CI (.30, .63)). The significant predictor variable for Perceived Behavioral control was Buying Organics Internal/External Choice, B = -.11, 95% CI (-.21, -.01)) ($p < .05$). Table 8 presents the results of the regression analysis (coefficients, significance, and confidence intervals) for research question 2.

Table 8

Modified TPB Constructs on Intent to Consume Regression

Variable	*B*	Significance	CI: Lower Bound	CI: Upper \Bound
Social Norms				
Other's Opinion Valued Personal Consumption	.06	.45	-.10	.22
Others of Importance Personal Consumption	-.02	.58	-.10	.06
Attitudes				
Buying Organics Bad/Good	.01	.88	-.15	.17
Buying Organics Non-Beneficial/Beneficial	.12	.04	.01	.38
Buying Organics Disadvantageous/Advantageous	-.08	.37	-.26	.10
Buying Organics Unreasonable/Reasonable	.47	.00	.30	.63
Buying Organics Not Right/Right	.10	.23	-.09	.29
Perceived Behavioral Control				
Buying Organics Difficult/Easy	.10	.10	-.02	.20
Buying Organics Internal/External Choice	-.11	.03	-.21	-.01
Descriptive Norms				
Others of Importance Think of My Consumption	.16	.05	.00	.32
Other's Opinion Values Approve of my Consumption	.32	.00	.16	.49

Note. N = 268, R-squared = .63 ($p < .05$)

Research Question 3

Cronbach's alpha was conducted to test the reliability of the modified TPB scale replicated from Urban (2012), just as it showed for research question 2. Cronbach's alpha was reported at .84, which indicated a high level of internal consistency in the scale.

To determine the relative strength of the modified TPB constructs (descriptive norms, attitudes, subjective norms, and perceived behavioral control) in predicting past behavior consumption, a standard multiple linear regression analysis was conducted. The criterion variable was Past Purchase Behavior in the last 30 days and the potential predictors were Others of Importance Think of My Consumption, Other's Opinion Valued Approve of My Consumption, Other's Opinion Valued Personal Consumption, Others of Importance Personal Consumption, Buying Organics Bad/Good, Buying Organics Non-Beneficial/Beneficial, Buying Organics Disadvantageous/Advantageous, Buying Organics Unreasonable/Reasonable, Buying Organics Not Right/Right, Buying Organics Difficult/Easy, and Buying Organics Internal/External Choice. Total sample size for this analysis was 267, after accounting for missing data.

The R-squared was calculated as .47 indicating that the model explained 47% of the variance. The F-test of overall significance was significant ($F = 20.13$, $p < .05$). The non-significant predictor variables for Social Norms were Others of Importance Think of My Consumption and Other's Opinion Valued Approve of My Consumption. The non-significant predictor variables for Descriptive norms were Other's Opinion Valued Personal Consumption and Others of Importance Personal Consumption. Non-significant predictor variables of Attitude were Buying Organics Bad/Good, Buying Organics Non-Beneficial/Beneficial, and Buying Organics Disadvantageous/Advantageous. The non-significant predictor variable of Perceived

Behavioral Control was Buying Organics Internal/External Choice. However, the significant predictor variables for Attitude were Buying Organics Unreasonable/Reasonable, B = .24, 95% CI (.09, .40)) and Buying Organics Not Right/Right, B = .25, 95% CI (.08, .42)). The significant predictor variable for Perceived Behavioral Control was Buying Organics Difficult/Easy, B = .15, 95% CI (.05, .25)) ($p < .05$). Table 9 presents the results of the regression analysis (coefficients, significance, and confidence intervals) for research question 3.

Table 9

Modified TPB Constructs on Past Purchase Behavior Regression

Variable	*B*	Significance	CI: Lower Bound	CI: Upper Bound
Social Norms				
Other's Opinion Valued Personal Consumption	-.07	.33	-.22	.07
Others of Importance Personal Consumption	.02	.66	-.06	.09
Attitudes				
Buying Organics Bad/Good	-.07	.38	-.21	.08
Buying Organics Non-Beneficial/Beneficial	.04	.68	-.13	.20
Buying Organics Disadvantageous/Advantageous	-.00	.97	-.17	.16
Buying Organics Unreasonable/Reasonable	.24	.00	.09	.40
Buying Organics Not Right/Right	.25	.00	.08	.42
Perceived Behavioral Control				
Buying Organics Difficult/Easy	.15	.00	.05	.25
Buying Organics Internal/External Choice	-.03	.49	-.12	.06
Descriptive Norms				
Others of Importance Think of My Consumption	.08	.28	-.07	.23
Other's Opinion Values Approve of my Consumption	.09	.23	-.06	.25

Note. N= 267. R-squared = .47 ($p < .05$)

Research Question 4

To determine the relative strength of the sociodemographic variables (income, gender, age, and education) in predicting intent to consume organics in the next 30 days a standard

multiple linear regression analysis was conducted. The criterion variable was intent to consume organics and the potential predictors were income, gender, age, and education. Total sample size for this analysis was 266 after accounting for missing data.

The R-squared was calculated as .04 indicating that the model explained 4% of the variance. The F-test of overall significance was significant ($F = 2.55$, $p < .05$). The predictor variables age, gender, and education were not significant predictors in the model. However, income was a significant predictor of intent to consume in the next 30 days ($p < .05$) ($B = .37$, 95% CI (.07, .66)). Table 10 presents the results of the regression analysis (coefficients, significance, and confidence intervals) for research question 4.

