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Where Are the Women?: A Study of Gender Disparity in Supply Chain Management

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Where Are the Women?: A Study of Gender Disparity in Supply Chain Management

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Abstract

As a student at the University of Tennessee, I have noticed a disproportionate amount of males to females in the supply chain management program. After further research, it is evident there is also a large gender gap where males dominate the career field. At the upper management level, the number of women present is even fewer. Fortune Magazine cites that only 37% of students enrolled in supply chain courses are female, which foreshadows the daunting statistic that only 5% of supply chain executives are women. The purpose of this study is to grasp an understanding of what motivates women to intend a career in Supply Chain Management as evidenced by their interest in the major. This study uses an adapted version of the Theory of Planned Behavior to investigate the behavioral intentions of female students. Subjective norms, attitude, and perceived behavioral control prove to all be significant in the choice to major in supply chain management.

Introduction

As the number of Science, Technology, Engineering, and Math majors in America declines, the United States may lose its footing on the global stage. As an example, the U.S. is not producing enough graduates to fill the job growth in the computer science industry (BLS). This lack of personnel may result in a significant shift to outsourcing these jobs at high costs to organizations. Because of the serious global economic implications that arise from a lack of STEM majors in the U.S., many studies have been conducted on the subject. There are also many studies that focus on the disproportionate amount of males to females in the discipline. Women hold less than 25% of STEM jobs in the United States. Supply chain management researchers can use this existing information and research to shape their own studies as they delve into issues such as the current gender disparity in supply chain management.

The number of males majoring in supply chain management at the University of Tennessee far outweighs the number of females in the major. This is apparent in a section of a capstone course, where only five out of thirty-three total students are female. The potential for females to thrive in the supply chain industry is high, as it is currently a male-dominated field, which leaves room for females to rise in the ranks. By looking into the factors that may influence a woman's decision to major in supply chain management and ultimately pursue a career in supply chain, we can begin to find ways to close that gender gap.

What we do know is that supply chain management is a growing area of business. Not only that, but the supply chain management program at the University of Tennessee at Knoxville one of the best in the country. The supply chain management program at UT was ranked #4 among public institutions in the 2016 U.S. News and World Report. Why is it then that there are fewer women enrolled in the program than before? Why are there so many more males that seem to be interested in the major?

Research Purpose

The purpose of this research is to understand what factors influence the choice to major in supply chain management. This study will use an adapted model of the Theory of Planned Behavior to investigate what factors have significant influence on the behavior of women who choose to major in supply chain management at the University of Tennessee at Knoxville. The results from this study can aid in the recruitment and retention of women in the supply chain management major. By cultivating a strong presence of women in supply chain management at the university level, we can begin to close the gender gap in the workforce.

Literature Review

I. Background on STEM

STEM refers to the Science, Technology, Engineering, and Mathematics fields. The U.S. is becoming increasingly dependent on science and technology, but the supply of the STEM workforce trails the nation's demand (Bottia). One example is the lack of computer science graduates. The Bureau of Labor Statistics reported that at least 1.2 million computer science jobs will be added to the U.S. economy by 2020. At its current pace, U.S. universities will only produce half of the graduates needed to fill those positions (Atkinson). Because of the rising concern about the ability of the United States to compete in a global economy, many efforts have been raised to increase the number and diversity of students in STEM fields (National Center of Education Statistics 2013). As a matter of fact, the Obama Administration launched a campaign in 2009 to improve the participation and performance of American students in STEM (White House n.d).

Not only is the United States falling behind in producing STEM professionals, it is also struggling to close the gender gap in the STEM field. Many studies have been conducted to understand the trends and reasoning for the gender gap in an effort to increase participation of females in the STEM fields. One study found that the demographic of high school faculty has a role on college students' decisions to major in STEM fields. Specifically, the proportion of female math and science teachers has a powerful impact on female students' likelihood of declaring and graduating with a STEM degree (Bottia). Another study cites that lack of female role models, gender stereotyping, and less family-friendly flexibility in the STEM fields may attribute to the gender disparity (US Department of Commerce).

