

DETERMINANTS THAT INFLUENCE COLLEGE STUDENTS IN
CONSIDERING HOSPITALITY BUSINESS
AS THEIR MAJOR: A NEW MODEL

By

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ABSTRACT

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In the vast and growing hospitality industry, the need for qualified supervisors, managers, and owners is also continuing to grow. College-level hospitality business programs will be an important source of qualified industry professionals. Therefore, the determinants that freshman and sophomore students use to decide on hospitality business as an academic major are of interest. This study extends Ajzen's (1985) Theory of Planned Behavior by adding constructs from Magolda's (1999) Self-Authorship Theory to predict how students choose Hospitality Business as an academic major. The contribution of this study is the 19% increase in predictability of students choosing hospitality business through the combination of Theory of Planned Behavior and Self-Authorship Theory (66%) over employing the Theory of Planned Behavior alone (47%). Students perceive the influence of others (parents, advisors, professors, friends, siblings, classmates, and business people) as most important in deciding to major in hospitality business. Other determinants are discussed and practical implications are presented.

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DEDICATION

I would like to dedicate this dissertation to my husband, *Thomas W. Tkach*,
for his support of my love of teaching and care of our family while I worked,
to my precious daughters, *Katharyn and Lauren*,
for being the joy and blessings of my life,
to my mother, *Barbara W. Longstreth*, and grandmothers,
life-long educators who are watching over me from heaven,
to *Mom and Dad Tkach*, my sisters-in-law, brother, aunts, nephew and niece,
to my father, *John K. Longstreth*,
and to God, who made a way.

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CHAPTER 1

INTRODUCTION

This chapter includes the following sections: (1) Introduction to the Study; (2) Statement of the Problem; (3) Purpose of the Study; (4) Significance of the Study; (5) Research Questions; (6) Definitions of Terms; and (7) Overview of the Dissertation Layout.

Introduction

College students have many decisions to make during their years at an institution of higher education, but one of the most significant and impactful on their lives could be which major they choose. In comparison with some academic majors, the field of hospitality is one that is quite visible and accessible. Students have often worked in some hospitality position during their high-school and early college years or at least have some basis to have formed an internal image or impression of the field.

By one definition, the hospitality industry includes lodging, foodservice, institutional settings, travel, and recreation facilities (Campbell, 1999). For purposes of this study, the hospitality industry or field is the economic sector where host and guest share in a service transaction away from their home, ranging from basic needs of food and shelter, to entertainment, enrichment through travel, and spa relaxation and wellness. According to the U.S. Bureau of Labor Statistics, in 2004, 21% of workers in food and drinking establishments were aged 16-19, five times the proportion for all industries. As of July 2011, 26 percent of employed youth worked in the leisure and hospitality sector (U.S. Bureau of Labor Statistics, 2011). As this industry is projected to continue to grow,

so will the opportunities for qualified and passionate employees, managers, owners, and operators. The primary focus of this study is to test a comprehensive model exploring determinants in the choice of academic major, specifically hospitality business, within the theoretical frameworks of the theory of planned behavior and self-authorship theory.

Statement of the Problem

A variety of theories have been used in research conducted on students and their choice of major from fields such as home economics, sport management, and accounting (Allen, 2004; Pittaoulis, 2012; Young and Johnson, 1986; Yu, 2011). The theory of planned behavior model has been used in a variety of past studies (Mayhew, et al., 2009; Phillips, 2009; Yu, 2011; Wu, 2008), but none in combination with the theory of self-authorship. Most studies have focused on junior and senior level-students since they have already gone through the process of choosing their major but this requires relying on a hind-sight or historical perspective. Hindsight bias is a person's belief that events that happened were bound to have happened (Kunda, 1990) or, "having forgotten their initial judgments, are forced to guess and, in the presence of outcome information, are likely to use this information as an anchor" (Schwarz and Stahlberg, 2003). Because of this bias, more studies are needed that investigate students in the midst of their decision-making process.

The desire is to see if the combination of the theory of planned behavior and self-authorship theory offers better prediction of student determinants in the decision-making process for college freshmen and sophomores considering hospitality business as an academic major than the theory of planned behavior alone.

Purpose of the Study

The purpose of this study is to empirically test a new theoretical model for identifying determinants of freshman and sophomore students' decision-making processes of choosing hospitality business as their major. The secondary focus is understanding which groups of these determinants are the strongest predictors of students choosing hospitality business. Better understanding of these factors would help to guide students to the major.

Significance of the Study

This study can contribute both theoretically and practically. This study was conducted during fall semester 2012 and spring semester 2013, focusing on those students who were taking selected hospitality business courses but not yet admitted to the major, as this group was in the midst of making this important career decision.

This study contributes to the development of the body of knowledge about student decision-making and choice of major studies. From an academic and industry perspective, the insight provided into how freshmen and sophomore students weigh perceived decision determinants can be used to design strategies to attract students who are a good fit for a career in the hospitality business industry. Being able to understand what determinants are perceived to be the most important to students when they are in the process of making their choice of a major will offer information which can also be used in *The School of Hospitality Business* recruitment materials, retention of admitted students, curricula development, advising, and fundraising activities.

Research Questions

1. Does the addition of the self-authorship constructs produce increased understanding beyond the theory of planned behavior alone?
2. Which of the constructs of the proposed conceptual model have the strongest associations with choosing a major?
3. What are the most common determinants that influence students' decisions to select a major?
4. How do the selected demographic variables (i.e. age, gender, ethnicity, socio-economic status, and GPA) compare between hospitality business and non-hospitality business majors in this sample?

Definition of Terms

The following terms are defined to clarify their use in this study:

Admitted major: the major program of study for which students have completed the requirements for admission, applied, and been accepted into at or after junior-level status has been obtained (Michigan State University Office of the Registrar, 2012).

Attitude toward the Behavior: The individual's personal judgment about whether a specific behavior is desirable or not, based on his/her pre-existing beliefs about the desirability of different kinds of behaviors (Ajzen and Fishbein, 1980).

Behavioral Intention: The indications of how hard people are willing to try and of how much of an effort they are planning to exert in order to perform the behavior (Ajzen, 1991).

Constructive-developmentalism: This theoretical perspective views people as active constructors of meaning via their organizing and interpreting of their experience. It also views these constructions as evolving in the context of increasingly complex assumptions about how to construct meaning (Kegan, 1982).

Crossroads phase: the second of four phases that characterize the meaning making assumptions employed by individuals in Magolda's Journey toward Self-Authorship study (Magolda, 2001).

Declared major: a major program chosen by students before junior-level status has been reached. The students in this category must still apply to be an admitted major when junior-level status has been reached (Michigan State University Office of the Registrar, 2012).

Early Self-Authorship: the third of four phases that characterize the meaning making assumptions employed by individuals in Magolda's Journey toward Self-authorship study. This phase is noted for individuals making decisions with self-reliance (Magolda, 2001).

External Formulas: the first of four phases in Magolda's Journey toward Self-authorship study. Individuals' decisions are strongly influenced by others (Magolda, 2001).

HB: an abbreviation for Hospitality Business used by the study university to code classes (e.g., HB 100). (Michigan State University Office of the Registrar, 2012).

Hospitality Business Major: students who have applied for and been accepted into to the hospitality business program after meeting the requirements for admission. (Michigan State University Office of the Registrar, 2012).

Meaning-making: The complex ways of organizing experiences, or of making meaning, to meet the demands of contemporary adult life (Magolda, 1998).

No-Preference: Students who are undecided about their fields of study may select the No-Preference option at the time of admission or at a later time until junior-level status has been reached (Michigan State University Office of the Registrar, 2012).

Perceived Behavioral Control: the individual's perception of the ease (or difficulty) of performing a specific behavior (Ajzen, 1991).

Self-Authorship: the ability to collect, interpret, and analyze information and reflect on one's own beliefs in order to form judgments. Self-authorship offers a theoretical lens to understand the meaning-making processes that individuals use to make a wide range of decisions (Magolda, 1998, 2004). It is comprised of three dimensions which are interrelated (Creamer, Magolda, and Yue, 2010).

Epistemological or Cognitive dimension: Addresses the question of "How do I know?" and encompasses epistemic assumptions about the nature, limits, and certainty of knowledge (Creamer, Magolda, and Yue, 2010).

Interpersonal dimension: Addresses the question of "What relationships do I want?" and refers to how one constructs relationships that are increasingly characterized by interdependence and mutuality (Creamer, Magolda, and Yue, 2010).

Intrapersonal dimension: Addresses the broad question of “Who am I?” and refers to a sense of self (Creamer, Magolda, and Yue, 2010).

Subjective Norms: The specific behavioral norms that an individual sets for him/herself; what an individual believes that he/she should do (Ajzen and Fishbein, 1980).

Theory of Planned Behavior: An extension of the Theory of Reasoned Action. The theory of Planned Behavior accounts for non-volitional control, or ‘actual control’, over the behavior (Ajzen, 1985).

Theory of Reasoned Action: An expectancy-value model to predict and understand an individual’s behavior. The theory assumes that human beings are rational and motivation-based, thus a person’s behavior is determined by his/her intention to perform the behavior and this intention, in turn, is a function of his/her attitude toward the behavior and his/her subjective norm (Ajzen and Fishbein, 1980).

Dissertation Organization

The organization of this dissertation is as follows. Chapter 1 provides the general background and justification for the study. Chapter 2 discusses theoretical and empirical issues and deficiencies in the research on choosing an academic major, specifically hospitality business. Two underlying theories upon which the research model is based are also introduced. From the literature review, a new theoretical model is developed and research hypotheses are then presented. Chapter 3 focuses on the research method employed, how the sample was defined, how data were collected, and how constructs in the research model were operationalized. Characteristics of sample statistics are also described. Chapter 4 describes how measures are validated in the measurement model, how research hypotheses were tested in the structural model, and provides data analyses and results. Chapter 5 includes implications drawn from data analyses, presents research limitations, and outlines future work to build on the results of this study.

CHAPTER 2

LITERATURE REVIEW AND MODEL DEVELOPMENT

This chapter includes the following sections: (1) Review of the Literature; (2) Theoretical Background of Theory of Planned Behavior; (3) Theoretical Background of Self-Authorship Theory; and (4) Proposed Conceptual Model.

Review of the Literature

The U.S. hospitality and tourism industry is vast in size and scope. In 2010, this industry generated \$1.8 trillion in economic impact in the United States with \$759 billion spent directly by domestic and international travelers, spurring an additional \$1 trillion in other industries (U.S. Travel Association, 2010). According to the American Hotel and Lodging Association's Lodging Industry Profile for 2011, tourism directly supports more than 7.4 million travel and tourism jobs, and spending on travel and tourism in the United States averaged \$2 billion per day or \$24,000 per second (American Hotel and Lodging Association, 2011). It is estimated that the U.S. hospitality industry currently employs over 8.8 million people, and it is expected that the industry will require more than 1.6 million new workers over the next decade if it is to keep pace with the anticipated demand.

In addition to the increasing need for qualified supervisors and managers to fill the opportunities for employment, the industry will need to rely on university graduates. Therefore, hospitality programs will need to attract and enroll growing numbers of students. Over the last 20 years, much research has been undertaken to understand

students' perceptions of the hospitality industry related to careers and career choice in hospitality and tourism (Barron and Maxwell, 1993; Bradford, 2005; Jenkins, 2001; Jiang & Tribe, 2008; Lindsay, 2005; Scanlon, 2008; Walmsley, 2004). One way to attract and retain students as future employees is to understand students' attitudes and perceptions towards the hospitality industry (Wan and Kong, 2012). Students who have positive attitudes and perceptions towards the industry are more likely to enter and remain in the industry after graduation (Richardson, 2009), and having a skilled and committed workforce is vital to the success of firms in the hospitality industry (Kusluvan & Kusluvan, 2000).

Earlier research on choosing a career (Kelly, 1989; Keys and Fernandes, 1993; Keys *et al.*, 1995; Foskett and Hesketh, 1995; Foskett and Hemsley-Brown, 1997) has shown that initial occupations and career intentions are chosen during late elementary/early middle school years (Foskett and Hemsley-Brown, 2001). However, these choices may change as students gain more life experiences and be different for students interested in hospitality. Recent studies by O'Mahoney, Whitelaw, and McWilliams (2008) and Sciarini and Borchgrevink (2008) on students enrolled in hospitality programs found that the majority of students had decided to major in hospitality only after they were at college.

A variety of studies have been published on how or why students in various schools choose their academic major (Beggs, Bantham, & Taylor, 2008; Bollman, 2009; Bradford, 2005; Dahlstrand, 2010; Johnson & Mack, 1963; Pittaoulis, 2012; Schultz, 1997; Simmons, 2008; Snelling & Boruch, 1970; Young & Johnson, 1986; Yu, 2011). Some studies intertwined the determinants in considering a major with those in choosing

an institution of higher education (Snelling and Boruch, 1970; O'Mahoney, *et al.*, 2008; Pittaoulis, 2012).

Numerous determinants have been attributed to the process of choosing of an academic major. From a small portion of the studies, determinants include parental and extended family involvement (Bradford, 2005; Simmons, 2008), salary, advancement opportunities, and prestige (Shipp, 1999), and job security, professional recognition, and leadership skills (Bradford, 2005).

In attempting to group or classify the characteristics which are important to the decision making process for choosing a major for their study, Beggs, Bantham, and Taylor (2008) ranked the following six domains in order of importance from their research findings: Match with Interests, Job Characteristics, Major Attributes, Psycho/Social Benefits, Financial Success, and Information Search. They speculated that if information on majors was last on the list, "Is this a problem with the method for delivering the information, the quality or the quantity of the information itself, or the development level of the student?" (p. 390). However, the literature is sparse relative to understanding the cognitive, social, and emotional developmental characteristics of undergraduate students (typically 18-22 years of age) that influence them to choose hospitality business for their academic major.