Table 10

Sociodemographics on Intent to Consume Organics Regression

Variable	*B*	Significance	CI: Lower Bound	CI: Upper Bound
Age	-.20	.27	-.54	.15
Gender	.09	.74	-.43	.60
Education	.13	.24	-.09	.34
Income	.37	.02	.07	.66

Note. $N = 266$. R-squared = .04 ($p < .05$)

Summary

All the TPB models, including TPB on intent, modified TPB on intent, modified TPB on past purchase behavior, and sociodemographics on intent, were significant ($p < .05$) in predicting intention and past behaviors of organic consumption. However, the combined sociodemographic variables did not support the hypothesis in predicting intent to consume. Income was the only significant variable in the sociodemographic model on intent to consume,

explaining 4% of the variance. When comparing the different models (TPB on intent, modified TPB on intent, modified TPB on past consumption), there was consistency in which particular variables concerning attitudes and perceived behavioral control of the TPB models were statistically significant in predicting respondents' intent to consume such as Buying Organics Unreasonable/Reasonable, Buying Organics Right/Not Right, and Buying Organics Not Difficult/Easy. Additionally, these same variables were also the ones which were significant in predicting past behavior, which strengthens the reliability of that particular variable's predictive abilities regarding organic food consumption. Attitudes and perceived behavioral control were significant in predicting intent to consume and past behavior in the TPB model as well as the modified TPB model. Descriptive norms were a significant predictor of intent to consume in the modified TPB model and reported at $p = .23$ on the model of modified TPB on past behavior.

Descriptive statistics showed that in general, more people held positive dispositions about the concept of organics and intended to consume them in the next 30 days, but were not willing to pay more than 0%-5% for them. The primary motivation for participants who identified as organic consumers to consume organics was the perceived health benefits. In Chapter 5, the results will be interpreted, related back to other current academic literature, summarized with implications for marketing, policy formation, and social change, and outlined into recommendations for further research.

Chapter 5: Conclusions

Introduction

This study had the main purpose of testing the role of the constructs of the TPB (Ajzen, 1991) on past organic food consumption behavior and on their intent to consume organic food in the future. The second purpose of the study was to incorporate descriptive norms into the TPB framework and subject this extension to an empirical test. This quantitative study used the survey method to test the role of TPB on American consumer's behaviors. By conducting this research, the results and conclusions may increase understanding about American consumer behaviors and motivations towards organic food consumption, assist in policy and marketing plans, as well as expand the body of knowledge on the TPB as it relates to American's consumption of organic foods compared to other nationalities. Key findings from the multiple regression analyses showed that descriptive norms, attitudes, and perceived behavioral control were significant predictors of participants' intent to consume.

Interpretation of Findings

Social norms were the only variable measured in the TPB and modified TPB models that were not statistically significant. Based on these results and the definitions of the constructs in the TPB, when it comes to social norms in the context of organic food consumption, what other's actually do is not as influential since food consumption is both a preference of a commodity and more personal experience. However, descriptive norms, which were a significant predictor of intent to consume, refer to what the respondent's friends and family think of their actions, which connect more with what the respondent is likely to do. Descriptive norms increased the variance explained by the model by 9% in this study.

When looking at the TPB model on respondents' past behavior, the constructs of attitudes and perceived behavioral control were the only two constructs that were significant in predicting

past organic consumption. Specifically, the questions assessing organics as beneficial or not, reasonable or unreasonable, right or not right, and difficult or easy to buy were significant predictors of past organic consumption. Moreover, attitudes and perceived behavioral control were the consistent predictors in all three TPB regression models: (a) TPB on intent, (b) modified TPB on intent, and (c) modified TPB on past behavior. Results indicated that the significant predictors of attitude and perceived behavioral control on the intent to consume organics also align with the results of the descriptive research question of which attributes of organics the respondents found the most value or motivation in for consumption organic product. Respondents indicated that health was the most frequent response regarding the product attribute driving their consumption. This aligns with the modified TPB model results because those respondents who perceived value in organic attributes were more likely to have positive attitudes of organics in general, and thus more likely to consume. This is partially consistent with the findings of Tarkiainen and Sundqvist (2005) who found that attitudes and subjective norms were the two significant explanatory variables in their model, where attitudes explained the majority of the variance ($R^2 = 0.558$). After further research, through following up with respondents with interviews, they found that the respondents' attitudes were actually the driving construct of overall organic consumption in Finnish consumers because of how it affected their perception of social norms. Urban (2012) also found attitudes to be the strongest predictor of organic consumption in their study with the modified TPB model. Indeed, when examining overall organic consumption versus specific goods, attitudes regarding the organic concept and product explain the majority of the variance in this research and the referenced research (Tarkiainen & Sundqvist, 2005; Urban, 2012).

Sociodemographic variables explained very little variance in respondents' intent to consume organics in the next 30 days. Household income was the only sociodemographic variable that was significant in predicting the likelihood of a respondent's intent to consume organics. Income was expected to be an influential variable in the sociodemographic model because of the cost difference between organics and conventional foods. The findings through the multiple regression on the TPB constructs and intent to consume organics are aligned with the results of the descriptive research question regarding how a consumer's willingness to pay effects their intention to consume where the primary reason those who have not consumed organics in the past 30 days was due to the cost.

Previous research on the TPB reviewed in Chapter 2 showed that the predictive power of the TPB variables can explain as much as 39% of variability in intent to consume and 27% of consumption behavior (Armitage & Conner, 2001). When looking at the TPB variables predictive ability on specific organic foods, previous research found that it varied between 24% and 83% (Tarkiaen & Sundqvist, 2005; Thogersen, 2009). The modified TPB model used in this present study explained 63% in the variability in predicting the intent to consume organics, which is comparatively high possibly because this study looked at organic foods in general as opposed to specific organic goods in the previous studies such as tomato sauces, breads, vegetables, and dairy. The two variables that accounted for the most variance in both intent to consume and past consumption were attitudes and descriptive norms, which is similar to the results found by Tarkiainen and Sundqvist (2005) who also used a modified TPB model to test its predictive power in explaining Finnish consumers' consumption of organic flours and how regularly respondents purchased organic food in a 30-day defined timeframe. They postulated that when buying organic food, subjective norms affected the buying intention indirectly through

attitude formation (Tarkiainen & Sundqvist, 2005). Based on their results, the authors concluded that Finnish consumers' intent to buy organic food can be predicted through their attitudes, and the predictive power can be increased further through descriptive norms (Tarkiaen & Sundqvist, 2005).

