DETERMINANTS OF BEHAVIORAL INTENTION TO USE MOBILE COUPONS IN CASUAL DINING RESTAURANTS

by

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IN CASUAL DINING RESTAURANTS

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ABSTRACT

Each year, over 300 billion dollars of print coupons are distributed, yet the redemption rate is less than one percent. As of 2010, 93% of the U.S. population has one or more cell phones providing anytime, anywhere access. Despite the 2009 economic downturn, Americans still spend 41% of their food budget outside of the home. The specific problem to be studied is the behavioral intention of young adults, 18 to 24 years of age, attending private, non-profit universities to use mobile coupons for casual restaurant dining. The purpose of this quantitative, cross-sectional correlation study was determining the relationship between five independent variables: (a) performance expectancy, (b) effort expectancy, (c) social influence, (d) fear of spam, and (e) opting-in; and one dependent variable: participants' behavioral intention to use mobile coupons for casual restaurant dining. The results demonstrated a strong positive correlation between all of the variables except fear of spam and the dependent variable: the behavioral intention to use mobile coupons for casual dining restaurants. There was no relationship between the fear of spam and the behavioral intention to use mobile coupons. This, in itself, was an important finding. Recommendations for using mobile coupons include coupon promotion as a component of the marketing mix, mobile coupons as a unique way of encouraging new menu items, creating an easy path to opt-in, and creative ideas for coupon face-value promotions. Mobile coupons have the potential to exceed the redemption rates of printed coupons.

DEDICATION

I would like to dedicate this dissertation to five people in reverse chronological order. The first dedication is to my mother, Martha Jennings, and my father, Ed Jennings. From the time I was 10, my parents encouraged multiple professions that required a college degree. Ed and Martha provided a life of many possibilities by encouraging me to attend college. The greatest gift I received from my parents was their work ethic and encouragement to be a lifelong learner. My father passed away many years ago and my mother is still working as a nurse. To my father, I know you would be proud. To my mother, thank you for your guidance.

Next, I would like to dedicate this dissertation to my wife, Peggy. As an audit partner in an accounting firm, Peggy demonstrates a work ethic that is familiar. Peggy is hard-working, ethical, resilient, committed, and smart. Providing unconditional love, patience, and constant support, Peggy was instrumental in my completing the program. To Peggy, thank you for your unfaltering love, support and commitment. Finally, to my sons Edward and Jon, while choosing your own careers, set your goals, work hard, be ethical, and enjoy the ride on your journey to becoming lifelong learners. I am proud of you both.

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Chapter 1

Introduction

The dissertation focused on understanding the ability of mobile marketing to drive young adults' behavioral intention to use mobile coupons in a casual dining restaurant environment. Officials from the CTIA, The Wireless Association, reported 93% (292 million) of the U.S. population are mobile phone subscribers (Martin, 2010). A total of 24.5% of the U.S. households include people who have abandoned landline phones in favor of wireless phones.

The saturation of mobile phones in the United States represents a large opportunity for mobile marketing and a unique opportunity for one-on-one consumer communication. The ability to receive Short Message Service (SMS) (i.e., text) messages can be a means to communicate relevant and timely promotions to consumers, when combined with opt-in permission-based marketing. In the United States, people send 153 billion text messages each month; that number amounts to 1.56 trillion text messages each year (Martin, 2010).

Jung and Lee (2010) noted that in 2008, 317 billion coupons were distributed in the United States, and less than 1% (2.6 billion coupons) was redeemed. Marketers use coupons to increase sales to existing customers and encourage new customers to purchase products and services. To date, little research has been conducted in the area of the behavioral intention to use mobile coupons for casual dining restaurants. The basis for this study included (a) the saturation of mobile phones, (b) the ability of mobile coupon delivery, and (c) the desire of casual dining restaurant owners to generate profits. The

goal for this study was to determine young adults' behavioral intention to use mobile coupons at casual dining restaurants.

Background of the Problem

CTIA – The Wireless Association (2013) noted worldwide telecommunication carriers have collectively spent in excess of $365 billion on United States infrastructure to broadcast high speed voice and data. The anticipation that consumers would utilize data services and make purchases drives carriers to continue development of higher speed networks known as third generation (3G) and fourth generation (4G) networks. Mobile commerce (M-commerce) marketing includes ubiquitous devices, online access, location sensitivity, and authorization by mobile consumers to make purchases. In many cases, people own phones with personal digital assistant (PDA) features, making the phone increasingly important in everyday mobile life (Sultan & Rohm, 2005).

Mobile Marketing

The ubiquitous nature of cell phones allows consumers to be connected any time, making phones a convenient marketing channel when consumers desire immediate information to make a purchasing decision. Personalization through the use of ringtones, carrying cases, background pictures, software, phone numbers, and services makes cell phones unique to each consumer. The addition of smart phone data services enables consumers to acquire information when mobile. In addition to traditional segmentation variables such as age, gender, income, and ethnicity, the use of mobile phones might be better understood based on (a) the acceptance of technology, (b) the use of technology, and (c) the lifestyle motivations of individuals (Sultan & Rohm, 2005).

Marketers view mobile marketing as a way to (a) shape consumer attitude and awareness of a brand, (b) increase brand involvement through consumer downloads of desired content, and (c) influence the consumer to purchase a specific brand (Sultan & Rohm, 2005). The goal of mobile marketing is to interact with individual consumers in a manner that adds value to the customer-brand relationship without creating the perception of being intrusive. A key question for marketers is whether customers would be willing to accept marketing messages on their cell phones.

Rettie, Grandcolas, and Deakins (2005) conducted 26 studies of SMS text messaging campaigns over a 3-month period. Overall, 44% of the participants found mobile marketing through SMS text messaging to be acceptable and less intrusive than telemarketing. A total of 85.7% of the participants who received the SMS text advertisements expressed they had a positive image of the brand and were likely to purchase the brand. All participants had opted-in to receive SMS advertisements and considered the most successful promotions to include a better promotional offer, explicit messaging, added value, or more interaction.

Setijono and Dahlgaard (2007) described customer added value as low price, fast response, and high quality. The implications of customer value might include different modes defined as received value, perceived value, or added value. Received value is the customer experience defined through acquisition and use of the product. Perceived value is a tradeoff of benefits based on the available offerings, while added value is a benefit beyond other available offerings. The customer ultimately determines the value. One of the most common purchases by consumers is food.

Restaurant Promotion

Herrington (2004) observed people in the average U.S. household spend more on dining out than on clothing or health care. The U.S. Bureau of Labor and Statistics (2011) stated that 41% of the U.S. household food budget was spent on prepared meals outside the home. To gain a competitive advantage, retain existing customers, and attract new customers, restaurants rely on marketing promotions.

Myung, Barrash, and Feinstein (2006) found restaurateurs in business for fewer than five years use marketing tactics described as frequent diner promotions, menus, and fliers. Restaurateurs in business for more than five years tended to spend money on press kits, promotional merchandise, and brochures. Both established and younger restaurants use price discounts that can take the form of coupons, two-for-one meals, frequent diner cards, and value meal bundling. Restaurant coupons in the United States are estimated at 10-15% of all coupons distributed, yet researchers have conducted few studies to discover people's behavioral intention to use coupons in the context of the restaurant industry (Myung et al., 2006; Taylor & Long-Tolbert, 2002; Varadarajan, 1984).

Theoretical Importance

Hsu, Wang, and Wen (2006) conducted a study in Taiwan using the decomposed theory of planned behavior to understand the behavioral intention toward using mobile text coupons. The study revealed two factors attributed to the use of mobile coupons: (a) consumer feelings about text coupons and (b) the consumer's knowledge of text-based coupons. Rohm and Sultan (2006) used the technology acceptance model with modifications to incorporate privacy-and permission-based marketing in the United States and Pakistan. The goal of Rohm and Sultan was to understand the behavioral

intention of undergraduate and graduate students to engage in mobile marketing. The results supported the roles of privacy, behavioral intention, and permission to interact with consumers before engaging in mobile marketing.

The study included a modified and enhanced unified theory of acceptance. The acceptance theory of mobile technology usage was used to determine young adults' behavioral intention to use mobile coupons at casual dining restaurants. Venkatesh, Morris, Davis, and Davis (2003) demonstrated the unified theory of acceptance and use of technology (UTAUT) is up to 70% accurate in predicting the behavioral intention to use technology. The UTAUT model was initially used to understand the acceptance of new computer software in the corporate and education marketplace.

Statement of the Problem

Growing in size and maintaining profitability are inherent components of any profit-driven business plan. Multiple marketing methodologies are incorporated as part of the marketing mix when promoting a business. In the United States, 285 million mobile phone subscribers are found, representing 93% of the country's total population (Martin, 2010). Among those subscribers, data transmission in the form of text messages exceeds one trillion messages each year in the United States.

In marketing, coupons represent one component of the marketing mix. In 2008, 317 billion coupons were distributed, but less than 1% was redeemed (Jung & Lee, 2010). Based on the fact that 93% of the population is connected to mobile phones (Martin, 2010) that provide anytime, anywhere access, it was unclear whether consumers would be open to mobile marketing on a device considered to be personal and individual to the user.

Jackson, Titz, and Defranco (2004) projected that U.S. consumers would spend a high percentage of their household food budgets on prepared meals outside the home. The U.S. Bureau of Labor and Statistics (2011) determined that the actual food purchased outside of the home declined from 44% in 2007 to 41% in 2010. The dollars spent by Americans for food outside of the home are still significant, despite the 2009 economic downturn (U.S. Bureau of Labor and Statistics 2011). Little research exists on the behavioral intention of U.S. consumers to redeem mobile coupons for restaurant purchases. The general problem is less than one percent of traditional printed coupons are redeemed. While mobile coupons represent a new delivery technology, little research existed on the behavioral intention of U.S. consumers to redeem mobile coupons, specifically for restaurant purchases. The specific problem studied in the this research study was the behavioral intention of young adults, 18 to 24 years of age, attending private, non-profit universities to use mobile coupons for casual restaurant dining. This study involved the use of three independent variables from the enhanced unified theory of acceptance and use of technology (UTAUT) in conjunction with two additional independent variables.

Purpose of the Study

The purpose of this quantitative, cross-sectional correlation study was determining the relationship between five independent variables: (a) performance expectancy, (b) effort expectancy, (c) social influence, (d) fear of spam, and (e) opting-in; and one dependent variable: participants' behavioral intention to use mobile coupons for casual restaurant dining. A quantitative survey at a Colorado university provided the context for gathering input from participants who owned cell phones and accessed casual

dining restaurants. The primary instrument with which to gather information on the behavioral intention of the participants to use mobile coupon data was a printed survey.

Venkatesh et al. (2003) described the independent variables of the UTAUT as performance expectancy, effort expectancy, social influence, and facilitating conditions. The model was modified because facilitating conditions did not influence the behavioral intention to use mobile coupons and only affected the use behavior (Venkatesh et al., 2003). To modify the UTAUT model, the independent variables of opting-in and fear of spam were added.

The goal of the study was to understand and assess the intention to redeem mobile coupons in casual dining restaurants by surveying participants. The survey was administered to a random sample of 328 participants who owned cell phones and lived in the United States. The survey was administered at a university located in Denver, Colorado. The researcher was able to distribute, collect, and analyze the results, while ensuring confidentiality.

Significance of the Study

Venkatesh et al. (2003) developed the UTAUT consisting of four independent variables developed through the consolidation of eight theories pertaining to the acceptance of technology. The UTAUT was initially designed to describe user acceptance of new information technology in the workplace. The pervasiveness of cellular phones in the United States coupled with 1.56 trillion text messages sent each year provides a potential platform for the delivery of marketing promotions (Martin, 2010). Coupons are widely distributed, yet less than 1% is redeemed (Jung & Lee, 2010). Mobile advertising is increasingly gaining momentum as a strategic tool for

businesses to communicate with consumers on an individual basis (Dickinger & Kleijnen, 2008).

Venkatesh et al. (2003) suggested the unified model be extended to multiple applications and contexts. For this study, the UTAUT was modified and extended as a framework for understanding young adults' intention to use mobile coupons in a casual dining restaurant environment. Findings from the study added to the contextual understanding of technology acceptance and mobile marketing usage intention. The unified model was validated in understanding 70% of the variance of behavioral intention to use technology. Venkatesh et al. suggested experimenting with other variables to determine whether the behavioral intention to use technology can be improved. Adding the variables of intrusive advertisements (i.e., fear of spam) and opting-in enhanced the explanation of behavioral intention to use mobile technology for advertising purposes.

Significance of the Study to Leadership

Mobile coupons represent a technology adaptation of existing printed coupons and offer a new potential for marketing, with the unique characteristic of reaching consumers' personal mobile devices. The findings of this study provided a number of important managerial implications for marketing executives, product managers, and digital advertising firms in understanding the behavioral intention to use mobile coupons. The outcome of the research may help marketers in (a) developing new applications for mobile marketing, (b) gaining a better understanding the determinants of consumers' desire to receive mobile advertising, and (c) demonstrating a relationship between opting-in and the behavioral intention to use mobile coupons in a casual dining restaurant.

Nature of the Study

This research study involved a quantitative approach as opposed to a qualitative approach in the methodology. Creswell (2005) noted qualitative research can be used to focus on broad questions and collect text to analyze broader themes. Quantitative research is used to focus on specific questions, collecting numeric data and analyzing data based on statistics. The research methodology was appropriate for this study because the relationship between the independent variables quantitatively reflected on the dependent variable of the intention to use mobile coupons.

Overview of the Research Method

This study involved the use of a cross sectional correlation rather than a qualitative approach. Creswell (2005) described qualitative research as having little understanding of the problem, unknown variables, and a central theme. In contrast, the study had five independent variables (performance expectancy, effort expectancy, social influence, fear of spam, and opting-in) and a single dependent variable of behavioral intention to use mobile coupons. Because the dependent and independent variables are known, a quantitative methodology was used to examine the relationships between the independent and dependent variables.

Four of the six variables in this study were adopted from the UTAUT (performance expectancy, effort expectancy, social influence, and the behavioral intention to use new technology). The UTAUT was first used in 2003 to understand the intention to use information systems (Venkatesh et al., 2003). The UTAUT consolidates eight models that individually explain 17% to 53% of the intention to use information

technology (Venkatesh et al.). More specifically, Venkatesh et al. stated the UTAUT is empirically proven to explain up to 70% of the variation to use information technology.

Overview of the Design Appropriateness

Because the notion of mobile coupons for casual dining restaurants represents a new use of technology for consumers, a modified and enhanced UTAUT model of technology acceptance was used for this cross-section correlational study. In an attempt to reach the demographic population, a panel of users was randomly selected through a Denver, Colorado university. Based on the ability to access the panel of participants and have them sign an informed consent, a printed survey questionnaire was the most efficient means to collect data. The printed survey was cross-sectional, indicating a point-in-time.

Prior to the study, a pilot test was administered. Fink (2006) described the purpose of the pilot test as an opportunity to solicit feedback on the survey instrument before the final survey was distributed to the participants. The pilot study was designed to test the survey instrument, but too small for effective evaluation. Once data were collected, the Statistical Package for the Social Sciences (SPSS) was used to conduct analysis on the data.

Research Questions

The findings of the study were useful in determining the relationship between the five independent variables and young adults' behavioral intention to use mobile coupons for casual restaurant dining. The independent variables included (a) performance expectancy, (b) effort expectancy, (c) social influence, (d) opting-in, and (e) fear of spam. The study was guided by five research questions, all designed to achieve the stated

purpose of the study.

Performance expectancy is the user belief that using the new technology results in some personal gain. The personal gain can be financial, an increase in productivity, or gains in job performance. Venkatesh et al. (2003) described performance expectancy as the strongest predictor of behavioral intention in the UTAUT model.

RQ 1: What is the relationship between performance expectancy and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

The second research question dealt with the subject of effort expectancy. In the case of technology, the assumption is the user has some sort of electronic device. If the electronic device, in this case a cell phone, were not pervasive, the question could have revolved around the ability to secure an electronic device. Because cell phones are ubiquitous, Venkatesh et al. (2003) described effort expectancy as the perceived degree of ease in using the proposed system.

RQ 2: What is the relationship between effort expectancy and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

The third research question focused on social influence. The subject of social influence can be addressed by multiple relationships to the user. For example, a younger user may be influenced by a parent, teacher, or sports coach. An older user may be influenced by a spouse, coworker, or boss. To ensure the subject of social influence is kept in context, Venkatesh et al. (2003) described social influence as the degree to which a user perceives important people believe the user should use the new technology. The

vagueness in describing social influence allows the user to self-describe important others as a possible influence on the behavioral intention to use.

RQ 3: What is the relationship between social influence and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

The fourth research question dealt with opting-in. Muk and Babin (2006) stated that 90% of the cell phones in the United States are short message service (SMS) enabled, representing a widely accessible technology. To evaluate opting-in, considerations of relative advantage, compatibility, and complexity could have been substitutes (Muk & Babin, 2006). Opting-in is a more familiar term for a user to grant acceptance of a mobile service.

RQ 4: What is the relationship between opting-in and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

The fifth research question was concerned with the fear of spam. The question could be worded in a manner that raises concerns about unwanted advertising, privacy of the user's cell phone number, timeliness of when messages are sent, or the sending of inappropriate messages (Dickinger & Kleijnen, 2008). Users commonly classify unwanted or intrusive advertising of all sorts as spam. The term *spam* is adapted from unwanted computer e-mail messages and has been adapted for use with text messages on cell phones (Dickinger & Kleijnen, 2008).

RQ 5: What is the relationship between the fear of spam and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

With each of the five research questions, a corresponding hypothesis was developed. These variables and research questions were used to develop the following hypotheses:

H_o1: There is no relationship between performance expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_a1: There is a relationship between performance expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_o2: There is no relationship between effort expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_a2: There is a relationship between effort expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_o3: There is no relationship between social influence and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_a3: There is a relationship between social influence and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_o4: There is no relationship between opting-in and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

H_a4: There is a relationship between opting-in and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

H_o5: There is no relationship between the fear of spam and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

H_o5: There is a relationship between the fear of spam and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

The concepts of spam and opt-in are not listed among the original constructs of the UTAUT. In the context of the study, spam was classified as an intrusive advertisement. Answers to the five research questions added knowledge in the area of mobile coupon marketing by combining (a) performance expectancy, (b) effort expectancy, (c) social influence, (d) fear of spam, and (e) opting-in.

Theoretical Framework

Each year, the implementation of information systems within organizations across the globe takes place with varying degrees of success. Similarly, consumers use technology with varying degrees of success. Technology acceptance is the area of research dedicated to understanding individual and organizational acceptance of innovation (Bauer, Reichardt, Barnes, & Neumann, 2005). Many of the technology acceptance theories are based in psychological models that have been adapted to understanding the human behavior of accepting new technologies (Bagozzi, 2007).

Understanding the determinants of technology acceptance is important in accessing the potential success of new technology that can be expensive to develop, implement, and support. Multiple models pertain to the issue of technology acceptance. Widely used acceptance models include the theory of reasoned action, the theory of planned behavior, the technology acceptance model, and the unified theory of acceptance and use of technology (Ajzen, 1991; Bagozzi, 2007; Bauer et al., 2005; Davis, 1989; Schaupp & Carter, 2009; Venkatesh et al., 2003).

In their germinal work, Ajzen and Fishbein (1980) developed the theory of reasoned action. The focus of the theory is the attitude toward acceptance of a new behavior. The basic premise is that actual behavior is a factor of the behavioral intention to commit to a particular behavior. Two factors influence behavioral intention: (a) individuals' attitude toward the behavior and (b) existing social norms.

Bauer et al. (2005) used the theory of reasoned action to validate a study on the consumer acceptance of mobile marketing. Using the theory of reasoned action, Muk and Babin (2006) concluded consumers' decisions to accept text advertising were based on attitudes and social

influences. Bauer et al. and Muk and Babin contended attitude has a stronger effect than social influence on behavior.

Kang, Hahn, Fortin, Hyun, and Eom (2006) used the theory of reasoned action to study paper coupons as opposed to electronic computer coupons. The study results showed a correlation among (a) the acceptance of electronic computer coupons, (b) computer skills, and (c) access to a computer. Behavioral control is defined as computer skills and access proved to have a strong influence on electronic coupon acceptance. Kang et al. recommended the theory of planned behavior would be a better theoretical model than the theory of reasoned action for understanding the usage of electronic computer coupons.

The theory of planned behavior developed by Ajzen (1991) includes the same constructs as the theory of reasoned action with the added construct of perceived behavioral control. Ajzen described actual behavioral control as the control an individual has over behavioral achievement. Perceived behavioral achievement is an individual's

perception of how easy the task may be performed. In 1957, Atkinson developed another approach to perceived control described as an individual's perception of the probability of success at a given task. Ajzen's construct of perceived behavioral control is similar to Bandura's (1977, 1982, 1986) construct of self-efficacy that describes how well an individual can implement a course of action.

Complementing the theory of planned behavior is the decomposed theory of planned behavior. Hsu et al. (2006) noted the decomposed theory is the same as the theory of planned behavior, but it includes a list of each relationship affecting (a) attitude, (b) subjective norms, and (c) perceived control. Hsu et al. used the decomposed theory of planned behavior to understand consumer intention to accept mobile text coupons. The study revealed individuals are strongly influenced by friends and family in deciding whether to accept or reject mobile coupons.

Taylor and Todd (1995) performed important research on the acceptance of information technology by using three theoretical models: (a) the theory of planned behavior, (b) the decomposed theory of planned behavior, and (c) the technology acceptance model. The decomposed theory of planned behavior was more effective at providing a complete understanding of behavioral intention by facilitating focus on specific items influencing systems use. Taylor and Todd stated each of the three models has merit, but the technology acceptance model is preferable when the sole goal is to predict usage.

Davis published germinal research on the technology acceptance model in 1989. Davis investigated the usefulness, ease of use, and user acceptance of information technology. The development of the technology acceptance model was motivated by the

need to better understand system use by (a) vendors developing new technology ideas and (b) information systems managers, within organizations, who would evaluate the technology offerings. Davis concluded usefulness was the strongest predictor of usage. Davis suggested further study of the technology acceptance model by applying the model to new applications.

Davis, Bagozzi, and Warshaw (1989) demonstrated the technology acceptance model construct of perceived usefulness was the major determinant of the intention to use computers. Morris and Dillon (1997) used the technology acceptance model to evaluate the potential acceptance of the Netscape web browser. Following their research, Morris and Dillon praised the cost-effectiveness, simplicity, and the predictive acceptability of the technology acceptance model.

Song, Koo, and Kim (2007) modified the technology acceptance model to study the consumer acceptance of mobile commerce. The study included perceived enjoyment as a new variable to understand user acceptance. With the addition of enjoyment as a criterion, Song et al. were able to account for 46% of the variance in users accepting mobile technology.

Dickinger and Kleijnen (2008) completed a study of the acceptance of mobile coupons, using a modified version of the technology acceptance model. Dickinger and Kleijnen acknowledged the independent variables of perceived usefulness and ease of use, but discussed the need to redefine the variables for the context of mobile coupons. The result defined perceived usefulness as the economic benefit of coupons, while ease of use was defined as the difficulty in redeeming mobile coupons.

Dickinger and Kleijnen (2008) added perceived control to understand consumer apprehension pertaining to spam. The results demonstrated subjective norms were not a factor in the intention to use mobile coupons, but perceived control was correlated to intention to use mobile coupons. A face value was not designated for the coupon, so users believed the process of redeeming coupons could potentially be more difficult than the coupon was potentially worth.

In 2000, Venkatesh and Davis used the technology acceptance model to study workers using a new software program. Venkatesh and Davis compared the results for men and women. Men were more strongly influenced by the perception of usefulness, and women were more influenced by the ease of use of the new software program. The technology acceptance model has demonstrated reasonable effectiveness in predicting the acceptance of new technology with relatively low cost and fast results.

The applications of the technology acceptance model included web browsers, mobile commerce, and mobile coupons. The model is flexible because researchers can modify the description of the variables to fit specific applications. A key criticism of the technology acceptance model is the lack of variables such as gender, perceived control, and experience that could improve the accuracy of the model.

In 2003, Venkatesh et al. unveiled the unified theory of acceptance and use of technology (UTAUT). Davis (1989), who developed the technology acceptance model, is one of the authors of the UTAUT. The strength of the UTAUT is the consolidation of eight previous models, including the technology acceptance model that contains important elements useful in explaining acceptance.

Venkatesh et al. (2003) noted eight previous models explained 17% to 53% of the variance in user intentions to use new technology. The UTAUT can outperform the other eight models in predicting new technology acceptance and use by explaining up to 70% of the variance in user intention. Given the strength of the technology acceptance model and the additional variables contained within the UTAUT, the model in the study helped explain young adults' acceptance of mobile coupons in a casual dining restaurant environment.

Past research on technology acceptance included exploration of consumers' behavioral intentions to use (a) mobile marketing, (b) opt-in strategies, (c) electronic coupons, and (d) mobile coupons (Dickinger & Kleijnen, 2008; Jayawardhena, 2009; Rohm & Sultan, 2006; Venkatesh et al., 2003). The previous research included the theory of reasoned action, the technology acceptance model, the theory of planned behavior, or innovation diffusion theory (Ajzen, 1991; Ajzen & Fishbein, 1980; Davis, 1989; Dickinger & Kleijnen, 2008; Rogers 1995; Venkatesh & Davis, 2000; Venkatesh et al., 2003). Previous researchers modified variables of the technology acceptance model constructs to incorporate mobile coupons specifically (Dickinger & Kleijnen, 2008; Rohm & Sultan, 2006). The results of these previous correlation studies suggest multiple theoretical frameworks are appropriate.

Definition of Terms

The acceptance theory of mobile technology usage is based on constructs of the UTAUT combined with the fear of spam. The terms contained in the model are defined as follows:

Age. The UTAUT includes age as a moderating variable to compare the effects of behavioral intention to use technology by age groups. For the purpose of this study, the model included young adults age 18 to 24 (Venkatesh et al., 2003).

Behavioral intention. Behavioral intention represents the degree to which an individual consciously formulates a plan to perform a certain behavior in the future (Venkatesh et al., 2003).