Theoretical Background

Theory of Planned Behavior

The theory of planned behavior (TPB), developed by Ajzen in 1985, has been used frequently as a framework for predicting and explaining an individual's behavior

and is an extension of the theory of reasoned action (TRA) (Fishbein & Ajzen, 1980). The TRA was specifically designed to predict human behaviors under complete volitional control. According to this theory, individuals are rational and motivation-based in their decision-making processes and make a reasoned choice among various alternatives (Fishbein and Ajzen, 1975). The TRA includes only the constructs of attitude and subjective norms as the antecedents of behavioral intention which then leads to the behavior. As an extension of TRA, an important assumption underlining the TBP is that the strongest predictor of how we will behave is our intentions to act (Ajzen, 1987); both social influences and personal factors as predictors of intention are included (Rivis & Sheeran, 2003). Three major constructs of the theory describe influences on a person's intentions instead of just two constructs in TRA.

The first is “*attitude toward the behavior*” and refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question.

The second antecedent of intention is “*subjective norms*” which is a social factor referring to the perceived social pressure to perform or not to perform the behavior.

The third predictor is the degree of “*perceived behavioral control*” which refers to the perceived ease or difficulty of performing the behavior. This construct reflects on past experiences, as well as anticipated obstacles (Ajzen, 1991, p.188).

Intention is positioned as an immediate antecedent of behavior, and indicates an individual's readiness/willingness to engage in a particular behavior (Ajzen, 1985, 2009). Whether individuals actually engage in the behavior is a function of their intention to do so and the extent to which they have real control over situations which might otherwise interfere with engaging in the behavior. In cases where a person's perception of control

aligns with reality, perceived behavioral control may serve as a proxy for actual behavior (Mayhew, Hubbard, Finelli, Harding, and Carpenter, 2009).

Behavior is the final step of the model and the anticipated action or outcome. The relationship among the three constructs, intention, and behavior is illustrated in Figure 1.

Since the Theory of Planned Behavior was developed, it has been the theoretical basis of numerous studies across various fields; in recent years it has been used in studies focusing on casino motivation and gaming intention (Phillips, 2009), predicting student cheating (Mayhew, et al., 2009), understanding the convenient use of credit cards (Rutherford and DeVaney, 2009), Taiwanese high school students' choice of sport management as a major (Yu, 2011), determinants of participation in social support groups for prostate cancer patients (Voerman, Visser, Fischer, Garssen, van Andel, and Bensing, 2007), predicting physical activity of first-year university students (Kwan, Bray, and Ginis, 2009), and factors affecting students' decisions to use online evaluation of instruction (Wu, 2008).

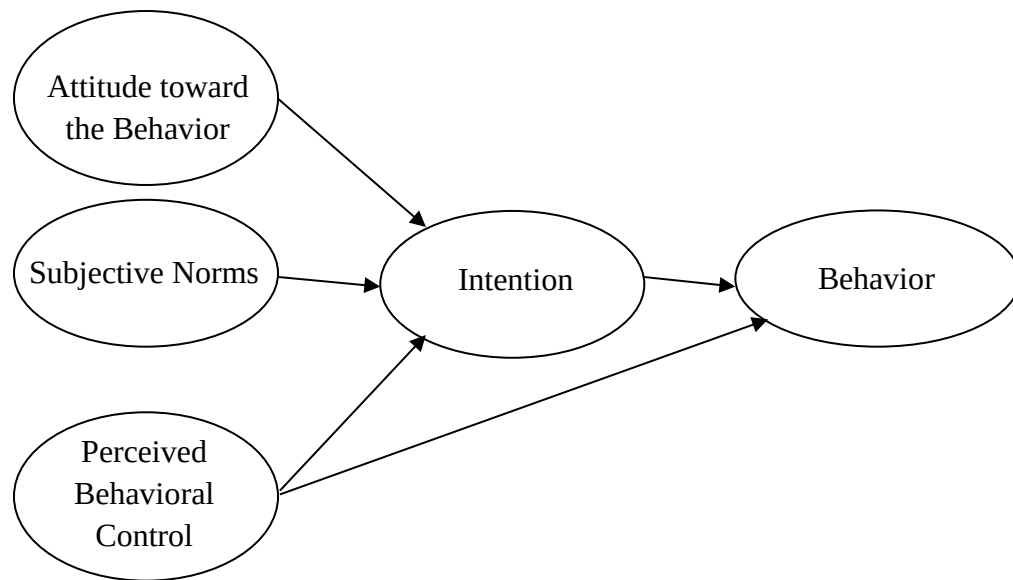


Figure 1: Ajzen's (1991) Theory of Planned Behavior (TPB)

According to Ajzen (1991) and Perugini and Bagozzi (2001), modifying the TPB model by altering paths and including additional critical constructs in a certain context often contribute to enhancing our understanding of the mechanisms within the theoretical model and contribute to increasing the prediction power for individuals' intention/behavior in that specific context. Broadening and deepening of the theory can happen through such a process (Ajzen, 1991; Perugini and Bagozzi, 2001).

Cohen and Hanno (1993), in their study focusing on accounting majors, discussed how, according to the theory of planned behavior, the antecedent of a behavior is the intention to carry out the behavior. Since subjects in their study had already performed the behavior of identifying a major, the intention of choosing a major was no longer an immediate determinant of the action captured by the model. The absence of an antecedent intention is a departure from the TPB and could limit the ability to draw

conclusions about the model's applicability in this context. However, previous studies have similarly modified the TPB model by removing the intention construct. Nijhof, ter Hoeven, and de Jong's (2008) study on the determinants of use of a diabetes risk test used a modified model theorizing 11 independent variables preceding the dichotomous dependent variable of using or not using the diabetes risk test. While the TPB model in this study is extended with the addition of three theory of self-authorship constructs, the TPB model is being modified by removing the intention construct.

Theory of Self-Authorship

Marcia Baxter Magolda (1998, 2001) has taken the concepts of "meaning-making" and "constructive-developmentalism" and applied them to cognitive stages of decision making through Self-Authorship Theory. Her notable longitudinal study (1999, 2001) of the identity development of college graduates followed individuals as they work toward self-authorship. In the quest for self-authorship, people become better independent decision makers and are more comfortable maintaining their sense of self even as they work through situations of different or contradictory values and ideas while being tolerant and accepting of such differences (Simmons, 2008).

Magolda based her research on the earlier work of Piaget (1950, 1957, 1971), and Kegan (1994). Kegan (1994) first defined self-authorship and posited different orders of mind through which individuals become more understanding and aware of external vs. self-defined expectations.

Kegan explained, "liberating ourselves from that in which we are embedded, making what was subject into object so that we can 'have it' rather than being 'had by it' – this is the most powerful way I know to conceptualize the growth of the *mind*." Kegan stated that his

use of the word mind does not refer to cognition alone but rather to the capacity of individuals to construct and organize meaning in their thinking, feeling, and relating to self and others. (Baxter Magolda, 1999, p. 631)

The journey toward self-authorship has three dimensions and four phases that characterize the perspective employed by individuals. As people mature and have more and varied life-experiences, they move through the phases, shown in Table 1, at their own speed. The first phase, following formulas or external formulas, is when young people are operating according to the rules and expectations of authoritative figures in their lives, e.g., parents and teachers. It is at the second phase, the crossroads phase, where people struggle to move from following external norms to cultivating and relying on their own internal authority. This is the typical phase college-aged students are in when they are making decisions related to major and career. In this transition time, some people recognize the need to make decisions for themselves, yet continue to rely on external formulas (Magolda, 2004). Magolda notes that a student doesn't tend to move on to early self-authoring until after college, perhaps in his/her late 20s, depending on the person (Magolda, 1999). Students in the early phases of self-authorship may be sensitive to societal expectations that they make their own decisions even while they still rely heavily on the advice of trusted others (Laughlin and Creamer, 2007). This is important because college students are expected to make a decision, i.e. choosing a major, that will impact the rest of their lives at a time when they may be dependent on what others expect them to do and, perhaps, not able to think for themselves about what they really want and what will make them the happiest.

For this study, the construct of self-authorship is defined as the capacity to operate within the context of norms and expectations, whether defined as family, peers, or culture in general, without being wholly defined by them.

Table 1: Four phases of the journey toward self-authorship

Dimensions	Phase 1: Following Formulas/External Formulas	Phase 2: Crossroads	Phase 3: Early Self- Authoring	Phase 4: Internal Foundation
Epistemological dimension: How do I know?	Believe authority's plans; how "you" know	Question plans; see need for own vision	Choose own beliefs; how "I" know in context of external knowledge claims	Grounded in internal belief system
Intrapersonal dimension: Who am I?	Define self through external others	Realize dilemma of external definition; see need for internal identity	Choose own values; identity in context of external forces	Grounded in internal coherent sense of self
Interpersonal dimension: What relationships do I have with others?	Act in relationships to acquire approval	Realize dilemma of focusing on external approval; see need to bring self to relationship	Act in relationships to be true to self, mutually negotiating how needs are met	Grounded in mutuality

Taken from Baxter Magolda, M.B. (2001), *Making Their Own Way*, Sterling, VA: Stylus, p. 40.

Proposed Conceptual Model

The proposed conceptual model incorporates the constructs of self-authorship into the existing framework of the theory of planned behavior and removes the behavioral intention construct as described earlier and shown in Figure 2. The proposed model incorporates both individual behavioral factors (attitude, perceived behavioral control, and subjective norms) and developmental factors (external formulas, crossroads, and early self-authoring) as antecedents that influence a college student's decision regarding academic major. The main outcome variable is a dichotomous identifier of choosing hospitality business (coded as 1) or choosing any other major (coded as 0).

Behavioral factors comprising the constructs of attitude, perceived behavioral control, and subjective norms, and developmental factors comprising the constructs of external formulas, crossroads, and early self-authorship influence a college student's choosing of a major positively and directly. I hypothesize that, as strong as TPB is considered to be in its original form, adding the self-authorship constructs in terms of capacity to operate as an individual will increase the strength of prediction of the TPB model.

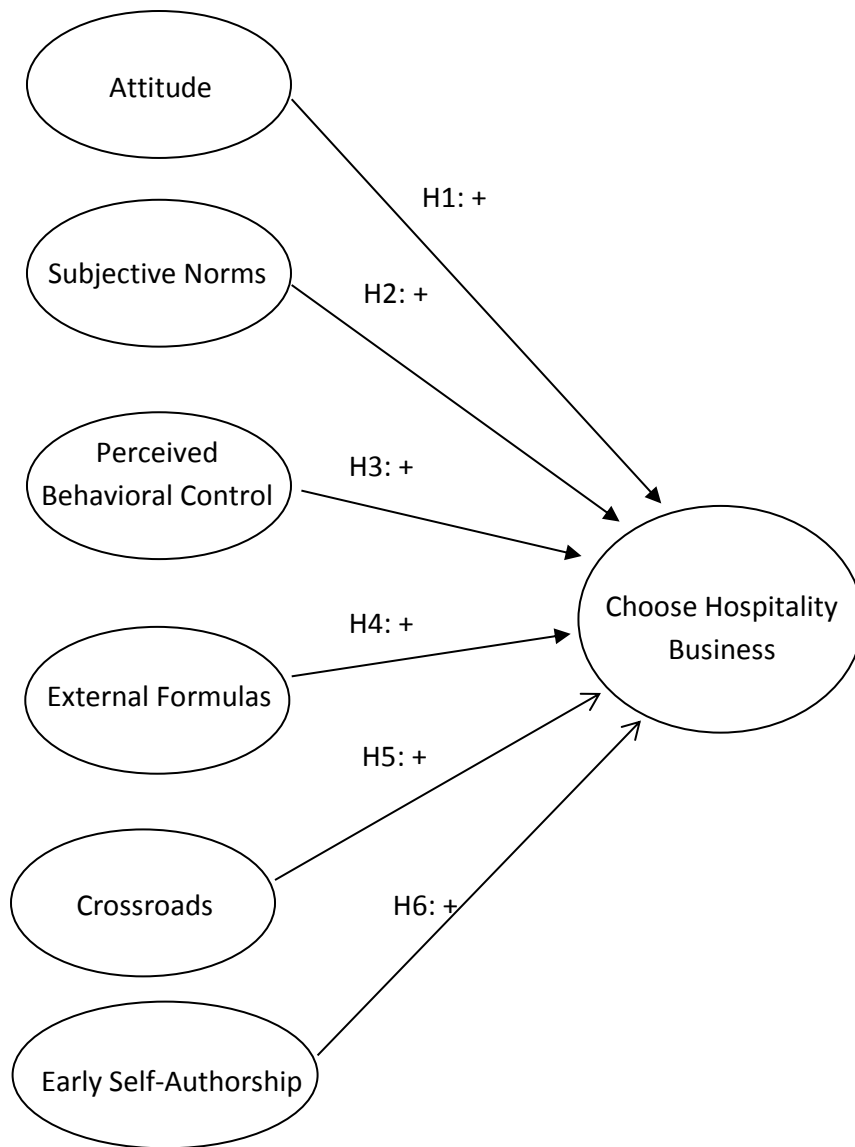


Figure 2: Proposed model for this study

Hypotheses

Based on the proposed conceptual model the following are the hypotheses for this study:

H₁: Attitude construct is expected to have a direct positive influence on Choose Hospitality Business construct

H₂: Subjective Norms construct is expected to have a direct positive influence on Choose Hospitality Business construct

H₃: Perceived Behavioral Control construct is expected to have a direct positive influence on Choose Hospitality Business construct

H₄: External Formulas construct is expected to have a direct positive influence on Choose Hospitality Business construct

H₅: Crossroads construct is expected to have a direct positive influence on Choose Hospitality Business construct

H₆: Early Self-Authorship construct is expected to have a direct positive influence on Choose Hospitality Business construct

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

The focus of this chapter is on: (1) the design of the study; (2) data collection; (3) instrumentation; and (4) data analyses.