Tarkiainen and Sundqvist (2005) tested their model on Finnish consumers and found that their modified model with descriptive norms offered better predictive data than the original model, which only included social norms, after comparing results. Similarly, this study's use of a modified TPB increased the model from explaining 37% of the variance to 63% of the variance in intent to consume. Tarkiainen and Sundqvist's study, along with the other organic studies using the TPB, were limited to applications within Europe (Arvola et. al. 2008; Dean, Raats, & Shepherd, 2012; Garcia & de Magistris, 2007; Thogerson, 2009). Urban's (2012) study was conducted in the Czech Republic where the organic movement has had a stronger undertaking compared to the United Sates due to policy formation and economic norms of food spending (Tarkiainen & Sundqvist, 2005; Urban, 2012; USDA, 2015). This study used Urban's measurement tool for the modified TPB on American respondents to fill the gap in research between consumers in Europe and the United States. Urban's model explained 44% of the variability in intention to consume in Czech respondents, whereas his modified TPB model explained 63% of the variance in intent to consume in American consumers. Like Tarkiainen and Sundqvist, Urban (2012) also found attitudes and descriptive norms to be the two statistically significant variables of the TPB on the intent to consume. Therefore, the results of this study align with the findings of previous research on European populations.

Attitudes and descriptive norms were significant predictors of intent to consume organics; however, respondents' willingness to pay did not relate with their intent to consume

organics. Respondents tended to have higher intentions of organic consumption than they were willing to pay for. Much of the previous research on the TPB and organic consumption has been focused in Europe; therefore, one of the main consumption factors discovered in this study, which was not included in the previously studied TPB models, willingness to pay, was outlined by country and delivered interesting differences between the spending of European consumers and American consumers. Figure 3 outlines the typical family budget for food by country:

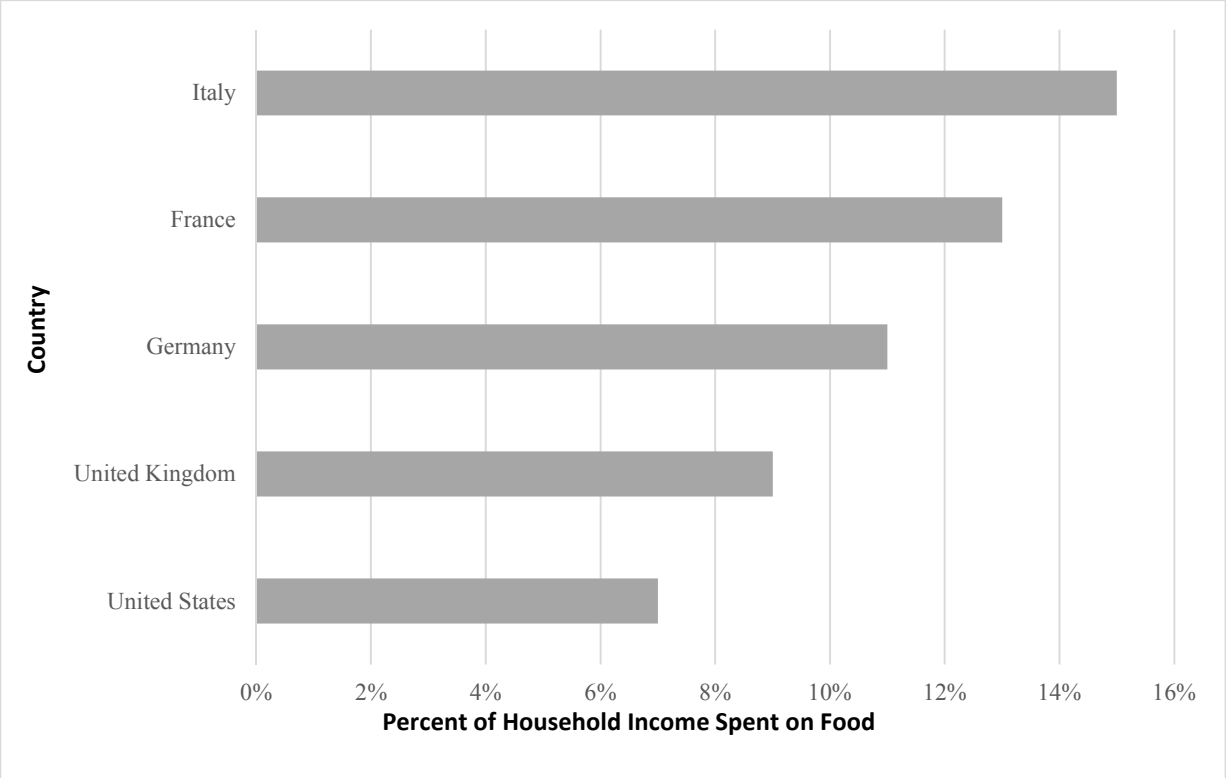

Figure 3. Percent of household income spent on food (USDA, 2015).

The United States spends less than half as much on food and grocery (7%) compared to some of European countries such as Italy (15%) (USDA, 2015). Additionally, the percentage of income Americans have been spending on food and grocery over the past century has been falling significantly. In 1900, the average household spent 43% on food; in 1950 it was 29%, and

in 2000 it was 13%, and then 7% in 2015 (USDA, 2015). With rising interests in sustainable production methods, non-GMO, Fairtrade, and overall organic goods, their higher cost of production does not commiserate with the economic and social norms of declining food costs (USDA, 2015). Based on the income to spending of food trends since 1984, income being the significant sociodemographic predictor to intent to consume organics is within reason. Those Americans in the lowest 20% of earnings spent the same on food in 2011 as they did in 1984, while those in the upper 20% of earning spent 1.4% less in 2011 than they did in 1984 (USDA, 2015). Additionally, those in the upper 20% of earning spend 4.5% less of their income overall than those in the lower 20% as shown in Figure 4 (USDA, 2015).