Effort expectancy. Effort expectancy is the level of ease or difficulty an individual might encounter in using a new technology (Venkatesh et al., 2003).

Experience. Experience is the degree to which individuals feel they can operate the system with little or no external assistance (Venkatesh et al., 2003).

Facilitating conditions. Facilitating conditions pertain to the degree to which individuals believe a technical or customer support system is in place to assist them (Venkatesh et al., 2003).

Mobile coupon. A mobile coupon is a text, image, or multimedia message solicited or delivered to a mobile phone that can be exchanged for financial benefit when purchasing a product or service. The mobile coupon contains information relevant to the terms and conditions, purchase requirements, face value, and expiration date. Redemption requires displaying the mobile coupon on the phone (Coupon Information Corporation, 2012).

Mobile devices. All of the devices that connect to a U.S. cellular network and have the minimum capability of receiving voice phone calls and text messages while outside of the home comprise mobile devices (Gill, 2008).

Opt-in. Opt-in pertains to a permission-based marketing tactic in which the users are asked whether they would like to receive mobile marketing promotions. Incentivized opt-in options exist when the users receive something of value (e.g., ringtones, wallpaper, or a complimentary product) for agreeing to opt-in. Individuals who have opted-in usually receive additional marketing promotions unless they request to opt-out (Muk, 2007).

Opt-out. Opting-out is the process by which individuals click on an unsubscribed button within a mobile advertisement to have their name removed from the list and not receive further promotions from the specific advertiser (Newell & Meier, 2007).

Perceived user control. Perceived user control is the degree to which users believe they have control over mobile advertising through the opt-in and opt-out process. The degree to which the fear of receiving mobile spam makes the users feel less control over the process might cause the users to not participate in mobile marketing campaigns (Dickinger & Kleijnen, 2008).

Performance expectancy. For the purpose of the study, performance expectancy is the degree to which mobile coupons assist individuals in the goal of dining at a casual dining restaurant (Venkatesh et al., 2003).

Social influence. Social influence is the degree to which individuals believe other people who are important to them believe they should use a new technology system (Venkatesh et al., 2003).

Spam. For the purpose of the study, spam is defined as intrusive advertisements delivered to users' cell phones. The advertisements may not have an opt-out button to stop future mobile advertisements (Dickinger & Kleijnen, 2008).

Use behavior. The concept of use behavior implies actual system use (Venkatesh et al., 2003).

Viral marketing. Social networking in the context of marketing allows the marketers to rely on previously established social networks to spread a message (Mort & Drennan, 2005).

Assumptions

Mobile coupons are a subset of mobile marketing that remains in an infancy stage of acceptance and use. Bauer et al. (2005) noted researchers have used theories or parts of theories such as the theory of reasoned action, the theory of planned behavior, innovation diffusion theory, and the technology acceptance model to explain some aspect of mobile marketing. The UTAUT was developed in 2003 to consolidate multiple models to understand the acceptance of technology in a work environment (Venkatesh et al., 2003).

Observing the suitability for multiple applications, the UTAUT, combined with characteristics of fear of spam and opt-in, were adopted for the study of mobile coupons. The assumption was the acceptance theory of mobile technology usage would provide an accurate understanding of the acceptance of mobile coupons. Correlation analysis was deemed the appropriate statistical analysis to test the relationships among the independent variables and the dependent variable.

The study included a printed survey administered to a panel of young adults. The research assumed that the participants answered the questions honestly. Another assumption was satisfied because predetermined minimum number of qualified participants completed the survey. The assumption existed that the panel of participants

represents a larger population. A final assumption is that other researchers would be able to duplicate the results.

Scope and Generalizations

The purpose of the study was to examine the influence of five independent variables on the participants' intention to use mobile coupons in a casual restaurant dining environment in the United States. The research participants consisted of young adults, age 18 to 24 attending a private, non-profit university, who own a cell phone. The sample was taken from a Denver, Colorado university. The results may be generalizable to other private, non-profit university students of the same age group within the United States.

The results in Chapter 4 showed 42.38% of the subjects were male and 57.62 percent were female. This demographic is consistent with national average for private, non-profit universities which consist of 42.5% males and 57.5% females (Snyder & Dillow, 2011). Room, board and tuition of the population sample is within $700 of the national average for undergraduate, private, not-for-profit institutions outlined by the U.S. Department of education (Snyder & Dillow, 2011). This indicates a socio-economic similarity but may not be generalized to public institutions, private for-profit institutions or young adults not attending undergraduate programs.

Because cell phones are ubiquitous and 97% of young adult's text (Smith, 2011) compared to 98% of the sample population, results may be generalizable to young adults in private, not-for-profit universities but may not be generalizable to the general population for socio-economic reasons. Ethnicity was not captured on the survey. The university data where the sample population was surveyed contained a high percentage of

non-reporting to make the statistic unusable. The lack of collecting ethnicity information may limit the generalization of the results.

Because mobile coupons are not available on a wide scale, the description of mobile coupons for casual dining restaurants was similar to an exchange of text messages between an individual and representatives of a restaurant. The coupon example in the survey stated an offer for a discount, the timeframe in which the discount is valid, and a redemption code. Consistent with multimedia and entertainment, coupons could contain pictures, sounds, and multimedia delivered by text message. Multimedia and entertainment coupons did not receive consideration in this study. The 25% coupon discount was determined based on previous studies (Myung et al., 2006; Suri, Swaminathan, & Monroe, 2004).

Dickinger and Kleijnen (2008) stated the face value of coupons, quality of food, and restaurant service can impact the behavioral intention to use a coupon at a casual dining restaurant. Past coupon usage is not considered part of the study. Mobile coupons are a new medium, and Dickinger and Kleijnen did not find a relationship between previous paper coupon usage and mobile coupon acceptance. Location-based services include suggesting coupons based on the location of an individual; such services were not part of the study.

Limitations

A limitation built into the correlational model is the inability to establish causality. Although correlational research methods can describe the nature and the extent to which the relationships exist among variables, the presence of a relationship cannot determine whether one variable caused an effect in another (Sladyk & Ryan, 2005). To

understand if causality between any of the five independent variables and the use of mobile coupons existed, experimental research studies would be necessary. Literature indicated that a limited sample size may not include all individuals in the organization's population (Leedy & Ormrod, 2005), which presents a limitation that must be considered in generalizing the findings. The results are limited by the participants' honesty and ability to estimate (a) their user experience and (b) the true importance of social influence.

Delimitations

The delimitations of the study included the participants' attitudes toward the capability of their cell phones in general. Frustrations or other attitudes relative to cell phone usage, may have affected the integrity of the responses to the survey. The halo effect, a cognitive bias whereby the perception of a particular ability is influenced by the perception of the former ability, may have also been present as an intervening variable.

Summary

Most people in the United States use mobile phone devices offering mobile communication and other popular data services such as text messaging. In the United States, people send approximately 153 billion text messages each month (Martin, 2010). Realizing the opportunity to capitalize on voice and data services, worldwide telecommunication carriers spent over $365 billion on United States wireless infrastructure (CTIA – The Wireless Association, 2013). Marketers are interested in using the wireless medium to build brands, shape consumers' attitudes, and influence purchasing decisions (Sultan & Rohm, 2005).

In 2010, U.S. Bureau of Labor and Statistics (2011) stated 41% of U.S. household food budgets were spent on prepared meals outside of the home. Jackson et al. (2004) concluded restaurants use multiple marketing techniques to gain a competitive advantage and vie for the consumers' food dollars. Paper coupons represent one form of restaurant advertising. The familiarity of coupons and the pervasiveness of text messaging on mobile phones make mobile coupons a potentially viable marketing technology. Introducing and understanding the potential success of a new technology pertains to the area of study called technology acceptance (Barat & Paswan, 2005; Dickinger & Kleijnen, 2008; Jakobson, 2005; Jung & Lee, 2010; Rohm & Sultan, 2006).

Researchers have used theoretical frameworks such as the theory of reasoned action, the theory of planned behavior, and the technology acceptance model to explore the behavioral intention to use new technology. In 2003, Venkatesh et al. unveiled the UTAUT. This quantitative cross sectional correlations study involved the primary constructs of the UTAUT acceptance theory, in conjunction with the variables of opting-in and the fear of spam. The combination of attributes in the study facilitated the understanding of young adults' behavioral intention to use mobile coupons for casual restaurant dining.

The literature review section in Chapter 2 includes additional insight into the mobile phone marketplace. More specifically, the chapter contains evaluations of mobile phone features and comparisons against age variables to explain existing usage. In an effort to differentiate variations in eating establishments, new restaurant categories such as casual dining have emerged. Chapter 2 contains in-depth information based upon the

literature review about mobile phone usage, coupon evolution, and restaurants, as important economic factors in the United States.

Chapter 2

Review of the Literature

Grindy, Karaer, Riehle, Roach, and Smith (2007) stated full-service restaurants are categorized into family dining, casual dining, and fine dining restaurants. Restaurants employed 13.1 million people in the early part of the 21st century. Herrington (2004) confirmed restaurant promotion stimulates the local markets because 70% of restaurant advertising dollars are spent in the local market as opposed to national advertising. In Chapter 2, a discussion of casual dining restaurant promotions as well as a comparison of casual dining and full-service restaurants in terms of overall satisfaction is presented.

The discussion of restaurant promotion is focused on coupon usage including (a) the overall redemption rate of coupons in the United States, (b) trends, and (c) the effectiveness of such a marketing medium for casual dining restaurants. Subsequent sections include the evolution of cellular technology and mobile phone features. The acceptance of mobile coupons (M-coupons) includes the casual dining restaurant environment, user preferences, available technologies, and attitudes. Becker, Liuzzo, and Keenan (2007) affirmed adults find the most popular mobile phone features to be the camera, call waiting, built-in speakers, and text messaging.

Finally, a discussion of technology acceptance models concludes the chapter. Specifically, the variables used in the model are discussed in the context of technology acceptance. The variables relate directly to the hypotheses and are sequentially incorporated into an overall visual model.

Documentation

Three hundred and nine articles were found in three primary databases and fewer articles were identified in secondary databases. The primary databases were ProQuest, Gale PowerSearch, and EBSCOhost. Twenty-nine key search terms and phrases included *casual dining, cell phone demographics, coupons, digital coupons, E-coupons, electronic coupon redemption, food service, Internet coupon, local search coupons, location-based coupons, mobile advertising, mobile commerce, mobile coupons,* and *mobile marketing.* Other terms were *unified theory of acceptance and use of technology, motivational model, opt-in, opt-out, permission marketing, redeeming electronic coupons,* and *restaurant promotions.* Related terms included *smart phones, spam, technology acceptance model, technology acceptance, text messaging, theory of planned behavior, theory of reasoned action,* and *wireless electronic coupons.* The search strings yielded 355 total articles. Most of the articles were published since 2005, except for germinal research articles and articles providing a historical perspective.

Credibility and Availability of Census Data

The primary sources for information pertaining to casual dining restaurants were the U.S. Census Bureau, The National Restaurant Association (NRA), and peer-reviewed articles. Collection of the economic census by the U.S. Census Bureau information takes place every five years as required under federal law, Title 13 of the U.S. Code, section 131. Section 224 makes the reporting of the economic census mandatory by law. Section 195 allows for the use of statistical sampling methods. Clayton (2002) noted representatives of the U.S. Census Bureau collect information by mail and through electronic reporting options to sample businesses in specific industries.

The U.S. Census Bureau (2007) gathers the information for the determination of the U.S. gross domestic product (GDP). The economic census occurs every five years with the years ending in a 2 or a 7. The first record of economic census data consisted of manufacturing data from the year 1810. This study draws upon the data reported in the economic census from 2007. Businesses submitted information for the 2007 economic census by February 12, 2008. For 2007, the U.S. Census Bureau mailed 4,700,000 economic census forms. The 2007 economic census contained 600 variations so business owners could respond in terms that were meaningful to a specific business.

The questions pertained to location, months of operation, gross sales, value of exports, electronic shipments (e-shipments), inventory franchise information, and payroll information. The 2007 economic census publication became available for general distribution in early 2009. Barker (2007) also noted individual pieces of the 2007 economic census information were released sooner.

Industry Classifications

Before 1997, the U.S. economic census was organized by the Standard Industry Classification (SIC) code system. In 1997, the United States, Canada, and Mexico adopted the North American Industry Classification System (NAICS). Russell (2004) noted the numerical system classifies 20 business sectors, 200 subsectors, 317 industry groups, and 1,179 industries. Differences exist between codes in SIC and NAICS, but the classification does not affect fine dining, casual dining, or the restaurant category other than the numerical indicator. In the NAICS, the restaurant sector begins with the Number 72, classifying it as *accommodation and food services*.

Russell (2003) noted the NAICS Number 722 represents the subsector *food service and drinking establishments*. Furthermore, businesses in the 722 category included drinking establishments, mobile food service, catering, food service contracting, limited-service eating establishments, and full-service eating establishments. Among businesses belonging to NAICS Classification 722, differentiation is based on seating space, configuration, waiter services, and amenities (e.g., entertainment). The NAICS classification of 7221 is the code for full-service restaurants. In the 7221 classification, patrons generally receive service while seated and pay after the meal. Other services, entertainment, or alcoholic beverages might be available.

Full-Service Restaurant Categories

In 1919, the National Restaurant Association (NRA) emerged as an association dedicated to the restaurant industry (Grindy et al., 2007). In the early part of the 21st century, 945,000 restaurants and 13.1 million restaurant employees reaped the benefits of NRA education, lobbying efforts, and community involvement. The NRA used the same *food service and drinking establishment* categories as the U.S. Census Bureau (2007).

The NRA further segmented full-service restaurants into family dining, casual dining, and fine dining (Grindy et al., 2007) because full-service restaurants represent a significant percentage of total dollars spent in eating and drinking places. Other variations of restaurant hybrids did not receive consideration in the study. In an effort to differentiate, restaurants are creating new marketing classifications, such as fast-casual restaurants (Eligon, 2008). The focuses of this study are the U.S. Census Bureau classification of full-service restaurants and one of the three subcategories defined by the NRA as casual dining full-service restaurants.

The NRA members adhere to the U.S. Census Bureau statistical information pertaining to full-service restaurants. The NRA members recognized three distinct subcategories of full-service restaurants (Grindy et al., 2007). The definition for family dining full-service restaurants, casual dining full-service restaurants, and fine dining full-service restaurants includes waiter service. In such restaurants, servers take orders while the patrons are seated and the patrons pay after the meal. The only differentiation between the three categories is the average total cost. The average per person total is $10 or less for family dining, $10 to $25 for casual dining, and $25 and above for fine dining full-service restaurants.

At limited-service restaurants (i.e., quick-service restaurants [QSR]) and fast food restaurants, the patron must pay before eating. People pay an average of $3 to $6 to eat at a fast food restaurant. The concept of quick, casual restaurants pertains to restaurants where fresh, wholesome, authentic food is served in a comfortable and attractive setting with an average per person total between $7 and $9. The U.S. Census Bureau and the NRA still consider quick, casual restaurants to be in the fast food category as described by the research department of the NRA (M. Altman, personal communication, May 28, 2008). Specific subsegments of full-service restaurants describe casual dining restaurants.

Restaurant Promotion Strategies

Jackson et al. (2004) evaluated 10 restaurant promotion strategies. The sample sizes ranged from 74 to 84 for each marketing category. The categories of promotion were radio, newspaper, directory advertising, Internet, direct mail, food samples, coupons, advertising specialties, frequent diner programs, and displays. The information

was categorized by the number of seats in the restaurant and franchise versus independent restaurant. Because the classification category does not follow the U.S. Census Bureau (2007) or NRA (Grindy et al., 2007) guidelines, correlation with other sources may be difficult. Jackson et al. (2004) stated 77.8% of franchise restaurants use promotional coupons, while only 37.3% of independent restaurants use coupons. One unexpected trend was restaurants with higher seating capacity utilized more Internet advertising.

Herrington (2004) described the conflict between restaurant franchisees and franchisers as it pertains to the value of national advertising. Restaurant franchisees spent 46% of advertising dollars on local advertising compared with the retail industry as a whole that spent 70% of advertising dollars in the local market. Herrington stated national restaurant franchisee advertising was not effective for restaurants. Approximately 75% of the top 400 restaurant chains failed to demonstrate a positive national sales-to-advertising relationship, even when net profit margins on incremental sales were calculated at 5%. The results could support the idea that chain restaurants are more likely to use coupons or local advertising than independent restaurants.

Yu-Te, Chin-Mei and Hsiao-Chien (2012) stated the cost of attracting a new customer is more than five times more expensive than maintaining an existing customer and a five percent increase in customer retention can lead to a profit increase of 25 percent to 75 percent. Therefore, the increasing emphasis is on retaining existing customers. In 1995, 26% of casual dining participants expressed a lack of desire to join a rewards program for fear of (a) receiving promotional e-mail, (b) having difficulty redeeming benefits, and (c) not wanting to carry a rewards card.

Casual dining participants prefer monetary rewards or savings as the preferred benefit. Immediacy, as opposed to a requirement of waiting to accumulate points, is a key consideration in casual dining loyalty programs (Jang & Mattila, 2005). Jang and Mattila's study results demonstrated the consumers' desire to receive an immediate, monetary benefit in a casual dining loyalty program.

Myung et al. (2006) described two opposing views of the effectiveness of coupons in attracting new customers. Existing customers have a higher intention to return to a full-service restaurant than new customers, regardless of the face value of a coupon. Positive views of service and food quality are the primary reasons customers return to a full-service restaurant. Myung et al. suggested coupons are nothing more than a means of showing appreciation to patrons who support the dining establishment. The limitation of the study was the population consisting of 831 undergraduate university students.

Intention to return to a restaurant and the intention to use a coupon describe a relationship between the perception of savings and the approval of a significant other who encourages the behavior. The behavioral aspects of clipping paper coupons, purchasing a different brand, and redeeming the coupon coupled with the influence of savings and significant other positive reinforcement lend themselves to the theory of reasoned actions. Even in the theory of reasoned action, Shimp and Kavas (1984) asserted subjective norms and personal perceptions play a role in the determination to use coupons. In 1984, coupons described a paper transaction, but technology has enabled people to create electronic coupons and deliver them through mobile carriers to a mobile

device. Other important aspects are the demographics of full-service restaurant customers and the diffusion of technology throughout the United States.

Customer Satisfaction in Full-Service Restaurants

Customers who visit a restaurant expect value. Unique value can be in the form of a product that is not easily duplicated. An example is a microwave oven at Subway that microwaves and toasts at the same time. When applying price in a conjoint analysis to tradeoff price and quality of service, Arora and Singer (2006) revealed that consumers believe price is more important. Customers with higher education levels consider price more important than quality of service. Further survey details reveal performance as the greatest appeal to customer satisfaction.

According to Arora and Singer (2006), customer satisfaction measurements include aspects such as location, food quality, service, and atmosphere. Ambiance of a restaurant did not influence satisfaction. Arora and Singer disclosed pricing on a restaurant menu has two elements of value. High menu prices cause customers to view restaurants as having negative value, but high food quality and continuous service add to the positive perception of the dining experience. Restaurant owners in full-service restaurant environments must determine what value-added features customers want that warrant increased prices.

Full-Service Dining Customers

In 2010, U.S. Bureau of Labor and Statistics (2011) noted restaurants accounted for 41% of the consumer dollar spent on food. Grindy et al. (2007) forecasted leaders of full-service restaurants would expect to attract $187 billion out of the $393 billion spent at eating and drinking establishments in 2008. To help meet such an expectation, 74% of

casual-dining restaurants have an e-mail address. The top five activities of a consumer on a restaurant Web site are (a) surfing the restaurant site in general, (b) finding nutritional information, (c) placing an order, (d) making a reservation, or (e) posting a comment. To meet consumers' needs, Grindy et al. (2007) professed casual dining Web sites include the following options by percentage: (a) menus (96%), (b) daily specials (50%), (c) ability to make reservations (13%), and (d) ability to place take-out orders (8%).

Technology Savvy Customers

In the 2007 NRA survey, adults fell into six age-group classifications (Grindy et al., 2007). The age-group classifications in years were 18 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, and above age 65. Grindy et al. (2007) confirmed the participants' desire for describing the use of technology in restaurants. Grindy et al. reported 53% of the adults believed using an electronic payment system at the table would be an advantage. Only 1% of full-service restaurant operators offers such a feature, and 70% of the operators do not believe the ability to make electronic payments is an important feature. A total of 34% of adults said wireless Internet access was important, and 29% said television at the table was a positive feature in a full-service restaurant.

Grindy et al. (2007) found 30% of adults reported they would like to receive an e-mail notification of the daily special, and 22% reported they would like to receive a cell phone notification of the daily special at the full-service restaurant of their choice. A total of 60% of casual dining operators said they believe wireless access would become more popular, and 34% of casual-dining restaurant operators reported planning to offer an e-mail promotion. Of the adults who desired cell phone notification of the daily

special from the restaurant of their choice, Grindy et al. discovered age was negatively correlated with desire to receive the cell phone notification with 35% of the participants in the age group 18 to 24 responding affirmatively and 11% of the participants in the age group of 65 and above responding affirmatively.

According to Grindy et al. (2007), adults desire electronic features at their table for the purpose of ordering, entertainment, and payment. Grindy et al. found the only form of electronic advertising adults desired was e-mail or cell phone notification of the daily special from the full-service restaurant of their choice. The results of the study by Grindy et al. have implications for the consumer being able to opt-in to receive restaurant notifications. An additional implication is consumers must have a computer or cell phone to receive the electronic offers they desire.

Cellular Phone Age Demographics

In a 2004 supplement to the Current Population Survey, the U.S. Census Bureau (2007) classified the use of cell phones and landline phones in the Unites States under household communications technology. The age classification was similar to the NRA survey (Grindy et al., 2007). The U.S. Bureau of Labor and Statistics identified four adult age groups as 18 to 24 years of age, 25 to 34, 35 to 54, and older than 55 years of age. In 2006, Tucker, Brick, and Meekins (2007) noted that people in 5% of households only have a cell phone, and people in 3% of households have no phone at all.

The existence of multiple cell phones per household is an indication of the high cell phone usage in the United States. In 2010, the Cellular Telephone Industry Association (CTIA)-The Wireless Association reported a continued trend, noting 24.5% of the U.S. households abandoned landline phones in favor of wireless only phones

(Martin, 2010). Palenchar (2008) correspondingly noted the percentage of people age 18 to 29 that use a cell phone as their sole phone grew from 26% to 32% in 2008.

The trend indicated more people are using cell phones as their primary phones, and such usage is more concentrated among people over 18 years of age and less than 40 years of age than in the general population. In 2004, Jenkins (2006) compared foreign penetration of cell phones by age group in the United Kingdom using six age groups: 16 to 24 years of age, 25 to 34, 35 to 44, 45 to 54, 55 to 64, and 65 years of age and older. The 25 to 34 age group was at saturation with greater than 90% cell phone ownership.

The high cell phone ownership rates in the United Kingdom speak to the ease of interaction with people on the move. Jenkins (2006) noted by purchasing a cell phone, the users have opted-in to being available on the go. The increase in cell phone usage in the 18 to 34 year-old age group coupled with more youth using the cell phone as their sole home phone indicated increased willingness to being available all of the time.

The Mobile Marketing Association (MMA) is a non-profit organization designed to monitor and lead the growth of mobile advertising. The MMA has 500 members, publishes a peer-reviewed journal, and conducts an annual survey on mobile usage and attitudes (Becker et al., 2007). In the annual 2007 MMA study, an online panel representing U.S. homes sampled 1,405 consumers with online interviews. The age brackets for adults were 18 to 24 years of age, 25 to 34, 35 to 44, 45 to 54, 55 to 64, and over 65 years of age. The 2007 study findings revealed 79% of the U.S. adult population used a mobile phone (Becker et al.).

Findings by Becker et al. (2007) supported the growth cited by CTIA-The Wireless Association's findings that the United States consists of 285 million mobile

phone subscribers representing 93% of the total U.S. population in 2010 (Martin, 2010). The adult age bracket with the highest cell phone penetration (88%) is 35 to 44 years of age. Adults spend an average of 5 hours each week using their cell phone. Corresponding to previous research trends, 25% of the 18 to 34 year-olds indicated the mobile phone replaces their landline phone at home.

Adults consider their personal computer (PC) to be the only electronic device more important than their cell phone. In the United States, each household has an average of 2.4 cell phones (Becker et al., 2007). In contrast, people in one third of the homes in the United States have three or more cell phones. In 2007, wireless service providers in order of popularity included AT&T, Verizon, Sprint, and T-Mobile. Such providers accounted for 91% of U.S. market share.

AT&T and Verizon were virtually tied and represented 66% of the market. More than half the people in the 18 to 44 age group considered the cell phone to be highly important in their daily life (Becker et al., 2007). The adoption of cell phones among adults was nearing saturation for voice applications.

Adults placed high importance on the cell phone in their daily life and were likely to carry their cell phone on a regular basis. The adult age group of 18 to 44 years demonstrated a high use of cellular phones. Because cell phone usage was prevalent in the United States, an understanding of which services are important to users will aid in the understanding of cell phone usage.

Cellular Phone Varieties

Cell phones are widely used in the United States, and the cell phone personal digital assistant (PDA) and a new class of phones called smart phones have the ability to

connect to the cellular network. In an effort to gain more market share, cellular device manufacturers and cellular network providers are focusing on convergence in the electronics sector. The concept of cellular convergence has allowed features such as MP3 music to be added to cell phones.

Apple added the iPhone® to the cellular offering, combining features of a cell phone, PDA, and iPod®. Gill (2008) stated the PDA provides the convenience of e-mail, calendar management, MP3 music, possibly Microsoft Office features, and voice communication over a cellular network. For the purpose of this research study, all devices that connect to a U.S. cellular network and have the minimum capability of receiving voice phone calls and text messages while outside the home were referred to as mobile devices.

Mobile Device Feature Usage

Mobile device features and usefulness increase with the bandwidth of cellular service providers, while the cost of handsets decreases when mobile manufacturers benefit from the economies of scale. The result is a user base of media rich services. Stafford (2008) noted in 2008, the number of worldwide mobile broadband connections grew to 10 times the number in 2007. The Global System for Mobile Communications (GSM) Association declared the existence of 32 million global broadband connections in April 2008.