Design of the study

Population and Sample

Based on the guidelines of program admittance at junior-level standing, students taking 100- and 200-level hospitality business classes at Michigan State University (MSU), a Carnegie Land Grant Institution, in this study are usually “declared” hospitality business majors or those exploring the major. *The School of Hospitality Business* is an industry-specific School in The Broad College of Business at MSU. Declared or exploring students in The Broad College of Business comprise a group of freshmen and sophomores who are working on becoming eligible for admission to a major. This group is taking hospitality business classes including and beyond the introduction course for the purpose of delving deeper into the discipline areas of the Hospitality Business program and also completing the classes needed to be admitted when junior standing is reached.

The purpose of this study is to empirically test a new theoretical model of determinants in freshman and sophomore students’ decision-making process of choosing hospitality business as their academic major. Thus, the population is all MSU college

students in academic year 2012-2013 who had not been formally admitted to their preferred major. The sample is a convenience sample using students enrolled in 100- and 200-level hospitality business courses at Michigan State University.

Data Collection Procedures

Pretest. Before data collection, a pilot study was conducted to confirm the face validity of measures and scales. Thirty-six upper-level college students enrolled in two upper-level hospitality business courses during the summer session 2012 agreed to provide feedback regarding: 1) the on-line survey's graphic design, 2) the clarity of the questions asked, and 3) the amount of time required to complete the questionnaire. They completed the questionnaire online at their convenience. The feedback collected from this pretest on questions and/or problems concerning format and wording was used to refine the survey instrument for the main survey. The above steps insured that the questionnaire was satisfactory in terms of content and face validity.

Survey Administration. The cross-sectional survey was administered December 3 - 7, 2012 and January 27 – February 1, 2013 using the survey tool, Qualtrics. The students in 100- and 200-level hospitality business courses (HB 100, 105, and 201 in fall 2012 and HB 100, 105, 201, 237, 265, and 267 in spring 2013) were sent an invitation email containing the consent form and a link to follow to give consent, with the request the survey be taken only one time. In some of the classes, the email with survey link was distributed by the course instructor instead of by the researcher. As an incentive, all participants were given the opportunity to enter a drawing to win one of two \$50 gift cards from a regional home and grocery store. Students who completed the survey and

chose to leave their contact information were entered into the drawing. A reminder email was sent to the students and the professors half-way through the survey window.

Questionnaire Format. This study employs the quantitative survey research method which is considered an appropriate method to address these research questions. Specifically, a survey is a good method for examining relationships between factors (Trochim, 2001). Quantitative methodology gave a large set of findings for this study by obtaining responses from many people. Responses were gathered via an online survey tool, Qualtrics. The instrument was administered online for ease of the students in completing it and increased accuracy in compiling the data. All students at Michigan State University have Internet connection available to them, and all students are required to have their own computer, so there was no expected data collection bias.

The survey instrument consists of three main sections: [1] variables for measuring factors of self-authorship (external formulas, crossroads, and early self-authorship), [2] variables for measuring factors of attitude, subjective norms, and perceived behavioral control, and [3] socio-demographics. A copy of the survey instrument is provided in Appendix A.

The survey is comprised of three sections. The first section of questions is drawn from a career decision making survey developed by members of a team called Women and Information Technology. The subset of questions from that study was constructed to measure the first three phases in the development of self-authorship consisting of 18 items, each using a 4-point Likert scale from 1(disagree) to 4 (agree). While low-count, even-number item scales are not as popular as higher-count scales, scales of as few as two or three points are sufficient to meet criteria of test-retest reliability, concurrent

validity, and predictive validity (Jacoby & Matell, 1971). This instrument was grouped into dimensions; the items were then tested for reliability and validity in 2010 by Creamer, Baxter Magolda, and Yue. Their initial data analysis involved Confirmatory Factor Analysis (CFA) and the Multidimensional Random Coefficients Multinomial Logit Model based on a generalized Item Response Theory (IRT). This modeling method provided a statistical procedure for determining that the three-phase, three-dimension factor structure was the most robust measure from among other configurations (Creamer, Baxter Magolda, and Yue, 2010). Section One includes questions regarding how students view their role in making education decisions, how advice is viewed, and how much outside input is accepted. These questions pertain to the self-authorship constructs of external formulas, crossroads, and early self-authorship.

Section Two of the survey is adapted from Allen's (2004) and Cohen and Hanno's (1993) survey tools. The questions are asked in a 7-point Likert scale format. Some studies suggest that seven response options are optimal (Cicchetti, Showalter, & Tyrer, 1985). Using the theory of planned behavior as the theoretical framework, seven additional items influencing choice of major were gathered from other studies (Bradford, 2005; Sibson, 2011; Yu, 2011) and adapted to focus on hospitality business

In Section Three, questions to assess any socio-demographic differences were asked. These included age, gender, socio-economic status, GPA, and ethnicity.

Instrumentation

Constructs in the proposed conceptual model depicted in Figure 2 were derived from the respondents' self-reported perceptions in response to the question stimuli.

Factors for use in the proposed model were assessed using multiple item measures. All scales were based on previous empirical studies using the theory of planned behavior and the theory of self-authorship (Ajzen; 1991; Allen, 2004; Bradford, 2005; Cohen and Hanno, 1993; Creamer, Baxter Magolda, and Yue, 2010; Yu, 2011). All items were modified to reflect the context of choosing hospitality business as an academic major.

The proposed model includes seven constructs which were unobserved (i.e. attitude, subjective norms, perceived behavioral control, external formulas, crossroads, early self-authorship, and choose hospitality business). It also included forty-two observed variables associated with those factors. These are listed in detail in Tables 8 and 9.

Attitude

Attitude toward choosing Hospitality Business as a major was measured with thirteen 7-point Likert scale questions based upon items from Allen (2004) and Cohen and Hanno (1993). First, using a scale of “very unimportant” to “very important”, students responded to questions of how important the factor (outcome) identified in the survey question is to the choice of academic major. For example, participants are asked to rate the importance of the following question: “Choosing a major that prepares me for a field with a number of job opportunities is....” Second, the participants assess the likelihood that majoring in hospitality business and majoring in another major will result in that same outcome using the seven-point Likert scale of “very unlikely” to “very likely”. For example, “Choosing a major that prepares me for a field with a number of opportunities will likely result if hospitality business is chosen as my major”, and “Choosing a major that prepares me for a field with a number of opportunities will likely

result if a major other than hospitality business is chosen as my major.” The items in this construct are listed in Table 2.

Table 2. Description observed variables in the attitude construct of the proposed model

Factor	Observed Variables	Survey Questions
Attitude	A1	Thinking of a major or career for you, earning a good salary initially is...
	A2	Choosing a career with increasing salary and advancement potential is...
	A3	Entering a field that offers a chance to become an owner is...
	A4	Choosing a career that provides social status is...
	A5	Choosing an academic major that is not boring is...
	A6	Choosing an academic major that is exciting is...
	A7	Choosing a major with easy courses is...
	A8	Choosing a major that prepares me for a field with a number of job opportunities is...
	A9	Choosing a major with the least cost of education is...
	A10	Choosing a major that builds on previous or current volunteer/employment experience is...
	A11	Being a part of a department or school that is prestigious is...
	A12	Having a degree with transferable skills and knowledge is...
	A13	Being a part of a major that has social perks is...

Subjective Norms

Subjective norms were measured by seven items using 7-point rating scales from Allen (2004), based on Ajzen (1991). These questions consisted of: “How much do you care whether your parents approve or disapprove of your choice of an academic major?” (1: very much to 7: not at all); “My advisors think I should major in hospitality business” (1: very unlikely to 7: very likely); and “My professors think I should major in a field other than hospitality business” (1:very unlikely to 7:very likely). The items in this construct are listed in Table 3.

Table 3. Description observed variables in the subjective norms construct of the proposed model

Factor	Observed Variables	Survey Questions
Subjective Norms	SN3	How much do you care whether your parents approve or disapprove of your choice of an academic major?
	SN4	How much do you care whether your professors...
	SN5	How much do you care whether your classmates...
	SN6	How much do you care whether most business people...
	SN7	How much do you care whether your siblings...
	SN8	How much do you care whether your advisors...
	SN9	How much do you care whether your friends...

Perceived Behavioral Control

Four items were measured with 7-point Likert scales from Allen (2004). These questions consisted of: “The availability of job opportunities for hospitality business graduates made it or would make it difficult for me to choose hospitality business as my major” (1: strongly disagree to 7: strongly agree); “The statistics and math background required in other majors’ courses made it or would make it difficult for me to choose a major other than Hospitality Business as a major” (1: strongly disagree to 7: strongly agree); and “It would be or was easy for me to choose Hospitality Business as my major” (1: strongly disagree to 7: strongly agree). The items in this construct are listed in Table 4.

Table 4. Description observed variables in the perceived behavior control construct of the proposed model

Factor	Observed Variables	Survey Questions
Perceived Behavior Control	PBC1	The statistics and math background required in Hospitality Business / a major other than Hospitality Business made or would make it difficult for me to choose Hospitality Business / a major other than Hospitality Business as my major.
	PBC4	The availability of job opportunities for Hospitality Business graduates...
	PBC10	It would be or was easy for me to choose Hospitality Business as my major / to choose a major other than Hospitality Business.

Table 4 (cont'd)

Factor	Observed Variables	Survey Questions
Perceived Behavior Control	PBC11	My performance in other classes has been or would be hurt because of the workload of Hospitality Business courses/ courses in other majors.

External Formulas

This variable was measured with six items on 4-point Likert scales of 1: disagree to 4: agree from Creamer, Magolda, and Yue (2010). Examples are “To make a good choice about a career, I think the facts are the strongest basis for a good decision”; “The most important role of an effective career counselor or advisor is to be an expert on a variety of career options”; and “My primary role in making an education decision such as choosing my major is to seek direction from informed experts.” The items in this construct are listed in Table 5.

Table 5. Description observed variables in the external formulas construct of the proposed model

Factor	Observed Variables	Survey Questions
External Formulas	ExF1	My primary role in making an education decision such as choosing my major is to acquire as much information as possible.
	ExF2	My primary role in making an education decision such as choosing my major is to seek direction from informed experts.
	ExF3	To make a good choice about a career, I think that facts are the strongest basis for a good decision.
	ExF4	To make a good career choice about a career, I think that experts are in the best position to advise me about a good choice.
	ExF5	The most important role of an effective career counselor or advisor is to be an expert on a variety of career options.
	ExF6	The most important role of an effective career counselor or advisor is to provide guidance about a choice that is appropriate to me.

Crossroads

Measured by five items on 4-point Likert scales of 1: disagree to 4: agree from Creamer, Magolda, and Yue (2010), this variable includes questions such as “To make a good career choice about a career, I think that it is largely a matter of personal opinion”; “The most important role of an effective career counselor or advisor is to help students think through multiple options”; and “My primary role in making an education decision such as choosing a major is to consider my own views.” The items in this construct are listed in Table 6.

Table 6. Description observed variables in the crossroads construct of the proposed model

Factor	Observed Variables	Survey Questions
Crossroads	CRS1	My primary role in making an education decision such as choosing my major is to consider my own views.
	CRS2	If a teacher or advisor recommended a career in a field that I have never considered before, I would explain my point of view.
	CRS3	To make a good career choice about a career, I think that it is largely a matter of personal opinion.
	CRS4	The most important role of an effective career counselor or advisor is to help students think through multiple options.
	CRS5	When people have different interpretations of a book, I think that some books are just that way. It is possible for all interpretations to be correct.

Early Self-Authorship

Early self-authorship was measured by seven items using 4-point Likert scales of 1: disagree to 4: agree from Creamer, Magolda, and Yue (2010). Examples of these questions are: “If a teacher or advisor recommended a career in a field that I have never considered before, I would try to understand their point of view and figure out an option that would best fit my needs and interests,”; “To make a good career choice about a

career, it is not a matter of facts or expert judgment, but a match between my values, interests, and skills, and those of the job,”; and “My primary role in making an educational decision in choosing my major is to make a decision considering all the available information and my views.” The items in this construct are listed in Table 7.

Table 7. Description observed variables in the early self-authorship construct of the proposed model

Factor	Observed Variables	Survey Questions
Early Self-Authorship	ESA1	My primary role in making an educational decision in choosing my major is to make a decision considering all the available information and my views.
	ESA2	If a teacher or advisor recommended a career in a field that I have never considered before, I would try to understand their point of view and figure out an option that would best fit my needs and interests.
	ESA3	To make a good career choice about a career, it is not a matter of facts or expert judgment, but a match between my values, interests, and skills and those of the job.
	ESA4	In my opinion, the most important role of an effective counselor or advisor is to direct students to information that will help them to make a decision on their own.
	ESA5	When people have different interpretations of a book, I think that multiple interpretations are possible, but some are closer to the truth than others.
	ESA6	Experts are divided on some scientific issues, such as the causes of global warming. In a situation like this, I would have to look at the evidence to come to my own conclusion.
	ESA7	Experts are divided on some scientific issues, such as the causes of global warming. In a situation like this, I think it is best to accept the uncertainty and try to understand the principal arguments behind the different points of view.