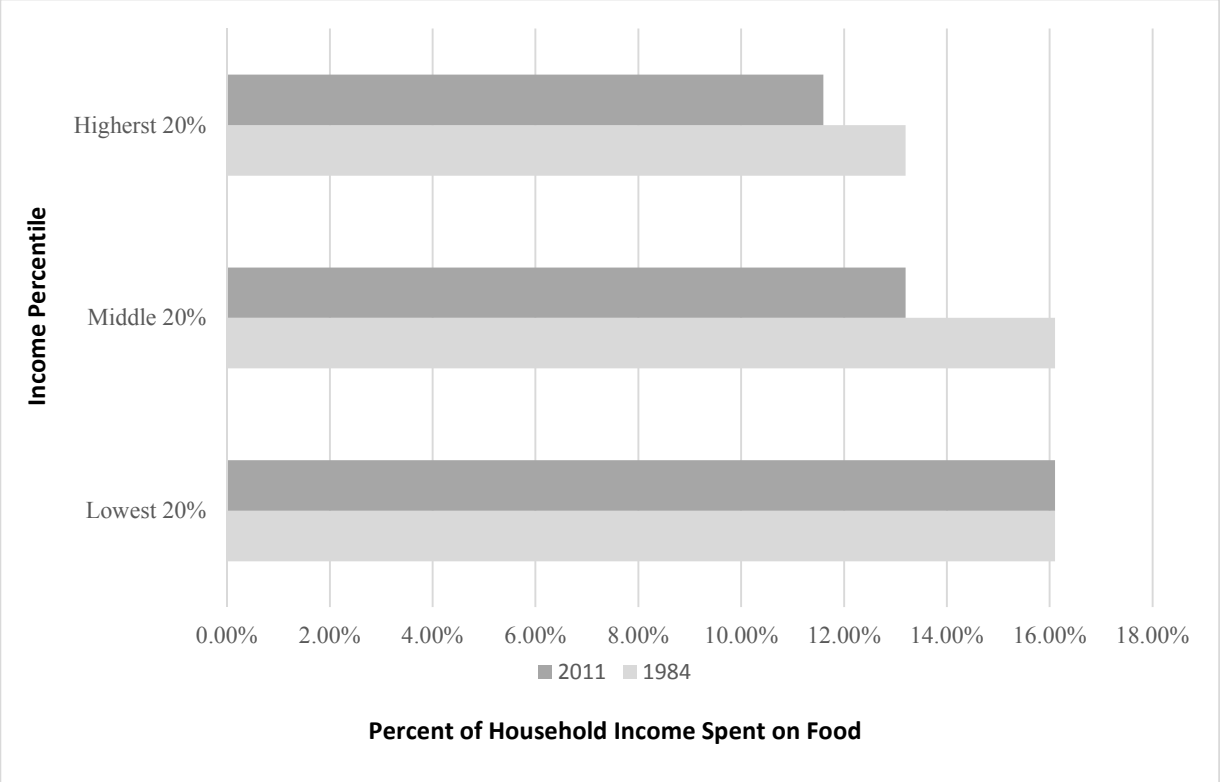

Figure 4. Percent of spending on food by income percentile (USDA, 2015).

Limitations of the Study

The first limitation in this study was that it examined organic foods in general (any organic food), rather than specific organic goods. This was originally done due to the limited breadth of literature looking at the generalizability of organic foods, as opposed to the wealth of literature existing on the consumption of specific organic goods, especially in European populations as outlined in Chapter 2. However, the survey results revealed that aside from price, American consumers' consumption of organic foods depended on the type of organic food. This conclusion was made from the open-ended comments respondents were encouraged to leave after being asked if they had consumed organic goods in the past 30 days. Open-ended comments tended to refer to specific types and preferences of goods being preferred as organic or inconsequential if they were organic. Therefore, the perspective given from this study will increase understanding of the motivations and factors of American's organic consumption, but future research should focus on specific organic foods to more accurately measure intent to consume. Specific organic goods may be a more accurate tool for measurement because consumers value organics for different reasons and have varied rationales behind organic or conventional products. For example, in this study a respondent who marked "other" for why they purchase organics wrote that they like to buy organic dairy because it tastes fresher and lasts longer. Additionally, in the Donahue (2010) study, it was found that consumers prefer to buy organics for fruits that need to be washed and the skin is eaten. However, fruits like bananas, which can be peeled or skinned, were less likely to be consumed organically.

The second limitation in the study was the ability to generalize the findings to the adult American population given the small sample and skewed demographics compared to the general U.S. population. Participants' age, income, gender, and education did not closely align with

those reported in the 2016 census data (U.S. Census Bureau, 2016). The participants in this study were younger, disproportionately female, and reported higher educations and incomes than those in the general U.S. population. However, the ages, incomes, genders, and educations in this study did align with those that were reported in Donahue's (2010) study, which the survey results could be more closely compared to because of this alignment in respondents' sociodemographic characteristics.

The third limitation comes from the limited number of survey questions and simplicity of the TPB measurement tool replicated from Urban (2012). Several indicator questions measuring each construct of attitude, social norms, descriptive norms, and perceived behavioral control were used for each construct of the TPB. However, these indicator questions were not able to measure every facet of attitudes, social norms, descriptive norms, and perceived behavioral control perhaps leaving some influential factors of these constructs unaccounted such as what coworkers or other types of influencers (other than friends and family) in the respondent's life believe they should be doing, or are doing themselves.

The fourth limitation of this study is that the data is cross-sectional, making the relevance for testing a causal relationship potentially different from that of a longitudinal study or experimental study. Comparing the results to those shown in Donahue (2010) added some relevance to the data by seeing a change in the sociodemographics of organic consumers over the past seven years; however, only the sociodemographic variables were comparable and not the TPB models as TPB constructs were not measured in Donahue (2010). Therefore, Urban's (2012) findings were useful in comparing the TPB constructs in regards to looking at shifts in behaviors and motivations over the past five years.