The fastest growing areas for broadband use are Asia, Australia, Europe, and North America. Stafford (2008) concluded the definition of high-speed handset access ranges from 1.8 megabits per second (mbps) to 7.2 mbps. With the bandwidth increase in 3G handsets, mobile operators are anxious to compete with Internet fixed-line network

operators for a piece of the lucrative revenue from information-and service-oriented consumers. As of April 2008, broadband was available in 73 countries from 166 operators (Stafford, 2008).

In the United States, different mobile operators offer varying speeds and prices to accommodate voice and data activity. The worldwide trend of increasing bandwidth continues and allows new services and feature-rich handsets. Trend information is a method of forecasting future usage while comparing studies on the intent to use features. The process is tempered with the blend of common mobile applications available on most mobile devices. The existing environment and trends are important in understanding consumer attitudes toward mobile services.

Mobile services (M-services) are defined by Mort and Drennan (2005) as any service accessed by mobile devices and include short message service (SMS), e-mail, web-mediated services, voice, mobile-commerce (M-commerce), mobile transaction services, and mobile information services. To understand the consumer more clearly, Mort and Drennan suggested five high-level usage classifications. The classifications are (a) time-sensitive users, (b) spontaneous users, (c) entertainment consumers, (d) productivity enhancers, and (e) mobile-sensitive consumers (i.e., geographical location plays a role).

Some researchers suggested the Web Motivation Inventory (WMI), indicative of computer online motives, was useful in understanding mobile motives. Only Rodgers, Chen, Wang, Rettie, and Alpert (2007) used the WMI for mobile motivational understanding; the WMI is not based on a common theory for understanding mobile usage. Rodgers et al. loaded six groups of services with multiple features ranging from

receiving news to text messaging. The results indicated consumers, based on existing and emerging services, were anxious to bundle multiple features to match their behavioral personalities. Mobile phones remain ubiquitous.

As the evolution of network speed and handset features increases, a heterogeneous pattern of mobile usage has emerged to allow mobile users to incorporate mobile devices into their daily lives. Affiliation and belonging are important social networking aspects of mobile features. Social networking has implications for *viral marketing* (i.e., marketing relying on previously established social networks). Consumers who are comfortable using computer features are more likely to use mobile features, suggesting a link between computer skills and competence to transfer the skill set to the mobile phone (Mort & Drennan, 2005).

A method to measure the adoption of technology might be the technology acceptance model. If consumers are comfortable with computers and their comfort level relates to the mobile phone, the adoption of new mobile features might be faster. According to CTIA-The Wireless Association, in the United States, 292 million wireless subscribers existed as of 2010 (Martin, 2010). Becker et al. (2007) and Kuo (2008) denoted that people in more than 80% of the households in the United States had mobile devices in 2007.

With the pervasiveness of mobile devices, the question remains of which features people use or consider most important. The answer varies with age. The common denominator is all mobile devices have telephone voice capability, so the most important feature of cellular phones is voice capability. Beyond the initial primary application, features fall into the two basic categories of actual usage and perceived usefulness. The

concept of perceived usefulness pertains to how useful the user imagines a feature to be. Since a feature might not be available on all phones or in all networks, users define a level of interest. Another method of showing

relative importance is to examine year-to-year changes based on the same study taken at two data points in time. The results can represent emerging trends.

Becker et al. (2007) observed that on average, adults use 4.2 mobile features each month. The most popular features are cameras, call waiting, built-in speakers, and text messaging. A total of 75% of mobile users engage in text messaging. The average number of text messages sent or received is 20 per week, according to Becker et al. Features that increased most in importance between 2005 and 2007 were picture or video messaging, additional connectivity such as the Internet, and blue tooth functionality (Becker et al., 2007).

Call waiting, speaker capability, and hands-free options are the features that (a) have been available the longest, (b) are most frequently used, and (c) are directly related to a phone call. In contrast, Becker et al. (2007) asserted text messaging and cameras were two of the features with significant usage in 2007 not directly attributable to a phone call. The highest ranking adult group for text messaging was the 18 to 44 year-old age bracket (Becker et al., 2007).

Text messaging declined in the 45 to 65 and older age group. Use of the camera feature ranged first or second preference in all age brackets. The three features showing the highest increase between 2006 and 2007 were the camera phone (23%), picture or video messaging (17%), and downloading pictures (14%). The trend is towards pictures and multimedia (Becker et al., 2007). Voice communication is the preferred application

on mobile devices followed by features related to voice calls. Such features are closely followed by text messaging and camera usage. The trends in camera phones, video messaging, and downloading of pictures were the largest gains for mobile features between 2006 and 2007 (Becker et al., 2007).

The multimedia options could have a relationship to the speed of the network, the fees associated with data, or the familiarity with the features. Becker et al. (2007) concluded a total of 41% of users send or receive 30 text messages a week and 70% of text message users choose an unlimited or bulk plan for text messages. In contrast, the people who did not use text messaging expressed that cost was the primary concern.

Text Messaging, M-Commerce, and Intention

Text messaging is the most popular activity after voice on mobile devices. Text messaging (i.e., SMS) is defined as exchanging a short set of words between mobile devices. To understand the profile of text messaging among mobile users, Steenkamp and Baumgartner (1992) evaluated personality traits and optimum stimulation level (OSL) to understand the factors' moderating roles. The goal of M-commerce is not to replace electronic commerce (E-commerce) but to transcend the mobility of consumers. As the pervasiveness of M-commerce continues, the ability exists to create a seamless infrastructure for E-commerce. Steenkamp and Baumgartner demonstrated a relationship of three personality traits well established as a theoretical framework. The traits are optimum stimulation level, personal innovativeness, and individual playfulness.

Researchers have viewed M-commerce by applying the Technology Acceptance Model (TAM) developed by Davis (1989), but Pagani (2004) agreed price, ease of use, perceived usefulness, and speed were major factors in the adoption of mobile services.

Bruner and Kumar (2007) explained visual stimulation and fun could extend the TAM model while engaging in M-commerce. Bruner and Kumar defined individual playfulness as a person's interest to engage spontaneously and creatively with microcomputer technology.

Bruner and Kumar (2007) defined personal innovativeness as a person's interest in trying new information technology, leading to the diffusion of new technology. The authors defined optimum stimulation level as people's general response to their environment and level of comfort with new situations. Bruner II and Kumar (2007) showed playfulness and innovativeness had a positive effect on the optimum stimulation level (OSL). Consumers who do not text message demonstrate a lower level of the three personality traits. The implication is consumers with higher OSL could be more responsive to M-advertising, but low OSL consumers might desire less excitement as a behavioral attribute (Mahatanankoon, 2007).

The implication is relationships exist among text messaging, the TAM model, personal attributes, and the desire to participate in M-commerce. Another implication is one mobile advertisement might not apply to all users. Some consumers might want a simple text message, and some consumers might want multimedia to participate in mobile advertising.

Consumer Concerns

Palmer (2005) wrote a scathing review of the inability of business owners to regulate themselves when displaying advertising to consumers. Palmer suggested consumers fall victim to spam (i.e., unwanted advertising), pop-ups (i.e., ads shown before the requested content is shown), and cookies (i.e., methods of tracking user

movement across Web sites). Palmer was referring to such issues as they pertain to personal computer use, but many similarities exist between mobile marketing and personal computer use. Government oversight or third-party protection of consumers is likely to result in higher costs. Both monetary and nonmonetary costs should be passed on to the business as part of gaining access to the consumer (Palmer).

Using the term mobile trust (M-trust), Park and Yang (2006) described the early adoption of new technology as involving confidence in the actors. Risks can occur from privacy loss, security system failures, software failures, theft of the mobile device, smaller screens, smaller keypads when compared to a personal computer, and unstable bandwidth. The results of the study showed users with more Internet experience were more apt to adopt mobile advertising in spite of the risks, suggesting user segments based on Internet experience might require a different approach given their tolerance for risk (Park & Yang).

Consumers seeking information, value, or entertainment want immediate gratification without a loss of privacy. A unique method is image recognition as an opt-in strategy. Image recognition would allow users to take a picture using their mobile camera on their phone and text the picture to a phone number or short messaging code. By the fourth quarter of 2006, Ramkumar (2007) confirmed 50.7% of U.S. cell phones included a camera.

Image recognition pictures and responses could be in the form of a sports banner providing team statistics, a film poster delivering information about a movie, a wine label providing recommendations about the wine, or a book offering reviews and pricing. Ramkumar (2007) stated the benefits of image recognition include the fact that the

technology already exists and users do not have to type in a long string of numbers or letters. By sending the picture, users request information or action. In contrast, negative aspects include the fact that the image must be on file for recognition to take place and installation software might be required that could make the consumer hesitant to use it (Ramkumar, 2007).

Restaurant Experiments with Mobile Coupons

According to Jakobson (2005), people can find the best bowl of black bean gator chili close to the University of South Florida at Skipper's Smokehouse Restaurant & Oyster Bar in North Tampa, Florida. As a way of encouraging students to try the gator chili, Skipper's advertisers sent out a text message coupon to students who would opt-in. The opt-in portion is unique. Students at the University of South Florida can register through the school and identify what types of coupons they would like. The students can opt-out at any time. A total of 8,500 out of 32,000 students enrolled in the coupon program, and a total of 85 merchants belonged to the program (Jakobson).

Jakobson (2005) observed a similar system at the Southern Illinois University, and 85% of the 21,000 students chose to opt-in to the program. The cost of sending a message to the students is $250 for five messages and is less expensive than one print ad in the school newspaper. If a restaurant is having a slow night, Jakobson proposed the owners or managers can send an e-mail blast at 10 p.m. offering a two-for-one pizza coupon.

Kevin (2007) reported Jupiter research said 73% of 25- to 34-year-old adults text message and more than half of the 35- to 44-year-olds text as well. A company called Cellfire is emerging as an early leader in distributing mobile coupons. A consumer signs

up with Cellfire, specifies his or her preferences, and receives coupons. Kevin stated grocers are starting to use mobile coupon advertising to offer half-price pizzas and half-price rotisserie chickens at times when adults are coming home from work. Dwight Moore, Vice President of Marketing at Cellfire, stated, "QSR eating places typically see less than one percent redemption rate on print coupons" (personal communication, June 6, 2008). The experience at Cellfire is a 5 to 15% redemption rate for QSRs when a free product or buy-one-get-one-free offer is made (D. Moore, personal communication, June 6, 2008).

Subway launched a text mobile coupon on October 21, 2008, at the Seattle Seahawks' NFL game. Attendees could text a short code displayed on the jumbotron screen. Coupons could only be redeemed at one of the 345 Subway franchises. The response rate was around 50% compared to a typical redemption rate of 1 to 3% for paper coupons ("Seattle Subway stores", 2007).

Coupons

Coupons entitling bearers to savings on products and services have been popular business promotion tools since the late 19th century. The two earliest documented coupons include handwritten certificates for a free sample glass of Coca Cola from company founder Asa Candler in his Atlanta, Georgia, drugstore in 1894 and a coupon issued by cereal-maker C.W. Post in 1895 for one cent off purchases of Grape Nuts (Carter, 2011). Coupon dissemination grew steadily in the intervening period to a high point of 310 billion coupons made available in 1992 (Brown, 2006). The growth rate tapered to 253 billion available coupons in 2006 at which point the face value of distributed coupons exceeded $300 billion (Santella, 2008). In 2008, 317 billion coupons

were distributed in the United States, and 2.6 billion (less than 1%) coupons were redeemed (Jung & Lee, 2010).

Definitions of a coupon vary, but a common conception is the following published by the Coupon Information Corporation (CIC) (2012):

> A coupon is a certificate with a stated value if it is used when purchasing a specific product. The consumer presents the coupon to the retailer selling the product at the time of purchase. The retailer will reduce the cost of the product by the specified amount on the coupon. (p. 1)

Matthew Tilley, Director of Marketing for coupon clearinghouse CMS, suggested the following succinct alternate version: "Any message received by a consumer for a discount not available to everyone" (personal communication, June 5, 2008).

Coupon distributors can be either manufacturers or retailers, and coupons vary in the methodology of savings to include cents-off, percentage-off, buy-one-get-one-free, outright price reductions, and other approaches. Yin and Dubinsky (2004) concluded debate exists in the coupon industry about whether retailers should routinely clarify non-discounted prices in order to stimulate coupon usage. Hutton and Francis (2002) observed coupons are distributed through (a) free-standing inserts commonly placed in newspapers and magazines, (b) direct mail, (c) packages available in stores, (d) cross-ruff (i.e., where coupons for one product are found inside the packaging of another product), and (e) advertisements distributed directly by manufacturers as well as from retailers upon check-out. Electronic means of coupon distribution are gaining in popularity.

Clearinghouse companies such as Carolina Manufacturers Services (CMS) and NCH Marketing Services, a Valassis Company (NCH) that handle 90% of redeemed

coupon traffic commonly process manufacturer coupons. By frequency of category, Santella (2008) noted coupons are promoted in free-standing inserts in the following order: (a) packaged goods: 67.4%, (b) direct response ads: 23.4% and (c) franchised restaurants: 9.2%. Consumers and marketers are interested in coupons from different vantage points.

For consumers, Hutton and Francis (2002) observed the motivation to save money is paramount and is further boosted by potential elements of psychological satisfaction and stimulation. For marketers, the primary motivation is to increase sales and profits and to attract new, loyal customers. The profit-based interests of marketers include the specific goals of increasing brand awareness, boosting retailer support, and encouraging product trial (Brown, 2006).

The high volume and progressively increasing face value of coupons indicate a strong commitment on the part of distributors to continue coupon promotion. Although large numbers of customers report using coupons at least occasionally, significant dissatisfaction exists in the marketing sector with several elements of the enterprise. Chief among the elements of dissatisfaction is the low level (e.g., 1%) of coupon redemption (NCH, 2008). Another area of dissatisfaction uncovered by Shoemaker and Tibrewala (1985) pertained to the fact that redemptions are frequently made by loyal, repeat customers rather than the new customers whom marketers are hoping to attract and retain.

Coupon Value

Another important issue is price sensitivity on the part of consumers and how it relates to the face value of coupons. The way information is presented on a coupon (i.e.,

the framing effects) might have a definite effect on the likelihood of redemption (Barat & Paswan, 2005). According to Barat and Paswan (2005), coupons with lower face value had a positive effect on intention to redeem; conversely, with coupons of higher face value, intention to redeem was essentially unchanged. Increasing the face value of a coupon does not necessarily stimulate higher redemption because consumers routinely associate higher face values with a more expensive product (Barat & Paswan, 2005).

Yin and Dubinsky (2004) suggested that cents-off coupons are more effective with high-priced products, and percentage-off coupons work best with lower-priced products. Yin and Dubinsky noted an increasing consensus existed that the provision of regular (i.e., non-discounted) price information is an important component of coupon promotion because price knowledge enables consumers to make comparisons about the degree of savings (Yin & Dubinsky, 2004). Anderson and Song (2004) observed that lowering retail prices during coupon events stimulates redemption among marginal customers by offsetting the negative costs of coupon utilization (e.g., the time taken to search for and present coupons).

Literature reflects (a) electronic communications are an increasingly important platform for marketing and (b) the potential for innovations such as e-coupons spur interest in and redemption of coupons (Blundo, Cimato, & De Bonis, 2005). E-coupons might eliminate or reduce some of the problems associated with traditional coupon methodologies. Han and Sung (2006) forecasted a positive future for online coupons with increasing amounts of exposure and familiarity with the technology involved. Kondo, Uwadaira, and Nakahara (2007) found in their experimental research that customers of a hair salon were somewhat segmented in their responsiveness to mobile

marketing. More favorable responses came from the customers with greater facility in using mobile Internet services. Kondo et al. suggested that for people with lower facility, mixing newer technologies with traditional methods of coupon redemption might help bridge the gap.

Perhaps the press has over-hyped the use of mobile advertising. The reality outlined by the 2007 Mobile Attitude & Usage Study was receiving coupons is the third most sought after activity after downloading ringtones, games or wallpaper, and participation in sweepstakes or contests (Becker et al., 2007). The percentage of adults with a high interest in receiving mobile coupons was 11% for the age group 18- to 24-years old, 14% for 25 to 34 years of age, 10% for 35 to 44 years of age, 11% for 45 to 54 years of age, and 8% for adults age 55 and older. For the consumers who expressed an interest in obtaining valuable mobile coupons, convenience was one of the most important factors (Becker et al.).

Customers may experience frustration with e-coupons if they do not have one at the time of checkout, said Oliver and Shor (2003). Paper coupons are a customer-initiated process. Ordinarily, customers tell the sales clerk they have a coupon and present the coupon at time of checkout. In the e-coupon arena, the e-coupon is prompted at the time of checkout. A person who does not have an e-coupon and only then realizes a potential discount exists might simply quit shopping. Oliver and Shor observed such situations happen more frequently on the Internet, but the issue has implications for mobile coupon marketing.

Mobile Coupons

E-coupons provide customer interaction that can be successful when the user combines localization, relevance, value, personalization, entertainment, and timely delivery with permission. Rettie et al. (2005) evaluated 200 separate electronic marketing campaigns in the United Kingdom. In each campaign, the consumers gave their permission to receive an e-coupon. The redemption rates for the e-coupons averaged 44% and ranged from 3% to 68%. When compared to direct mail coupons that have a redemption rate of 1% to 5%, e-coupons appeared more favorable as an advertising medium (Rettie et al., 2005).

Adding a twist to mobile coupon redemption, McDonalds and Coke in the United Kingdom sought to tie the promotion of the movie *Finding Nemo* into a reverse coupon or reward program (Sultan & Rohm, 2005). As a result, 25 million Coke cups contained a unique number that could be sent by text message for redemption. The consumer prize consisted of Nemo cell phone wallpaper, Nemo postcards, or Nemo ringtones. Four million participants chose to accept the download (Sultan & Rohm). Normally, coupons or value propositions are taken before payment. In the previous case, McDonalds and Coke provided the value award after the sale of a drink.

The second unique coupon concept was used in Japan. Bus commuters could scan the bus route with their cell phone and receive coupons for businesses within walking distance to the scheduled stops (Sultan & Rohm, 2005). Such a form of geocentric coupon takes into account the consumer's location and the consumer's destination, implying some level of smart coupon.

Kurkovsky and Harihar (2006) put forth a different type of coupon suggestion

scheme and opt-in strategy. The protocol consisted of asking the consumer to opt-in for different types of coupons instead of a particular store brand. Customers downloaded software to their cell phones, and the software recognized preferences based on (a) choices, (b) consumer input, and (c) purchases. The purchases were matched against a taxonomy of standard terms. When the consumer entered a store, the wireless local area network could read the standard terms without giving away the identity of the consumer and offer coupons pertaining to previous purchases and preferences. Kurkovsky and Harihar implied coupons could become more relevant as the system learns from previous purchases.

Some consumers only show interest in free offers. The most popular definition of a free offer is no cost to the consumer (Wang, 2007). In a follow-up study, Wang stated 33% of consumers were willing to sign up for free offers in comparison to .03% of consumers who claimed they would not sign up if strings were attached to the free offer. Wang said mobile marketers should learn from techniques used in the credit card industry. For the first six months, the credit card might have zero interest. After the 6-month period, the credit card carries a profitable interest rate for the lending institution.

Wang (2007) offered the suggestion of providing something relatively inexpensive and perhaps unrelated (e.g., wallpaper or ringtones) for free. After a certain period of time, company offers can be made with a complimentary offer. The concept of free offers and the analogy of credit card marketing techniques might seem at odds, but Wang discovered that consumers who seek information (e.g., news) are more likely to accept coupons. The subtle implication is consumers who seek information might view the news as a free service and are more likely to accept a coupon.

Technology Acceptance Theories

Some researchers, discussed by Chiang (1995), have questioned whether the marketplace is saturated with coupons and called for more sophisticated studies to elucidate self-selection variables and patterns. Similarly, extensive research has been conducted on the economics and psychology of coupon redemption from both academic and industry perspectives. Study topics documented by Myung et al. (2006) have included the features of coupons themselves, including the face value and delivery methods, and the habits and preferences of various demographic groups of customers. Two theoretical perspectives dominate the academic literature on coupon redemption: the theory of reasoned action and the theory of planned behavior.

Theory of Reasoned Action

The theory of reasoned action (see Figure 1) was originally developed by psychologists Ajzen and Fishbein (1980) and was notably applied to coupon usage in the consumer research of Shimp and Kavas (1984). The theory includes an assumption that coupon usage is rational and systematic and that intentions to use coupons are influenced by perceptions of whether coupon usage is a worthwhile pursuit. Personal attitudes, subjective norms, and influences from important people in an individual's environment add to such perceptions of usefulness. Intentions shaped by such factors influence behavior.

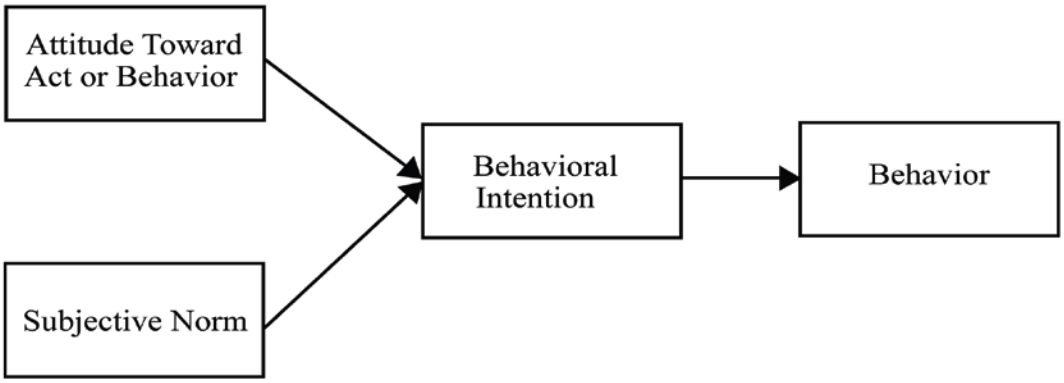

Figure 1. Theory of reasoned action.

From " Nurses' perception of the quality of care they provide to hospitalized drug addicts: Testing the theory of reasoned action" by B. Natan, V., Beyil, and O. Neta, 2009, *International Journal of Nursing Practice*, *15*(6), pp. 566-573. Copyright 2009 by Blackwell Publishing. Reprinted with permission.

Bagozzi, Baumgartner, and Yi (1992) extended the application of the theory by further elaborating the process between intentions and behavior. Bagozzi et al. also considered the effects of previous coupon usage patterns. Kang et al. (2006) noted the theory of reasoned action has been extended when researchers examined coupon usage intention as it pertains to electronic coupons (e-coupons).

Bauer et al. (2005), recognizing the emergence of wireless technologies, conducted a study to understand the acceptance of mobile marketing, using the theory of reasoned action as a framework. Based upon the study results, Bauer et al. suggested further research was necessary in the areas of permission marketing and understanding mobile marketing in context. Muk and Babin (2006) furthered technology acceptance research in the area of mobile marketing by including opt-in questions pertaining to the adoption of mobile advertising. The results were based on the theory of reasoned action, illustrating that opt-in strategies influenced consumers to participate in mobile marketing.

Kang et al. (2006) performed a study on consumer intention to use e-coupons defined as e-mail coupons. The researchers in the e-coupon study did not measure an intention within a specific industry and used the theory of reasoned action as the theoretical framework. Kang et al. conceded behavioral control was an important factor in e-coupon usage and the theory of planned behavior would be a better theory to explain e-coupon usage.

Theory of Planned Behavior

Ajzen (1991) developed the theory of planned behavior (see Figure 2) that contains the elements of attitudes, subjective norms, and behavioral intentions. Hsu et al. (2006) applied the theory to the emerging category of mobile text message coupons and determined that marketing campaigns for M-coupons can be successful. The researchers cautioned the marketers to take into account consumers' feelings and assess the new technology to lower anxieties and fears of new technological applications.

Using the theory of planned behavior, Hsu et al. (2006) researched consumers' behavioral intention to use mobile coupons. Based upon the results, Hsu et al. suggested personal innovativeness was not related to behavioral attitudes, and marketing of mobile coupons was not warranted because friends and family have a strong influence on consumers. Because the attitudes of friends and family are significant, Hsu et al. discouraged large-scale marketing campaigns and advocated targeted marketing, consumer education, and brand promotion instead. Hsu et al. recommended that marketing companies provide consumers with a general education on the benefits of mobile coupons before introducing mobile coupons on a wide scale.

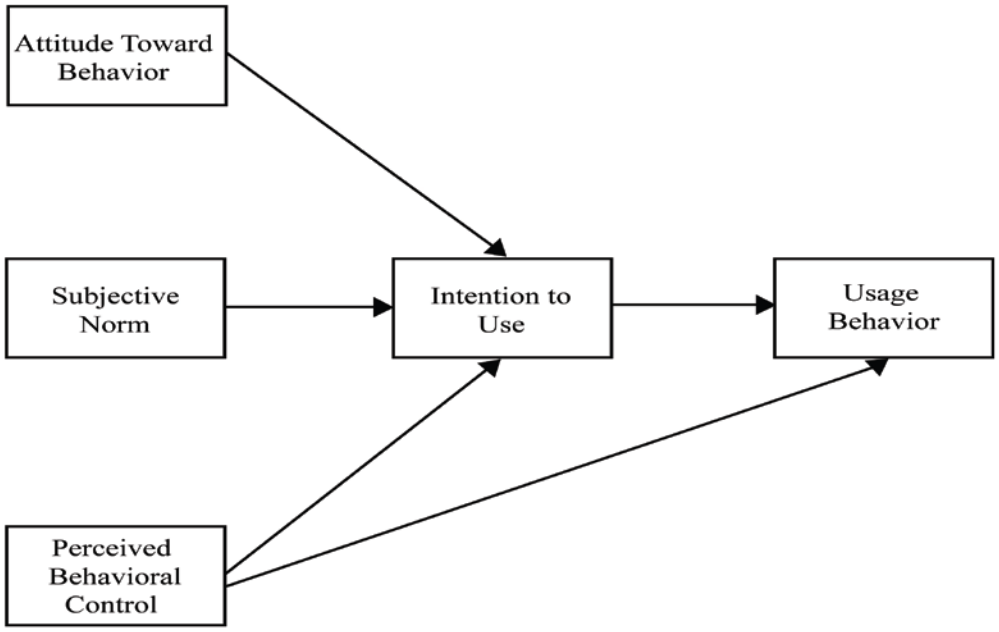

Figure 2. Theory of planned behavior.