Interestingly enough, a study conducted by Allison Mann and Thomas Di Prete of Columbia University found that gender differences in math performance and life goals contribute very little to the understanding of the gender disparity in fields of study. Their results suggest the possibility that if engineering professions were organized like medicine with some training in the undergraduate years followed by intensive training in graduate school, the fraction of engineers who were women would be higher (Mann and DiPrete 2013). Women's interest in STEM-related majors may also be increased by

developing their self-image, promoting early STEM career-linking strategies, interacting with female role models and mentors in STEM career fields, developing confidence in mathematics abilities through group activities and capstone projects, and providing female STEM related scholarships for higher education (Moakler and Mikyong 2014).

From these studies, it is evident that there are many possible explanations for the gender gap in STEM. Recall that the study by Mann and DiPrete indicated that mathematics performance does not explain the gender disparity, while the Moakler study suggests that STEM interest may be increased by developing mathematics *confidence*. It is these details that can bring us closer to clarifying the influences on a woman's choice to enter the STEM field. Sifting through these explanations may enable researchers to be closer in understanding the gender gap.

II. Background on Supply Chain Management

Interest in the concept of supply chain management has steadily increased since the 1980s, when companies saw the benefits of collaborative relationships within and beyond their own organization (Lummus). Supply chain management is a conglomerate of disciplines such as transportation, operations, manufacturing, and distribution. It is difficult to find just one simply definition of supply chain management, but there are common themes: Supply chain management is the management of upstream and downstream relationships with suppliers and customers to deliver high customer value at lower costs (Enarsson). A summary definition of the supply chain can be stated as: all the activities involved in delivering a product from raw material through to the customer including sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, delivery to the customer, and the information systems necessary to monitor all of these activities. Supply chain management coordinates and integrates all of these activities into a seamless process (Lummus). The business world as we see it today would not be possible without the professionals in supply chain management that focus on the end-to-end processes involved with providing products or services to the end customers.

According to the Bureau of Labor Statistics, there are 125,900 logistician jobs in the U.S. as of 2012. It is expected that the employment of logisticians will grow 22 percent

by the year 2022. This steady increase can be attributed to the rising need of the transportation of goods in a global economy (BLS). An article by Supply and Demand Chain Executive stated that the manufacturing sector is facing an estimated 2 million worker shortage throughout the next decade. Many universities are now offering supply chain management undergraduate and master's programs to fill the void (SDC).

Gartner, Inc. is a world-leading information technology research and advisory company. The company is known for its research in evaluating the supply chain management programs at universities across the country. In a 2014 study, they found that supply chain undergraduate placement rates are between 85% to 100% percent and in many cases, graduates are accepting higher starting salaries than their finance and accounting peers. The average starting salary for undergraduates is \$52,584 (Gartner). In the 2014 study, the University of Tennessee's Supply Chain Management program was ranked number 3 in the nation.

III. Gender Disparity in Supply Chain Careers and Majors

An article by Fortune Magazine stated that women fill just 5 percent of top-level supply chain management roles at Fortune 500 companies, lagging behind figures in other senior executive roles (Fairchild). According to the article, female students account for 37 percent of students enrolled in supply chain courses, but women fill only 5 percent of top-level supply chain positions. Overall, women hold 15% of all executive officer positions at Fortune 500 companies.

The manufacturing sector of supply chain management faces a large gender gap. Although women account for 47% of the total workforce according the Bureau of Labor Statistics, only 27% of the manufacturing workforce is women. According to a study conducted by The Manufacturing Institute, APICS, and Deloitte, women earn more money than their male counterparts upon entering their careers. As they cross the 30-year-old threshold, however, men surpass them in terms of career progression and earnings (Manufacturing Institute). Despite their competitive starting salary, few women surveyed felt like their employers were doing enough to attract and retain women. The survey noted that woman value meaningful work, promotion opportunities, and

flexibility. However, the study cited poor working relationships, lack of opportunities to move up, and low earnings as the primary motivators for women to leave the manufacturing sector. Additionally, two-thirds of respondents indicated that standards of performance are not the same for men and women. Of those that indicate the standards are not the same, three-fourths say the standards are higher for women (Manufacturing Institute).