Choose Hospitality Business

The questions, “What is your major today?” and “If you are no-preference, what academic major would you pick if asked to choose one today?” were asked as open-ended questions. The participant’s behavior of choosing hospitality business or choosing

some other major was assessed using the responses to these two items. Since the respondents gave a strong indication of what their choice of major would be, this variable was used to determine the groups of choose hospitality business and choose other major for subsequent analysis.

Table 8. Description of factors and observed variables in the theory of planned behavior (TPB) constructs of the proposed model

Factors	Observed Variables	Survey Questions	Response Scale
A ^a	A1	Thinking of a major or career for you, earning a good salary initially is	1:very unimportant to 7: very important &1: very unlikely to 7: very likely
	A2	Choosing a career with increasing salary and advancement potential is	
	A3	Entering a field that offers a chance to become an owner is	
	A4	Choosing a career that provides social status is	
	A5	Choosing an academic major that is not boring is	
	A6	Choosing an academic major that is exciting is	
	A7	Choosing a major with easy courses is	
	A8	Choosing a major that prepares me for a field with a number of job opportunities is	
	A9	Choosing a major with the least cost of education is	
	A10	Choosing a major that builds on previous or current volunteer/employment experience is	
	A11	Being a part of a department or school that is prestigious is	
	A12	Having a degree with transferable skills and knowledge is	
SN ^b	A13	Being a part of a major that has social perks is	1:very much to 7: not at all & 1:very unlikely to 7: very likely
	SN3	How much do you care whether you parents approve/disapprove of your choice of academic major?	
	SN4	How much do you care whether your professors...	
	SN5	How much do you care whether your classmates...	
	SN6	How much do you care whether most business people...	
	SN7	How much do you care whether your siblings...	

Table 8 (cont'd)

Factors	Observed Variables	Survey Questions	Response Scale
SN ^b	SN8	How much do you care whether your advisors...	1:very much to 7: not at all & 1:very unlikely to 7: very likely
	SN9	How much do you care whether your friends...	
PBC ^c	PBC1	The statistics and math background required in Hospitality Business / a major other than Hospitality Business made or would make it difficult for me to choose Hospitality Business / a major other than Hospitality Business as my major.	1:strongly disagree to 7: strongly agree
	PBC4	The availability of job opportunities for Hospitality Business graduates...	
	PBC10	It would be or was easy for me to choose Hospitality Business as my major / to choose a major other than Hospitality Business.	1:strongly disagree to 7: strongly agree 1:strongly disagree to 7: strongly agree
	PBC11	My performance in other classes has been or would be hurt because of the workload of Hospitality Business courses/ courses in other majors.	1:strongly disagree to 7: strongly agree

Note: ^a Attitude: overall evaluative response of choosing hospitality business as a major;

^b Subjective Norms: the perceived social pressure in choosing hospitality business as a major; ^c Perceived Behavioral Control: perception of how easy or difficult it is to choose hospitality business as a major.

Table 9. Description of factors and observed variables of the self-authorship (SA) constructs in the proposed model

Factors	Observed Variables	Survey Questions	Response Scale
ExF ^a	ExF1	My primary role in making an education decision such as choosing my major is to acquire as much information as possible.	1:disagree to 4: agree
	ExF2	My primary role in making an education decision such as choosing my major is to seek direction from informed experts.	1:disagree to 4: agree
	ExF3	To make a good choice about a career, I think that facts are the strongest basis for a good decision.	1:disagree to 4: agree
	ExF4	To make a good career choice about a career, I think that experts are in the best position to advise me about a good choice.	1:disagree to 4: agree
	ExF5	The most important role of an effective career counselor or advisor is to be an expert on a variety of career options.	1:disagree to 4: agree
	ExF6	The most important role of an effective career counselor or advisor is to provide guidance about a choice that is appropriate to me.	1:disagree to 4: agree
CRS ^b	CRS1	My primary role in making an education decision such as choosing my major is to consider my own views.	1:disagree to 4: agree
	CRS2	If a teacher or advisor recommended a career in a field that I have never considered before, I would explain my point of view.	1:disagree to 4: agree
	CRS3	To make a good career choice about a career, I think that it is largely a matter of personal opinion.	1:disagree to 4: agree
	CRS4	The most important role of an effective career counselor or advisor is to help students think through multiple options.	1:disagree to 4: agree
	CRS5	When people have different interpretations of a book, I think that some books are just that way. It is possible for all interpretations to be correct.	1:disagree to 4: agree
ESA ^c	ESA1	My primary role in making an educational decision in choosing my	1:disagree to 4: agree

Table 9 (cont'd)

Factors	Observed Variables	Survey Questions	Response Scale
		major is to make a decision considering all the available information and my views.	
	ESA2	If a teacher or advisor recommended a career in a field that I have never considered before, I would try to understand their point of view and figure out an option that would best fit my needs and interests.	1:disagree to 4: agree
	ESA3	To make a good career choice about a career, it is not a matter of facts or expert judgment, but a match between my values, interests, and skills and those of the job.	1:disagree to 4: agree
	ESA4	In my opinion, the most important role of an effective counselor or advisor is to direct students to information that will help them to make a decision on their own.	1:disagree to 4: agree
	ESA5	When people have different interpretations of a book, I think that multiple interpretations are possible, but some are closer to the truth than others.	1:disagree to 4: agree
	ESA6	Experts are divided on some scientific issues, such as the causes of global warming. In a situation like this, I would have to look at the evidence to come to my own conclusion.	1:disagree to 4: agree
	ESA7	Experts are divided on some scientific issues, such as the causes of global warming. In a situation like this, I think it is best to accept the uncertainty and try to understand the principal arguments behind the different points of view.	1:disagree to 4: agree

Note: ^a External Formulas: the stage where individuals rely heavily on the influences of others; ^b Crossroads: the stage where individuals begin to practice their own decision-making; ^c Early Self-Authorship: self-reliance and confidence in decision-making become more common for individuals.

Data Analyses

Data were analyzed using AMOS and SPSS 20. A two-stage data analysis procedure was used. In stage one, the descriptive analysis was used to compare the socio-demographics of the study participants. Stage two used Binary Logistic (Logit) Regression to assess construct measures in the proposed model, in order to examine the relationships between the constructs in the conceptual model. Following Anderson and Gerbing's (1988) two-step approach, a measurement model was estimated using Confirmatory Factor Analysis (CFA) to ensure the adequacy of convergent and discriminant validity. CFA was employed on items comprising the six constructs of the full new model: attitude, subjective norms, perceived behavioral control, external formulas, crossroads, and early self-authorship to show that the items measuring a given construct can be considered indicators of the same latent variable. A model in which the constructs' items are treated as assessing separate constructs is superior to a model in which all items are considered to measure the same underlying construct (Ajzen, 2009).

Differential Perceptions

In Section Two of the questionnaire, participants were asked to rate the importance of items in the TPB constructs as well as the likelihood of that item occurring by majoring in hospitality business and by majoring in a field other than hospitality business. In total, students rated the importance of each factor to their academic major decision. Next, following Allen (2004) and Cohen and Hanno (1993), the factors were used to assess students' perceptions toward each target behavior (choosing hospitality business as a major) and non-target (choosing any other major) behavior, and then derive

a differential perception (i.e. target behavior minus non-target behavior) toward the behavior. As noted by Ajzen and Fishbein (1980, p. 118), better prediction can be obtained by considering the difference between the belief and their underlying determinants than by considering each belief and its determinants individually. Finally, the participant's difference score is multiplied by the related outcome assessment. The resulting products (per participant) are summed, and represent 1) the participant's differential personal perception toward a major in hospitality business; 2) differential perception of important referents toward a major in hospitality business; and 3) the participant's differential perceived control over choosing a major in hospitality business. See the Appendix B for a detailed calculation example.

Logistic Regression

Binary Logistic Regression (Logit) is a statistical technique which allows for a regression-like analysis of the data in cases where the dependent variable is a qualitative rather than a continuous interval-level variable (Walsh, 1987). In general, logistic regression is a good choice for describing and testing hypotheses about relationships between a categorical outcome variable and one or more categorical or continuous predictor variables (Peng, Lee, and Ingersoll, 2002). In this study, the outcome is coded as 1 if the student did or would choose hospitality business as his/her major and 0 if the student did or would choose any other major. Logit also allows the researcher to analyze the effects of a set of independent variables on a dichotomous dependent variable with minimal statistical bias and loss of information (Walsh, 1987).

Measurement Model

The measurement model identifies how factors are measured in terms of the observed variables, and factors describe the measurement qualities of the observed variables. The measurement model was evaluated with Confirmatory Factor Analysis (CFA). During measurement model testing, CFA estimates only relationships among factors, not direct causal effects. In other words, causal relationships among factors in the proposed structural model are not a product of the measurement model. The measurement model including seven factors and 42 observed variables was tested and evaluated through the model specification procedure suggested by Jöreskog and Sörbom (1993).

Model fit indices. The measurement model was specified based on previous theoretical and empirical studies. The proposed model was tested and evaluated using overall fit indices and parameters estimated using CFA. Multiple indices were used in this study including the chi-square statistic adjusted for degrees of freedom (χ^2/df), the comparative fit index (CFI), the non-normed fit index (NNFI), and the root mean square error of approximation (RMSEA) in assessing the model fit following suggestions by Kline (1998). General rules of thumb for model fit are that CFI and NNFI should be greater than .90 and RMSEA should not be larger than .05 (Kline, 1998).

CHAPTER 4

RESULTS

The focus of this chapter is on: (1) survey response information; (2) descriptive statistics; (3) normality test results; (4) confirmatory factor analysis results; and (5) hypotheses-testing results of the proposed conceptual model.

Survey Response

Data Collection

The survey was made available to college students enrolled in a 100- and 200-level hospitality business course at Michigan State University during fall semester 2012 and spring semester 2013. In the fall semester, 684 surveys were received, of which 546 were completed surveys. In the spring semester, of the 971 surveys received, 720 were completed. Next, the two collections were compared to check for multiple submissions from students enrolled in 100- and 200- level classes for both semesters. Eighty-one (81) students took the survey in both December and January, so those students' January surveys were removed. In the final step of cleaning, any students identifying themselves as juniors or seniors were removed, equaling 149 in December and 137 in January. The final number of useable surveys was 899 (December 397, January 502) as presented in Table 10.

Table 10. Summary of data collection: total sample, returned sample, invalid sample, and valid sample

	December 2012	January 2013	Total
Returned surveys	684	971	1655
Invalid cases ^a	287	466	753
Valid cases	397	505	899

Note: ^a Invalid sample refers to respondents with incomplete or double responses, or upper-level class standing.

Characteristics of Survey Respondents

As shown in Table 11, the distribution of the top three declared academic majors of the participants taking introductory hospitality business courses is as follows: Business (50.8%), Hospitality Business (27%), and No-Preference (10.2%). Social Science / Education (4.5%), Liberal Arts / Communication (3.2%), and Natural Science / Medical (3.1%) were the following three majors in frequency ranking.

Table 11. Survey respondents' identified academic majors (n=893)

Category	Descriptions	Frequency	Percent
Majors	Business (Finance, Accounting, Marketing)	454	50.8%
	Hospitality Business	241	27.0%
	Social Science / Education	40	4.5%
	Liberal Arts / Communication	29	3.2%
	Natural Science / Medical	28	3.1%
	Engineering	6	0.7%
	Agriculture / Environment / Natural Resources	5	0.6%
	Other	5	0.6%
	No-Preference	91	10.2%

Of the respondents indicating No-Preference as their declared major, Business (25.3%), Hospitality Business (23.1%), and Social Science/Education (13.2%) were the

three most frequently identified when asked to name a major he/she would choose if required to do so today. The complete distribution is presented in Table 12.

Table 12. No-preference survey respondents' identified academic majors (n=91)

Category	Descriptions	Frequency	Percent
Majors	Business (General Business, Accounting, Finance)	23	25.3%
	Hospitality Business	21	23.1%
	Social Science / Education	12	13.2%
	Engineering	6	6.6%
	Natural Science / Medical	5	5.5%
	Liberal Arts / Communication	5	5.5%
	Other	4	4.4%
	Agriculture / Environment / Natural Resources	3	3.3%
	Unspecified	12	13.2%

Study Subjects Selected from Survey Respondents

Survey respondents included not only freshmen and sophomores who have or would choose Hospitality Business as their major, the targeted study population, but also those who have or would choose any other major. The sample screening procedure resulted in a final sample of 262 freshmen and sophomores who have declared, or would choose, hospitality business as their major, representing 29.1% of the 899 survey respondents.

Demographic Comparisons of Study Subjects to Other Subjects

Demographic characteristics of students choosing hospitality business (n=262) were compared with the students in the study choosing any other major (n=637) to assess similarities and differences. Subjects as a sample group were also compared to all Michigan State University undergraduate students and U.S. four-year college students

based on US national education data to assess generalizability of the sample. Results of these comparisons are presented in Tables 13 and 14.

As displayed in Table 13, the Hospitality Business majors are significantly different from the non-hospitality business majors for each of the demographics except academic year and family income. Hospitality business majors are more likely to be female as compared with non-hospitality business students in this study (69.1% hospitality business vs. 52.8% non-hospitality business), a younger group (74.0% hospitality business vs. 61.2% non-hospitality business are 19 or younger) and more likely to have a GPA below 3.0 (35% hospitality business vs. 25.4% non-hospitality business). Ethnically, hospitality business majors more often identified as White/Caucasian (65.9% hospitality business vs. 52.8% non-hospitality business) and Hispanic/Latino (3.1% hospitality business vs. 1.0% non-hospitality business). There is no significant difference between the family income levels of the two groups.