From "The theory of planned behavior," by I. Ajzen, 1991, *Organizational Behavior and Human decision Processes*, *50*(2), pp. 179-211. Copyright 1991 by Elsevier. Reprinted with permission.

Technology Acceptance Model

The construct of subjective norms proposed by Bhatti (2007) is a combination of the theories of reasoned action and planned behavior. The elements of subjective norms influence the perception of usefulness that is part of the technology acceptance model (TAM) developed by Davis (1989) (see Figure 3). The TAM influences the usage of new technology that leads to increased diffusion of technology into the marketplace.

The subject of mobile advertising is pertinent to many theories, but Bhatti's (2007) study included the theory of planned behavior (i.e., a consumer perception of the level of difficulty to perform a particular task). When combining the TAM, the theory of planned behavior, and the diffusion of new technology, the relationship among (a) subjective norms, (b) perceived usefulness, (c) ease of use, and (d) planned behavior

strongly related to adaptation of mobile commerce (Bhatti, 2007). Planned behavior is a new aspect to the adoption of technology pertaining to M-advertising.

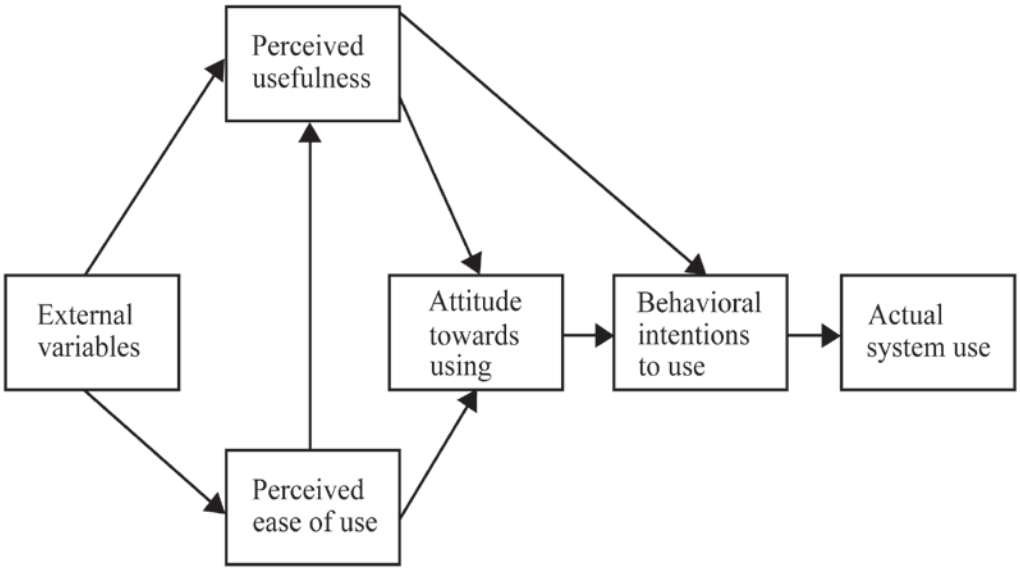

Figure 3. Technology acceptance model.

From "Perceived usefulness, perceived ease of use, and user acceptance of information technology," by F. Davis, 1989, *MIS Quarterly*, *13*(3), pp. 319-339. Copyright 1989 by Regents of the University of Minnesota. Reprinted with permission.

M-commerce success can be explained by the positive reinforcement of word-of-mouth advertising within a peer group. Song et al. (2007) stated the TAM model, in a wireless E-commerce context, showed usefulness and enjoyment as accounting for 73% of positive effects. If users perceive M-commerce to be easy, useful, and enjoyable, they recommend M-commerce to members of their social group. According to Song et al., when people walking down a street (a) choose to find a restaurant of their choice while operating a mobile device and (b) request a coupon, the opt-in portion is significant.

Dickinger and Kleijnen (2008) studied the determinants of consumer intention to redeem mobile coupons using the technology acceptance model as the theoretical

framework. The technology acceptance model includes attitude, ease of use, and perceived usefulness as key constructs. Dickinger and Kleijnen redefined the variables affecting the technology acceptance model to make the key constructs specific to mobile coupons. In the study, Dickinger and Kleijnen added the variables of redemption effort, apprehension about spam, social norms, and past coupon behavior. Suggestions for further research included opt-in and opt-out possibilities, the face value of coupons, location-based services, and multimedia coupons.

The ability of the carrier to recognize the user's location and suggest nearby restaurants might be helpful. Some mobile devices are equipped with global positioning systems (GPS) to monitor the location of the device. The consumer might be happy to view mobile advertising if an incentive accompanies the advertisement (Blum & McClellan, 2006).

The example listed in the study by Blum and McClellan (2006) represented the relationship between restaurants as a practical application of a new methodology for mobile marketing using geographic proximity and an opt-in strategy to provide value to the consumer. Consumers can request restaurants near their location, coupons appear on the mobile device, and the coupon might influence where consumers choose to dine.

Bauer et al. (2005) stressed the understanding of opt-in marketing for mobile advertising purposes and conducted a study with 1,103 online participants of an average age of 30.51 years. A total of 88.5% of the participants already used text messaging. By using the theory of reasoned action, Bauer et al. demonstrated personal attitudes have a greater effect than social norms on the behavioral intention to use M-advertising. The

result suggests mobile phones are a personal experience. The results demonstrated the relationship between the perception of utility and the acceptance of mobile marketing.

Information and entertainment are positive influencers. Consumers express potential risk in their attitudes toward mobile advertising. Mobile advertisers must demonstrate creative advertising, entertainment, or high information value to be of interest to consumers. Consumers' fears of mobile advertising pertain to the misuse of personal information and spam (Bauer et al., 2005).

Motivational Model

The psychological research suggesting general motivation can influence behavior is supported by the motivation model (MM). Vallerand (1997) studied and reported on the determinants and consequences of motivation by focusing on extrinsic and intrinsic motivation. Vallerand suggested the MM outcome bridges social and personality perspectives of extrinsic and intrinsic motivation. The intrinsic motivation of doing something for the enjoyment of the activity can be applied to new technology. Extrinsic rewards, such as discounts, account for further motivation. Davis, Bagozzi and Warshaw (1992) applied early motivational theory to technology adoption by explaining the extrinsic motivation as users wanting to perform the act. In contrast, Davis et al. explained the intrinsic value of motivation in technology as job performance, promotion, or pay-related compensation.

Model of Personal Computer Utilization

The subject of personal computer utilization is a specialized occurrence of technology acceptance. As an alternative model to the theory of planned behavior and the theory of reasoned action, Thompson, Higgins, and Howell (1991) proposed a model

based on human behavior to predict technology usage. The model created by Thompson et al., included significant constructs: (a) job fit, (b) complexity of the technology, (c) future outcomes, (d) feelings, (e) social factors, and (f) facilitating conditions. Thompson et al. focused on use behavior in contrast to Venkatesh et al. (2003) who modified the dependent variable to behavioral intention. Venkatesh et al. believed behavioral intention was a necessary factor to compare multiple models of technology acceptance.

Innovation Diffusion Theory

The theory of innovation diffusion deals with the way in which new ideas and innovations are accepted by society. Rogers (1995) was raised on a farm in Iowa. From a sociological perspective, Rogers noticed that farmers tended to adopt new technology faster than other groups. Rogers also studied the sociological aspects of innovation diffusion in multiple applications ranging from agriculture to technology products. Moore and Benbasat (1991) adapted constructs from Rogers and applied new constructs to further the individual acceptance of technology. Specifically, Moore and Benbasat devised innovative constructs such as relative advantage, image or status, visibility of the innovation, and demonstrated results.

Following a research study, Muk and Babin (2006) suggested attitudes and social influence have a strong effect on the desire to receive mobile advertising. Muk (2007) continued research in the area of opt-in text message advertising by combining attributes of the theory of reasoned action and the innovation diffusion theory. Based upon the results, Muk noted that innovation attributes were important belief characteristics shaping consumer attitudes. Muk stated more research was needed before definitive conclusions could be drawn.

Social Cognition Theory

The concept of social cognition is based upon people learning by watching other people. Bandura (1982) summarized that if people wanted to learn an activity, they would be motivated to observe other people performing the activity and learn the activity for themselves. Bandura believed three dynamic influences affected social cognition: behavior, cognition, and observing people within their environment.

Compeau and Higgins (1995) applied social cognition theory to the adoption of computer technology. Specifically, Compeau and Higgins modified performance to include job-related satisfaction and personal consequences to mimic an individual's self-esteem. The self-efficacy construct was modified by Compeau and Higgins to include a personal judgment as to one's ability to use technology to complete a task. Finally, Compeau and Higgins used usage as the dependent variable. In contrast, Venkatesh et al. (2003) modified the dependent variable to be the behavioral intention to use technology.

Unified Theory of Acceptance and Use of Technology

Technology acceptance theories offer competing models, variables, and outcomes. Venkatesh et al. (2003) combined eight acceptance models into the unified theory of acceptance and use of technology (see Figure 4). The researchers led by Venkatesh et al. noted the previous eight models explained between 17% and 53% of the behavioral intention to use technology. Venkatesh et al. developed a longitudinal study by tracking participants in four companies over six months, using four core variables of intention to use technology and usage. Venkatesh et al. stated that the unified theory of acceptance and use of technology explains up to 70% of the variance of the intention to use technology.

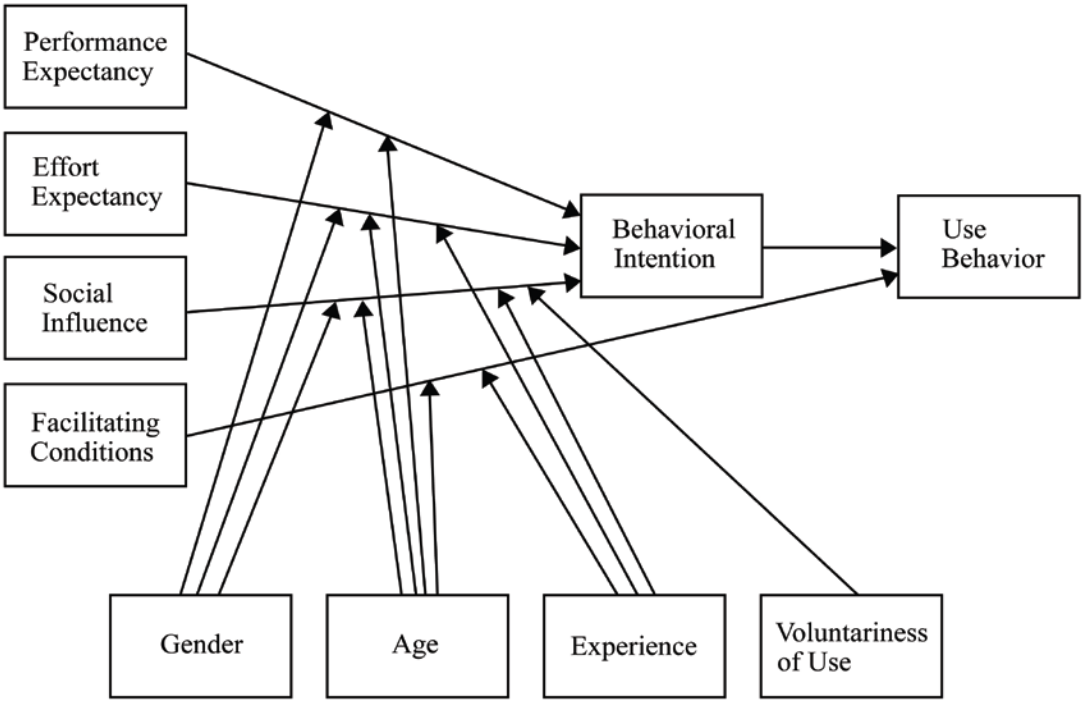

Figure 4. Unified theory of acceptance and use of technology.

From "User acceptance of information technology: Toward a unified view," by V. Venkatesh et al., 2003, *MIS Quarterly*, *27*(3), pp. 425-478. Copyright 2003, Regents of the University of Minnesota. Reprinted with permission.

Bagozzi (2007) published an article critical of the technology acceptance model and the unified theory of acceptance and use of technology. Specifically, Bagozzi criticized the UTAUT model in three ways. First, Bagozzi stated behavioral intention is the least important variable that is accepted in social science research. Second, the time difference between intention to use and actual usage can be long, requiring several unidentified intervening steps. Third, users move from intention to use technology, to trying to use technology. This act of trying to use technology alters the orientation of decision makers in ways not studied by intention or usage. An outcome of Bagozzi's argument is that the technology exists to measure each step of human behavior through

the usage stage. The act of attempting to predict usage may mean the technology does not exist.

Performance Expectancy

The construct of performance expectancy is designed to measure the degree to which a user believes the new technology helps him or her attain a goal. In the context of UTAUT, Venkatesh et al. (2003) described this gain as increased job performance. In the context of mobile coupons, Dickinger and Kleijnen (2008) described economic benefit as a performance-based outcome. Dickinger and Kleijnen approached performance expectancy from the perspective of economic benefit within the technology acceptance model, whereas Venkatesh et al. used components of the technology acceptance model to build the UTAUT model. Venkatesh et al. utilized the technology acceptance model, motivational model, model of personal computer utilization, innovation diffusion theory, and social cognition theory to formulate the construct of performance expectancy. Venkatesh et al. stated performance expectancy is the strongest predictor of behavioral intention to use technology. Venkatesh et al. used performance expectancy as a direct determinant of behavioral intention to use new technology.

Effort Expectancy

The effort expectancy construct is the level of ease or difficulty associated with using the new technology. Venkatesh et al. (2003) borrowed ideas from the technology acceptance model, model of personal computer utilization, and innovation diffusion theory to create the variable of effort expectancy. Schaupp and Carter (2009) noted the construct of effort expectancy was significant in both cases of mandatory and voluntary usage. Schaupp and Carter recognized effort expectancy was only significant in the

initial intention to use technology and became insignificant over time, when users became familiar with the new technology. Venkatesh et al. used effort expectancy as a direct determinant of behavioral intention to use new technology.

Social Influence

Venkatesh et al. (2003) described social influence as a perception by a potential user of technology that people who are important to him believe he should use the new technology. Using the following models: theory of reasoned action; technology acceptance model; theory of planned behavior; model of personal computer utilization; and innovation diffusion theory; Venkatesh et al. defined the construct of social influence in the UTAUT model. Venkatesh et al. noted social influence constructs were not significant when the new technology activity was voluntary but, were significant when the new technology activity was mandatory. Venkatesh and Davis (2000) suggested mandatory usage is a social influence that has an effect on the behavioral intention to use new technology. Schaupp and Carter (2009) believed, in a voluntary context, perceptions of the technology influence users, relating directly to the construct of social influence. Schaupp and Carter observed in their study that people filing an e-tax return, which is voluntary, were influenced by peers, bosses, and mentors. Venkatesh et al. used social influence as a direct determinant of behavioral intention to use new technology.

Opting-In

Muk (2007) acknowledged positive correlations between SMS advertising and attitudes, social characteristics, and opting-in. Muk included short codes (i.e., a five-digit number in the form of a text message resulting in the receipt of a coupon or information) with SMS advertising. To understand more clearly consumers' intentions to accept SMS

advertising, Muk combined the theory of reasoned action with certain aspects of diffusion theory. The study created tension because of the selection of a cross cultural sample of American and Taiwanese participants.

Taiwan was selected because the population consisted of 22 million people; Muk (2007) stated Taiwan represents a land mass the size of Rhode Island and represents a collectivist culture. The United States represents a diverse culture and an individualistic society in which members might perceive SMS advertising as an intrusion. Muk concluded that Taiwanese were likely to use SMS because of cultural norms, while their U.S. counterparts' decision to use SMS was not affected by social pressure. Participants from both countries disliked SMS advertising. Such a finding might be a result of a general dislike of advertising or the loss of personal privacy associated with freedom.

The U.S. participants showed a desire to test a new service before committing to the service, because the U.S. consumers showed more distrust of the advertiser than the technology. The lack of trust of the advertiser may be somewhat mitigated by the brand name of the advertiser. The larger the brand name, the more trust Americans have in the advertising. An opt-in methodology with an easy, non-restrictive opt-out strategy works best with Americans.

A summary of Muk's (2007) findings is that one SMS methodology will not work for global users. The study has elements of the optimum stimulation model in describing a comfort level for Americans based on the trustworthiness of the brand. The concern about privacy is a real issue to be mitigated with opt-in strategies.

Consumers have not always viewed advertising negatively. Tsang, Ho, and Liang (2004) asserted that before 1970, the Gallup survey organization found consumers

viewed advertising favorably, based on the informative nature of the ads. After the 1970s, consumers' dislike for television advertising began to increase because of the perception of deceptive advertising.

Consumers perceive various media differently. In the early 21st century, analysts of six media demonstrated television and magazines were viewed as more problematic, disruptive, and less favorable than newspapers, yellow pages, direct mail, and radio (Tsang et al., 2004). Based upon the results, Tsang et al. created a model of attitudes, permission-based marketing, and incentives to generate the intention that leads to the behavior of accepting SMS-based advertising. Attitudes consist of entertainment value, information, credibility, and irritation of the message. Tsang et al. stated permission is the act of allowing the consumer to choose whether to receive the advertising message. Incentives might be in the form of free mobile device minutes for accepting mobile advertising (Tsang et al., 2004).

The responses in the study of Tsang et al. (2004) showed the general attitude toward SMS advertising was negative if unsolicited based on the personal privacy invasion of consumer space by the mobile device. Attitudes were positive when the consumers opted-in for the SMS advertising. Entertainment was the single biggest contributor toward consumers' attitude followed by credibility and irritation (Tsang et al., 2004).

Tsang et al. (2004) noted incentives were motivators, and consumers were more willing to accept mobile advertising when provided with an incentive. When permission marketing, positive attitudes and incentives were present, the intention of the SMS

advertising affected behavior. Acceptance and behavior were consistent with the theory of reasoned action (Tsang et al., 2004).

Permission marketing with easy opt-in and opt-out strategies might become the most important factor in the acceptance of mobile marketing. The attitudinal aspect of entertainment pertains to the users' innovativeness and optimum stimulation level. Mobile advertising, inclusive of SMS advertising, includes the assumption that one advertisement does not fit all consumers. Mobile marketing has the advantage of attributing one phone number to one consumer. To the extent demographics and preferences are available, mobile SMS marketing can be more effective than direct mail.

In the developing country of Bangladesh with a mobile penetration of 5% and a landline penetration of less than 1%, Chowdhury, Parvin, Weitenberner, and Becker (2006) affirmed a test of attitudes, and their effect on the mobile SMS advertising contradicts the results of a similar study in the United States. Bangladesh consumers considered credibility as necessary to develop a positive attitude toward SMS advertising. The inclusion of entertainment and information were negative characteristics of Bangladesh consumers. Consumers in Bangladesh did not experience irritation from receiving SMS advertisements (Chowdhury et al., 2006).

The responses of the participants in the Bangladesh study could be a result of cultural factors (Chowdhury et al., 2006). The lack of positive influence pertaining to entertainment or informational advertising could correlate to the lack of such SMS advertising in Bangladesh. Based on the peer-reviewed research, Chowdhury et al. (2006) concluded a correlation existed between the acceptance of SMS text advertising

and a concern for privacy when usage of text messaging is high. The opt-in strategy appeared to assist in removing the concern for privacy in SMS advertising.

Dickinger and Kleijnen (2008) concluded that opting-in was a relevant construct to the behavioral intention to use mobile coupons. Dickinger and Kleijnen used the term perceived control, but the questions could easily be re-worded with the term opt-in and maintain the same integrity of controlling mobile coupons received. While Dickinger and Kleijnen used the technology acceptance model as their basis, they added the construct of perceived control. In this study, opting-in is also used with the dependent variable behavioral intention to use mobile coupons.

Fear of Spam

The New York Times reporter Holson (2008) wrote about cases in which consumers successfully contacted their cellular carrier and received reimbursement for spam messages. Martin (2010) stated Americans were expected to receive 1.5 billion unwanted text messages in 2008. Consumers in the United States receive or transmit a total of 48 billion text messages each month, while some users without a text plan can receive charges of $.20 per text message (Martin, 2010).

Carriers are constantly tweaking their spam filters. Sprint spokespersons stated 65% of all text messages sent over their network were spam sent through a filter so the spam never reached the consumer (Holson, 2008). Similarly, carriers are sharing spam information and using it to file lawsuits against spammers. Carriers are quick to report consumers have some options for changing their mobile device spam filters through the Internet.

Television-type advertising, video, audio, banner-display advertising, and text information have become the new weapons of marketing executives operating in the mobile marketplace. Consumer advocates say unwanted ads have become an intrusion in consumers' pockets. Wireless carriers continue to attempt to divert unsolicited messages for fear of losing customers.

By law, Richtel (2006) asserted mobile carriers are not permitted to provide a subscriber's location unless the subscriber gives permission. Carriers and advertisers are investigating incentives that would entice consumers to receive ads. Such incentives might include free cellular minutes or free text messages.

Elson and LeClerc (2006) stated 10 million customers are the victims of identity theft each year, and many request government intervention. People are asking federal and state governments to ensure organizations have data security in place so their personal information will not be misappropriated. If organizations are not proactive in protecting consumer information, government regulation might become necessary (Elson & LeClerc, 2006).

Newell and Meier (2007) reported that AT&T researchers predicted mobile marketing revenue would be $1.4 billion in the United States by 2012. According to Newell and Meier, government regulation already exists to prevent mobile spam, and such regulation impacted the revenue number for 2012. "The controlled assault of non-solicited pornography and marketing act of 2003" (Newell & Meier, 2007, p. 54), also known as the CAN-SPAM Act, includes a requirement that business owners provide opt-out options for the consumer when sending advertising messages via e-mail.

In a study by Newell and Meier (2007), students received requests to sign up for mobile advertising. A total of 36.4% accepted mobile ads, while 63.6% of the students did not accept mobile ads. The researchers conducted a qualitative study to determine why each of the participants chose to accept or decline the offer of mobile ads. The participants who accepted the ads reported the following incentives, as noted by Newell and Meier: (a) mobile ads were a new activity; (b) local restaurant, shopping, and bar coupons were a benefit of the promotion; (c) the service was free; (d) the service was novel; (e) peer pressure; and (f) the ease of opting-out. The students rejecting the offer cited the following reasons for declining: (a) desire to avoid advertising, (b) technical reasons, (c) cost, (d) the content was not important to the users, and (e) no interest in coupons.

Dickinger and Kleijnen (2008) concluded that fear of spam was a relevant construct to the behavioral intention to use mobile coupons. Dickinger and Kleijnen used the technology acceptance model as their basis and added the construct fear of spam. In this dissertation study, the fear of spam was used with the dependent variable behavioral intention to use mobile coupons.

Conclusions

A total of 945,000 restaurants and 13.1 million restaurant employees exist in the United States (Grindy et al., 2007). The U.S. Bureau of Labor and Statistics (2011) demonstrated food purchased outside of the home declined from 44% in 2007 to 41% in 2010. The decline in food dollars spent outside of the home is likely due to the recession and unemployment rate. Reflecting declining attendance, restaurants employ a number of promotional strategies to attract new customers while retaining existing customers.

Jackson et al. (2004) discovered 77.8% of franchise restaurants and 37.3% of independent restaurants used coupons for promotional purposes. Casual-dining restaurant patrons prefer monetary rewards or restaurant savings (e.g., coupons) as the number one benefit of a restaurant promotion (Jang & Mattila, 2005).

Mobile coupons offer the ability to combine mobile phone use with the traditional concept of coupons. Despite the long history of coupon use as a promotional tool in the United States, little peer-reviewed research exists on the acceptance and redemption of mobile coupons for the casual-dining restaurant segment. Casual dining represents a rich application area to study the historically proven promotional tool of coupons and the new technology of mobile coupon delivery.

The MMA 2007 study revealed 79% of the population uses a mobile phone, while the 2010 CTIA-The Wireless Association report estimated 93% of the U.S. population subscribed to mobile phones (Martin, 2010). Mobile phone developers have incorporated features that make phones increasingly valuable and more personalized for consumers. The most popular features are cameras, call waiting, built-in speakers, and text messaging (Becker et al., 2007). The adult group with the highest usage of text messaging is the 18- to 44-year-old group.

Becker et al. (2007) reported 41% of users send or receive 30 text messages per week, and 70% of text message users choose an unlimited text message payment plan. The 100-year-old coupon promotion strategy combined with the popular use of text messaging would appear to be a strong case for mobile coupons. Any time new technology is introduced or an adaptation of new applications on existing technology is

introduced, consumers have a choice in whether to accept the concept. Consumers' decision on whether to accept new technology is known as technology acceptance.

The field of technology acceptance is based in psychology and was adapted to information systems applications. Song et al. (2007) demonstrated the acceptance of mobile commerce by using the technology acceptance model (TAM) coupled with the construct of enjoyment to account for 73% of the positive effects of mobile commerce. Researchers suggested a consumer might be more willing to view mobile advertising if an advertising incentive accompanies the ad (Blum & McClellan, 2006). The suggestion consumers want something of value with advertising is another reason to suggest coupons might be a useful mobile advertising concept.

Palmer (2005) noted businesses could not regulate themselves when displaying mobile advertising to consumers. The result is consumers can fall victim to unwanted spam. Consumers with more Internet experience might be more apt to adopt mobile advertising given the risk of spam, while other consumers might need a different approach to adopt mobile advertising (Park & Yang, 2006).

Foundation for Research Hypotheses

The focus of this study was to determine if a relationship exists between the independent variables and the participants' behavioral intention to use mobile coupons for casual restaurant dining. Three primary constructs of the study are taken from the UTAUT. Based upon the results from previous studies, the fear of spam (i.e., intrusive advertisements) and opting-in were thought to influence the acceptance and use of mobile marketing and both were included in the study as independent variables.