The design of the study brings a fifth limitation in that its scope was limited to the intention to consume and not actual future consumption behavior. However, behavioral intention can be inferred based off the respondents' reported intent to consume aligned with their past purchase behavior (Urban, 2012). To strengthen this examination as much as possible, both past purchase behavior and future intention were measured to better strengthen the scope and results of study, in addition to the respondent's consumption frequency (percent of organics consumed in the past 30 days) as it compares to the strength of their intent to consume in the next 30 days. This limitation could also be rectified by not having an anonymous survey and following up with the participants 30 days after their intent was measured and comparing their intent to actual consumption.

A sixth limitation, which cannot be confirmed, is a limitation found in self-reporting and the potential for social desirability inherit within the respondent. It is also referred to as wishing to please (Ajzen & Fishbein, 1980). Wishing to please explains why respondents exaggerate their behaviors one way to meet social desirability, pleasing both themselves and the researcher (Ajzen & Fishbein, 1980). The majority of participants were recruited via Facebook, which could have amplified the wishing to please bias, as the Facebook respondents may have wanted to provide desirable responses because of a social connection. Given these limitations along with its unique findings as compared prior research, further areas of study are necessary to build on this knowledge.

Recommendations

Further Research

Recommendations for further research include replicating the present study using a sample that better represents the American consumer market, such as using distributed surveys to

consumers who are actually shopping for goods in various retailers across the country. This approach would ensure that actual purchase decision-makers are being targeted because the data is being collected from a sample of respondents in the purchase process. This may or may not be representative of the U.S population because the demographic of actual decision-makers may not be reflective of the U.S population. However, the sample integrity would be stronger than online. In addition to the sampling benefits of surveying at brick and mortar food retailers, the responses could also be diversified and influenced by the retailer's inventory and in-store advertising. Because the results revealed that the participants were more likely to be motivated to consume organics by the health aspect of organics, further research based on this finding could include how the modified TPB model applies to related consumer health options such as fair trade, natural foods, protein intake, calorie intake, sugar consumption, and vitamin and supplement consumption. Respondents did not generally perceive consuming organics to have environmental value, which is the only scientifically proven value of organics (Stanford, 2012). Therefore, testing related industries such as recycling and public transportation and their perceived beneficial attributes of personal health would be recommended to see if the respondent's perceptions of the industries relate back to health or environment. Within the context of organic consumption, another recommendation for further research would be examining if and how descriptive norms influence attitudes of consumers, given that both were descriptive norms and attitudes were significant predictors in the Intent to Consume model. Descriptive norms describe people's perception of what is commonly done in specific situations; it signifies what most people do, without assigning judgment (Cialdini et al., 1990). If descriptive norms correlate with the formulation of attitudes, this could show why both variables had significant predictive power

on the intent to purchase organics and could further the explanation of food trend and consumption motivation.

Policy Making

The USDA has set a goal of increasing certified organic operations. Their rationale for growing certified organic operations is to preserve the United Sates soil and environment so that crops can continue to thrive for future generations (USDA, 2015). Aspects of the certification include preserving natural resources and biodiversity, supporting animal health and welfare, providing access to the outdoors so that animals can exercise their natural behaviors, only using approved materials, not using genetically modified ingredients, receiving annual onsite inspections, and separating organic food from non-organic food (USDA, 2015). Due to the high cost gaining organic certification and covering all aspects of the certification, many producers have turned to loans to cover the increase of production costs, inspections, testing, and certification labeling (Donahue, 2010; USDA, 2015). As a result, the consumer also sees a rise in the costs of their products as the organic producers struggle to compete and repay their loans (Donahue 2010; USDA, 2015).

The research in this study has shown that participants' "willingness to pay" more money for organic goods is low, where 34% of respondents indicated they were not willing to pay more. Of those who were willing to pay more, over half were not willing to pay more than 5%-20% more on an organic good less than $10 ($0.50-$2.00 more maximum). Policymaking will be increasingly important to address this discrepancy between low willingness to pay more for organic food and rising premiums so that the USDA can continue to incentivize organic producers to stay organic certified as well as attract new organic certified producers. In order to do this, it is advised from this research that government and policy officials address the

consumer demand side of organics in order to stimulate consumption and therefore incentivize supply, eventually driving down costs as these processes become more standardized, cost effective, and available. This includes initiatives such as consumer-targeted promotions on the importance of more sustainable growing practices.

Marketing

Compared to the previous research done on organic consumers by Donahue (2010), the ages, gender, and education of those who were considered organic consumers varied more in this study. Donahue (2010) showed consumers were primarily higher educated females in their 30's and 40's. Based on the comparison of the demographics in the samples which were collected 5 years apart, there has been an expansion of the sociodemographic profile of organic consumers. This shift in demographic has marketing implications for target audiences and consumers, where the market is now primarily controlled by income as opposed to income, gender, age, and education. Due to the current premium markups on organics, two key limitations that remain on a target market are income in addition the consumers' perceived attributes of organics, attitude, perceived behavioral control, and descriptive norms. Because willingness to pay is a major barrier to consumption and income was a significant predictor of intent to consume, price will be the major factor for marketers to overcome as an incentive. Additionally, as a value proposition, health was ranked the top motivational attribute for respondents to consume organics. This is a difficult aspect to factor into branding, as health statements are strictly regulated by the FDA (FDA, 2014). Particular and consecutive studies of organics benefits on health, or conventional food's threat to health, must be recognized by the FDA to make health claims. However, no studies to this day have been approved by the FDA to support health claims.

Since many consumers are associating the concept of organics with health unprompted, health related imagery and content could be used in branding. In addition to organic certifications on labeling, words like *eat pure* and *buy better* can be included, because the products are indeed produced in a more sustainable and natural way. This type of branding would give the organization a better opportunity to connect with a passive or intentional consumer by creating an emotional appeal with pre-existing motivations and perceptions that consumers have with the product. Additionally, this heuristic appeal can open up the opportunity for the product to demonstrate further value added attributes such as social welfare and environmental stewardship. Thus, building an additional value proposition in the product and further validating the price premiums many are unwilling to pay. In doing these things, marketers will also address one of the main statistically significant variables influencing the consumer's propensity to buy organics, their attitudes. Infographics, copy, and content that are directed at the consumer's attitude of the organic aspect of a product will more likely influence their consumption opposed to social or descriptive norms. The other significant variable was perceived behavioral control, which effects the consumers' perception of their ability to purchase organics. This finding is within reason given the additional findings on income and willingness to pay. Perceived behavioral control can be effected by income restriction and the barrier to consume of being 'too expensive'.