Table 13. Comparison of demographic characteristics of sample

Demographic variables	Descriptions	All	Hospitality Business Majors ^a (n=262)	Non-Hospitality Business Majors ^b (n=637)	Test statistics ^c	
					χ^2	p
Gender						
	Male	42.4%	30.9%	47.2%	$\chi^2=20.03$	.000
	Female	57.6%	69.1%	52.8%		
Age						
	19 or younger	65%	74.0%	61.2%	$\chi^2=13.41$	.000
	20 or older	35%	26.0%	38.8%		

Table 13 (cont'd)

Demographic variables	Descriptions	All	Hospitality Business Majors ^a (n=262)	Non-Hospitality Business Majors ^b (n=637)	Test statistics ^c	
					χ^2	p
Academic year	Freshman	50.4%	48.5%	51.2%	$\chi^2=0.54$	.461
	Sophomore	49.6%	51.5%	48.8%		
Ethnicity	White / Caucasian	43.6%	65.9%	34.4%	$\chi^2=93.09$	.000
	Asian / Pacific Islander	49.3%	25.3%	59.3%		
	Black / African American	4.9%	5.7%	4.6%		
	Hispanic / Latino	1.6%	3.1%	1.0%		
	Native American	0.6%	0.8%	0.0%		
G.P.A.	3.5 or higher	31.4%	28.0%	32.8%	$\chi^2=8.75$	.033
	3.0 to 3.49	40.4%	37.0%	41.8%		
	2.5 to 2.99	19.1%	24.5%	17.0%		
	2.49 or lower	9.0%	10.5%	8.4%		
Family Income	\$100,000 or higher	46.9%	50.2%	45.5%	$\chi^2=6.42$	.093
	\$75,000 to \$99,999	14.1%	16.3%	13.2%		
	\$50,000 to \$74,999	15.3%	15.1%	15.3%		
	\$49,999 or lower	23.7%	18.3%	25.9%		

Table 13 (cont'd)

Note: ^a Hospitality Business Majors refers to the respondents who have currently declared or would declare hospitality business as their major. ^b Non-Hospitality Business Majors refers to respondents who have currently declared or would declare any major other than Hospitality Business. ^c $p < .05$.

Gender, age, and ethnicity are compared for participants in this study, MSU undergrads, and undergrads from all U.S. 4-year colleges in Table 14. The data for only freshmen and sophomores from the comparison groups could not be found for a better comparison, so broader data for both MSU and U.S. college students were used for comparison. Whereas the gender breakdown in this study is 42.4% male to 57.6% female, the MSU student population is 49.8% male to 50.2% female and the U.S. college population is 45% male to 55% female. The ages of all U.S. four-year college students are distributed as follows: 19 or younger 28.6% and 20 or older 71.4%. MSU's age breakdown is age 19 or younger 39.1% and age 20 or older 60.9%. This is opposite of the age breakdown of the study participants: age 19 or younger 65% and age 20 or older 35%. Regarding ethnic background, the majority of study subjects are Asian/Pacific Islander (49.3%), followed by White/Caucasian (43.6%), Black (4.9%), Hispanic/Latino (1.6%) and Native American (0.6%). Ethnic background for MSU undergrads and U.S. college undergrads are White (79.5% and 64.6%, respectively), Black (7.9% and 14.6%, respectively), Asian (4.8% and 6.5%, respectively), Hispanic (3.8% and 11.3%, respectively) and Native American (.04% and .08%, respectively). The Native American percentages are the only numbers similar across all three groups.

The subjects in this study that have or would choose hospitality business (N = 262) do not have overall demographic characteristics similar to those respondents who have or would choose a major other than hospitality business (N = 637) and, as a whole sample, are dissimilar to the total population of MSU and U.S. college students. This creates the likelihood that generalizability of results to other hospitality programs could likely be problematic based on the specificity of this study and its respondents. This group of students may not think or act like groups of students elsewhere.

Table 14. Comparison of demographic characteristics of study subjects, Michigan State University (MSU) students, and U.S. four-year college students

Demographic variables	Descriptions	Study subjects ^a	MSU undergrad students ^b	U.S. four year college students ^c
		(n=899)	(n=33,044)	(n=10,563,055)
Gender	Male	42.4 %	49.8%	45%
	Female	57.6 %	50.2%	55%
Age	19 or younger	65%	39.1%*	28.6%
	20 or older	35%	60.9%*	71.4%
Ethnicity	White / Caucasian	43.6%	79.5%	64.6%
	Asian / Pacific Islander	49.3%	4.8%	6.5%
	Black / African American	4.9%	7.9%	14.6%
	Hispanic / Latino	1.6%	3.8%	11.3%
	Native American	0.6%	0.4%	0.8%

Note: ^a Study subjects refer to respondents who are freshmen and sophomores taking 100- and 200-level hospitality business courses. This sample was used for main analyses, testing the proposed model and developing a profile of students in this study. ^b Source: Undergraduate enrollment, Fall 2011, MSU Office of Planning and Budgets, Data Digest 2012. ^c Source: four year undergraduate college students in Table 226 “Total fall enrollment in degree-granting institutions, by level of enrollment, control and level of institution, attendance status, and age of student: 2011”, Digest of Education Statistics,

National Center for Education Statistics. *MSU reports the ages of 19-20 as one group in its printed reports. Here, 20 year-olds are included with the 19 and younger category.

Testing the Measurement Model: Confirmatory Factor Analysis in AMOS

This section concentrates on assessing the measurement model that represents relationships between observed variables and factors. First, assumption tests measuring normality of the data are discussed. Next, the measurement model is assessed through confirmatory factor analysis (CFA). The discussions of reliability, convergent validity, and discriminant validity for the measurement model are discussed.

Normality Test

The normality for each variable in the proposed model was examined to determine if the data meet the normality assumption for the maximum likelihood estimation (MLE) method. The normality test is an important preliminary analysis step since test results must fall within acceptable standards for subsequent analyses to be meaningful. Skewness and kurtosis tests were performed to evaluate normality. Data in Table 15 show that the value for univariate skewness and kurtosis ranged from -2.36 (A1) to -0.28 (PBC2) and from -0.33 (SN3) to 8.0 (A1) respectively. Values of all variables in the model for univariate skewness and kurtosis were found to fall within conventional criteria of normality (-3 to 3 for skewness and -10 to 10 for kurtosis) (Kline, 1998).

Table 15. Normality^a test results of items included in the proposed model presented in Figure 2

Constructs and Items	Skewness ^b	Kurtosis ^c
	($> 3 $ = extremely skewed)	($> 10 $: extremely peaked)
Attitude (A)		
A1	-2.26	7.00
A2	-1.70	4.29
A3	-1.95	4.66
A4	-2.09	5.86
A5	-2.14	6.95
A6	-0.76	-0.06
A7	-1.18	3.40
A8	-0.43	-0.33
A9	-0.62	0.00
A10	-0.16	0.14
A11	-0.28	-0.44
A12	-0.87	-4.04
A13	-0.79	-0.25
Subject norms (SN)		
SN1	-1.06	1.01
SN2	-1.21	-1.81
SN3	-1.06	0.67
SN4	-1.18	1.70
SN5	-1.37	2.46
SN6	-2.03	2.58
SN7	-1.68	1.96
SN7	-1.21	1.42
Perceived behavioral control (PBC)		
PBC1	-1.84	1.50
PBC2	-1.43	0.76
PBC3	-1.60	3.34
PBC4	-1.89	4.43
PBC4	-1.57	2.85
Self-authorship (SA)		
External Formulas (EXF)		
EXF1	-1.12	0.65
EXF2	-2.36	6.88
EXF3	-1.70	4.19
EXF4	-1.95	4.66
EXF5	-2.09	5.46
EXF6	-2.14	3.95

Table 15 (cont'd)

Constructs and Items	Skewness ^b	Kurtosis ^c
	(> 3 = extremely skewed)	(> 10 : extremely peaked)
Crossroads (CRS)		
CRS1	-0.73	-0.33
CRS2	-0.62	0.00
CRS3	-0.46	0.14
CRS4	-0.28	-0.44
CRS5	-0.87	-0.04
	-0.79	-0.25
Early Self-Authorship (ESA)		
ESA1	-1.04	1.01
ESA2	-1.21	1.81
ESA3	-1.16	0.67
ESA4	-1.18	1.70
ESA5	-1.37	2.46
ESA6	-2.36	3.58
ESA7	-1.48	1.76

Note: ^a Normality was examined in terms of skewness and kurtosis. ^b Skewness refers to the symmetry of the distribution. Skewness with a value above three is conventionally considered as extremely skewed. ^c Kurtosis indicates a relative excess of cases in the tails of a distribution relative to a normal distribution. A kurtosis value of 10 is a conventional criterion indicating normality distribution in terms of its peakedness. Values above 10 are considered extremely peaked.

Model Specification

The proposed measurement model was specified for the relationships between the observed variables and the factors through loadings of the observed variables and their error term. All factors and observed variables were specified based on previous empirical studies discussed in Chapter 3.

As shown in Figure 2, the proposed measurement model consisted of seven factors and 42 observed variables. The attitude construct was specified by thirteen items, the subjective norms construct was specified by seven items, and the perceived

behavioral control construct was specified by four observed variables. External formulas construct included six observed variables, crossroads construct contained five items, and early self-authorship construct was specified by seven items. All observed variables in the proposed measurement model were presented earlier in Tables 8 and 9.

Model Testing

Analyses. Confirmatory Factor Analysis (CFA) was employed to assess construct measures in the proposed model. The AMOS and SPSS 20.0 statistical program package were used for CFA. To examine the causal relationships in the model, logit regression was used via SPSS 20.

Reliability. In the first stage of model testing, confirmatory factor analysis was employed to test measurement validity. CFA results established evidence of reliability, convergent validity, and discriminant validity in the measurement model. Reliability of measures was evaluated by estimating Cronbach's alpha and composite construct reliability (CCR). Reliability scores range from $\alpha = .70$ to $\alpha = .96$ which are equal to or above the recommended .70 level. Observed variables should have a Cronbach's alpha of .7 or higher to be judged reliable measures (Nunnally, 1978). CCRs of all constructs also exceed the level of 0.70. All scales demonstrate generally good reliability.

Convergent validity is used to determine if different observed variables used to measure the same construct are highly correlated. Convergent validity can be assessed by reviewing the t-test for factor loadings (Hatcher, 1994) and average variances extracted (AVE) (Hair, Anderson, Tatham, and Black (1998). As presented in Table 16, all factor loadings for the observed variables measuring the same construct are relatively high

(statistically significant at $p < .05$), ranging from .48 to .93. Additional testing shows that AVEs in all constructs exceed the critical level of 0.50. Both are evidence of convergent validity.

Table 16. Confirmatory factory analysis results for the measurement model

Constructs and Items	Standardized loading*	AVE	CCR	Item-to-total correlation	Cronbach's α
Theory of Planned Behavior					
Attitude (A)		.74	.89		.88
A1	.87			.42	
A2	.88			.62	
A3	.62			.60	
A4	.70			.58	
A5	.67			.60	
A6	.79			.64	
A7	.71			.42	
A8	.68			.65	
A9	.59			.40	
A10	.88			.60	
A11	.81			.60	
A12	.69			.63	
A13	.86			.64	
Subject norms (SN)		.78	.91		.96
SN3	.86			.80	
SN4	.93			.87	
SN5	.88			.91	
SN6	.83			.85	
SN7	.83			.89	
SN8	.72			.89	
SN9	.90			.86	
Perceived behavioral control (PBC)		.50	.71		.70
PBC1	.58			.47	
PBC4	.64			.56	
PBC10	.68			.57	
PBC11	.52			.53	
Self-authorship (SA)					
External Formulas (EXF)		.69	.82		.74

Table 16 (cont'd)

Constructs and Items	Standardized loading*	AVE	CCR	Item-to-total correlation	Cronbach's α
EXF1	.54			.55	
EXF2	.58			.57	
EXF3	.61			.40	
EXF4	.54			.33	
EXF5	.55			.46	
EXF6	.62			.55	
Crossroads (CRS)		.51	.72		.71
CRS1	.53			.61	
CRS2	.69			.42	
CRS3	.51			.54	
CRS4	.65			.70	
CRS5	.643			.52	
Early Self-Authorship (ESA)		.56	.73		.70
ESA1	.48			.58	
ESA2	.60			.52	
ESA3	.51			.55	
ESA4	.54			.61	
ESA5	.54			.53	
ESA6	.50			.51	
ESA7	.66			.47	

Note: *Factor loadings were all significant at $p < .05$. Goodness-of-fit indices of full measurement model: $\chi^2 = 1224.08$ (df = 428), $\chi^2/\text{df} = 2.86$, NNFI = .920; CFI = .931; RMSEA = .058. CCR: composite construct reliability, AVE: average variances extracted

The overall mean difference for the constructs in the model for hospitality business majors and for non-hospitality business majors are presented in Table 17. The differential personal perception (attitude) is positive (62.93) for hospitality business majors, and positive (6.87) for non-hospitality business majors for a significant mean difference of 56.07. The differential perception of the influence of important people (subjective norms) is statistically significant at $p < 0.05$. Also, the mean response for

subjective norms is positive (86.69) for hospitality business majors and negative (-25.18) for non-hospitality business majors. The negative sign on the differential perceived control construct for non-hospitality business majors is predicted by the theory of planned behavior (mean response = - 0.83). The means of external formulas, crossroads, and early self-authorship for both hospitality business majors and non-hospitality business majors are positive in nature and similar in number, yet, the mean difference is statistically significant at $p < 0.05$.