Venkatesh et al. (2003) originally defined performance expectancy as the degree to which participants believe that using an information system benefits job performance (Wang, Wu, & Wang, 2009). Five constructs from previous theoretical models are included in the concept of performance expectancy. Venkatesh et al. (2003) declared the construct of performance expectancy is the strongest indicator of behavioral intention to use technology. Adapting performance expectancy to mobile coupons in a casual dining restaurant experience was a method to extend the knowledge of the UTAUT. The first hypothesis tested relates to RQ 1 and explaining the relationship of the variable performance expectancy on the behavioral intention to use mobile coupons.

H_o1: There is no relationship between performance expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_a1: There is a relationship between performance expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

The construct of effort expectancy is used to measure the ease of use with which a participant can use the technology (McLeod, Pippin, & Mason, 2009). In this study, the participants evaluated the anticipated effort to redeem an SMS text message coupon in a casual dining restaurant environment. Venkatesh et al. (2003) demonstrated a difference in the perception of effort expectancy between men and women, based on a study of 215 adults and the behavioral intention to use new software in a work environment. Understanding the independent variable of effort expectancy and the possible relationship to the behavioral intention to use mobile coupons was part of RQ 2.

H_o2: There is no relationship between effort expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_a2: There is a relationship between effort expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

Social influence pertains to people's perceptions that others would support their use of a new technology (Wang et al., 2009). Social influence includes concepts from three existing models that capture the concepts of self-image, social factors, and subjective norms. Social influence pertains to the intention to use new technology as recognized in past studies (Mathieson, 1991; Moore & Benbasat, 1991; Venkatesh & Davis, 2000). This study examined the relationship between social influence and the behavioral intention to use mobile coupons.

Social influence is a primary component of RQ 3. The third hypothesis pertains to understanding the relationship of social influence and the behavioral intention to use mobile coupons.

H_o3: There is no relationship between social influence and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_a3: There is a relationship between social influence and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

The relationship between opting-in and behavioral intention comprises RQ 4. The variable of opting-in was not one of the original UTAUT variables, but is an extension of the original UTAUT model. Opting-in was considered a mobile technology reflecting the user's acceptance to receive a mobile promotion.

H_o4: There is no relationship between opting-in and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

H_a4: There is a relationship between opting-in and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

Venkatesh et al. (2003) discussed the need to extend the research of the UTAUT by incorporating variables that might influence acceptance of technology. As an extension of the UTAUT model, the construct pertaining to spam was added to the study as an independent variable. The objective was to determine a potential relationship between fear of spam and the behavioral intention to redeem mobile coupons.

Dickinger and Kleijnen (2008) found a relationship between the consumers' fears of spam and perceived control in a coupon related study. A relationship was also discovered between acceptance of mobile marketing and consumers' feeling of loss of control over the medium. Dickinger and Kleijnen suggested further research should be conducted in the area of opt-in and opt-out methodologies for mobile coupons, citing the personal nature of the cell phone and concerns for consumer privacy. Fear of spam was an independent variable measured in RQ 5, with the dependent variable of behavioral intention to redeem mobile coupons in a casual dining restaurant environment.

H_o5: There is no relationship between the fear of spam and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

H_a5: There is a relationship between the fear of spam and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

Summary

The objective of Chapter 2 was to present a review of the existing research literature on restaurant classifications and the concept of casual-dining restaurants as a

subset of full-service restaurants. The chapter contained information from literature pertaining to mobile phone trends, demographics, and usage statistics. Chapter 2 included information on the history of coupons as well as statistics on their usage and redemption. The complementary nature of mobile phone text messaging and coupons as a new form of mobile advertising was discussed in a balanced review of the literature.

The literature review included discussion of the reasons consumers might be willing to accept mobile coupons along with concerns that might prevent consumers from adopting mobile coupons. A summary of research conducted on topics relevant to the research study was included. In Chapter 3, a discussion of the participant sample population, the sampling framework, a description of the survey, and the processes of data collection and analysis is presented. The chapter also includes issues of consent and confidentiality along with an explanation of the reliability and validity of the quantitative research.

Chapter 3

Method

The purpose of this quantitative cross-sectional correlation study was to determine the degree to which (a) performance expectancy, (b) effort expectancy, (c) social influence, (d) opting-in, and (e) fear of spam are related to young adults' behavioral intention to use mobile coupons for casual restaurant dining. Participants from a Denver, Colorado university, age 18-24 who own cell phones, and have access to casual dining restaurants were the participants of this research study. The primary instrument used to gather information on behavioral intention was a printed survey. The survey was used to assess the relationship between five independent variables and one dependent variable.

The literature review identified coupons as a component of the restaurant business promotion process (Jung & Lee, 2010; Myung et al., 2006; Sultan & Rohm, 2005; Taylor & Long-Tolbert, 2002; Varadarajan, 1984). Technology acceptance models are based upon the theory about the antecedents of users accepting new technology (Ajzen, 1991; Ajzen & Fishbein, 1980; Davis, 1989; Dickinger & Kleijnen, 2008; Venkatesh & Davis, 2000; Venkatesh et al., 2003). Specifically, this study involved an examination of technology acceptance and antecedents of behavioral intention to use coupons delivered to the cell phone.

This quantitative study involved a test of the hypotheses outlined in Chapter 2. A printed survey completed by panel participants facilitated the data collection. The study determined whether a relationship existed between performance expectancy, effort expectancy, social influence, fear of spam, opting-in, and participants' behavioral intention to use mobile coupons in a casual dining restaurant environment.

The initial step in this study was to select a research methodology and appropriate design to answer the research questions. Each variable was tested with appropriate survey questions based on empirically tested research. The population and the sampling frame were identified in Chapter 1 under the heading of "Generalizations". The data collection methodology included information about the desired number of completed surveys and the recommended printed survey. Chapter 3 concludes with an outline of the measures of validity, reliability, and data analysis.

Research Method and Design Appropriateness

The research methodology was appropriate for the study and designed to determine whether a relationship existed between the independent variables the dependent variable: behavioral intention to use mobile coupons. Three of the independent variables were selected from the UTAUT. Venkatesh et al. (2003) deemed the three variables of performance expectancy, effort expectancy, and social influence to be significant in determining the behavioral intention to use new software. After Dickinger and Kleijnen (2008) noted the fear of spam was an independent variable to a study of mobile coupons, this variable was included in the study. Opting-in is composed of questions from two studies. Rohm and Sultan (2006) provided a cross-market study of mobile marketing acceptance and Jayawardhena, Kuckertz, Karjaluoto, and Kautonen (2009) studied the antecedents to permission-based mobile marketing. This study includes a visual model in Figure 5, depicting the independent and dependent variables.

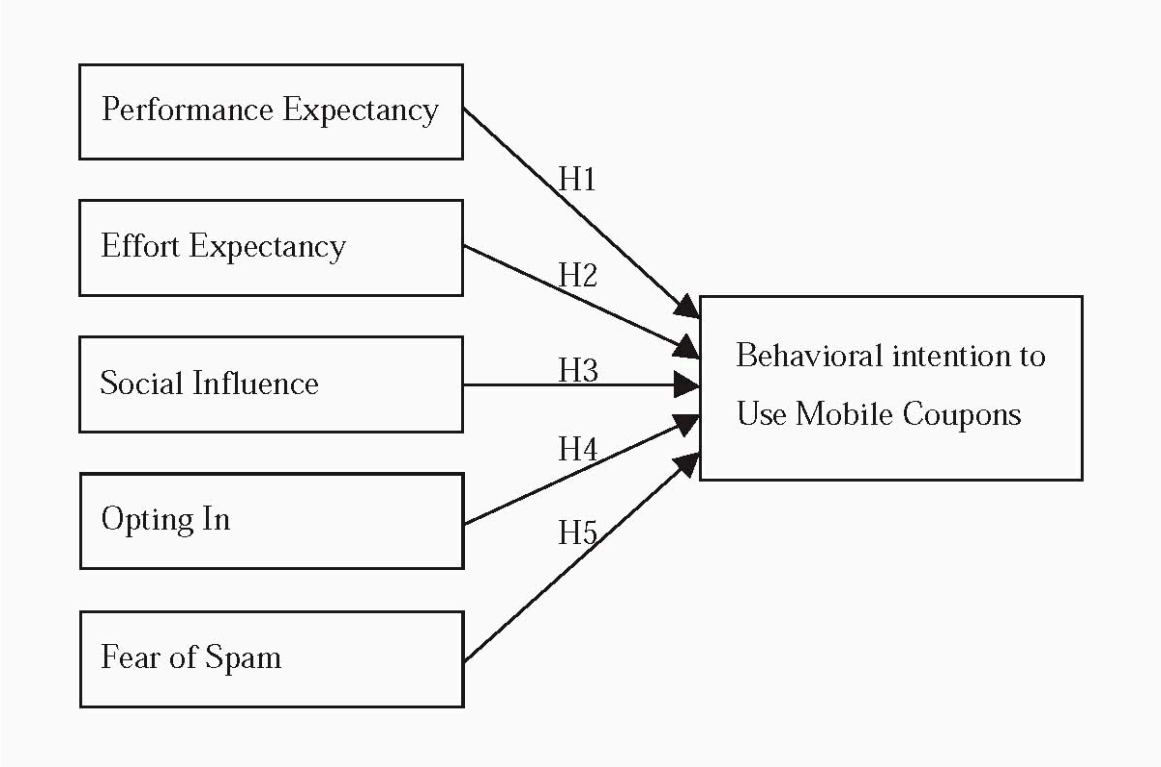

Figure 5. Study of the behavioral intention to use mobile coupons.

This quantitative study tested the research questions outlined in Chapter 1. The research design was quantitative as opposed to qualitative or a mixed methods research design. Creswell (2005) stated a quantitative research method is appropriate when the goal of the study is to seek measurable and observable data and understand the relationships of the variables. Quantitative research is suitable for investigators seeking to explain the relationships among variables as outlined in the study. The appropriateness of the design is demonstrated by previous studies (Dickinger & Kleijnen, 2008; Jayawardhena et al., 2009; Rohm & Sultan, 2006; Venkatesh et al., 2003) testing similar associations. The constructs, scale descriptions, and explanations of the constructs are discussed in the instrumentation section.

A quantitative study is described by Creswell (2005) as an examination of the relationship of multiple variables to measure the degree of association (see also Denzin &

Lincoln, 2005). For this quantitative study, the correlational design was also considered because one group was studied as opposed to experimental research. In an experimental research design, two or more groups would be used for the experiment involving an intervention to influence the outcome for one of the groups of participants (Denzin & Lincoln, 2005). This study involved the use of only one group as the test population of participants.

In contrast, Creswell (2005) described qualitative design as exploring experiences, cultures, and stories of a population to develop a theory. The qualitative method uses interviews, open-ended questions, and focus groups to gather data. Creswell described qualitative analysis as a method of gathering rich textural data to elicit themes and describe phenomena. Qualitative analysis is not appropriate to evaluate numeric relationships among variables.

The third research design methodology described by Creswell (2005) is mixed methods, using a combination of quantitative and qualitative research. Mixed methods analysis is appropriate to combine rich textural data providing explanations regarding quantitative data. The use of mixed methods is primarily used for action research and understanding the research problem. Because the problem of the study was understood and the relationships among multiple variables were to be tested, a quantitative method was most appropriate.

The study of a single group of individuals was considered a correlation research design. Because the data were gathered at one point in time on all of a population or a representative sample, the study was cross-sectional as opposed to longitudinal. For these reasons, the research study was a quantitative, cross-sectional, correlation research

design. The survey took place by administering a printed questionnaire to participants. The survey results led to an increased understanding of the participants' attitudes toward a mobile coupon delivered to a cell phone in the form of a text message.

Research Questions

The findings of the study indicated whether a relationship exists between young adults and the desire to use mobile coupons in a casual dining restaurant environment. Participants attending a private, non-profit university were screened by age and included young adults age 18-24 who own cell phones. The study was be guided by five research questions.

1. What is the relationship between performance expectancy and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?
2. What is the relationship between effort expectancy and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?
3. What is the relationship between social influence and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?
4. What is the relationship between opting-in and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?
5. What is the relationship between the fear of spam and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

Hypotheses

The model (see Figure 5) shows three of the relationships from the key constructs used in the UTAUT model (Venkatesh et al., 2003) consisting of performance expectancy, effort expectancy, and social influence. The fear of spam construct from

Dickinger and Kleijnen (2008) was shown in the model and used in this study. The opt-in construct from Jayawardhena et al. (2009) and Rohm and Sultan (2006) were also used in this study. The variables were used to develop the research questions and are stated in the following hypotheses.

H_o1: There is no relationship between performance expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_a1: There is a relationship between performance expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_o2: There is no relationship between effort expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_a2: There is a relationship between effort expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_o3: There is no relationship between social influence and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_a3: There is a relationship between social influence and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_o4: There is no relationship between opting-in and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

H_a4: There is a relationship between opting-in and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

H_o5: There is no relationship between the fear of spam and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

H_a5: There is a relationship between the fear of spam and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

Sample Size and Power Analysis

Sample size and power analysis estimations are key components of research studies where data are collected. An adequate sample size ensures the study yields reliable, generalizable information. Generally, the researcher chooses a sample size large enough to yield reliable results while small enough to be obtained at a reasonable cost (Oyeyemi, Adewara, Adebola, & Salau, 2010).

Field (2009) argued that determining an appropriate sample size is a difficult task that requires taking into account the preciseness of the estimate, the time available, and the money needed to collect a sample. This study planned to accumulate a minimum of 200 completed surveys. However, 328 random surveys were completed. The number of minimum required surveys was based on a power analysis and the terminal study that validated the UTAUT (Venkatesh et al., 2003). MacCallum, Widaman, Preacher, and Hong (2001) described a rule pertaining to sample size: the ratio of participants to variables should be greater than or equal to 4:1.

Gorsuch (1983) recommended a participant to variable ratio of greater than or equal to 5:1. Gorsuch added an additional sample size rule that the sample size should never be below 100, regardless of the number of variables studied. Another researcher (Everett, 1983) raised the participant to variable ratio to 10:1.

MacCallum et al. (2001) stated sample sizes might require a participant to variable ratio of 20:1 when factors are not highly over-determined and communalities are low. Venkatesh et al. (2003) validated the UTAUT with 215 participants, pooled from

four studies and six variables (i.e., a participant to variable ratio of 35:1). This study used 328 participants and six variables (i.e., a participant to variable ratio of 54:1).

Based upon the power analysis, a sample size was estimated for power of .80 and alpha of .05 with six predictors. To detect a medium effect size (f^2 = .15), 98 participants would have been needed. To detect an effect size between small and medium (f^2 = .15), a minimum of 177 participants would have been required. This study used 328 participants meeting the minimum requirements of the power analysis and the conservative recommendations of a participant to variable ratio.

Population

The population consists of men and women attending a private, non-profit university in the United States, who own a cell phone and are between 18 and 24 years of age. The study conducted by Jayawardhena et al. (2009) consisted of 207 participants in Germany, 200 participants in Finland, and 260 participants in the United Kingdom. The study by Dickinger and Kleijnen (2008) resulted in data from an online survey of 370 mobile phone users in Austria. Rohm and Sultan (2006) chose to compare cross cultural results by surveying 169 college students in the United States and 215 college students in Pakistan. In contrast, the original UTAUT study conducted by Venkatesh et al. (2003) included 215 subjects studied over three separate time periods. This study only included residents of the United States.

Sampling Frame

A printed survey was randomly administered to students of a private non-profit Colorado University located in Denver. The students were selected from random classes offered at the university. Class members were asked verbally at the beginning of class if

they wished to participate in the survey. Participants were offered $10 to complete the survey. The purpose of the monetary incentive was to encourage participation. Class members choosing not to participate were allowed to study on their own, while the remaining class members completed the informed consent forms and completed the survey. The quantitative survey was administered in print, transcribed to Excel©, and analyzed using SPSS software. Because the sample needed to be random, the following steps were taken to ensure a random sample.

The selection process of choosing participants from the university classes employed systematic random sampling. Field (2009) asserted the process of systematic random sampling is a quick and inexpensive method of generating a random sample. To select participants in systematic random sampling, a skip interval had to be generated. The skip interval was equal to the target population based on classes and average class size divided by the desired sample size. To randomize the sample further, the starting position was created by a random number generator. After the first position was established, a survey was administered to each skip interval class of students who agreed to participate, until all of the surveys were distributed. The printed surveys were administered after a signed informed consent form was received. Once the desired number of completed surveys was accumulated, the survey process ceased.

Field (2009) discussed the difficulty of determining an appropriate sample size. Specifically, Field considered (a) how precise the estimates must be, (b) the amount of time the researcher has to collect the data, and (c) the money available. Data collection is generally the most expensive aspect of a research study. In this study, the participants were compensated for completing the voluntary survey.

Geographic Location

This study took place at a private, non-profit Colorado university. The specific organization represented requests for organizational anonymity. The requirements to participate in the survey were based on age and owning a cell phone, so most participants qualified.

Informed Consent

The concept of informed consent included two basic requirements: (a) the participants understood the type of research being conducted, potential risks, and benefits of participation and (b) each participant agreed to participate (Couper & Singer, 2009). In a quantitative survey, the medium was usually a paper or an electronic survey. In the study, participants were provided a printed survey form. Before the panel members could participate in the survey, the participants were asked verbally if they would like to participate in the survey. If participants would have chosen not to participate, they would have been allowed to study on their own until the other participants completed the survey. The informed consent page was signed by each participant. Potential participants did not receive a survey until they sign the informed consent form, thereby agreeing to the terms.

As part of the online informed consent procedure, the participants were required to be over 18 years of age. The participants received the e-mail address and phone number of the researcher in the event they had questions. The participants received information allowing them to decline or withdraw from the study at any time without consequences. The participants' responses minus identifying information were coded

into SPSS software. Only the researcher knows the identities of the participants that will remain confidential.

The data from the surveys were coded with each participant identified as a number between one and the number of completed surveys. Each participant was informed that the collected data would be stored in a locked area and held for a period of 3 years and the research will be used for publication (see Appendix A). Participation was defined as voluntary. Any participant wishing to withdraw from the survey after data were collected notified the researcher; the data were then secured, withdrawn, and destroyed.

Confidentiality

Only the raw data were analyzed upon completion of the study. No information that might identify a participant was available. The data set were stored on the researcher's password-protected personal computer for the length of time required to analyze the data. Upon completion of the data analysis, the individual survey data files were stored on a compact disc with read-only memory (CD-ROM). The CD-ROM will be kept for a period of 3 years and then destroyed by physically breaking the CD-ROM into multiple pieces. All electronic data will be permanently deleted and associated materials will be destroyed.

Data Collection

Hard copy surveys were used for the data collection phase for the study. The participants remained anonymous, and none of the responses were linked to any individual participant. The data were collected using a Likert-type scale as part of the survey, which was used to assess the six variables (see Appendix B).

Each participant evaluated a list of questions pertaining to mobile coupon performance, effort, social influence, facilitating conditions, opting-in, and fear of spam. The participants received instructions on how to complete the survey and the 15-minute estimated completion time of the survey. Each completed survey was numbered, and the survey results were collected and transcribed onto an Excel© spreadsheet.

Instrumentation

The number of completed surveys was 328. Each participant was asked to evaluate questions pertaining to the acceptance of mobile coupons for use in a casual dining restaurant environment. The design of the instrument was specific to the study determining whether relationships existed between any of the five independent variables: (a) performance expectancy, (b) effort expectancy, (c) social influence, (d) opting-in, and (e) fear of spam and the dependent variable: the behavioral intention to use mobile coupons.

The review of multiple survey instruments (Dickinger & Kleijnen, 2008; Jayawardhena et al., 2009; Rohm & Sultan, 2006; Venkatesh et al., 2003) enabled compilation of suitable questions pertaining to the variables in the study. Using this instrument, survey questions were gathered from validated surveys to ensure suitable questions were included. The survey methodology and statistical analysis had been tested in related research studies. To be consistent across variables, the responses for all items were provided on a 6-point Likert-type scale with the exception of descriptive data. Reliability using Cronbach's (1984) alpha scores and reliability test results are reported in Chapter 4.

A pilot study was conducted to test the printed survey with a small group of 20 participants who owned cell phones and used text messaging. The pilot survey required 15 minutes or less to complete, as anticipated. Following the pilot survey, the participants were asked for suggestions to improve the survey (Fink, 2006). The feedback indicated no changes needed to be made to the instrument. The instrument was then administered to the survey participants.

Performance Expectancy

The goal of the study was to evaluate the acceptance of mobile coupons delivered to consumers' cell phones. In the context of the germinal UTAUT study, performance expectancy refers to the extent to which people believe using the system will help their job performance (Venkatesh et al., 2003). During the course of their work, Venkatesh et al. (2003) investigated five theories to create the construct of performance expectancy.

The measurement of performance expectancy was assessed using a four-item measure based on the original UTAUT study (Venkatesh et al., 2003). In the original UTAUT study, Venkatesh et al. (2003) adapted the questions to employees learning a software program to perform their work tasks more efficiently. The four questions were adapted to the acceptance of mobile coupons. An example of the original question was, "I would find the system useful in my job" (Venkatesh et al., 2003, p. 460). The adaptation of the question for the purpose of the survey was, "receiving a mobile text message coupon would be useful." The full four-item measure can be found in Appendix B. A six-point Likert-type scale with a range from *strongly disagree* to *strongly agree* was used. Venkatesh et al. described the original Cronbach Alpha as .91. The Cronbach

Alpha described in all of the Venkatesh et al. studies was based on the average alpha reported in the original longitudinal study consisting of three measurements.

Effort Expectancy

Effort expectancy is defined as the degree of ease associated with the use of mobile coupons in a casual dining restaurant environment. The effort expectancy construct was expected to have a relationship with the behavioral intention to use mobile coupons. In the germinal study of the UTAUT (Venkatesh et al., 2003), effort expectancy was assessed using a four-item measure developed on the adaptation of questions derived from the TAM, the model of personal computer utilization, and the innovation diffusion theory. In this study, the performance expectancy was measured using the intact four-item measure based on the original UTAUT study (Venkatesh et al., 2003).

Venkatesh et al. (2003) described the original Cronbach Alpha as .91. The full four-item measure can be found in Appendix B. Venkatesh et al. adapted the four-item measure related to technology acceptance of computer software in a work environment. An example of an original question from Venkatesh et al. was, "My interaction with the system would be clear and understandable" (p. 460). The question adapted for this survey is, "The text message coupon would be clear and understandable." A six-point Likert scale with a range from *strongly disagree* to *strongly agree* was used to measure the effort expectancy construct.

Social Influence

Social influence as described by Venkatesh et al. (2003) is the degree to which individuals perceive influencers and people of importance think the individuals should be

using new technology. Venkatesh et al. assessed social influence using a four -item measure based on the adaptation of six models. The six models included (a) the theory of reasoned action, (b) the TAM-two, (c) the theory of planned behavior, (d) the consumer technology acceptance model, (e) the model of personal computer utilization, and (f) innovation diffusion theory. In this study, the measurement of social influence was assessed using the intact subscale based on the original UTAUT study (Venkatesh et al.). An example of the original question was "People who influence my behavior think that I should use the system" (Venkatesh et al., 2003, p. 460). The adaptation of the question for the purpose of this survey was, "People who influence my behavior think that I should use mobile coupons." A six-point Likert-type scale with a range from *strongly disagree* to *strongly agree* facilitated measurement of the social influence construct (see Appendix B). Venkatesh et al. described the original Cronbach Alpha as .91.

Opting-in

Opt-in is a measurement of control by the consumer to receive mobile coupons, monitor the types of mobile coupons received, and the ability to cancel permission to receive mobile coupons. Dickinger and Kleijnen (2008) used the term *perceived control* to describe the amount of control that can be applied to the technology of mobile coupons to avoid unwanted mobile messages. Dickinger and Kleijnen described another definition of perceived control as the skills, resources, and opportunities to participate in mobile coupons.

Rohm and Sultan (2006) asked two questions about the ability to receive coupons and information. The scale was characterized by Rohm and Sultan as permission to interact within the mobile space. The original Cronbach Alpha was .92. Both questions

were used in the study and modified to highlight casual dining restaurants as opposed to products or services. An example of the original question from Rohm and Sultans was, "I would be willing to receive coupons for discounts on certain products or services on my cell phone (p. 12). The adaptation of the question for the purpose of the survey was, "By choosing opt-in, I would be willing to receive coupons for discounts on casual dining restaurants on my cell phone."

Jayawardhena et al. (2009) used three questions related to controlling the types of coupons, number of coupons, and to the ability of the user to cancel permission for an advertiser to send mobile text messages. The three questions regarding the construct of opt-in were modified by replacing the term "marketing messages" with "casual dining restaurant mobile coupons," and added to the survey. The original Cronbach Alpha for these three questions was .81. A six-point Likert-type scale ranging from *strongly disagree* to *strongly agree* facilitated measurement of the opt-in construct.

Fear of Spam

The term *spam* refers to unsolicited commercial electronic messages sent to a computer or cell phone (Tezinde, Smith, & Murphy, 2002). Spam (i.e., intrusive advertisements) is a measurement of the negative effect of unsolicited messages. Edwards, Li, and Lee (2002) explored pop-up advertising delivered to Web surfers. As a result of their studies, Edwards et al. described the social psychological theory as reactance theory, stating that individuals faced with a loss of freedom attempt to restore freedom by resisting the pressure to conform.

The consequences of spam include a lack of control over the number of messages received and the time when messages are received. Krishnamurthy (2001) identified five

factors associated with opt-in or permission marketing programs. The five constructs are (a) message relevance, (b) economic benefit, (c) personal information and modification costs, (d) message processing costs, and (e) privacy costs. Personal information, as described by Krishnamurthy, is the effort expectancy required for marketing promotions. Message processing costs refer to the ability to control the number and timing of marketing promotions to avoid information overload. The privacy cost relates to the uncertainty of how information is used and is described in Krishnamurthy's model as the fear of spam.