Implications

The implications of this study for positive social change on the individual and academic discipline will be its contribution to creating enhanced awareness, understanding of motivational factors and barriers to the consumption of organics, and campaigns about sustainable food consumption, as well as filling the gap in the research by addressing an under-researched area in

the modern food-chain. The original contribution of this study is that it used the TPB to understand organic food consumption among American consumers and fill the gap that existed in knowledge of decision-making determinants of general organic food consumption in the United States. The results from this research help to provide insight into modern American consumers' attitudes and behaviors towards organic food consumption, and therefore, can help inform new decision-making frameworks behind organic, local, and socially responsible consumption. In doing this, the research can also provide rationale for the relationships among attitudes, perceived behavioral control descriptive norms, subjective norms, age, income, education, and gender to consumption. Ultimately, the results provided from this study can be helpful in finding new ways to promote more socially responsible food production and consumption.

The implications of this study for positive social change on the public and industrial level is such that it will allow policy makers, marketers, and stakeholders to better understand consumer perceptions and motivations towards organic and conventional foods to support healthier and more sustainable food choices (Gullien-Royo, 2009; Jolly, 1991; Pretty, 1995; Shepherd et al., 2005; Timmins, 2010). As stated by Petty (1995), understanding and adapting food consumption and production is essential for addressing a growing population. Much about the food chain is understood from a financial and economic perspective; however, the present research has the ability to support that knowledge of key agribusiness players from a social-behavioral perspective, understanding the pathways to sustainable decision-making, as well as the barriers to overcome in motivating sustainable consumption choices, such as cost and knowledge.

Conclusion

This study was conducted to provide insight into the factors that explain organic food consumption in the United States using a modified version of the TPB. The findings revealed that American consumers' attitudes, descriptive norms, perceived behavioral control, and income were significant predictive variables of intention to consume organics. The modified TPB model, which included descriptive norms, increased the ability of the model to predict intent to consume organics compared to the unmodified TPB model, which did not include descriptive norms. However, when the modified TPB was applied to respondents' past purchase behavior, the influence of descriptive norms did not significantly predict past purchase behavior. The major attribute that consumers saw value in organics was health, and the major barrier that inhibited consumption was cost. According to the literature review, increased organic food consumption may lead to improved health consciousness and health-related behaviors, environmental and ecological sustainability, and most importantly, other pro-environmental behaviors such as recycling and/or public transit. The dissemination of this research can help policy makers and stakeholders in these industries learn how to target their messages and improve their operations to address consumers' attitudes and perceived behavioral control over accessing these goods and their intrinsic values, as well as overcome some of the willingness to pay and knowledge gaps held by potential consumers.

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Appendix A: Urban's 2012 TPB Survey

1. Most people whose opinion I value buy organic food.
   a. Strongly agree
   b. Agree
   c. Somewhat agree
   d. Neutral
   e. Somewhat disagree
   f. Disagree
   g. Strongly disagree

2. Most people who are important to me buy organic food.
   a. Strongly agree
   b. Agree
   c. Somewhat agree
   d. Neutral
   e. Somewhat disagree
   f. Disagree
   g. Strongly disagree

3. Most people who are important to me think that I ... (should always – should never)… buy organic food in the next month.

   Should Always 1 2 3 4 5 6 7 Should Never

4. People whose opinion I value would …(approve- disapprove)... of my buying organic food in the next month

   Approve 1 2 3 4 5 6 7 Disapprove

5. Buying organic food in the next month would be… (bad - good)… for you.

   Bad 1 2 3 4 5 6 7 Good

6. Buying organic food in the next month would be… (not beneficial – beneficial)

   Not Beneficial 1 2 3 4 5 6 7 Beneficial

7. Buying organic food in the next month would be… (disadvantageous- advantageous)

   Disadvantageous 1 2 3 4 5 6 7 Advantageous

8. Buying organic food in the next month would be… (unreasonable- reasonable)

   Unreasonable 1 2 3 4 5 6 7 Reasonable

9. Buying organic food in the next month would be… (not right – right)

Not Right 1 2 3 4 5 6 7 Right

10. Buying organic food in the next month is… (difficult- easy) for me.

Difficult 1 2 3 4 5 6 7 Easy

11. My buying of organic food in the next month depends only on my decision and not external conditions.

a. Strongly agree
b. Agree
c. Somewhat agree
d. Neutral
e. Somewhat disagree
f. Disagree
g. Strongly disagree

12. I intend to buy organic food in the next month.

a. Strongly agree
b. Agree
c. Somewhat agree
d. Neutral
e. Somewhat disagree
f. Disagree
g. Strongly disagree

13. I have bought organic food previously (never- always)

Never 1 2 3 4 5 6 7 Always

14. My household has bought organic food previously (never- always)

Never 1 2 3 4 5 6 7 Always

Appendix B: Organic Consumption Questionnaire

1. Are you a resident in the United States?
    a. Yes
    b. No

2. Do have you bought organics in the last 30 days?
    a. Yes (go to question 3)
    b. No (go to question 4).

3. What are your reasons for buying organics?
    a. Health
    b. Environment
    c. Social responsibility to producers
    d. Taste
    e. Other (please name)

4. If no, why not?
    a. Not Available
    b. Too Expensive
    c. Undesired
    d. Do Not Believe in the concept of organics

5. Would you be willing to pay more for organic food?

    a. Yes (go to question 20)
    b. No (go to question 21)

6. Please indicate the approximate maximum amount more you are willing to pay for organics as compared to non-organics if, say, the organic food ranges from $0.50 to $10.00?
    a. Less than 5%
    b. 5%-10%
    c. 10%-20%
    d. 20%-30%
    e. 30%- 40%
    f. 40% to 50%
    g. 50% to 60%
    h. 60% to 70%
    i. 70% to 80%
    j. 80% to 90%
    k. 90% to double
    l. More than double