The positive mean differences between the groups for the differential attitude, differential subjective norms, and perceived behavioral control are statistically significant ($p < 0.05$), suggesting that non-hospitality business majors perceive significantly less importance in academic major characteristics, less influence of referents, and less control over choosing a major in hospitality business than hospitality business majors. Overall, the results show that hospitality business majors have a positive perception of a major in hospitality business, while non-hospitality business majors have an unfavorable perception of hospitality business as a major based on the positive versus negative means for the two groups.

Table 17. Summary of means and mean difference test (t-test) results: hospitality business choice vs. non-hospitality business choice for factors in the model

Factors	Number of variables	Hospitality Business (n=260)	Non-Hospitality Business (n=635)	Mean Difference	t-value
Attitude	13	62.93	6.87	56.07	11.26*
Subjective Norms	7	86.69	-25.18	111.87	20.39*
Perceived Behavioral Control	4	1.95	-0.83	2.78	17.46*
External Formulas	6	19.83	19.13	.69	3.21*
Crossroads	5	17.00	16.15	.85	4.86*
Early Self-Authorship	7	23.58	23.53	1.05	5.04*

Note: *significant at $p < .05$

Discriminant Validity. Discriminant validity was assessed in two ways. First, correlations among constructs were inspected. As presented in Table 18, estimated correlations between constructs were not excessively high, and none of the pairs for the 95% confidence interval approach 1.00, thus providing support for discriminant validity (Anderson & Gerbing, 1988). The stronger discriminant validity test is also achieved if the square root of the average variance extracted (AVE) is larger than correlation coefficients (Fornell and Larcker, 1981). All the correlation coefficients met this criterion, establishing discriminant validity among the constructs in the proposed model.

Table 18. Correlations among constructs in the proposed model for examining discriminant validity

	1	2	3	4	5	6	M	SD	SQR of AVE
1. A	1						24.16	66.87	.83
2. SN	.40	1					7.57	82.67	.81
3. PBC	.36	.61	1				-0.02	2.43	.70
4. EXF	.02	.01	.02	1			19.34	2.96	.86
5. CRS	.10	.09	.02	.67	1		16.39	2.49	.74
6. ESA	.05	.09	.05	.57	.61	1	20.85	1.59	.81

Note: SQR = square root; A: The differential personal perception of choosing a major in hospitality business versus choosing a major other than hospitality business. SN: The differential perception of important people about a major in hospitality business versus a major other than hospitality business. PBC: The perceived differential control over choosing a major in hospitality business versus choosing a major other than hospitality business. EXF: The strong reliance on the influence of others when choosing a major. CRS: Partial reliance on the influences of others when choosing a major. ESA: The self-reliance in choosing a major.

Testing the Hypothesized Structural Model

Goodness-of-fit of the Structural Model

When the proposed measurement model was tested, according to overall fit indices, the proposed model produced a good fit with the data, $\chi^2(428)=1224.08$, $p<.05$ ($\chi^2/df=2.86$, CFI=.931, NNFI=.920, RMSEA=.058). Guidelines of χ^2/df smaller than 3.0, RMSEA smaller than .05, CFI and NNFI all greater than .90 are suggested by Kline (1998).

Path Coefficients and Hypothesis Testing

Path coefficients estimated by SPSS and hypothesis testing results are presented in Table 19, which shows the logit regression results for choosing an academic major.

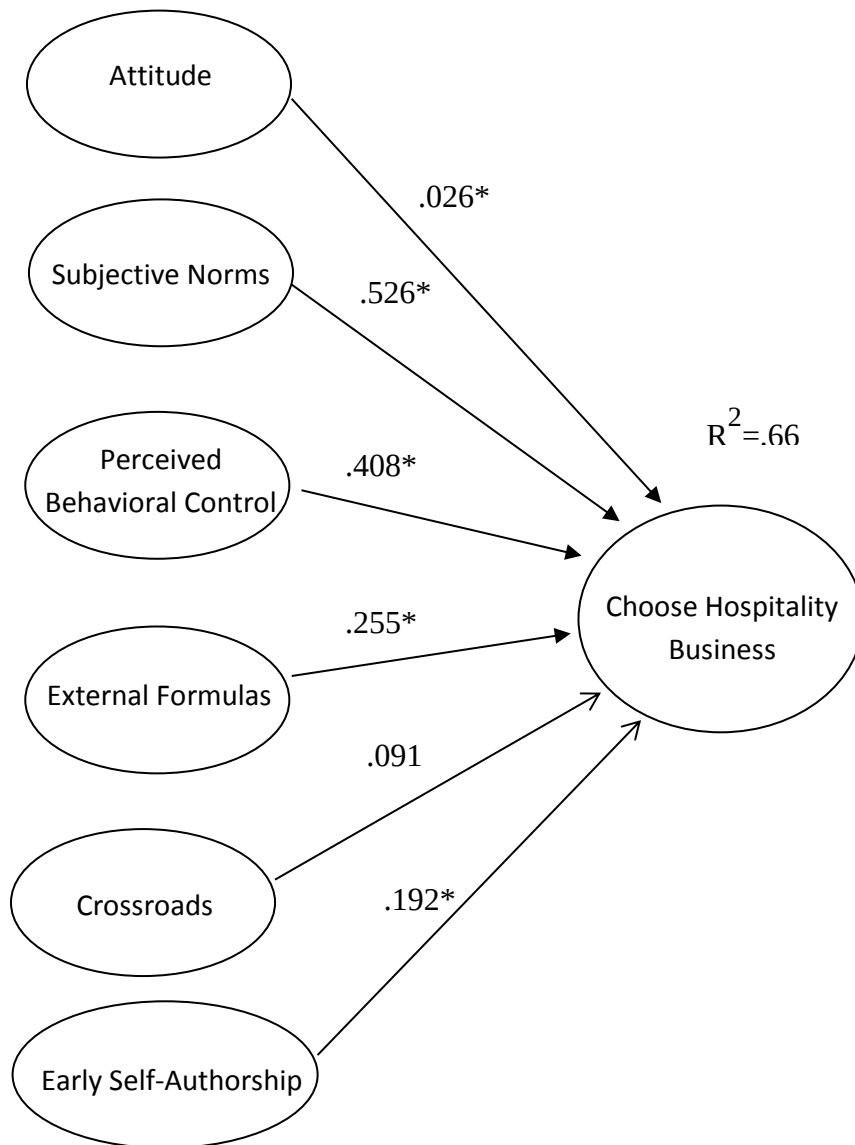
The Chi Square statistic for goodness-of-fit is 477.30 with six degrees of freedom. The Pseudo R^2 from the logit regression is .66. The path coefficient from the attitude construct to the choose hospitality business construct (differential personal perception) was significant at the .05 level, indicating a strong and positive relationship ($\beta=.206$, $t=11.26$, $p<.05$). The path coefficients from the subjective norms construct to the choose hospitality business construct (differential perception of important people) ($\beta=.526$, $t=20.39$, $p<.05$), and from the perceived behavioral control construct to the choose hospitality business construct (perceived differential control) ($\beta=.408$, $t=17.46$, $p<.05$) were significant with strong and positive relationships. Further, path coefficients from the external formulas construct to the choose hospitality business construct (strong reliance on others) ($\beta=.255$, $t=3.21$, $p<.05$) and from the early self-authorship construct to the choose hospitality business construct (strong self-reliance) ($\beta=.192$, $t=5.04$, $p<.05$) were significant at .05 level with strong and positive relationships. The significant test results for path coefficients support all hypotheses (H1, H2, H3, H4, and H6) except one (H5) which is the crossroads construct (CRS) to the choose hospitality business construct (partial reliance on others). The logistic regression analysis shows that students' perceptions, along with high- and low-levels of reliance on others, directly influence their choice of academic major.

Table 19. Logit regression results

Variables	Predicted sign	Coefficient β (standard error)	Wald	Hypotheses testing results
Intercept		-5.173 (.989)	27.380	
A	+	.206* (.002)	10.403	Supported
SN	+	.526* (.003)	80.315	Supported
PBC	+	.408* (.072)	31.991	Supported
EXF	+	.255* (.059)	16.985	Supported
CRS	+	.091 (.071)	1.670	Not supported
ESA	+	.192* (.104)	10.420	Supported

Note: *Coefficients were significant at $p < .05$; A=attitude; SN=subjective norms; PBC=perceived behavioral control; EXF=external factors; CRS=crossroads; ESA=early self-authorship. Chi-square goodness-of-fit=477.30, six degrees of freedom, $p=.000$, $-2\log$ likelihood=458.79, Pseudo $R^2=.66$

Based on the relative values of coefficients from the results, the subjective norms construct ($\beta=.526$) has the highest level of explanatory power for the choose hospitality business construct when compared to the perceived behavioral control construct ($\beta=.408$), the external formulas construct ($\beta=.255$), the attitude construct ($\beta=.206$), and the early self-authorship construct ($\beta=.192$). These factors explain 66% ($R^2=.66$) of the variance in the outcome variable of choose hospitality business, as shown in Figure 3. The effect of the subjective norms construct on the choose hospitality business construct is shown by its high level of explanatory power ($\beta=.526$). Compared to the other factors, the construct of crossroads is not significant in explaining the prediction of the choose hospitality business construct ($\beta=.091$) at $p<.05$.



*Significant at $p < .05$

Figure 3: Test results for the proposed structural model: standardized path coefficients and Pseudo R^2 .

Effects on Choose Hospitality Business

Indications of the contributions made by the self-authorship constructs of external formulas, crossroads, and early self-authorship were evident in the comparison of explained variances for the choose hospitality business construct between simply using the theory of planned behavior and using the combination of TPB and SA constructs. A summary of explained variance in the choose hospitality business construct is shown in Table 14. The addition of the Self-Authorship constructs increases the explained variance in Choose Hospitality Business by 19%. R^2 increases from .47 to .66, when the self-authorship constructs are added to the model of the theory of planned behavior model. Based on the results, it is concluded that the proposed model is an improvement on the model of the theory of planned behavior to explain choosing hospitality business as a major.

Table 20. Comparison of explained variance in choice of hospitality business for 1) the theory of planned behavior (TPB), 2) the TPB plus self-authorship (SA)

Model	Choose Hospitality Business (R^2)
Theory of planned behavior	.47
Theory of planned behavior plus SA	.66

Note: *TPB=Theory of Planned Behavior; SA=Self-Authorship Theory*

CHAPTER 5

DISCUSSION, IMPLICATIONS, AND FUTURE RESEARCH

The focus of this chapter is on: (1) results of hypotheses testing and discussion of the findings; (2) theoretical and practical implications; (3) limitations; and (4) future research.

Summary Characteristics of Students who are Choosing their Majors

The freshmen and sophomore students in this study who have chosen or would choose hospitality business in this study are typically female (69.1%) and White/Caucasian (65.9%), with a GPA in the 3.0 to 3.49 range (37%). The likely student in this sample who has chosen or would choose a major other than hospitality business is Asian (59.3%), female (52.8%), and also holds a GPA in the 3.0 to 3.49 range (41.8%). Of important note, the College of Business is the academic home to more Chinese international students than any other college on campus. This large Chinese population is reflected in the demographics for non-hospitality majors.

Results of Hypotheses Testing and Discussion of the Findings

The purpose of this study is to test empirically a new theoretical model in understanding determinants in freshman and sophomore students' decision-making processes of choosing hospitality business as their major. These underclassmen and women are in the midst of making a decision on academic major because, in MSU's College of Business, and several other colleges on campus, the junior year marks the time

when students apply to the academic major of his/her choice and move from “declared” or “no-preference” to “admitted” into that major. In the modified and extended TPB model proposed in this study, the intention construct was removed since the respondents gave a strong indication of what their choice of major would be by asking the respondents about their current major or, if classified as no-preference major of choice. Additionally, the three SA constructs were added. As presented in Figure 2, the conceptual model of this study was proposed to examine relationships among the constructs with six hypotheses. The six identified constructs (attitude, subjective norms, perceived behavioral control, external formulas, crossroads, and early self-authorship) were proposed to be direct antecedents of the outcome variable (choose hospitality business). Testing showed that overall fit for this model was good. Findings were generally consistent with the proposed hypotheses. All hypothesized relationships were strong and positive, as predicted, except for the hypothesized relationship between the crossroads construct and the choose hospitality business construct. The link between these two was calculated to be positive, but not statistically significant.

As the findings for each of the six hypotheses are discussed, none of the suggestions discussed here, or in the implications section, work in isolation.

Hypothesis H₁: Attitude construct is expected to have a direct positive influence on the Choose Hospitality Business construct

The hypothesis of direct influence of the attitude construct on the choose hospitality business construct was supported. Attitude has the fourth highest indicator of strength, ($\beta=.206$), of the 6 constructs. Comparing the means of the hospitality business majors to those of the non-hospitality business majors (62.93 to 6.87, respectively), the

non-hospitality business majors perceived less importance of the academic major characteristics, like choosing a major that is exciting or choosing a career with increasing salary and advancement potential. Students who are interested in hospitality business perceive more importance of characteristics of a major, such as gaining transferrable skills and building on volunteer and work experiences and they feel more strongly that choosing hospitality business will likely result in these outcomes than do students evaluating other majors when considering other majors than hospitality business. To attract students to hospitality business, showcasing characteristics such as these will speak to students who perceive these as important.

Hypothesis H₂: Subjective Norms construct is expected to have a direct positive influence on Choose Hospitality Business construct

The hypothesis regarding the direct influence of subjective norms on choose hospitality business was supported. Subjective norms is the construct that is the strongest predictor of choose hospitality business ($\beta=.526$). The group of seven referents measured in this construct (parents, professors, classmates, most business people I know, siblings, advisers, and friends) is part of the outcome to the secondary objective of this study, which is to understand which groups of determinants are the strongest predictors of students choosing hospitality business as an academic major. Comparing the means of the hospitality business majors to those of the non-hospitality business majors for this construct (86.69 to -25.18, respectively), the non-hospitality business majors perceived much less importance of important referents' influences. Considering both results, hospitality business majors care very much about whether their referents approve or disapprove of their choice of academic major and perceive that their

families, friends, advisors, and professors would support them in choosing hospitality business as an academic major.