At the University of Tennessee, there are currently 4,537 students enrolled in the Haslam College of Business, of which 35% are females. In 2014, there were 762 students that declared supply chain

management as their major. Only

26% of those students were female.

Between 2011 and 2014, the

number of supply chain

management graduates increased

by 15%. At the same time, the

percentage of females graduates in

supply chain management slipped

down to just 20%. Figure 1 shows

how the number of female SCM graduates has declined as the number of SCM graduates

has increased. Table 1 illustrates the number of students enrolled in the Haslam College

of Business, as well as the breakdown in gender in the college and in the supply chain

management major.

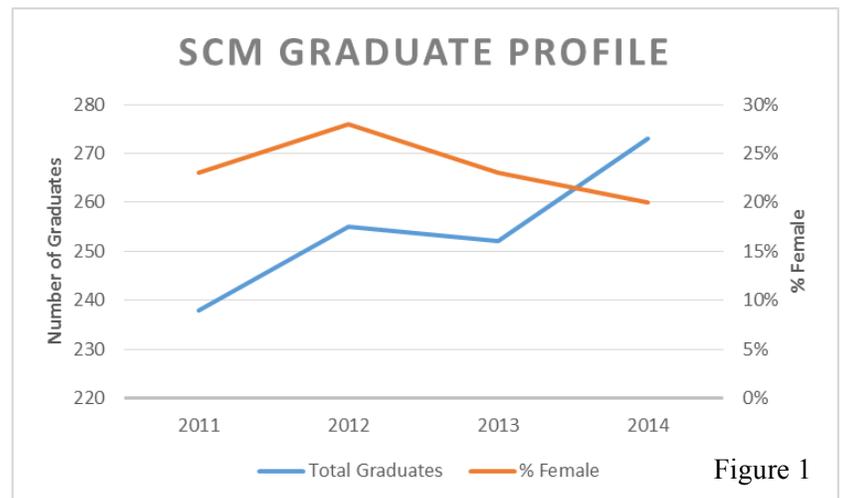


Figure 1

Table 1- Student Composition of Haslam College of Business

Year	Students in HCB	Students in SCM	Percent of Students in SCM	Females in HCB	Percent of Females in HCB	Females in SCM	Percent of Females in SCM
2011	3,682	596	16.19%	1,202	32.65%	142	23.83%
2012	3,681	648	17.60%	1,223	33.22%	147	22.69%
2013	3,820	720	18.85%	1,289	33.74%	161	22.36%
2014	4,266	791	18.54%	1,485	34.81%	208	26.30%
2015	4,537	885	19.5%	1,602	35.31%	240	27.12%

Model and Hypothesis

I. Theory of Planned Behavior

The Theory of Planned Behavior was proposed in 1985 by Icek Azjen from the University of Massachusetts at Amherst. The Theory of Planned Behavior is an extension of the Theory of Reasoned Action. The Theory of Reasoned Action can be used to explain the relationship between attitudes, behavior, and human action. Researchers can use this theory to predict how individuals will act based on their attitudes and behavioral intentions. Azjen extended the Theory of Reasoned Action into the Theory of Planned Behavior, hereby referred to as TPB, by adding a new component called “perceived behavioral control”.

TPB states that attitude, subjective norms and perceived behavioral control together determine an individual’s behavioral intentions and behaviors. *Attitude* toward a behavior refers to the degree to which a person has a favorable or unfavorable appraisal of the behavior in question (Azjen 188). *Subjective norm* is a social factor that refers to the perceived social pressure to perform or to not perform a behavior. The third determinant of behavior is the degree of *perceived behavioral control*, which refers to the perceived ease of difficulty of performing the behavior. The more favorable the attitude and subjective norm and the greater perceived behavioral control, the stronger should be an individual’s intention to perform a behavior.