The original test for intrusive advertising included seven negative terms. Participants received instructions to rate the words on a seven-point Likert scale measuring pop-up ads, television commercials, and magazine ads (Li, Edwards, & Lee, 2002). The seven-point ad intrusiveness scale had an alpha score of .90. Dickinger and Kleijnen (2008) adapted the intrusiveness scale to mobile coupons as illustrated in Figure 5. In the study, a six-point Likert-type scale, using the intact subscale, facilitated measurement of perceptions about spam (see Appendix B).

Behavioral Intention

The behavioral intention to use a mobile text message coupon pertains to the level of belief a person will use a mobile coupon. Because mobile coupons are not pervasive, participants are limited by their ability to receive a mobile coupon. To overcome such an obstacle, the question was be worded from the perspective that a mobile coupon would be available in the next 90 days. Venkatesh et al. (2003) included three questions to measure behavioral intention. The original Cronbach Alpha was .89. The three questions were adapted to mobile coupons as opposed to system use. An example of an original

question from Venkatesh et al. was, "I plan to use the system in the next three months" (p. 460). An example of the modified question for the study was, "If a casual dining restaurant mobile coupon were available,

I would plan to use the mobile coupon in the next 90 days." A six-point Likert-type scale facilitated measurement of the behavioral intention to use mobile coupons.

In addition to the questions measuring variables using a six-point Likert-type scale, participants were asked descriptive questions. A total of six descriptive questions were asked. Examples of descriptive data questions were gender (1 = *Male,* 2 = *Female*), previous experience with text messaging (1 = *Yes*, 2 = *No*), and previous exposure to mobile text message coupons (1 = *Yes*, 2 = *No*). Age was coded as (1 = *18*, 2 = *19*, 3 = *20*, 4 = *21*, 5 = *22*, 6 = *23*, 7 = *24*).

To place the coupon in perspective, participants were instructed that the coupon could be used at a casual dining restaurant with a defined price range. The coupon had a face value of 25%. Myung et al. (2006) experimented with restaurant coupons ranging from 0% to 50%. The 25% face value coupon selected for the study provided an average incentive.

Validity and Reliability

Validity and reliability are important issues relative to measurement. Both deal with how concrete measures are aligned with constructs. Field (2009) affirmed while perfect validity and reliability are likely impossible to achieve, both are goals for which researchers strive. The closer researchers come to establishing validity and reliability, the more credible are the findings of the research study. Validity was examined from an internal and external perspective.

Internal Validity

Internal validity allows conclusions to be reached from study data. Threats to internal validity (e.g., design issues that can lead to false outcomes) prevent researchers from drawing conclusions from the data (Creswell, 2005). Field (2009) advised when observable differences in the independent variable affect the dependent variable and rival hypotheses suggesting other explanations are ruled out, then the causal inference is internally valid. Field (2009) posited that validity is the measure of how well the survey instrument meets the purpose of the study, how well the instrument resembles reality, and that validity is the measure of truthfulness of the survey.

Instrumentation and selection bias are threats to internal validity controlled in this study. Selection bias was controlled by a screening process to select qualified participants from a pool of participants using a random sample. To control the instrument for the study, participants received an identical survey for completion, to control for content validity. The items selected for the constructs were adapted from previous researchers' studies to ensure content validity. Employment of a pilot study ensured the questions were clearly understood.

External Validity

External validity allows researchers to draw conclusions from a sample and generalize the conclusions to a larger population (Field, 2009). The population, sample, and use of a private, non-profit university panel were considered in this study to minimize the threats to external validity. Generalizations to the population were outlined in Chapter 1.

Reliability

Reliability is an assurance of stability and consistency (Creswell, 2005). Reliability scores should yield similar results when the instrument is administered at different times. Creswell noted unreliable instruments can result from ambiguous questions, nonstandard test administration, and fatigued participants. One test of internal consistency is Cronbach's alpha (Cronbach, 1984). Thorndike, Cunningham, Thorndike, and Hagen (1991) viewed reliability as the precision of a measurement and thus an instrument's relative lack of error. How well does the instrument measure what it is supposed to measure is the common question associated with reliability. This research study used Cronbach's alpha test of internal consistency.

Data Analysis

Davis (1989) published his technology acceptance study on perceived usefulness, perceived ease of use, and user acceptance of information technology. Davis's study is considered an important development in user technology acceptance theory. In the study, Davis involved 40 participants and analyzed the data using regression analysis. Venkatesh et al. (2003) published the UTAUT model based on four studies consisting of 38 to 65 subjects per study. The participants were pooled to generate the 215-person sample most frequently quoted. The study by Venkatesh et al. was analyzed using partial least squares (PLS) software.

Hair, Sarstedt, Ringle, and Mena (2012) researched the 30 top-ranked marketing journals from 1981 to 2010 and found only 204 published articles using PLS as a research methodology. The top three marketing journals publishing PLS studies represented 11.4% of the total studies. This research study, taking into account non-

normal data, used correlation analysis to answer the research questions. Venkatesh et al. (2003) noted PLS does not produce an adjusted *R* squared value, resulting in the need for further data analysis using hierarchical regressions in SPSS so the adjusted *R* squared was reported. In another study, the researchers modified the UTAUT variables to test for the adoption of e-filing, using a sample of 260 participants, and analyzing the data by using regression analysis (Schaupp & Carter, 2009).

A pilot test was conducted with 20 participants representing similar characteristics to the planned panel participants. The goal of the pilot study was to ensure the participants clearly understood the survey questions. The participants were asked to complete the survey and comment on any improvements that could be made to the survey. No changes were made to the survey.

The survey was finalized and presented to participants. The results were collected by the researcher. The data from the survey was transcribed into an Excel© file and input into the Statistical Package for the Social Sciences (SPSS). The first step in the process was to conduct preliminary analyses by documenting the descriptive characteristics of the sample, including frequencies and percentages. Cronbach's (1984) alpha coefficients were calculated for each independent variable and the dependent variable to test the internal consistency. Multiple correlation analysis was used to test all hypotheses and answer the research questions.

Osborne and Waters (2002) stated four assumptions of multiple regression that researchers should always test: (a) assumption of a linear relationship between the independent and dependent variables, (b) variables are measured reliably, (c) assumption of homoscedasticity, and (d) normality. The data did not pass the normality test.

Skewness, kurtosis, and frequency histograms (see Appendix C) with normal curves overlaid along with the Shapiro-Wilk test were used to examine normality. Linear relationships between independent and dependent variables were examined using residual plots.

The Gamma, Kendall *tau-b*, Spearman, and Pearson product moment correlations were calculated among all independent and dependent variables to examine interrelationships. The main analyses were conducted to test the hypotheses. The significance level was set to .05 for each predictor. The results determined the magnitude and direction of the association for significant effect. The results were reported in Tables 5 and 6 along with the level of significance (*p*-value).

Field (2009) noted the discovery of relationships, effects, and differences lead researchers to increase the likelihood of rejecting the null hypothesis when the hypothesis is false. Statistical power analysis was used to ensure the statistical significance was enough to reject a false null hypothesis stated in the study. The three variables taken into account with the power analysis were alpha, the desired amount of power, and the effect size. The results are presented in Chapter 4.

Summary

Chapter 3 included the foundation for the research study through a detailed description of the quantitative approach and the appropriateness of the design for the study. The focus of Chapter 3 was on the data collection procedures, data measurement, analysis, and conceptual framework in the context of the research questions. The analytical methods recommended for the study were based on a review of the literature

and previous researchers' work. The research study provided new knowledge in the area of technology acceptance of mobile marketing, and the results are presented in Chapter 4.

In addition to adding to the existing knowledge, the results of the research will affect the study of leadership described in Chapter 5. Mobile coupons have the unique characteristic of reaching individual cell phones carried by consumers. The results of the study may be used by marketing executives to assist them in understanding the behavioral intentions to use mobile marketing. The results may also be used by senior managers interested in developing more effective customer relationship strategies to assists them in developing policies and practices. The results of the research are included in Chapter 4.

Chapter 4

Results, Findings and Analysis

The findings of this study will provide managers with a deeper understanding of the behavioral intentions involved in using coupons on a mobile device. The purpose of the quantitative cross-sectional correlation study was to determine the degree to which (a) performance expectancy, (b) effort expectancy, (c) social influence, (d) opting-in, and (e) fear of spam relate to young adults' behavioral intention to use mobile coupons for casual restaurant dining. Participants from a private, non-profit Denver, Colorado, university met the criteria and participated in the study. The primary instrument used to gather information on the behavioral intention to use mobile coupon data consisted of a printed survey.

In Chapter 4, the research design, data and analysis are summarized for this study. The mobile coupon variables are restated in the hypotheses and research questions. In Chapter 4, demographic data provided by the participants along with hypotheses testing and a summary of key findings are presented.

Population and Sampling

The data collection process consisted of five steps: (a) identify a private non-profit university in the Denver area, and (b) obtain permission from the University of Phoenix IRB to conduct the research. The next steps were to (c) obtain permission from the IRB and the president of the university to conduct research on the university campus, (d) acquire participants' written consent, and (e) collect the survey data for analysis. After receiving permission from both the University of Phoenix IRB and the private, non-

profit university in the Denver area, the administrators at selected university provided a list of classes from which a random sample was selected.

Based on the power analysis, number of variables, and similar peer-reviewed sources, the minimum number of participants was deemed to be 200. Participants were paid $10 each for participating in the survey. Of the 1,618 full- and part-time students attending the university, 345 surveys were completed. All surveys were completed on campus. Professors allowed 15 minutes during the first part of class for students to complete the survey. Survey participation was optional, but all students chose to take the survey and collect $10 for taking the survey. All participants completed the survey in less than 15 minutes. Surveys were eliminated for the following reasons: (a) Nine participants were outside of the 18-24 age range, and (b) Two participants did not accept the terms of the informed consent. Finally, (c) Six participants altered the scale, selected multiple answers for the same question, or did not answer several questions. Based on a total of 345 completed surveys and the elimination of 17 surveys, 328 (n = 328) usable surveys were collected. Generalizations regarding the population are outlined in Chapter 1.

Pilot Study

The survey consisted of 30 questions, an introduction to the meaning of casual dining restaurants, 10 examples of casual dining restaurants, and a picture of a cellular phone with an example of a text message coupon (see Appendix A). Prior to administering the survey, 20 participants agreed to participate in the pilot study. Each participant was paid $10 to complete the pilot survey. Participants were asked to make comments on the survey form for any text deemed confusing or having multiple

meanings. Each participant was timed to determine if anyone exceeded the 15-minute expected survey completion time. At the end of the survey, each participant was interviewed and asked if the survey was understandable and clear in terms of the meaning of the questions. All participants indicated they had no problem in understanding or completing the survey in less than 15 minutes. Pilot study participants did not mark any text indicating difficulty with a question. The survey was not modified.

Demographics and Descriptive Data

Descriptive statistics summarized the demographic data (gender and age). The descriptive data regarding prior use of mobile coupons and the use of text messaging were collected and analyzed. Demographic and descriptive statistics were not used to test a hypothesis. Instead, the descriptive information characterized the sample and affirmed information on how the data were distributed, varied, and shaped. Questions 1 through 5 represented the demographic and descriptive data. At the time of the study, the university population consisted of 1,618 students, of which 41.5% were male and 58.5% were female. Table 1 represents the gender of the sample population in terms of the frequency, percent, and cumulative percent. Males comprised 42.38% of the sample population, while females accounted for 57.62% of the participants.

Table 1

Descriptive Statistics of the Population--Gender

Variable	Category	Frequency*	Percent	Cumulative Percent
Gender	Male	139	42.38	42.38
	Female	189	57.62	100.00

*n = 328

Table 2 represents Questions 2, 3, and 4. Each row of Table 2 includes the question number, variable, category, frequency, percent and cumulative percent. Question 2 referred to any text message coupons the participants previously had received. Participants (n = 328) who received at least one mobile text message coupons numbered 138 (42.07%), while 190 (57.93%) did not report receiving a mobile coupon. In Question 3, participants were asked if they had redeemed any text message coupons. Only 90 participants (27.44%) disclosed redeeming at least one mobile text message coupon, while 238 participants (72.56%) reported never redeeming a mobile coupon. If 138 participants reported receiving a text coupon and 90 redeemed a text coupon, the overall participation rate of participants who received a text coupon was 65%. Question 4 asked if participants use text messaging. The majority of participants (98.17%) revealed that they used text messaging, while 1.83% did not use text messaging.

Table 2

Descriptive Statistics of Mobile Coupon Usage, Redemption and Text Message Usage

Question	Variable	Category	Frequency*	Percent	Cumulative Percent
2	Received Coupon	Yes	138	42.07	42.07
		No	190	57.93	100.00
3	Redeemed Coupon	Yes	90	27.44	27.44
		No	238	72.56	100.00
4	Use Text Messaging	Yes	322	98.17	98.17
		No	6	1.83	100.00

*n = 328

The survey was administered at a private, non-profit university in Denver with a campus consisting of 1,618 students. Students between the ages of 18 and 24 years of age participated in the study. Of the participants who completed the entire survey and fell inside the age range (n = 328), the distribution of ages were listed in Table 3. In Table 3, the age of the participants are followed by the frequency, percent of the total and cumulative percentage. The data showed 75.3% of participants fell in the 18 to 20 age range.

Table 3

Age of Survey Participants

Age	Frequency*	Percent	Cumulative Percent
18	102	31.1	31.1
19	88	26.8	57.9
20	57	17.4	75.3
21	39	11.9	87.2
22	24	7.3	94.5
23	11	3.4	97.9
24	7	2.1	100

*(n = 328)

Instrumentation and Reliability

After answering the five demographic questions, participants were asked to complete a 25-question survey. The survey responses ranged from 1 = *strongly disagree* to 6 = *strongly agree*. Scores for the survey dimensions were determined by adding responses of appropriate questions on each dimension for a dimension score. The dimensions were performance expectancy (PE), effort expectancy (EE), social influence (SI), opting-in (Opt-In), fear of spam (Fear), and behavioral intention (BI) to use mobile coupons. Table 4 shows the variable, questions associated with the variable, the minimum, maximum, mean, and standard deviation (SD). The mean shows the central tendency of the data for each variable.

Table 4

*Variables, Related Questions and the Central Tendency**

Variable	Questions	Minimum	Maximum	Mean	Standard Deviation
PE	6, 7, 8, 9	4	24	19.34	4.16
EE	10, 11, 12, 13	4	24	19.64	3.79
SI	14, 15, 16, 17	4	24	16.99	4.14
Opt-In	18, 19, 20, 21, 22	5	30	24.02	5.15
Fear	23, 24, 25, 26, 27	5	30	21.04	7.18
BI	28, 29, 30	3	18	14.72	3.28

*n = 328

Reliability analysis using Cronbach Alpha indicated results on this research study were consistent with previous research. All constructs demonstrated a Cronbach Alpha of greater than .70, deemed to be the minimum threshold.

Significant Findings

The data were analyzed using inferential and descriptive statistical tests. The demographic and descriptive statistical tests were outlined in the previous section. Included in the significant findings are the research questions, associated hypotheses, and

inferential statistics. Data were analyzed using the Statistical Package for the Social Sciences® (SPSS) version 20. First, the data were checked for normality using the Shapiro-Wilk test. To test for normality using the Shapiro-Wilk test, the null hypothesis functioned on the basis the data were normally distributed. Using an alpha of .05, the tests were conducted, and each variable had a *p* value greater than .05, thus rejecting the null hypothesis.

Histograms were printed for each variable, and a visual representation also indicated the data were nonnormally distributed (see Appendix C). Attempts to transform the data and correct the normality issue using square root, inverse, and logarithm methods were attempted, but the data remained in a nonnormal distribution. The results of the Shapiro-Wilk tests and representations of each individual histogram can be found in Appendix C. In the absence of normally distributed data, nonparametric statistical tests represented the best option for statistical analysis.

Spearman *R* correlation, Kendall *tau-b,* and Gamma were used as bivariate measures to test the association between variables and validate the results. For all tests, the confidence level was 95% and alpha was established at .05. Spearman correlation was a nonparametric alternative to the Pearson correlation coefficient. The Spearman correlation differs from the Pearson correlation coefficient because data values were replaced with ranks.

Essentially, with Spearman, the data were first ranked, and then the Pearson equation was conducted on the ranked data. While Spearman was considered a more popular test statistic, Kendall's *tau-b* was also used to take into account tied scores of the same rank. Gamma was a third measurement used to describe the association between

variables, and Gamma did not address tied comparisons. Because the independent variables and dependent variable were measured on a meaningful scale, in the study, correlation coefficients were used to determine the strength of the associations between each independent variable and the dependent variable.

Research Questions and Hypotheses Testing

In this study, the survey questions were used to elicit an understanding of whether a relationship exists between young adults and the desire to use mobile coupons in a casual dining restaurant environment. Five independent variables were used along with the dependent variable of behavioral intention. The study was guided by the following five research questions.

1. What is the relationship between performance expectancy and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?
2. What is the relationship between effort expectancy and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?
3. What is the relationship between social influence and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?
4. What is the relationship between opting-in and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?
5. What is the relationship between the fear of spam and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

In Table 5, the results of the relationship between the independent variables and the dependent variable Kendall *tau-b*, Spearman Correlation, and Gamma. In the first

four variables, the *p* value was < .001. For the fifth value, the exact *p* value is listed under each test.

Table 5

Independent Variable Correlations with Behavioral Intention from Kendall Tau-b, Spearman, and Gamma Tests

Independent Variable	Kendall *tau-b*	Spearman	Gamma
PE	.547**	.674**	.615**
EE	.478**	.589**	.538**
SI	.409**	.532**	.461**
Opt-In	.522**	.658**	.582**
Fear	.048	.063	.054
--	*P* = .237	*P* = .256	*P* = .265

Note. ** Correlation is significant at the .001 level. *n* = 328.

Hypothesis 1

Table 5 displays the results of the Kendall *tau-b*, Spearman, and Gamma correlation analysis used for hypothesis testing. The first hypothesis related to performance expectancy. The hypothesis was stated as:

H_o1: There is no relationship between performance expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_a1: There is a relationship between performance expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

The correlation for performance expectancy and behavioral intentions as reported in Table 4, the Spearman rank order correlation stated ($N = 328$, $r_s = .674$, $p < .001$). Because $p < .05$, the null hypothesis was rejected, and there is a positive, significant relationship between performance expectancy and behavioral intention. Because $p < .05$, the result could not have happened by chance. Further tests ($n = 328$, Kendall *tau-b* =

.547, $p < .001$) and ($n = 328$, Gamma = .615, $p < .001$) supported the Spearman correlation.

Hypothesis 2

The second hypothesis sought to understand the relationship between effort expectancy and the behavioral intention. The second hypothesis was stated as follows:

H_o2: There is no relationship between effort expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_a2: There is a relationship between effort expectancy and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

The Spearman correlation in Table 5 was (n = 328, rs = .589, p < .001). Because p < .05, the null hypothesis was rejected. The Spearman correlation was supported by (n = 328, Kendall tau-b = .478, p < .001) and (n = 328, Gamma = .538, p < .001). The relationship between effort expectancy and behavioral intention was significant (p < .001) and exhibited a positive relationship.

Hypothesis 3

H_o3: There is no relationship between social influence and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

H_a3: There is a relationship between social influence and the behavioral intention to use mobile coupons in a casual dining restaurant environment.

To test the third hypothesis, a Spearman's correlation was performed to determine if there was a relationship between social influence and behavioral intention. In Table 5, Spearman's rank order correlation was ($n = 328$, $r_s = .532$, $p < .001$). Both Kendall *tau-b* and Gamma were used to audit the results from the Spearman correlation. The results

showed (n = 328, Kendall *tau-b* = .409, p < .001) and (n = 328, Gamma = .461, p < .001). Because p < .05, the null hypothesis was rejected. The results demonstrated a strong positive correlation between social influence and behavioral intention.

Hypothesis 4

H_o4: There is no relationship between opting-in and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

H_a4: There is a relationship between opting-in and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

Because p < .05, the null hypothesis was rejected; there is a significant positive relationship between opting-in and behavioral intention (n = 328, r_s = .658, p < .001). Table 5 showed further support for this finding based on the Kendall *tau-b* and Gamma correlations (n = 328, Kendall *tau-b* = .522, p < .001) and (n = 328, Gamma = .582, p < .001).

Hypothesis 5

The fifth and final hypothesis was concerned with the relationship between fear of spam and behavioral intention. The hypothesis was stated as follows:

H_o5: There is no relationship between the fear of spam and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

H_a5: There is a relationship between the fear of spam and the behavioral intention to use mobile coupons in the casual dining restaurant environment.

The Spearman correlation as shown in Table 5 demonstrated there is no significant relationship between the fear of spam and behavioral intention (n = 328, r_s =

.063, p =.256). Because $p > .05$, the relationship is not significant and could have only happened by chance (Creswell, 2005). Both Kendall *tau-b* and Gamma correlations supported the Spearman correlation finding (n = 328, Kendall *tau-b* = .048, p= .237) and (n = 328, Gamma = .054, p = .256).

Additional Findings

The significant findings in this paper used nonparametric test to report the results. The assumption was the data distribution of hundreds of observations tends to be normal, no matter the shape of the data. The research for the study used 328 observations. Conventional thinking states nonparametric statistics should be used with nonnormal data distributions. In an effort to compare nonparametric results with the parametric significant findings, the Pearson correlation coefficients were calculated and compared to the Spearman nonparametric counterpart. The results are summarized in Table 6; the confidence level was 95% and alpha was established at .05 for all the tests in Table 6.

Table 6

Independent Variable Correlations with Behavioral Intention from Pearson and Spearman Tests

Independent Variable	Pearson	Spearman
PE	.682**	.674**
EE	.611**	.589**
SI	.512**	.532**
Opt-In	.680**	.658**
Fear	.040	.063
--	p = .459	p = .256

Note. ** Correlation is significant at the .001 level. n = 328.

In each instance, the Pearson correlation coefficient and the Spearman correlation coefficient provide similar results. The results directly relate to the hypotheses outlined under research questions and hypotheses testing one through five. A significant positive

relationship existed between performance expectancy and behavioral intention (n = 328, r_s = .674, p < .00) and (n = 328, r = .682, p < .001). A significant relationship existed between effort expectancy and behavioral intention (n = 328, r_s = .589, p < .001) and (n = 328, r = .611, p < .001). A significant relationship existed between social influence and behavioral intention (n = 328, r_s = .532, p < .001) and (n = 328, r = .512, p < .001). A significant relationship existed between opting-in and behavioral intention (n = 328, r_s = .658, p < .001) and (n = 328, r = .680, p < .001). No significant relationship existed between fear of spam and behavioral intention (n = 328, r_s = .063, p = .256) and (n = 328, r = .040, p = .459).

Summary

The purpose of this quantitative correlational study was to discover if a relationship existed between each of the five independent variables and the behavioral intention to use mobile coupons in a casual dining restaurant. The statistical program SPSS version 20 was used to analyze the data. Descriptive and inferential statistics reported the findings. To analyze the hypotheses, correlational analysis consisting of Spearman Correlation, Gamma, Kendall's *tau-b* and the Pearson correlation coefficient were used. All correlation results were consistent.

For hypothesis 1 (performance expectancy and behavioral intention), hypothesis 2 (effort expectancy and behavioral intention), hypothesis 3 (effort expectancy and behavioral intention), and hypothesis 4 (opt-in and behavioral intention), the null hypotheses were rejected. A significant relationship existed between the first four independent variables and behavioral intention. For hypothesis 5 (fear of spam and behavioral intention), no relationship existed between the independent variable and the

dependent variable. Chapter 4 included the detailed data analysis and the study findings. In Chapter 5, the recommendations and conclusions are presented.

Chapter 5

Conclusions and Recommendations

Martin (2010) quoted CTIA, The Wireless Association, declaring 93% of the U.S. population had become mobile phone users. Correspondingly, the dependence on mobile phones resulted in 24.5% of households abandoning landline phones in favor of wireless phones. Martin noted that 1.56 trillion text messages are sent each year in the Unites States alone. Retti, Grandcolas, and Deakins (2005) found that 85.7% of study participants who received a text message for advertising had a positive image of the company, and 44% of the participants found mobile marketing less intrusive than telemarketing.

Herrington (2004) noted people in the United States spend more on dining out than on clothing. The U.S. Bureau of Labor and Statistics (2011) further stated that 41% of the U.S. household food budget was spent on prepared meals outside of the home. Marketers use coupons as one promotional tool to encourage customers to purchase products and services. Jung and Lee (2010) noted that while 317 billion coupons were distributed in the United States, less than 1% was redeemed. Restaurants rely on marketing promotions to gain a competitive advantage, retain existing customers, and attract new customers.

The general problem is less than 1% of traditional printed coupons are redeemed. While mobile coupons represent a new delivery technology, little research exists on the behavioral intention of U.S. consumers to redeem mobile coupons, specifically for restaurant purchases. The specific problem to be studied is the behavioral intention of young adults from private, non-profit universities to use mobile coupons for casual dining

restaurants. The survey participants consisted of 328 randomly selected private, non-profit university participants, age 18 to 24, from a Colorado university who owned cell phones. A Likert-type scale was used for the quantitative, cross-sectional correlation study. Four variables in the study were taken from the Venkatesh et al. (2003) study titled the Unified Theory of Acceptance and Use of Technology (UTAUT). The four core determinants were behavioral intention, performance expectancy, effort expectancy, and social influence. The determinant opt-in was derived from studies performed by Rohm and Sultan (2006) and Jayawardhena et al. (2009). Finally, the fear of spam determinant was taken from the study performed by Dickinger and Kleijnen (2008).

Chapter 1 discussed the pervasiveness of mobile phone technologies, food budgets spent outside the home, and the importance of casual dining restaurant marketing. The theoretical framework was outlined in conjunction with the scope and limitations of the study. Chapter 2 included a literature review of research models used to predict behavioral intention and usage of technology and the importance of applying key determinants to mobile coupons. Chapter 3 focused on the research design, sample population, informed consent, data collection, and instrumentation. The analyses are found in Chapter 4, providing the basis for conclusions and recommendations found in the final chapter. The findings are summarized in Chapter 5 along with conclusions, recommendations for marketing management, and suggestions for further research.