7. In the last 30 days approximately what percentage of the food you consumed was organic?

    a. 0%
    b. 1-20%
    c. 20%-50%
    d. 50%-75%
    e. 75%-100%
    f. Not applicable

8. In what zip code do you reside in the U.S?

9. What is your age?
    a. 18-24
    b. 25-39
    c. 40-64
    d. 65+

10. What is your gender?
    a. Male
    b. Female

11. What is the highest level of education you have completed?
    a. High school
    b. Some college
    c. Bachelors
    d. Post-Graduate
    e. None of the above

12. What is your household's income level?
    a. $0- $20,000
    b. $20,000- $50,000
    c. $50,000-$75,000
    d. $75,000-$100,000
    e. $100,000 +

Appendix C: Donahue 2010 Survey

U.S Consumer Attitude Survey on Fair Trade Organic Bananas (Marie Donahue)

1. Are you a resident in the United States?
    a. Yes
    b. No

2. How often do you purchase organic fruit?
    a. Always
    b. Sometimes
    c. Never

3. If so, what type of organic fruit do you purchase?
   (check all that apply)

    a. Bananas
    b. Apples
    c. Grapes
    d. Kiwi
    e. Oranges
    f. Pineapple
    g. Strawberries
    h. Blueberries
    i. Raspberries
    j. Melon
    k. Cantaloupe
    l. Other tropical fruit
    m. Other non-tropical fruit

4. What are your reasons for buying organic fruit?
    a. Health
    b. Environment
    c. Packaging
    d. Philanthropy
    e. Availability
    f. All of the Above

5. Do you purchase organic bananas?
    a. Yes
    b. No

6. If no, why not?
    a. Not Available
    b. Too Expensive
    c. Undesired
    d. Do Not Believe in the concept of organics
    e. All of the Above

7. Would you be willing to pay more for organic bananas than non-organic bananas?
    a. Yes (go to question 8)
    b. No (go to question 9)

8. Please indicate the maximum amount more you are willing to pay for organic bananas as compared to non-organic bananas if, say, non-organic bananas are selling for $0.50 per pound.
    a. Less than 5% more
    b. 5%-10% more
    c. 10%-20% more
    d. Over 20% more

9. How important is it to you to be able to purchase organic fruit?
    a. Highly
    b. Moderate
    c. Slightly
    d. Not At All

10. How important to you is Fair Trade fruit? Fair trade is defined as a market-based approach that has the goal to pay producers from developing countries a price that contributes to their sustainability. This essentially means that higher prices are paid for products from developing countries as a means to support a higher living standard for the producers and workers.
    a. Highly
    b. Moderate
    c. Slightly
    d. Not At All

11. How often do you consider Fair Trade pricing when making your purchases?
    a. Always
    b. Sometimes
    c. Never

12. What type of outlet have you bought your groceries in the past week?
    a. Conventional Grocery Store
    b. Wholesale Grocer

c. Farmer's Market
d. Convenience Store
e. No grocer, Restaurant/Fast Food Only

13. In what zip code do you reside in the U.S?

14. What is your age?
a. 18-25
b. 26-35
c. 36-50
d. 51-64
e. 65 +

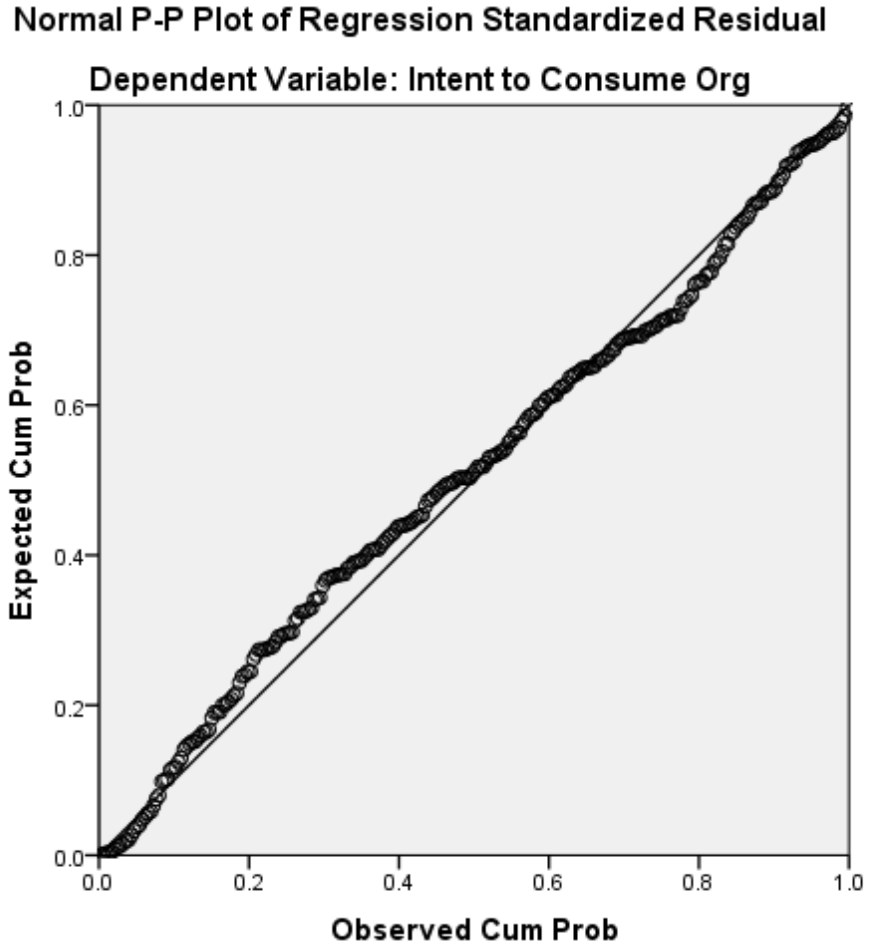
15. What is your gender?
a. Male
b. Female