Attitudes, subjective norms, and perceived behavioral control can be further decomposed into belief structures (Taylor 140). Attitude formation is influenced by relative advantage, complexity, and compatibility. Relative advantage refers to the degree to which an innovation or behavior provides benefits to the decision maker. Factors of relative advantage can include economic benefits, image enhancement, convenience, and satisfaction. Relative advantage should be positively related to Attitude. Complexity refers to the degree to which an innovation or behavior is perceived to be difficult to understand, learn, or operate (Taylor 141). Complexity is negatively related to attitude, as a simpler behavior will be more likely to be adopted. Compatibility is the degree to which a behavior fits with the potential adopter’s values, previous experiences, and current needs. A behavior is more likely to be adopted if it is compatible with the adopter.

Normative beliefs influence subjective norms. A normative belief is an individual's perception about a behavior as influenced by a significant person in their life such as a spouse, parent, or teacher. The final belief structure is referred to as the control belief structure, or perceived behavioral control. Factors that influence perceived behavioral control include self-efficacy and facilitating conditions. Facilitating conditions are factors that enhance or impede a behavior and the availability of the resources necessary to perform the behavior. Self-efficacy is defined as the "conviction that one can successfully execute a given behavior" (Taylor 195). Self-efficacy can often be related to complexity. However, complexity refers to an object or behavior whereas self-efficacy refers to a person. This Theory of Planned Behavior was adapted to study behavior in majoring in supply chain management.

II. Hypothesized Model:

The Theory of Planned Behavior can be applied to this research by forming questions concerning the likelihood of women majoring in supply chain management. The model from the Theory of Planned Behavior displayed below visualizes how the hypotheses for this research were tested concerning behavior towards majoring in supply chain management.

The first hypothesis concerns the relationship between the respondent's relative advantage and attitude towards majoring in supply chain management.

H₁ : Respondent's relative advantage will positively affect their attitude in majoring in supply chain management.

The second hypothesis concerns the relationship between the respondent's perceived complexity of majoring in supply chain management and their attitude towards majoring in supply chain management.

H₂ : Respondent's perceived complexity of majoring in supply chain management will negatively affect their attitude towards majoring in supply chain management.

The third hypothesis concerns the relationship between the respondent's compatibility with supply chain management and their attitude towards majoring in supply chain management.

H₃ : Respondent's compatibility with supply chain management will positively affect their attitude towards majoring in supply chain management.

The fourth hypothesis focuses on the relationship between the respondent's normative influences and their subjective norms in regards to supply chain management.

H₄ : Respondent's normative influences toward supply chain management will positively affect their subjective norms towards majoring in supply chain management.

The fifth hypothesis concerns the relationship between the respondent's efficacy and their perceived behavior control of majoring in supply chain management.

H₅ : Respondent's efficacy will positively affect their perceived behavioral control towards majoring in supply chain management.

The sixth hypothesis concerns the relationship between the respondent's facilitating conditions and their perceived behavior control of majoring in supply chain management.

H₆ : Respondent's facilitating conditions will positively affect their perceived behavioral control towards majoring in supply chain management

The seventh hypothesis concerns the relationship between the respondent's attitude towards supply chain management and their decision to major in supply chain management.

H₇ : Respondent's attitude (if positive) will positively affect their decision to major in supply chain management.