Hypothesis H₃: Perceived Behavioral Control construct is expected to have a direct positive influence on Choose Hospitality Business construct

The hypothesis regarding the direct influence of perceived behavioral control construct on the choose hospitality business construct was supported. Perceived behavioral control has the second highest indicator of strength, ($\beta=.408$), of the 6 constructs. Comparing the means of the hospitality business majors to those of the non-hospitality business majors (1.95 to -0.83, respectively), the non-hospitality business majors perceived less control over the choice of academic major. Items like the required statistics and math background or class performance being affected by a major's workload are answered from different frames of reference for different students in various majors.

This construct speaks to confidence in major success, availability of job opportunities, ease of choosing a major, and performance in other classes due to major work load. When it comes to a student changing his/her major, ease is related to different stages. First, students must have access to advisors quickly and any advisor should be allowed to help a student change a major, instead of requiring multiple steps and office visits. Ease also is related to access to courses. A student wants to know if he/she can pursue academic interests or not. Third, advisors need the time to evaluate the student's position and give good advice. Professional advisors of today do a better job of this, like creating walk-in hours and availability during peak times, and asking the questions students don't know to ask, than some advising situations of years past.

Unfortunately, not all offices on campus have the availability to see students all day, like lunch times and breaks. Finally, advisors, professors, and mentors need to coach students on how to succeed in the classroom. One method for success is different study approaches for different courses. Many students study one way for all of their classes, relying on the way they have always done it. Therefore feeling that if they didn't do well in math, science, or writing, for instance, that they cannot do well and don't pursue a major that requires those types of classes. Advisors, professors, and upper class students can help the underclass students understand university support resources and give specifics for each class. One advisor coaches students to realize that past grades don't matter for future success.

Hypothesis H₄: External Formulas construct is expected to have a direct positive influence on Choose Hospitality Business construct

The hypothesis regarding the direct influence of external formulas on choose hospitality business was supported. External formulas has the third highest indicator of strength, ($\beta=.255$), of the 6 constructs. The tenets of self-authorship theory posit that making your own meaning and self-reliance are not the norm for young college students. Seeking direction from advisors and experts, and gathering facts and information are very important to people in this phase; it is a slow process to move to the second and third stages of self-authorship. This reliance on other referents is characteristic of collectivism, important here because of the high percentage of Asian students in this study. There is .69 for mean difference between the hospitality business students and the non-hospitality business students.

Upper class students are a source of facts, expertise, and direction that not all underclass students search out. Upper class students in hospitality business have typically one or both required internships and had opportunities to participate in hospitality student clubs and events. Whether involvement one-on-one or in interest group settings, underclass students must be informed of and invited repeatedly to take advantage of this relationship-building opportunity. While reluctance to participate and form relationships can be common for young students, lack of information and invitation is not acceptable, as was the case with many of the students in the 100-level classes surveyed for this study.

Hypothesis H₅: Crossroads construct is expected to have a direct positive influence on Choose Hospitality Business construct

The hypothesis of the direct influence of the crossroads construct on the construct of choose hospitality business was not supported. Crossroads has the lowest indicator of strength, ($\beta=.091$), of the 6 constructs. In fact, it is not significant at $p<.05$, so it does not increase the predictability nor enhance understanding of the proposed model. The crossroads construct attempts to identify young people who are trying to be more self-reliant, yet still need facts, advice, and direction. This is an unexpected finding since this is a likely phase, according to the theory, for students to be moving into during the college years. Possibly as a result of the collectivistic study composition, students in this study could be distinctly ‘stuck’ in the external formulas stage rather than moving along the self-authorship path.

Hypothesis H₆: Early Self-Authorship construct is expected to have a direct positive influence on Choose Hospitality Business construct

The hypothesis regarding the direct influence of the construct of early self-authorship on the choose hospitality business construct was supported. Early self-authorship has the fifth highest indicator of strength, ($\beta=.192$), of the 6 constructs. With the means of the two groups very nearly identical (23.58 for hospitality majors and 23.53 for non-hospitality majors), this construct points toward self-reliance in decisions as well as weighing a person's own values and interests into everyday judgments. Key indicators for this construct are 1] matching information with personal views, interests, and skills, and 2] making personally-fulfilling decisions, rather than relying on others to decide for you. The hospitality business and non-hospitality business groups may not be very different from each other and may not be very influential overall because, according to the theory of self-authorship, not many college students usually find themselves in this stage at their age and number of life-experiences.

Implications

The findings of this study have both theoretical and practical implications. This section presents the theoretical contributions of this study to existing literature, and its practical implications for hospitality business faculty, advisors, administrators, student leaders, and the industry.

Theoretical Implications

The primary purpose of this study is to expand the theory of planned behavior with the addition of the self-authorship theory constructs to check for increased explanation in variance. The theory of planned behavior model has been used in a variety

of past studies (Mayhew, et al., 2009; Phillips, 2009; Yu, 2011; Wu, 2008), but none in combination with the theory of self-authorship. The proposed combined model increases the explained variance in Choose Hospitality Business by 19%. As shown in Table 20, R^2 increases from .47 to .66, when the three self-authorship constructs, external formulas, crossroads, and early self-authorship, are added to the model of the theory of planned behavior model. This TPB model expanded with SA constructs is the first study this researcher is aware of where a behaviorist theory and a constructivist learning theory are blended in such a way. Based on the results, this new model is this study's contribution to the body of literature through increased explanation and understanding of the social, cognitive, and emotional developmental characteristics of undergraduate students (typically 18-22 years of age) that influence them to choose hospitality business for their academic major.

Practical Implications

This study provides insight into how freshmen and sophomore students weigh perceived decision determinants relative to choosing their major. The model provides an opportunity to evaluate which constructs hold the greatest level of prediction power and how, collectively, those determinants could help inform stakeholders of hospitality business programs. The results can have an impact on the academic process, student educational experience, and industry perspectives.

Academic Process. From the results, the constructs of subjective norms and perceived behavioral control are the first and second strongest predictors of choosing hospitality business ($\beta=.526$ and $\beta=.408$, respectively). Understanding the determinants

that students who are interested in hospitality business rely on most frequently can be used to design strategies to attract and capable students into the hospitality business field. For example, the results of this study indicate that the construct of subjective norms is the most predictive determinant of choosing hospitality business. Yet, many times, students don't know that they don't have to be a junior or senior, or even a declared hospitality business student, to use the hospitality business advising office. Administrators need to get in front of all advisors and university admissions officers (they help students declare a major and help transfer students) to continually educate the leaders about the hospitality programs and what kinds of opportunities the program offers.

The construct of perceived behavioral control used four items: the difficulty of choosing hospitality business based on the statistics and math background required for a hospitality business major, based on the availability of job opportunities for hospitality business graduates, based on performance in other classes because of the hospitality business workload, and the personal ease of simply choosing a major. These things that could be perceived to be out of the control of potential students, yet good information, structure, and access to resources like study partners for classes or big hospitality brothers/big hospitality sisters might allow some students to perceive they can take back the control.

Educational Experience. Subjective norms is comprised of the combined perceived importance of the opinions of parents, professors, classmates, most business people the student knows, siblings, advisers, and friends. If potential students are inclined to rely on these important referents, professors, advisers, administrators, and student leaders can be better prepared and willing to be the knowledgeable expert to

students asking choice of major-type questions. Students don't always take the initiative to get involved in the exploration process. Encouraging students to understand the importance of relationships with academic advisors, talking to professors, talking to career development advisors and getting involved in student-led activities leads to strengthening relationships and building peer-to-peer mentoring, a part of the key referents group . This is a win-win for students as well as major programs. Hospitality programs could also help themselves by connecting with parents and being visible to all students, hospitality business major or not, to educate those potential unofficial "recruiters."

Beyond the opportunities for assistance with classroom success, an implication for individual courses or curriculum based on how students choose hospitality business is encouraging alumni and other business people in the community to connect with students of all grade levels for education, mentoring, and job shadowing experiences, which could lead to additional students choosing hospitality business through relationships with successful business people, deeper understanding, and tangible opportunities.

Hospitality Industry. The findings of this study can be of interest to the industry through understanding what the students perceive to be important in making their decision of an academic major. While a career earning a good salary is important, so is having an increasing salary and advancement potential. Also, the perception that the field offers a number of job opportunities and the major offers a chance to become an owner is important to students. These opportunities can be discussed during recruitment and hiring to attract the students who are committed to companies or positions which might offer lower starting salaries and could lead to better fitting employees in field. The

results indicated, too, that the approval of business people the subjects knew was important and choosing hospitality business as a career would likely result in obtaining that approval.

Limitations

Despite its theoretical and practical contributions to the field of hospitality business education, several limitations of the present study need to be addressed. These include: 1) generalizability of results due to the convenience sample, 2) TPB model construct of intention was removed, and 3) freshmen and sophomore populations have a greater chance of changing majors.

Generalizability of Results

Convenience sampling using only students in 100- and 200-level hospitality business courses at Michigan State University limits the generalizability of the findings of this study to a broader population of college students. The ideal sample to use would be a random sample of the total population of all college students who have not been formally admitted to a hospitality business program. Obtaining such a sample was not possible due to the lack of access and the fact that admittance timing is not consistent among all colleges, therefore a convenience sample was used. While this sampling limits generalizability of the study, the focus of this study is primarily on relationships between variables in testing the model. While this study focuses primarily on relationships between variables and this type of research question is typically less vulnerable to generalizability problems (Burnett and Dunne, 1986; Sears, 1986), the group used in this

study was not similar enough to comparison groups to be able to generalize beyond the study respondents. The large Chinese student population in this study alters the demographics profile away from being similar to the overall university student composition, but this international mix could be the trend for the future. Instructors at other universities with hospitality programs have volunteered their students for future phases of this study which will help broaden the sample demographics. Future studies are needed that apply the same theoretical framework to other hospitality programs and other majors. For example, it would be interesting to examine the relationships of TPB and SA factors on the decision-making process of students at European and /or Asian universities, private universities, and smaller institutions.

TPB Construct of Intention was Removed

Because of the context of the study, the original theory of planned behavior model construct of intention was removed which might limit the inferences that can be drawn about the validity of the model. However, Ajzen (1991) and Perugini and Bagozzi (2001) noted that modifying the TPB model can contribute to increasing the prediction power for individuals' intention/behavior in that specific context. Broadening and deepening of the theory can happen through such a process (Ajzen, 1991; Perugini and Bagozzi, 2001). The model is explaining 66% of variance now, but perhaps putting the intention back into the model would yield a still better explanation.

Freshmen and Sophomore Populations Changing Majors

A major can be changed at any point during a student's academic career and this study focuses on freshmen and sophomores, not students who are already deeply involved in the program or graduated with a Hospitality Business degree. Underclassmen and women have greater opportunity to change their major than junior and senior students so their reported major in this study might not end up being accurate. The study does, however, provide evidence concerning students who were attracted to Hospitality Business in the first years of their academic career.

Future Research

Future studies need to address these identified issues and limitations to extend the body of knowledge on the effects of TPB and SA constructs on choice of academic major. Two interesting components of further study could enhance the research. First would be to compare no-preference students (undecided) who identified hospitality business to declared hospitality business students when the sample is larger. In the current study, the numbers were too small to have any meaningful outcome. As the study is replicated, those group sizes should increase. Second, create a longitudinal study over the four years in college to explore if students are staying in hospitality business (retention in the major), how the demographic profile changes semester by semester or year by year, what proportion of hospitality business majors have parents with hospitality experience, and how the amount of hospitality work experience as a young person influences a choice of hospitality business as a major. Third, surveying students during MSU's academic orientation program would allow access to a cross-section of a wide

variety of academic interest as all incoming freshmen are required to participate in this program each summer. This would also be a broad audience to begin informing about hospitality business as a major. Fourth, exploring the data from a cultural collectivism vs. independence stance would be interesting. The Asian dominance of this study may be similar to other college campuses where the insight into the differences in influences in choice of major could be helpful. Fifth, studying other hospitality students in other colleges could be beneficial as the ages and stages of decision making can be different as other schools might have different admittance procedures and time frames for making academic major choices. Lastly, because of the timing of the two surveys, the question of a pre-/post-test situation arises: would model perform differently if all students took at end of the semester instead of one at the beginning of a semester instead of one at the beginning and one at the end?

APPENDICES

APPENDIX A

Consent Form and Survey Tool

You are invited to participate in the research study, “Determinants that Influence College Students in Considering Hospitality Business as their Major.” The purposes of this study are to examine what determinants influence college student decision-making related to your future major and any intent to choose Hospitality Business as your major. This survey asks you for information about your attitudes, beliefs, and behaviors about choosing your major and your intent of majoring in *The School of Hospitality Business*. This survey also seeks information about satisfaction with *The School of Hospitality Business*, past work experience, and general demographic questions.

The survey will take approximately 20 minutes. This study is for research purposes only. Your responses will not be associated with you in any way when analyzed and will remain strictly **confidential**. Your privacy will be protected to the maximum extent allowable by law. There are no anticipated risks associated with participation beyond possible stress from thinking about these questions. Data will be stored for a minimum of three years and only researchers listed below will have access to the data.

As an incentive to take this survey, you will be entered in a drawing to receive one of two \$50 Meijer gift cards. Providing your email address on the last part of the survey is completely voluntary, but is needed to enter you in the drawing for a chance at one of the gift cards.