The study was guided by five research questions, described sequentially:

1. What is the relationship between performance expectancy and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

2. What is the relationship between effort expectancy and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

3. What is the relationship between social influence and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

4. What is the relationship between opting-in and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

5. What is the relationship between the fear of spam and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

Findings and the Relationship to Existing Literature

The quantitative cross-sectional correlational study concentrated on five independent variables and tested the correlations to the behavioral intention to use mobile coupons in a casual dining restaurant. In the descriptive analysis, the gender population of the random sample was within 1% of the population of 18 to 24-year-olds in private, non-profit universities, while females outnumbered the males. Because the focus of the study was the intention to use mobile coupons in a casual dining restaurant environment, almost half of the sample population had received a mobile coupon of some kind was significant. Of those participants who received a mobile coupon, over half had redeemed a mobile coupon. The survey did not include a question on whether the mobile coupon was redeemed at a casual dining restaurant or for other products and services.

The willingness of the participants to receive and act upon mobile coupons is noteworthy, revealing a trend among participants, in general, to accept mobile advertising for some product or service. Due to the pervasiveness of cell phones and the acceptance of text messaging, the participants acknowledged a cumulative usage rate of almost 100%

for text messaging. The quantitative portion of the study examined five research questions, corresponding hypotheses, and detailed analysis. The results are compared to existing literature and conclusions are drawn.

Research Question 1: What is the relationship between performance expectancy and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

Because of the results of the inferential statistical tests, the null hypothesis 1 was rejected and the alternative hypothesis was accepted. A significant positive relationship existed between performance expectancy and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment.

Venkatesh et al. (2003) described performance expectancy as the strength of belief an individual has that using the system will help him achieve gains in job performance. According to Venkatesh et al., performance expectancy should be the strongest indicator of behavioral intention in both voluntary and mandatory settings. In essence, the user has to believe that the effort to use the system has to be worth the benefit; otherwise, why expend the effort?

Dickinger and Kleijnen (2008) evaluated performance expectancy in the context of mobile coupons, but changed the definition to economic benefit as an effect on attitude. Both economic benefit and effort were shown to have opposite effects on attitude. Economic benefit positively affected attitude, while effort negatively affected attitude. Finally, attitude was shown to affect behavioral intention positively. Results from the study affirmed the Dickinger and Kleijnen study, stating performance

expectancy or economic benefit in the case of mobile coupons ultimately has a positive correlation with behavioral intention to redeem mobile coupons.

Schaupp and Carter (2009) studied electronic filing (e-file) adoption as a behavioral intention using variables associated with the UTAUT. Schaupp and Carter found a significant relationship between performance expectancy and the behavioral intention to e-file. The explanation for the positive correlation was e-filing was faster and more efficient that traditional methods of filing taxes.

The results of the study are consistent with existing literature. The economic benefit of receiving a discount on the price of a casual dining restaurant meal is a positive effect. Because most consumers dine in a casual dining restaurant at some point, the need is established. To the extent the consumer need is obvious and an economic benefit in the form of performance expectancy can be seen, the consumer can be influenced in terms of where to go for a casual dining experience. The expectancy in the case of a mobile coupon, when redeemed, is a direct economic benefit to the consumer resulting in a cash savings.

Research Question 2: What is the relationship between effort expectancy and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

Because of the statistical results, the null hypothesis 2 was rejected and the alternative hypothesis was accepted. A significant, positive relationship exists between effort expectancy and behavioral intention. Venkatesh et al. (2003) described effort expectancy as the level of ease associated with using the system.

Venkatesh et al. (2003) noted the concept of effort expectancy was explained in other models as complexity and ease of use as noted in the works of Moore and Benbassat (1991) and Thompson et al. (1991). Similar to performance expectancy, Venkatesh et al. and Schaupp and Carter (2009) stated effort expectancy is significant in both voluntary and mandatory use situations. Venkatesh et al. explained that effort expectancy is more noticeable in the early stages of adoption when new technology can present issues or hurdles to overcome. This thought was supported by Schaupp and Carter and Thompson et al., who stated definitely that effort expectancy is only significant in the initial stages of intention to use technology and becomes insignificant over time after users became familiar with the new technology.

In this study, the findings on effort expectancy supported the existing literature (Moore & Benbassat, 1991; Schaupp & Carter, 2009; Thompson et al., 1991; Venkatesh et al., 2003), demonstrating a strong correlation with behavioral intention. As exhibited by mobile technology, the effort required to use a mobile coupons is less than a paper coupon. Because users can receive mobile coupons on their cell phone, the need for clipping coupons and remembering to take coupons with them for the purpose of redemption is mitigated by the fact that mobile coupons are delivered to the cell phone normally carried by the consumer. Another potential reason effort expectancy did not prove to be a roadblock for behavioral intention was the fact that just less than half of participants had received some type of mobile coupon prior to taking the survey. More than half of the participants who received mobile coupons redeemed at least one mobile coupon and had experience with the process.

Because almost all the participants had effectively used text messaging and mobile coupons were explained as analogous to receiving a text message, people may have felt confident with their ability. As a result of companies such as Groupon and Living Social, consumers have become more educated on what a mobile coupon is and may know someone who has used a mobile coupon. Knowing someone who may have used a particular technology introduces the next variable: social influence.

Research Question 3: What is the relationship between social influence and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

Because of the results of the statistical tests, the null hypothesis 3 was rejected and the alternative hypothesis was accepted. A significant positive relationship between social influence and the behavioral intention to use mobile coupons in a casual dining restaurant environment existed. Venkatesh et al. (2003) described social influence as the degree to which individuals believe someone of importance thinks they should use the new system. The effect would be strongest for women, older women in particular, focused on mandatory settings and in the early stages of adoption.

In contrast to the Venkatesh et al. (2003) study, over half of the sample population in the study was female between the ages of 18 and 24 and the participants were evaluating a nonmandatory setting. The results still showed a positive correlation. Because the participants were all from the same nonprofit, private university, the sphere of influence may have been strong because of the closeness associated with living, working, eating, and taking classes together generally associated with a university setting.

Bagozzi (2007) was a critic of the social influence predictor in the UTAUT. Bagozzi suggested social influence should be separated from group norms. Second, social identity is the idea of doing something to be part of the group as opposed to being influenced by one person of importance. Third, influence can be cultural from the standpoint that certain cultures are collective and others are individualist. Consistent with the third point, Muk (2007) studied the adoption of mobile advertising by comparing American and Taiwanese consumers. Americans are believed to be a more individualistic culture, while the Taiwanese comprise a more collectivist culture. All participants of the Muk study included college students. The study involved opting-in for advertising, which is optional. The results confirmed Americans are less influenced by social pressures to conform to group behavior compared to Taiwanese participants.

One reason this study may differ in acceptance from Muk's study is the study involved receiving a single mobile coupon. In the Muk study, participants were opting-in to receive a variety of mobile ads. Perhaps to the extent the participants found the types of ads interesting, the Americans were more or less likely to participate.

In another e-coupon study regarding coupons for eating out in general, Kang et al. (2006) studied 410 college students of which the majority were male, and determined social influence was an important predictor of behavioral intention to use and actual usage. Kang et al. also noted past usage of traditional paper coupons was more of a factor in the ongoing usage of paper coupons and less of an influence on the intention to use e-coupons. E-coupons differ from mobile coupons because e-coupons are delivered to an e-mail address, whereas mobile coupons are delivered to a cell phone using text messaging technology. While some smart phones can receive e-mail on their phones,

almost all cell phones are capable of receiving text messages in the United States if the text messaging option is chosen. The Kang et al. study supported the results of this study.

The results of the study supported a positive relationship between social influence and behavioral intention. The relationship is supported by existing literature in the use of technology in general and e-coupons specifically. While some scholars suggested other factors and questions could be included in the identification of social influence, the constructs of social influence had a Cronbach Alpha reliability of .80 and were deemed acceptable for the purpose of this study.

Research Question 4: What is the relationship between opting-in and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

Because of the statistical results, the null hypothesis 4 was rejected and the alternative hypothesis was accepted. Dickinger and Kleijnen (2008) used the term perceived control or opt-in as a perceived measure of control the consumer has in determining whether to receive mobile coupons, monitor the type of coupons received, and cancel permission to receive mobile coupons, if desired. While Dickinger and Kleijnen found a correlation between opt-in and behavioral intention, they described the reasoning with a unique explanation. Dickinger and Kleijnen stated if consumers lack control over the opt-in process, they believe they have no control over the outcome. Without control, consumers could receive too many coupons at any time of the day or night. Feeling as though they have the opportunity to opt-out provides a comfort level to

consumers. The results of the study are consistent with the results of Dickinger and Kleijnen.

In the study by Rohm and Sultan (2006), students from Pakistan and the United States were measured on multiple antecedents of behavioral intention to interact with mobile marketing advertisements. Both groups of students provided a positive correlation between permission to interact and behavioral intention. The Rohm and Sultan study demonstrates the importance of permission and behavioral intention across two cultures. The finding is consistent with the results for participants of this study.

Jayawardhena et al. (2009) also conducted a multi-cultural study with students from Finland, Germany, and the United Kingdom (UK). Again, students were measured on perceived control (opting-in) and intention to use mobile marketing. In the study of Jayawardhena et al., the Finnish sample stated perceived control had no influence on intention. The German and UK samples indicated a significant correlation between perceived control and behavioral intention. The explanation from Jayawardhena et al. was countries with high levels of trust, countries where users are more experienced with mobile advertising, and countries where little unsolicited mobile spam messages are sent, will be less likely to consider permission as an antecedent to using mobile marketing. In the case of Finland, the country meets all three criteria, whereas Germany and the UK do not.

In 2007, Newell and Meier explored the acceptance of mobile coupons with university students. The students indicated the most popular reasons for accepting coupons were the novelty factor and they liked coupons because they seemed like good deals. The most popular reason for not wanting coupons was ad avoidance. Specifically,

ad avoidance was related to too many messages, unwanted messages, and a general dislike of advertising. The negative qualitative comments could have been mitigated by perceived control or opting-in with an option to opt-out.

The results of the study supported a relationship between opting-in and behavioral intention. The prior studies mentioned above confirmed this association both in the United States and several foreign cultures. The one exception was the Finnish sample. The explanations for the lack of association between opt-in and behavioral intention could be explained by experience, trust, and lack of spam. In particular, a fear of spam was studied in the fifth and final hypothesis.

Research Question 5: What is the relationship between the fear of spam and the behavioral intention to redeem mobile coupons in a casual dining restaurant environment?

Fear of spam was the first independent variable in this study, which exhibited no correlation with behavioral intention. Because of the statistical results, no correlation between fear of spam and behavioral intention existed. Tezinde et al. (2002) described spam as unsolicited electronic advertising sent to a cell phone or computer. Tezinde et al. made a clear distinction between spam and opt-in, stating that if consumers choose to opt-in, they are agreeing to receive electronic advertisements. To the extent consumers receive too many electronic ads, the consumers may not differentiate between having opted-in and spam (Tezinde et al., 2002).

Krishnamurthy (2001) refers to the consumer opting-in as permission-based marketing, negating the negative effects of spam or unwanted electronic messages.

Li, Edwards, and Lee (2002) studied spam in the context of television advertising and magazine advertising using the same intrusiveness scales used in this study. Li et al. found a correlation between ad intrusiveness in both television and magazines. Li et al. offered a reason for the ad intrusiveness as it relates to consumers' use of television and magazines. Li et al. believed the cognitive processing interruption created negative feelings in the consumer by interruptions from advertising. Perhaps the results of this study differed from Li et al. because unlike television or a magazine, the receipt of a text message coupon does not interrupt the cognitive process. A text message coupon is delivered to a consumers' phone similar to an inbox, allowing the consumer to view the message as time becomes available.

To extend the work of Li et al. (2002), Edwards et al. (2002) measured the intrusiveness of pop-up advertising in the context of Internet usage. Edwards et al. found that spam or unwanted pop up ads were found to be intrusive by consumers. The level of intrusiveness depended on the level of cognitive intensity. Consumers who were viewing material more intensely, found pop up ads to be more intrusive. While the pop up ad experiments contained 10 second and 20 second ads, both were considered intrusive. Because text message ads do not impair the cognitive process, this may be a reason the results in the study did not show a relationship between the fear of spam and behavioral intention. Second, Edwards et al. and Dickinger and Kleijnen (2008) used fear of spam as a determinant of perceived control. In both cases, fear of spam was shown to have a negative correlation when associated with perceived control. Edwards et al. and Dickinger and Kleijnen did not measure fear of spam as an antecedent to behavioral intention. Not including fear of spam may be another reason the results of the study

differed from the study performed by Edwards et al. and Dickinger and Kleijnen.

While fear of spam did not reflect a correlation with behavioral intention, this study was the first to examine fear of spam as an antecedent to the behavioral intention to use mobile coupons for casual dining restaurants. Text message coupons are less intrusive because of their ability to be stored in an inbox on the cell phone until the consumer chooses to look at incoming messages. This function may explain why the fear of spam shows no correlation in this study. A second reason may be the age of the participants. In the study, participants are 18-24 years of age. Other age groups may respond differently. Third, institutional trust could be a factor in understanding the lack of concern for spam.

In the introduction to the survey, participants were provided examples of restaurants considered casual dining. A list of 10 national chain casual dining restaurants was provided prior to taking the survey. Jayawardhena (2009) described institutional trust as a wider form of trust the consumer has in institutions as well as in the cultural, legal, and societal norms. As a corporation advertises continuously, the consumer's familiarity with the company and products contribute to consumer trust. Because the national chain restaurant examples used in this study may already have consumer trust in the minds of the participants, a fear of spam may be nonexistent.

In summary, four of the five variables showed strong correlations with behavioral intention to redeem mobile coupons in a casual dining restaurant. In order of importance as demonstrated by the strength of the correlation, the variables were performance expectancy, opt-in, effort expectancy, and social influence. The one variable in this study not correlated with behavioral intention was the fear of spam. While other studies

(Edwards et al., 2002; Dickinger & Kleijnen, 2008) used fear of spam in the context of advertising, this study was the first to use fear of spam as an antecedent to the behavioral intention to use mobile coupons. From the information derived from this study, recommendations for marketing managers and entrepreneurs in mobile coupon marketing surfaced.

Recommendations

The restaurant business is a competitive environment, and variations of the marketing mix are employed to promote the business with consumers in the hopes of making a profit. Coupons are one element in the marketing mix. Traditional, printed coupons represent a 1% redemption rate. With the advent of mobile coupons, some inherent advantages can increase usage. The purpose of this section is to provide recommendations to marketing leaders and entrepreneurs.

No single marketing effort can lead to instant success, including coupons. The success of a business depends on multiple marketing mix efforts. For example, in the case of coupons, a push-pull strategy may be more effective. By presenting consumers with advertising, marketers create a push strategy by letting consumers know about the positioning of the restaurant. In conjunction, a coupon can be a pull strategy to encourage customers to come into the restaurant.

Beyond using a coupon to attract new customers, coupons can be used as a reward system for existing customers. Couponing moves into the realm of customer relationship management. Providing a coupon to a good customer may seem as though one is giving away money to someone who would have frequented the restaurant anyway. Customers have a choice. New restaurants are opening all of the time. Keeping good customers

through loyalty promotions is an important aspect of maintaining good customer relations.

Coupons can also be used to encourage a new item on the menu. Barat and Paswan (2005) showed that performance expectancy and effort expectancy are important elements in the behavioral intention to use mobile coupons. This means the offer has to be clear and the consumer perceives the offer will be a good deal, that is, the effort to redeem the coupon cannot be complicated.

The offer or face value of a coupon can include a percentage off the price, a special price as designated on the coupon, a dollar amount off the price, or an offer to receive something in exchange for eating at the restaurant. With the advent of Groupon, coupons became more popular. Groupon encourages businesses to offer 50% off coupons. Do not be misled. Groupon receives a commission on each coupon that is sold. Groupon would like to offer the best deal possible so that Groupon increases their gross sales. If the restaurant offers a 50% coupon and pays Groupon a commission between 25% and 35%, the restaurant could lose money on the deal, depending on the cost of goods sold. This study involved a 25% off coupon. Barat and Paswan (2005) showed that sometimes a higher coupon face value resulted in fewer coupon redemptions. Creative coupon face values are more important than only providing a high percentage-off face value. Creative coupon face values can save the restaurant money and increase profitability.

The effort to redeem mobile coupons cannot be complicated. One advantage of delivering a coupon to a cell phone is most consumers always carry their cell phone with them. Asking a customer to see the text message and provide a code or a phone number

is acceptable. Asking for a customer to exert more effort may exceed their effort expectancy.

The coupon should have text encouraging customers to opt-in. Next to performance expectancy, opt-in was the second strongest correlation with behavioral intention. Text offers a good opportunity to combine advertising and mobile coupons. Restaurant print advertising could contain a phone number or short code for consumers to text as part of the opt-in process. To enhance the control the consumer feels over the process, a methodology for opting-out should be an option when opting-in. Again, creativity in the initial opt-in strategy is important. Newell and Meier (2007) demonstrated that creative text messaging strategies can influence responses from consumers.

The text should relate to the customers. One of the reasons for the potential quick adoption of mobile coupons is that mobile coupons combine two technologies understood by consumers: coupons and text messaging. To the extent restaurants develop new ideas, relating the new concept to something the consumers already understand, will aid in the adoption process.

Social influence exhibits a strong effect in the correlation of coupon use with behavioral intention. Waiting for word of mouth to influence many consumers can take too long. To speed the process, restaurants may want to introduce a coupon that can only be used by the person who opted-in and another coupon may be specifically designed for consumers to share with their friends. This shared coupon can be forwarded as a group message for the friends of one participant. This process would increase the volume of

coupons distributed. Restaurants must then be prepared for a coupon with a wide distribution and may choose to limit the coupons by a date code.

When a restaurant owner distributes coupons, the owner takes a financial reserve against the potential discounts. Because paper coupons have a 1% redemption rate, owners need to become familiar with the redemption rate of mobile coupons. The use of a consistent redemption rate removes the variability for restaurants and a comfort level to forecasting mobile coupon redemption ensues. Second, social influence was tested by asking if friends and people who are important to the user think they should use mobile coupons. Another way of achieving social influence is by a person of importance influencing the consumer. This influence could be combined with a public relations effort. For example, if a restaurant critic, famous chef, television personality, or a media personality spoke highly of the restaurant, the celebrity could influence the consumer, even though the consumer does not have direct contact with the influencer.

Restatement of the Limitations

The initial limitations were anticipated in Chapter 1. Upon completing the study, additional limitations were identified. The complete list of the limitations of this study is noted.

The sample was taken from one private, non-profit university with participants 18 to 24 years of age who owned a cell phone. A stratified random sample from across the United States inclusive of more age groups would enhance the findings of the study. Including other age groups would identify whether the strength of the correlations are similar among other age groups.

The statistics associated with this study use correlation coefficients. The limitation of correlation is the inability to establish causality (Creswell, 2005). Similarly, the results were limited by the participants' honesty and ability to estimate their potential user experience. As part of the survey, a written explanation was provided describing the scenario of receiving mobile coupons from 1 of 10 national restaurant chains. During the questioning, participants were asked about their past use of mobile coupons in general and not restaurant coupons specifically. Finally, participants were asked about their intention to use mobile coupons, but there was no follow-up with an attempt to confirm actual usage.

Suggestions for Further Research

Fear of spam failed to show a correlation with the behavioral intention to use mobile coupons for casual dining restaurants. Jayawardhena (2009) suggested that with continuous advertising, the consumer's familiarity with the company and products contributed to consumer trust. One option for further study would be to replace the construct of fear of spam with institutional trust, which may help explain why a lack of fear of spam exists.

Location-based services are a new type of mobile messaging coupon. Mobile messaging can take multiple forms. For example, a mall can put up a sign on the doors saying that if you enter the mall, you may receive special deals on that day. Some store owners may put a sign in their window saying that by coming into the store, you may receive coupons. Another variation of the study could include location-based coupons. In a location-based coupon study, fear of spam could be a factor because the perceived control over coupons is lessened when coupons are provided without opting-in.

Conducting the study with other age groups will provide useful insights from a larger population. By completing this study, results indicated young adults in private, non-profit universities exhibit a correlation between the stated variables and behavioral intention. By conducting studies with specific restaurant, owners can identify their customer segmentation and determine if coupons might be appropriate to their marketing mix.

Finally, the study revealed that performance expectancy was the most prominent correlation with behavioral intention. Performance expectancy is concerned with the idea of providing a deal that is worthwhile for the consumer to be engaged. Deals can be worded differently, indicate divergent value propositions, and become more creative. By keeping other variables consistent, a researcher could examine variations of performance expectancy in relation to behavioral intention or actual usage.

Summary and Conclusion

Since 1894 when Coca Cola distributed the first printed coupon (Carter, 2011), restaurants have been using coupons as part of the marketing mix. Printed coupons have maintained a redemption rate of 1% or less (Jung & Lee, 2010), making any casual dining restaurateur question the return on investment. With the arrival and subsequent penetration of cell phones in the United States, marketing, technology, and entrepreneurial personnel realized the potential of combining coupons with the cell phone. Combining mobile coupons with a cell phone can provide instant access, one-to-one marketing, and a simple way for consumer to carry the coupons. In this study, the relationship between multiple variables and the intention to redeem mobile coupons in a casual dining restaurant was investigated. The new information resulting from the study

will aid marketing managers, restaurant managers, and entrepreneurs in understanding more clearly the antecedents of mobile coupons and the behavioral intention to use mobile coupons in casual dining restaurants.

The study combined variables from three studies to examine their effect on the behavioral intention to use mobile coupons. Performance expectancy or economic benefit exhibited a large effect and the highest positive correlation with intention. The finding of a positive effect was consistent (Dickinger & Kleijnen, 2008; Schaupp & Carter 2009; Venkatesh et al., 2003) with previous studies.

Effort expectancy or ease of redemption also exhibited a large effect and a positive correlation with behavioral intention. Previous literature (Moore & Benbassat, 1991; Schaupp & Carter, 2009; Thompson et al., 1991; Venkatesh et al., 2003) supported this finding, while previous researchers stated effort expectancy is more significant in the early stages of intention to use new technology.

Social influence, when a person of importance thought the user should use the new technology, also demonstrated a large effect and positive correlation with behavioral intention. Prior researchers (e.g., Kang et al, 2006; Venkatesh et al., 2003) in the United States established the correlation between social influence and behavioral intention. Bagozzi (2007), who was more critical of social influence, stated cultural influence was an important factor of social influence. The study by Muk (2007) confirmed the correlation of social influence and the adoption of mobile advertising with both American and Taiwanese consumers.

The variable of opt-in had a strong effect and positive correlation with behavioral intention. Op-in or perceived control refers to the act of a consumer agreeing to accept

mobile coupons and being able to opt-out (stop mobile coupons) when requested. Some studies (Dickinger & Kleijnen, 2008; Rohm & Sultan, 2006) found a positive correlation between opt-in and behavioral intention. Newell and Meier (2007) had qualitative evidence of the opt-in relationship. Jayawardhena et al. (2009) had mixed results from a cross-cultural study. The German and UK samples showed a relationship, while the Finnish sample did not show a relationship between perceived control and behavioral intention.

Finally, the study showed the fear of spam or fear of receiving unwanted mobile coupons was not correlated to behavioral intention. This study was the first study to examine fear of spam relative to the behavioral intention to use mobile coupons. Other researchers (Dickinger & Kleijnen, 2008; Edwards et al., 2002; Krishnamurthy, 2001; Li et al., 2002; Tezinde et al., 2002) studied variations of the fear of spam, but not in the context of behavioral intention to redeem mobile coupons for casual dining restaurants.

By understanding the antecedents of behavioral intention in the context of casual dining restaurants, marketing and restaurant executives will be more prepared to incorporate mobile marketing into the marketing mix. This study indicates the importance of emphasizing creativity in coupons, incorporating consumer solicitation to opt-in into advertising, and understanding more clearly the role of mobile coupons in conjunction with advertising and public relations. The knowledge gained from the study can increase the effectiveness of restaurant marketing and potentially lead to reduced costs through increased effectiveness. Correspondingly, policy makers will be encouraged to provide a clear path for consumers to opt-out when desired, thus giving consumers' perceived control over messages received on their personal cell phones.

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Appendix A

Informed Consent Form

Informed Consent: Participants 18 years of age and older

Dear Participant,

My name is Ed Jennings, and I am a student at the University of Phoenix, School of Advanced Studies working on a Doctorate of Business Administration degree. I am doing a research study entitled "The determinants of behavioral intention to use mobile coupons in a casual dining restaurant environment". The purpose of the research study is to understand what factors have a more significant effect in determining mobile coupon usage, in a casual dining restaurant environment.

Your participation will involve answering a 30-question survey that will take approximately 15 minutes of your time. The only data that will be recorded are your answers to the survey questions. In total, I am going to collect 200 participant responses. After 200 responses are collected, the survey process will be terminated. You can decide to be a part of this study or not. Once you start, you can withdraw from the study at any time without any penalty or loss of benefits. The results of the research study may be published but your identity will remain confidential and your name will not be made known to any outside party.

In terms of this research and foreseeable risks, there are none.

Although there may be no direct benefit to you, a possible benefit from your being part of this study is the continuation of understanding mobile coupon usage in a casual dining restaurant environment.

If you have any questions about the research study, please call me at xxx-xxx-xxxx or email me at ed@xxxxxxxx.com. You can also contact me through my website or follow the dissertation progress at www.xxxxxxxxx.com. For questions about your rights as a study participant, or any concerns or complaints, please contact the University of Phoenix Institutional Review Board via email at IRB@phoenix.edu.

As a participant in this study, you should understand the following:

1. You may decide not to be part of this study or you may want to withdraw from the study at any time. If you want to withdraw, you can do so without any problems.
2. Your identity will be kept confidential.
3. Ed Jennings, the researcher, has fully explained the nature of the research study and has answered all of your questions and concerns.
4. No interviews will be recorded. If they are recorded, you must give permission for the researcher, Ed Jennings, to record the interviews. You understand that the information from the recorded interviews may be transcribed. The researcher will develop a way to code the data to assure that your name is protected.
5. Data will be kept in a secure and locked area. The data will be kept for three years, and then destroyed.
6. The results of this study may be published.

"By signing this form, you agree that you understand the nature of the study, the possible risks to you as a participant, and how your identity will be kept confidential. When you sign this form, this means that you are 18 years old or older and that you give your permission to volunteer as a participant in the study that is described here."