16. What is the highest level of education you have completed?
a. High school
b. Some college
c. Bachelors
d. Post-Graduate
e. None of the above

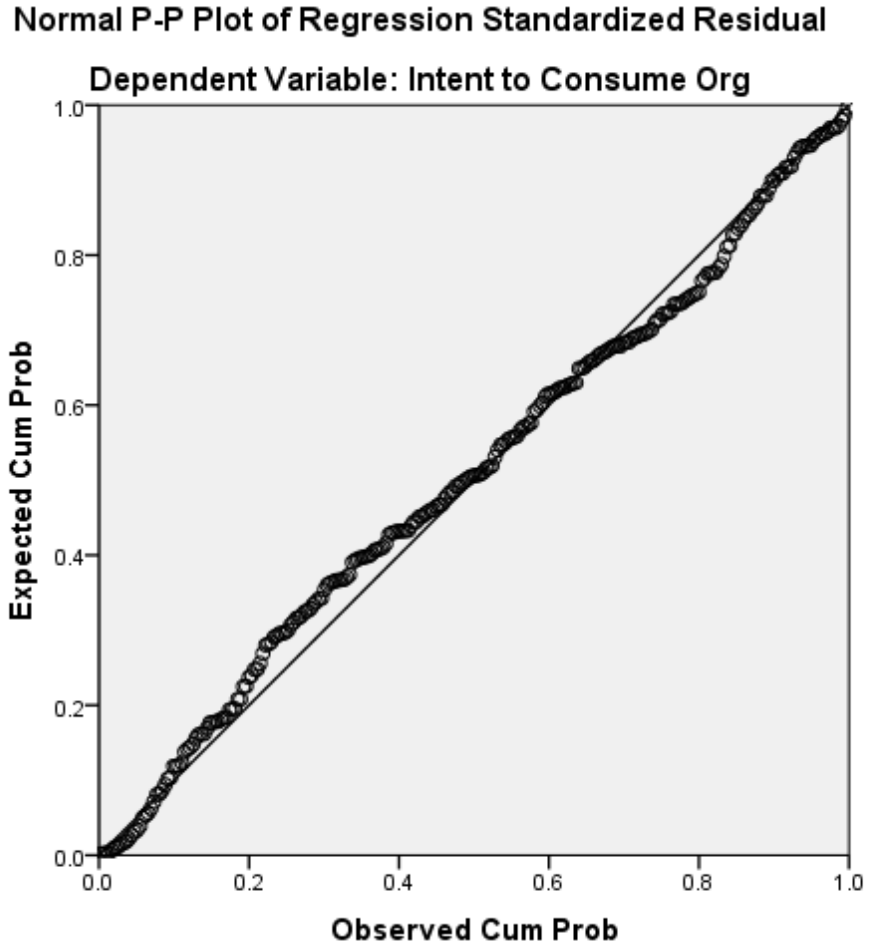
17. What is your household's income level?
a. $0- $20,000
b. $20,000- $50,000
c. $50,000-$75,000
d. $75,000-$100,000
e. $100,000 +

Appendix D: Regression Scatterplot Output

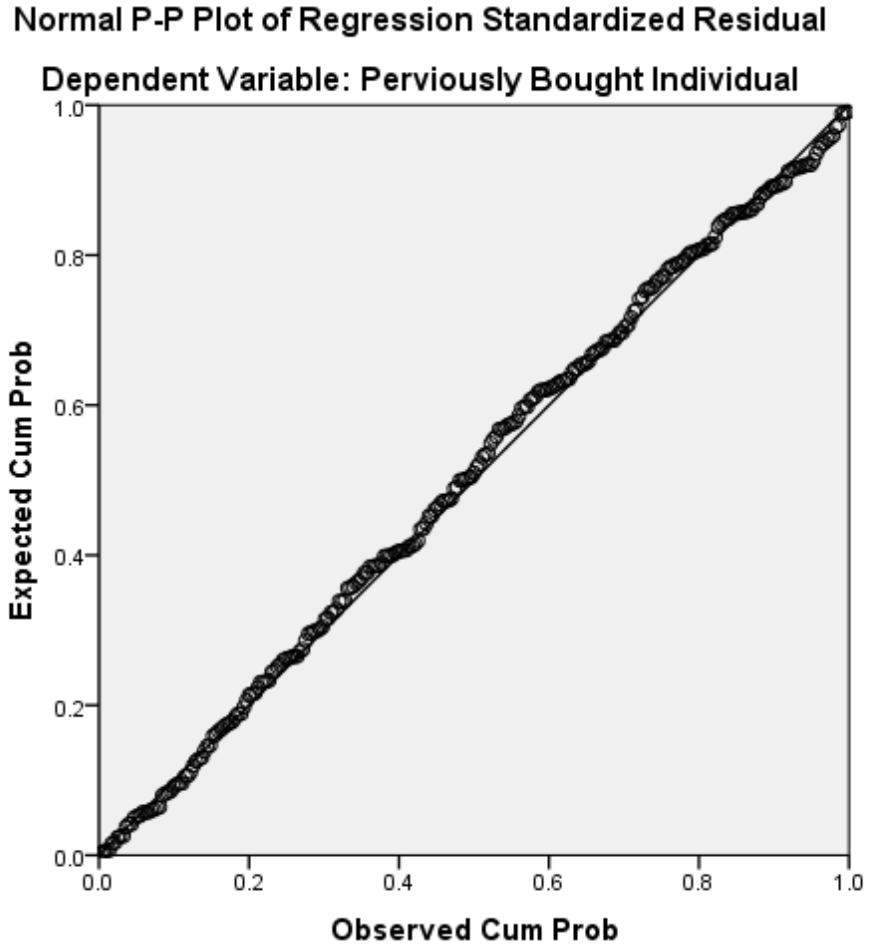
TPB Regression on Intent to Consume



Modified TPB Regression on Intent to Consume



Modified TPB Regression on Past Consumption



Sociodemogrpahics on Intent to Consume