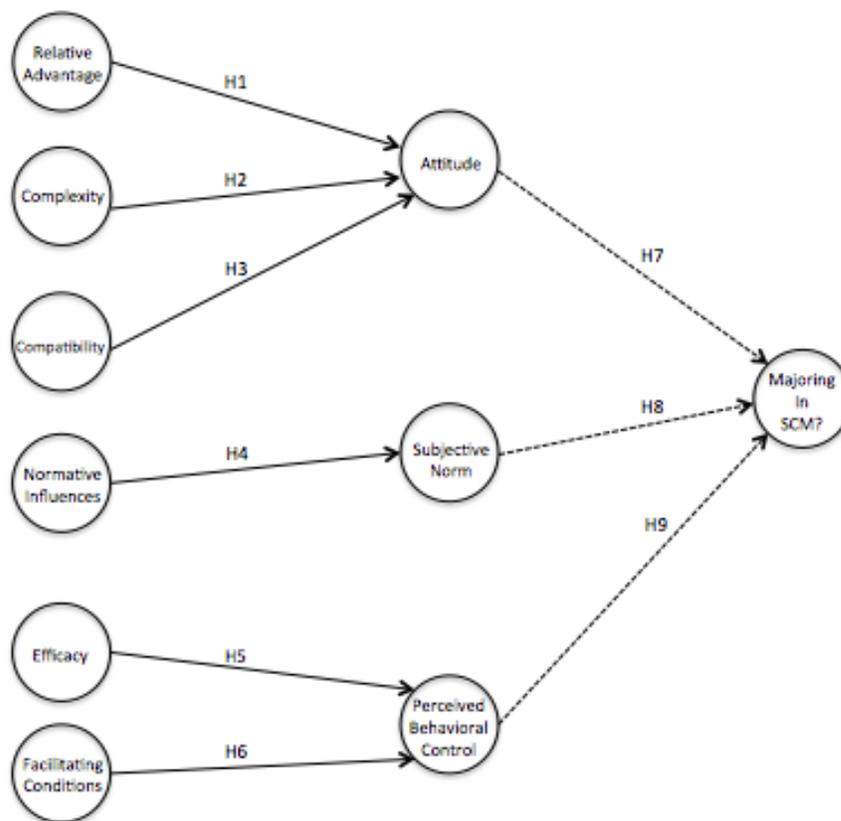
The eighth hypothesis concerns the relationship between the respondent's subjective norms and their decision to major in supply chain management.

H₈ : Respondent's subjective norms will positively affect their decision to major in supply chain management.

The ninth hypothesis and final hypothesis focuses on the relationship between the respondent's perceived behavioral control and their decision to major in supply chain management.

H₉ : Respondent's perceived behavioral control will positively affect their decision to major in supply chain management.

Figure 2 – Adapted Theory of Planned Behavior Model



Methods and Procedures

The Theory of Planned Behavior Model by Azjen was adapted to study gender disparity in supply chain management. After carefully studying research by Taylor and Todd, an adapted model was created to better fit the study. Questions were developed for a survey that asked about the participant's relative advantage, complexity, compatibility, attitude, normative influences, subjective norm, efficacy, facilitating conditions, perceived behavioral control, and intention to major in supply chain management. The office of Undergraduate Advising identified the pool of participants within the college that fit the parameters of the study and sent out the surveys to ensure that confidentiality was kept. The researchers were not able to know who responded to the surveys.

After data collection, Cronbach's Alpha reliability tests were conducted using SPSS to determine the reliability of the survey items. Items in the same model group were tested together. For example, all Personal Relative Advantage questions were tested together. Items that scored below .70 were removed from the grouping. If an entire group of items could not reach a Cronbach's Alpha of .70, the group of items was removed. After determining the validity of the items, the item's scores were averaged to create a single independent variable for the regression analysis. Four models were run, as depicted in Figure 3. The analysis determined which variables were significant in determining whether or not a female student chose to major in supply chain management.

Survey Design:

The survey was designed by using the adapted Theory of Planned Behavior model. The survey asked respondents to rank from strongly disagree to strongly agree and the answers were measured on a 1 to 5 scale. Behavioral intention was measured by asking the respondent if they intend on majoring in supply chain management.

Attitude was measured by asking participants if they liked the idea of supply chain management as a career option and if they had a good attitude towards supply chain management as a career. One component of attitude that was measured was personal relative advantage. Participants were asked to rank if they could be successful in a supply chain management career, if they could personally benefit from a career in supply chain management, and if they believed that the supply chain management field is growing, and

therefore, there are many opportunities for growth. Complexity was measured by asking participants to rank if they believed supply chain management is an easy career choice, if supply chain management as a career is difficult, if supply chain is a difficult concept to understand, if it will be difficult to balance a family and career, and if it will be difficult to move up in a company as a supply chain management professional. Compatibility was measured by asking if the participant agreed that a career in supply chain management is compatible with their family life, if it would work well with their desired lifestyle, if a career in supply chain management would fit their personality, and if they enjoyed learning about supply chain.

Subjective norm was measured by asking participants if they agreed that people who are important to them like supply chain management, if those people think the participant should pursue a career in supply chain management, and if the people who influence the participants' decisions would think that they should pursue a career in supply chain management. Normative influence was measured by asking participants if they agreed that they chose their major because of a family or friend influence, if they make decisions based on others' opinion, if their family believes that they should major in supply chain management, and if they do what their family thinks they should do.