Participation in this study is voluntary, and you may choose not to participate at all, you may decline to participate in certain sections or answer certain questions, or you may discontinue your participation at any point without penalty or loss of benefits. You also have the right to withdraw your consent to participate from this study at any time without penalty.

If you have concerns or questions about this study, such as scientific issues, how to do any part of it, or to report an injury, please contact the researcher Julie Tkach at 517-353-9211, Fax 517-432-1170, or e-mail tkach@msu.edu, or the Dissertation Director, Dr. Bonnie Knutson, at 517-353-9211, Fax 517-432-1170, or email drbonnie@msu.edu.

If you have any questions or concerns about your role and rights as a research participant, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Director of MSU’s Human Research Protection Program at 517-355-2180, Fax 517-432-4503, or e-mail irb@msu.edu, or regular mail at 207 Olds Hall, MSU, East Lansing, MI 48824.

You indicate your voluntary agreement to participate in this study by clicking the link below:

DETERMINANTS THAT INFLUENCE COLLEGE STUDENTS IN
CONSIDERING HOSPITALITY BUSINESS
AS THEIR MAJOR: A NEW MODEL

Section 1: Diverse Viewpoints and Decision Making

The following questions are about your viewpoints toward diverse situations. Please answer the following questions indicating how much you agree or disagree with each of the following statements.

1. My primary role in making an education decision, such as choosing my major, is to _____

	Disagree	Slightly Disagree	Slightly Agree	Agree
Acquire as much information as possible.	1	2	3	4
Seek direction from informed experts.	1	2	3	4
Make a decision considering all the available information and my own views.	1	2	3	4
Consider my own views.	1	2	3	4

2. If a teacher or adviser recommended a career in a field that I have never considered before, _____

	Disagree	Slightly Disagree	Slightly Agree	Agree
I would listen, but I probably wouldn't seriously consider it because I have already made a decision.	1	2	3	4
I would try to understand their point of view and figure out an option that would best fit my needs and interests.	1	2	3	4
I would give it some thought because they probably know better than I do about what might suite me.	1	2	3	4
I would try to explain my point of view.	1	2	3	4

3. To make a good choice about a career, I think that _____

	Disagree	Slightly Disagree	Slightly Agree	Agree
facts are the strongest basis for a good decision.	1	2	3	4
it is largely a matter of personal opinion.	1	2	3	4
experts are in the best position to advise me about a good choice.	1	2	3	4
it is not a matter of facts or expert judgment, but a match between my values, interests, and skills and those of the job.	1	2	3	4

4. In my opinion, the most important role of an effective career counselor or adviser is to _____

	Disagree	Slightly Disagree	Slightly Agree	Agree
be an expert on a variety of career options.	1	2	3	4
provide guidance about a choice that is appropriate for me.	1	2	3	4
help students to think through multiple options.	1	2	3	4
direct students to information that will help them to make a decision on their own.	1	2	3	4

5. When I am in the process of making an important decision and people give me conflicting advice, _____

	Disagree	Slightly Disagree	Slightly Agree	Agree
I get confused.	1	2	3	4
I don't listen.	1	2	3	4
I try to listen and consider all of their advice carefully.	1	2	3	4
I try to make a judgment if they are someone I should listen to.	1	2	3	4

6. When people have different interpretations of a book, I think that _____

	Disagree	Slightly Disagree	Slightly Agree	Agree
the author has done a poor job of communicating the true meaning.	1	2	3	4
some books are just that way. It is possible for all interpretations to be correct.	1	2	3	4
only the expert(s) can really say which interpretation is correct.	1	2	3	4
multiple interpretations are possible, but some are closer to the truth than others.	1	2	3	4

7. Experts are divided on some scientific issues, such as the causes of global warming. In a situation like this, _____

	Disagree	Slightly Disagree	Slightly Agree	Agree
I rely on the experts to tell me.	1	2	3	4
I would have to look at the evidence and come to my own conclusions.	1	2	3	4
I think it is best to accept the uncertainty and try to understand the principal arguments behind the different points of view.	1	2	3	4
I try not to judge as long as different scientists have different opinions on these kinds of issues.	1	2	3	4

Section 2: Choosing a Major

The following questions are about your viewpoints toward choosing a major. Please answer the following questions indicating the level of importance or unimportance with each of the following statements.

8. Thinking of a major or career for you, in general:

	Very Unimportant			Neutral		Very Important	
Earning a good salary initially is	1	2	3	4	5	6	7
Choosing a career with increasing salary and advancement potential is	1	2	3	4	5	6	7
Entering a field that offers a chance to become an owner is	1	2	3	4	5	6	7
Choosing a career that provides social status is	1	2	3	4	5	6	7
Choosing an academic major that is not boring is	1	2	3	4	5	6	7
Choosing an academic major that is exciting is	1	2	3	4	5	6	7

Choosing a major with easy courses is	1	2	3	4	5	6	7
Choosing a major that prepares me for a field with a number of job opportunities is	1	2	3	4	5	6	7
Choosing a major with the least cost of education is	1	2	3	4	5	6	7
Choosing a major that builds on previous or current volunteer/employment experience is	1	2	3	4	5	6	7
Being a part of a department or school that is prestigious is	1	2	3	4	5	6	7
Having a degree with transferable skills and knowledge is	1	2	3	4	5	6	7
Being a part of a major that has social/job perks is	1	2	3	4	5	6	7

9. What is the likelihood that majoring in Hospitality Business will result in this outcome?

	Very Unlikely		Neutral			Very Likely	
Earning a good salary initially	1	2	3	4	5	6	7
Choosing a career with increasing salary and advancement potential	1	2	3	4	5	6	7
Entering a field that offers a chance to become an owner	1	2	3	4	5	6	7
Choosing a career that provides social status	1	2	3	4	5	6	7
Choosing an academic major that is not boring	1	2	3	4	5	6	7
Choosing an academic major that is exciting	1	2	3	4	5	6	7
Choosing a major with easy courses	1	2	3	4	5	6	7
Choosing a major that prepares me for a field with a number of job opportunities	1	2	3	4	5	6	7
Choosing a major with the least cost of education	1	2	3	4	5	6	7
Choosing a major that builds on previous or current volunteer/employment experience	1	2	3	4	5	6	7
Being a part of a department or school that is prestigious	1	2	3	4	5	6	7

	1	2	3	4	5	6	7
Having a degree with transferable skills and knowledge							
Being a part of a major that has social/job perks	1	2	3	4	5	6	7

10. What is the likelihood that majoring in a major **OTHER THAN** Hospitality Business will result in this outcome?

	Very Unlikely		Neutral			Very Likely	
Earning a good salary initially	1	2	3	4	5	6	7
Choosing a career with increasing salary and advancement potential	1	2	3	4	5	6	7
Entering a field that offers a chance to become an owner	1	2	3	4	5	6	7
Choosing a career that provides social status	1	2	3	4	5	6	7
Choosing an academic major that is not boring	1	2	3	4	5	6	7
Choosing an academic major that is exciting	1	2	3	4	5	6	7
Choosing a major with easy courses	1	2	3	4	5	6	7
Choosing a major that prepares me for a field with a number of job opportunities	1	2	3	4	5	6	7
Choosing a major with the least cost of education	1	2	3	4	5	6	7
Choosing a major that builds on previous or current volunteer/employment experience	1	2	3	4	5	6	7
Being a part of a department or school that is prestigious	1	2	3	4	5	6	7
Having a degree with transferable skills and knowledge	1	2	3	4	5	6	7
Being a part of a major that has social/job perks	1	2	3	4	5	6	7

11. Please answer the following questions indicating your level of caring:

	Very Much			Some			Not at all	
How much do you care whether your parents approve or disapprove of your choice of an academic major?	1	2	3	4	5	6	7	
How much do you care whether your professors approve or disapprove of your choice of an academic major?	1	2	3	4	5	6	7	
How much do you care whether your classmates approve or disapprove of your choice of an academic major?	1	2	3	4	5	6	7	
How much do you care whether most business people you know approve or disapprove of your choice of an academic major?	1	2	3	4	5	6	7	
How much do you care whether your siblings approve or disapprove of your choice of an academic major?	1	2	3	4	5	6	7	
How much do you care whether your advisors approve or disapprove of your choice of an academic major?	1	2	3	4	5	6	7	
How much do you care whether your friends approve or disapprove of your choice of an academic major?	1	2	3	4	5	6	7	

12. The following people think I should major in a field OTHER THAN Hospitality Business:

	Very Unlikely		Neither			Very Likely	
My parents	1	2	3	4	5	6	7
My professors	1	2	3	4	5	6	7
My classmates	1	2	3	4	5	6	7
Most business people I know	1	2	3	4	5	6	7
My siblings	1	2	3	4	5	6	7
My advisors	1	2	3	4	5	6	7
My friends	1	2	3	4	5	6	7

13. The following people think I should major in Hospitality Business:

	Very Unlikely			Neither			Very Likely	
My parents	1	2	3	4	5	6	7	
My professors	1	2	3	4	5	6	7	
My classmates	1	2	3	4	5	6	7	
Most business people I know	1	2	3	4	5	6	7	
My siblings	1	2	3	4	5	6	7	
My advisors	1	2	3	4	5	6	7	
My friends	1	2	3	4	5	6	7	

14. Please answer the following questions indicating your level of agreement:

	Strongly Disagree			Neither			Strongly Agree	
The statistics and math background required in Hospitality Business made or would make it difficult for me to choose Hospitality Business as my major.	1	2	3	4	5	6	7	
The availability of job opportunities for Hospitality Business graduates made or would make it difficult for me to choose Hospitality Business as my major.	1	2	3	4	5	6	7	
It was easy for me to choose a major other than Hospitality Business.	1	2	3	4	5	6	7	
My performance in other classes has been or would be hurt because of the workload of Hospitality Business courses.	1	2	3	4	5	6	7	

15. Please answer the following questions indicating your level of agreement:

	Strongly Disagree		Neither		Strongly Agree	
The statistics and math background required in a major other than Hospitality Business made or would make it difficult for me to choose a major other than Hospitality Business.	1	2	3	4	5	6 7
The availability of job opportunities for Hospitality Business graduates made or would make it difficult for me to choose a major other than Hospitality Business.	1	2	3	4	5	6 7
It was easy for me to choose Hospitality Business.	1	2	3	4	5	6 7
My performance in Hospitality Business courses has been or would be hurt because of the workload in courses of other majors.	1	2	3	4	5	6 7

Section 3: Descriptive Information

This information will be held in the strictest confidence and will only be used for statistical purposes and only in aggregate form.

16. Please select the gender you identify with. *Please select a response.*

☐ Male ☐ Female ☐ Transgender

17. What is your age: *Please type a number.* _____

18. Of which country are you a citizen? *Please type it.* _____

19. Please select the ethnic background you identify with? *Please select all that apply.*

☐ African American/ Black ☐ European American/ Middle East/White
☐ American Indian ☐ Hispanic/ Latino/ Latina
☐ Asian or Pacific Islander ☐ Other (*please specify*) _____

20. Is English your native language? *Please select a response.* ☐ Yes ☐ No

21. What is your major today? *Please type it.* _____

22. If you are no-preference, what academic major would you pick if asked to choose one today?
Please type it. _____

23. Please select your class level. *Please select a response.*

☐ Freshman ☐ Sophomore ☐ Junior ☐ Senior

24. Please select your overall MSU GPA range: *Please select one.*

- | | | | |
|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| ☐ 3.80 – 4.0 | ☐ 3.00 – 3.24 | ☐ 2.25 – 2.49 | ☐ 1.00 – 1.49 |
| ☐ 3.50 – 3.79 | ☐ 2.75 – 2.99 | ☐ 2.00 – 2.24 | ☐ Under 1.00 |
| ☐ 3.25 – 3.49 | ☐ 2.50 – 2.74 | ☐ 1.50 – 1.99 | |

25. Which income category best describes your family's total annual income before taxes in 2011? *Please select one.*

- | | | |
|---|--|--|
| ☐ Less than \$25,000 | ☐ \$50,000- \$74,999 | ☐ \$150,000-\$199,999 |
| ☐ \$25,000- \$34,999 | ☐ \$75,000 - \$99,999 | ☐ \$200,000 or more |
| ☐ \$35,000- \$49,999 | ☐ \$100,000-\$149,999 | |

Thank you for completing this survey.

To enter a chance to win one of the Meijer gift cards, please fill out your contact information on the drawing ticket.

APPENDIX B

Example Calculation of Differential Perception- summary of procedure

1. *Step 1.* Outcome assessment = having a degree with transferable skills and knowledge is (important) (unimportant) – (scale 1-7).
2. *Step 2.* Likelihood assessment of target and non-target behaviors (scale 1-7):
 - a. Choosing to major in hospitality business will result in having a degree with transferable skills and knowledge (likely) (unlikely) = likelihood of outcome resulting from target behavior.
 - b. Choosing to a major other than hospitality business will result in having a degree with transferable skills and knowledge (likely) (unlikely) = likelihood of outcome resulting from non-target behavior.
3. *Step 3.* Difference score = (Step 2a – Step 2b) (scale 0-minus 6).
4. *Step 4.* Differential personal perception = (Step 1) x (Step 3) (scale 0-minus 42) (per personal factor).
5. *Step 5.* Differential personal perception = Step 4 summed across the 13 personal attitude factors (see Table 2: Description of factors and observed variables in the TPB constructs of the proposed model). Similarly, important referents' differential perceptions of choosing a major in hospitality business are summed across the seven important referent factors for each sample participant to represent the differential perception of important people construct (variable) in the model and the differential control perceptions are summed across the four control factors for each sample participant to represent the differential perceived control construct (variable) in the model.

Taken from Allen, 2004

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