(☐) I accept the above terms. (☐) I do not accept the above terms.

(CHECK ONE)

Print name of the interviewee_____

Signature of the interviewee _____ Date _____

Signature of the researcher _____ Date _____

Appendix B

Survey Instrument

Note to Participants:

The following statements are based on a mobile coupon for 25% off of your entire meal, in a casual dining restaurant of your choice.

A casual dining restaurant is defined as a restaurant that includes a total restaurant bill from $10 to $25. Some examples of casual dining restaurants are, but not limited to, Buffalo Wild Wings, California Pizza Kitchen, Cheesecake Factory, Chili's, Olive Garden, Red Lobster, Ruby Tuesday, Macaroni Grill, Outback Steak House, and P. F. Chang's.

A mobile coupon is a coupon delivered to your cell phone in the form of a text message. To redeem the mobile coupon, you show the text message to your server and your entire bill is reduced by 25%. An example of the text message coupon is shown below on a cell phone screen capture.

Select the answer for each question that best fits. The survey should take approximately 10-15 minutes.

Descriptive Statistical Information:

1.___ Male (1) Female (2) Gender

2. ___Yes (1) No (2) Have you previously received any text message coupons?

3. ___Yes (1) No (2) Have you previously redeemed any text message coupons?

4. ___Yes (1) No (2) Do you currently use text messaging?

5. ___ Your Age

(1) 18 (6) 23

(2) 19 (7) 24

(3) 20 (8) age other than the ages listed

(4) 21

(5) 22

Questions	Range of Responses					
Performance Expectancy	Strongly Disagree	Moderately Disagree	Mildly Disagree	Mildly Agree	Moderately Agree	Strongly Agree
6. Receiving a mobile text message coupon would be useful.	1	2	3	4	5	6
7. Using a mobile coupon would enable me to accomplish coupon related tasks more quickly.	1	2	3	4	5	6
8. Using mobile coupons will increase my productivity of using coupons.	1	2	3	4	5	6
9. If I use mobile coupons, the financial gain is worthwhile.	1	2	3	4	5	6

Cronbach's Alpha = .91.

Note. From "User acceptance of information technology: Toward a unified view," by V. Venkatesh et al., 2003, *MIS Quarterly*, *27*(3), pp. 425-478. Copyright 2003 by MISQ.

Effort Expectancy	Strongly Disagree	Moderately Disagree	Mildly Disagree	Mildly Agree	Moderately Agree	Strongly Agree
10. Mobile coupon usage would be clear and understandable.	1	2	3	4	5	6
11. It would be easy for me to become skillful at using mobile coupons.	1	2	3	4	5	6
12. I would find mobile coupons easy to use.	1	2	3	4	5	6
13. Learning to redeem mobile coupons will be easy for me.	1	2	3	4	5	6

Cronbach's Alpha = .91.

Note. From "User acceptance of information technology: Toward a unified view," by V. Venkatesh et al. 2003, *MIS Quarterly*, *27*(3), pp. 425-478. Copyright 2003 by MISQ.

Social Influence	Strongly Disagree	Moderately Disagree	Mildly Disagree	Mildly Agree	Moderately Agree	Strongly Agree
14. People who influence my behavior think that I should use mobile coupons.	1	2	3	4	5	6
15. People who are important to me think that I should use mobile coupons.	1	2	3	4	5	6
16. My family would support the use of mobile coupons.	1	2	3	4	5	6
17. In general, my cellular phone provider supports mobile coupons.	1	2	3	4	5	6

Cronbach's Alpha = .91.

Note. From "User acceptance of information technology: Toward a unified view," by V. Venkatesh et al. 2003, *MIS Quarterly*, *27*(3), pp. 425-478. Copyright 2003, Regents of the University of Minnesota. Reprinted with permission.

Opt-In	Strongly Disagree	Moderately Disagree	Mildly Disagree	Mildly Agree	Moderately Agree	Strongly Agree
18. By choosing to opt-in, I would be willing to receive coupons for discounts on casual dining restaurants on my cell phone.*	1	2	3	4	5	6
19. By choosing to opt-in, I would be willing to receive information on where to find certain casual dining restaurants on my cell phone.*	1	2	3	4	5	6
20. By choosing to opt-in, I can choose the types of casual dining restaurant coupons that I receive.**	1	2	3	4	5	6
21. By choosing to opt-in, I can easily control the number of casual dining restaurant coupons I receive.**	1	2	3	4	5	6
22. By choosing to opt-in, I can easily cancel the permission to send casual dining restaurant mobile coupons to me.**	1	2	3	4	5	6

* Cronbach's Alpha = .92

Note: *From "An exploratory cross-market study of mobile marketing acceptance," by A. Rohm & F. Sultan, 2006, *International Journal of Mobile Marketing*, *1*(1), pp. 2-10. Copyright 2006 by Mobile Marketing Association. Reprinted with permission.

** Cronbach's Alpha = .81

Note: **From "Antecedents to permission based mobile marketing: An initial examination," by C. Jayawardhena et al., 2009, *European Journal of Marketing*, *43*(3/4), pp. 473-499. Copyright 2008 by Emerald Group Publishing Ltd.

Fear of Spam	Strongly Disagree	Moderately Disagree	Mildly Disagree	Mildly Agree	Moderately Agree	Strongly Agree
In general, I find mobile advertisements that I did not opt-in, to be:						
23. Disturbing	1	2	3	4	5	6
24. Forced	1	2	3	4	5	6
25. Interfering	1	2	3	4	5	6
26. Intrusive	1	2	3	4	5	6
27. Obtrusive or Annoying	1	2	3	4	5	6

Composite scale reliability = .98

Note. From "Coupons going wireless: Determinants of consumer intentions to redeem mobile coupons," by A. Dickinger & M. Kleijnen, 2008, *Journal of Interactive Marketing*, *22*(3), pp. 23-39. Copyright 2008 by Elsevier. Reprinted with permission.

Behavioral Intention	Strongly Disagree	Moderately Disagree	Mildly Disagree	Mildly Agree	Moderately Agree	Strongly Agree
28. If a casual dining restaurant mobile coupon were available, I would intend to use the coupon in the next 90 days.	1	2	3	4	5	6
29. If a casual dining restaurant mobile coupon were available, I predict I would use the mobile coupon in the next 90 days.	1	2	3	4	5	6
30. If a casual dining restaurant mobile coupon were available, I would plan to use the mobile coupon in the next 90 days.	1	2	3	4	5	6

Cronbach's Alpha = .89

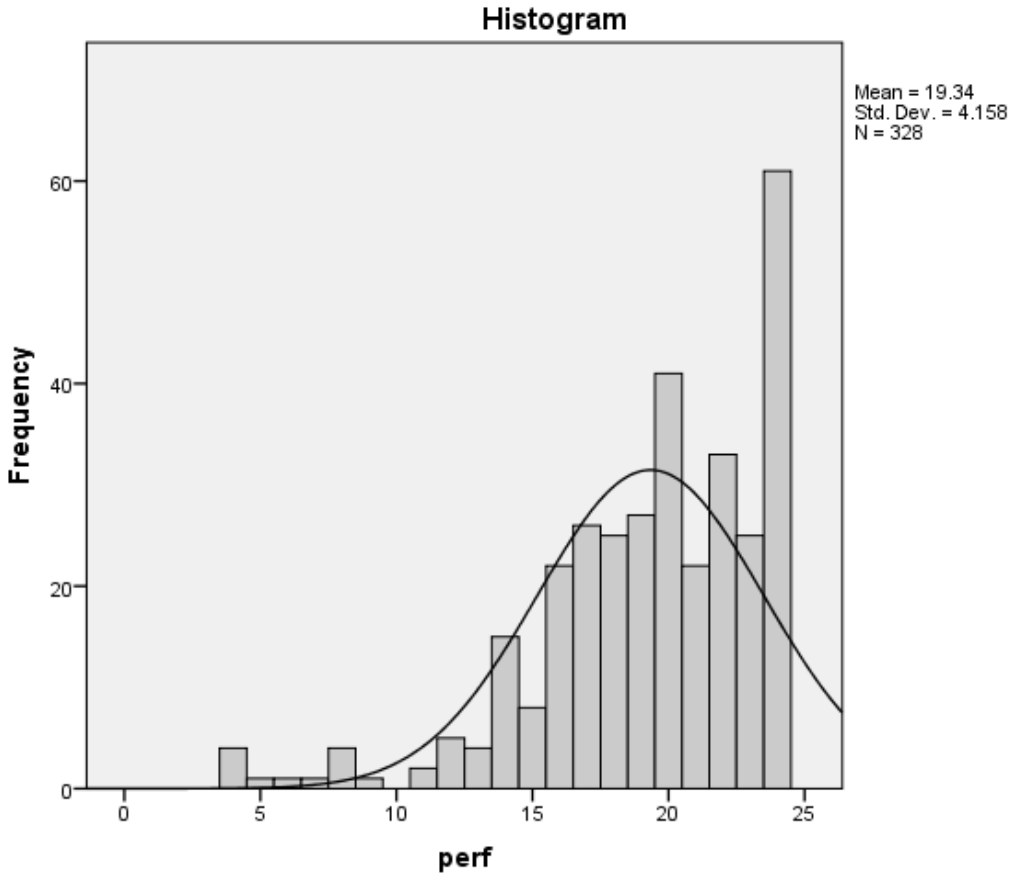
Note. From "User acceptance of information technology: Toward a unified view," by V. Venkatesh et al. 2003, *MIS Quarterly*, *27*(3), pp. 425-478. Copyright 2003, Regents of the University of Minnesota. Reprinted with permission.

Appendix C

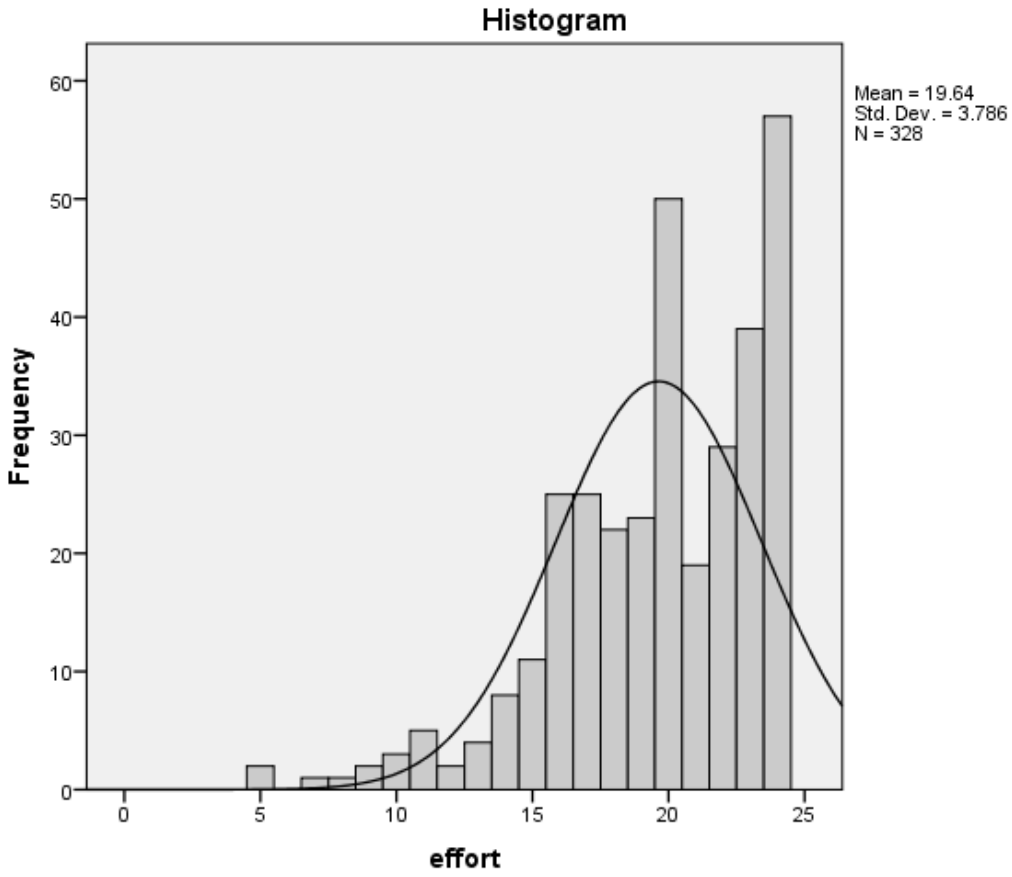
Variable Histograms and Normality Results

To test for normality, the data were tested using the Shapiro-Wilk test. The alpha level was set at .05 and each variable was tested. The null hypothesis indicates the data were normally distributed. In each case, the *p* value was greater than .05 and the null hypothesis was rejected. The actual *p* values for each variable were as follows: a) Performance Expectancy, $p = .89$; b) Effort Expectancy, $p = .91$; c) Social Influence, $p = .98$; d) Opting-In, $p = .92$; e) Fear of Spam, $p = .93$; and the Behavioral Intention to Use Mobile Coupons, $P = .87$. In each instance, the *p* value was greater than .05, the null hypothesis was rejected and the data were non-normally distributed.

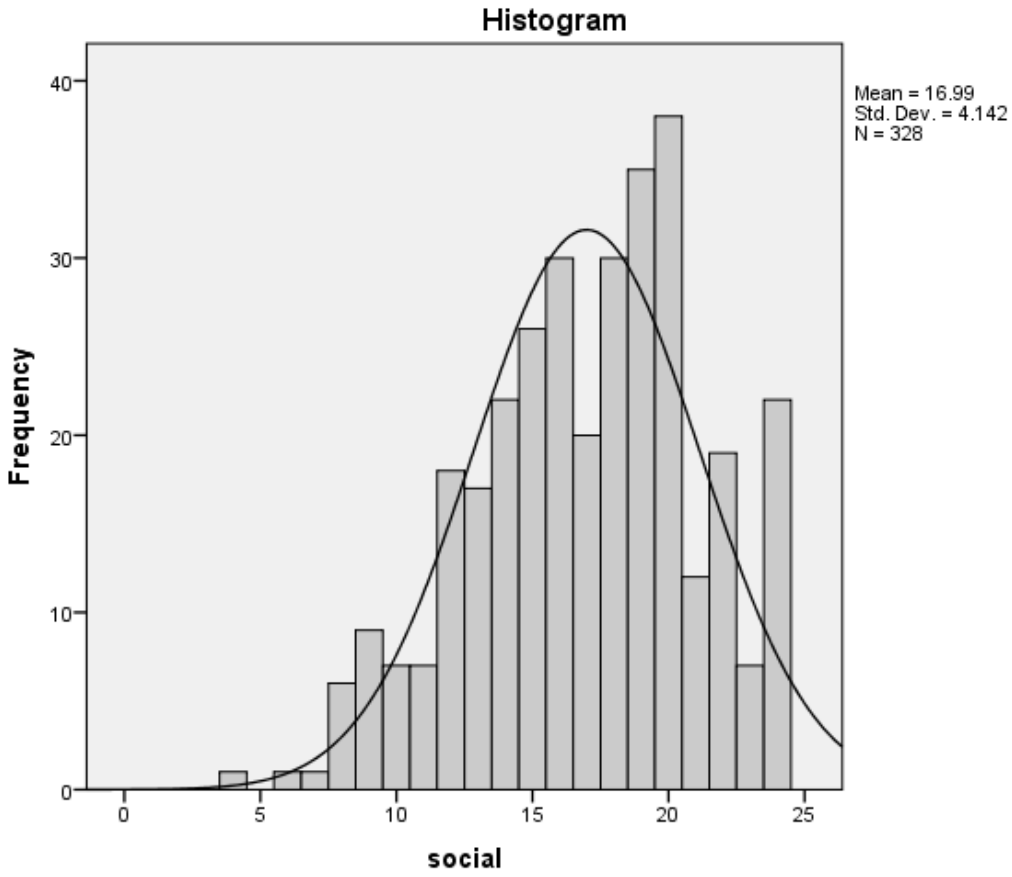
Further evidence of the non-normal distribution of each variable can be found by observing the histograms.



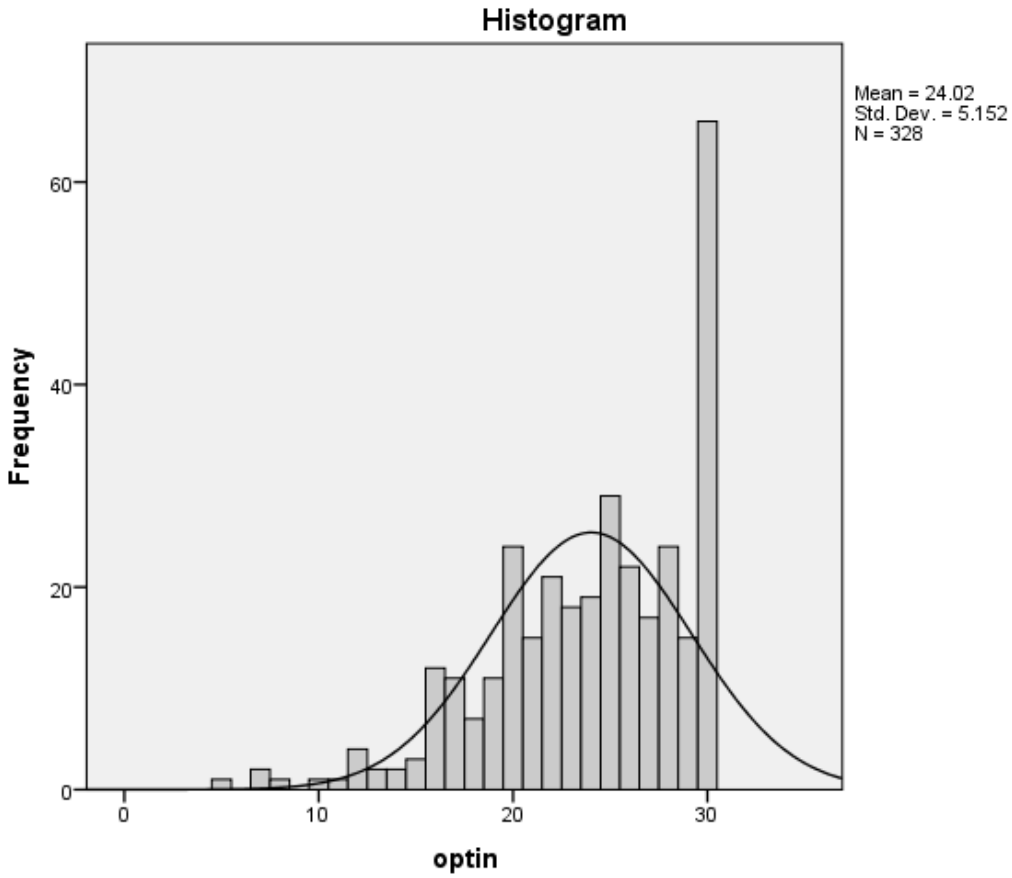
Performance Expectancy



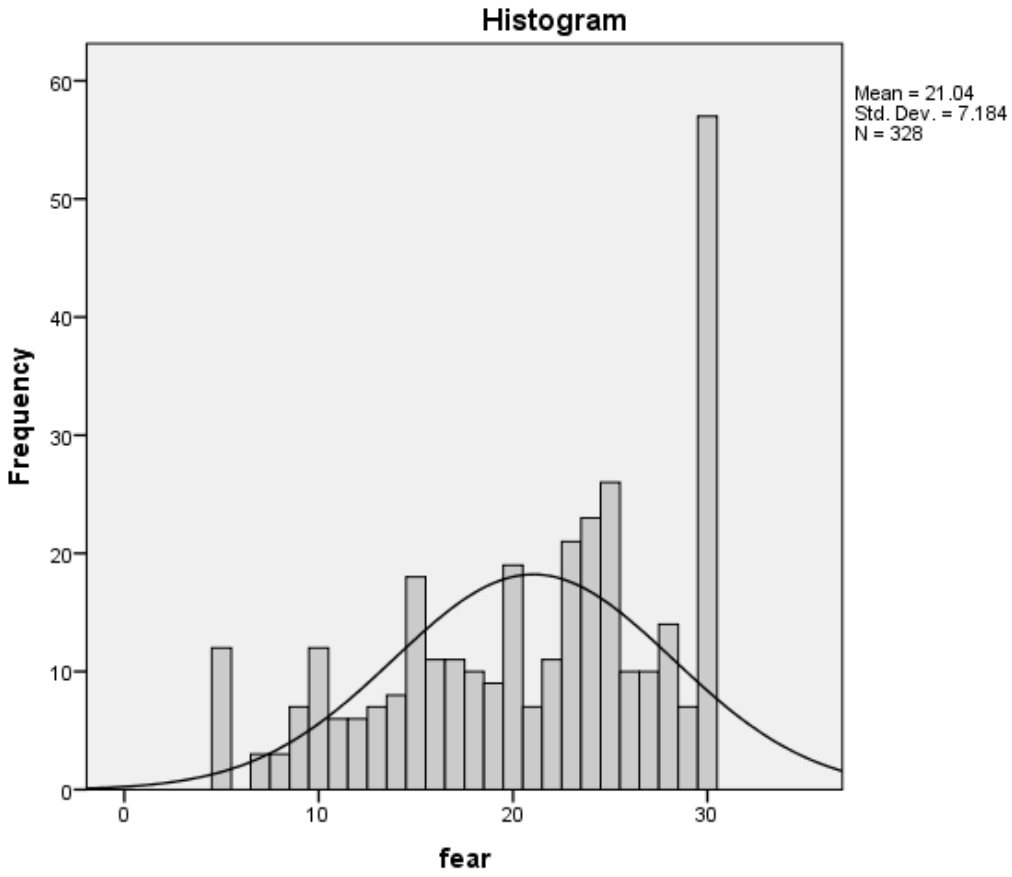
Effort Expectancy



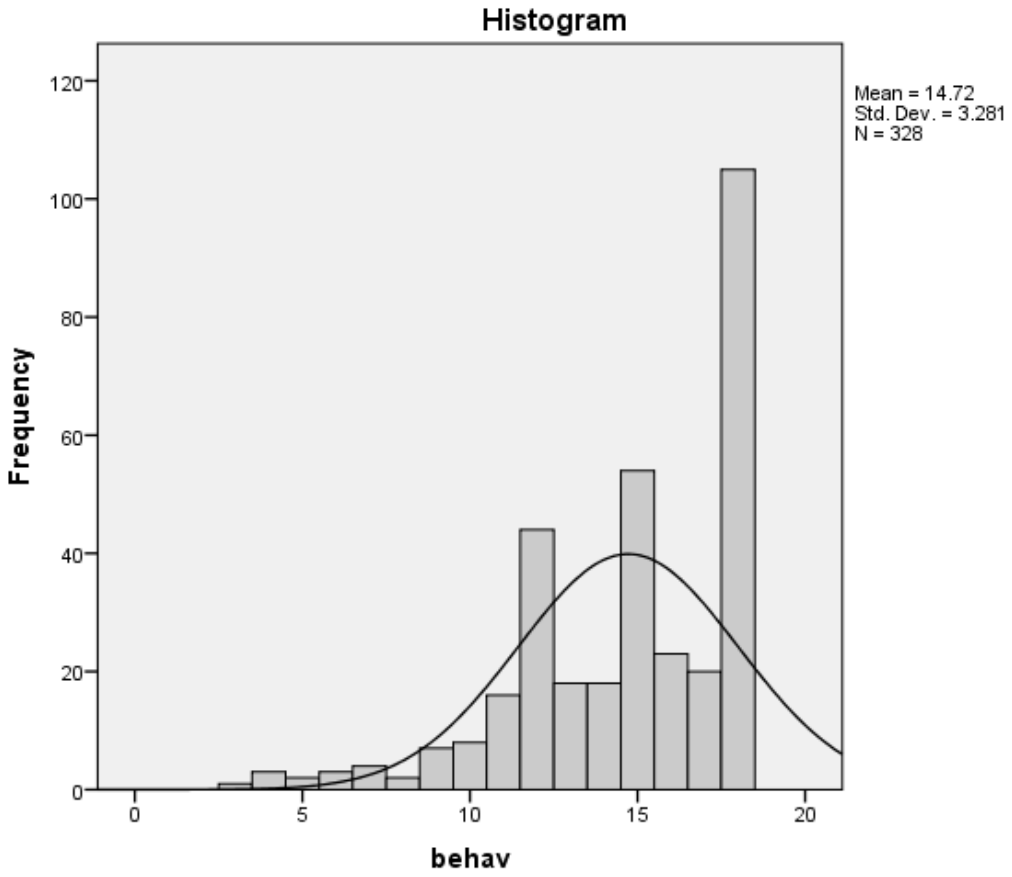
Social Influence



Opting-In



Fear of Spam



Behavioral Intention to Use Mobile Coupons

AUTHOR BIOGRAPHY

Edward Jennings is originally from Monaca, Pennsylvania. He attended Duquesne University in Pittsburgh, Pennsylvania where he earned a Bachelor of Science degree in Business Administration in three years. While working in sales at NCR Corporation full-time, he attended Point Park University and received a Bachelor of Science degree in Computer Science. Focusing on International business, Ed then received a Master of International Management from the Thunderbird School of Global Management in Glendale, Arizona. In 2014, Ed completed the requirements and was awarded a Doctorate in Business Administration from the University of Phoenix, School of Advanced Studies.

Ed has demonstrated success in startups, launching new products and generating volume growth in diverse industries including telecommunications, food service, and technology. With a focus in marketing and sales, Ed held positions as Product Manager, Marketing Manager, Director of Marketing, and General Manager for companies such as Intel, Motorola, US West (a Regional Bell Operating Company) and ICE-O-Matic. Ed was a member of a team which holds a patent for remotely monitoring ice machines using the Internet (Patent 7310957). Ed won an award from the Yellow Pages Industry Association for the creation of an online yellow pages product and was a guest speaker at the Directory Assistance Conference.

While completing his Doctorate in Business Administration, Ed continues working as an Adjunct Faculty member at Johnson and Wales University teaching Marketing, Sales and Quantitative Research. Ed currently resides in Denver, Colorado.