Perceived behavioral control was measured by asking the participants if they agreed that they have the resources, knowledge, and ability to pursue a career in supply chain management and if whether or not they pursue a career in supply chain management is completely up to them. Efficacy was measured by asking if the participant agreed that they believe they could be a supply chain executive, if they knew how to pursue a career in supply chain management, if they would be able to grow in their career if they joined supply chain management, and if the participant could contribute to their organization in a supply chain management role. Finally, facilitating conditions was measured by asking the participant if they agree that pursuing a career in supply chain management is inconvenient or takes too much effort, if they are in supply chain management because of scholarship money, and if they have access to supply chain management professionals.

Survey Sample:

The survey was sent out to female undergraduate students in the Haslam College of Business. Only students who were juniors or seniors were invited to participate in the survey. The participants could be in any major, as the researchers were trying to capture a broad view of why women are or are not interested in Supply Chain Management as a career. 98 survey responses were collected.

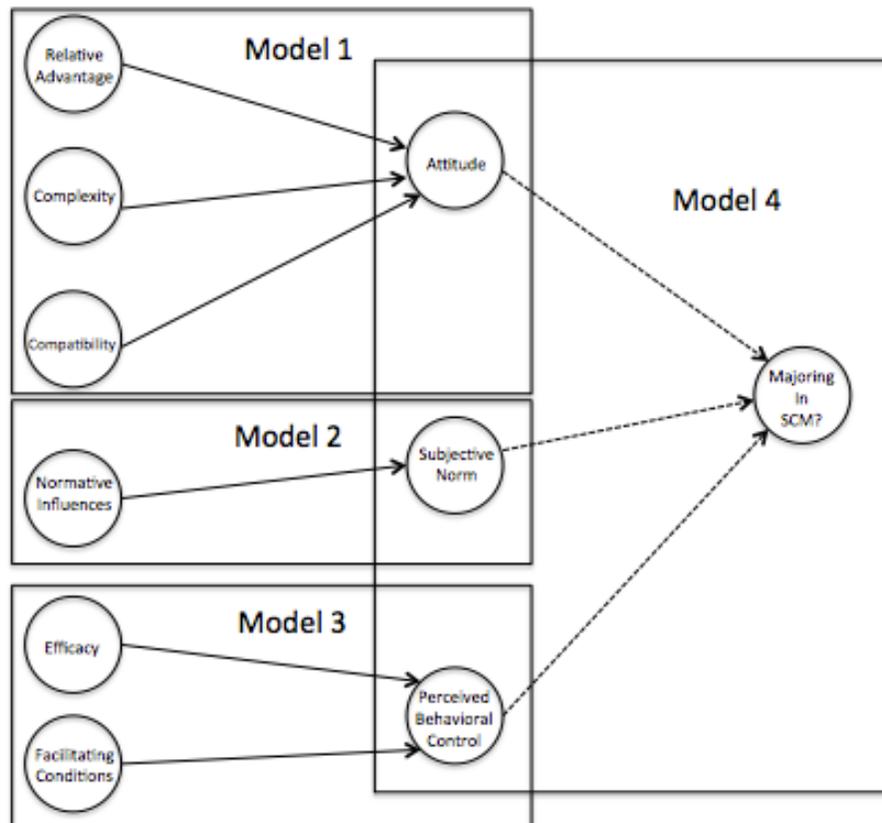
Findings

Results and Hypothesis Testing:

Once the data was exported from Qualtrics into Excel, rows were eliminated from surveys that were incomplete. Of 98 total responses to the survey, only 57 could be analyzed. Of those 57 responses, 15 were from supply chain management majors. Some respondents did not indicate their major, so the number of supply chain management majors may actually be higher. Formulas were created in Excel to reverse code the questions that were asked inversely. Following the data cleansing, the data was exported into SPSS for reliability testing, variable creation, and regression analysis.

The first set of items to undergo the reliability test was personal relative advantage. The set included 4 questions, but question 2 was eliminated to increase the Cronbach's Alpha. Complexity had a total of 5 items. The entire set of complexity items had to be eliminated because it could not reach the threshold of .700 Cronbach's Alpha. Therefore, no complexity variable was created. The compatibility set had 4 items. No items had to be removed from the set. Normative influences had a total of 5 items. The highest Cronbach's Alpha that could be reached was .508, so the entire set had to be eliminated and no variable was created. Efficacy had 5 total items in the set and no items had to be eliminated. Facilitating conditions had a total of 4 questions. Items number 31 and 32 were eliminated to increase the alpha to its highest potential of .60. Although this does not reach the .70 threshold, the set of two items were kept for analysis. Attitude had 3 items in the set, but item number 16. The subjective norm set included 3 items, but item number 23 was eliminated. Perceived behavioral control had 4 items in the original set, however, item number 38 was eliminated.

The Adapted Theory of Planned Behavior Model



*Complexity and Normative influences had to be excluded from the model due to internal inconsistencies.

Model 1: Predictors of Attitude:

When performing a linear regression in which attitude was the independent variable and relative advantage and compatibility were the dependent variables, the resulting R Square was 0.665 meaning that the model accounted for 66.5% of the variance.

The first linear regression was based on the hypothesis (H_1) that the relative advantage of majoring in supply chain management would be significant towards attitude. According to the results, this deemed to be false with a p-value of 0.258. The next hypothesis (H_2) could not be tested because complexity had to be removed from the

model due to inconsistencies. Hypothesis (H_3) towards attitude was that compatibility would be significant in terms of majoring in supply chain management and proved to be significant at the 0.000.

Coefficients

Model 1	B	Std. Error	Beta	T	Sig
(Constant)	.619	.381		1.625	.110
PRA	.169	.148	.140	1.144	.258
Compatibility	.751	.129	.710	5.820	.000

a. Dependent Variable: Attitude

ANOVA

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	35.142	2	17.571	55.256	.000
Residual	16.854	53	.318		
Total	51.996	55			

a. Dependent Variable: Attitude

b. Predictors: (Constant), Compatibility, PRA

R Square

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.822	.676	.664	.56391

Model 2: Predictors of Subjective Norm:

Model 2 could not be tested. The normative influences item set had to be eliminated because the internal consistency was too low. The independent variable for normative influences could not be created, therefore, Model 2 became obsolete.

Model 3: Predictors of Perceived Behavioral Control:

The R Square of the results of entering perceived behavioral control as the independent variable and efficacy and facilitating conditions as the dependent variables was 0.500 meaning that the particular model accounted for 50.0% of the variation.

The next hypothesis (H_5) was that efficacy would be significant towards the perceived behavioral control of majoring in supply chain management. According to the data, efficacy was significant at 0.000. The hypothesis (H_6) was facilitating conditions would have a significant impact on the perceived behavioral control towards majoring in supply chain management. This hypothesis proved to be not significant at 0.516.

Coefficients

Model 3	B	Std. Error	Beta	T	Sig
(Constant)	.423	.485		.867	.390
FC	.076	.117	.055	.654	.516
Efficacy	.841	.089	.796	9.485	.000

a. Dependent Variable: PBC

ANOVA

Model 3	Sum of Squares	df	Mean Square	F	Sig.
Regression	25.057	2	12.529	50.860	.000
Residual	12.809	52	.246		
Total	37.867	54			

a. Dependent Variable: PBC

b. Predictors: Efficacy, FC

R Square

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	.707	.500	.481	1.270

Model 4: Predictors of Behavior:

Lastly, behavior was analyzed in terms of majoring in supply chain management based on attitude, subjective norm, and perceived behavioral control. The R square determined from this linear regression was .665 meaning that 66.5% of the variance was accounted for in the regression.

The hypothesis (H_7) was that attitude would be significant in terms of majoring in supply chain management. This hypothesis was proved to be true with a significant p-value of .013. The next hypothesis (H_8) was that subjective norm would be significant towards majoring in supply chain management. The data concluded that this was very significant at .000. The last hypothesis (H_9) that perceived behavioral control would be significant in terms of majoring in supply chain management. This also proved to be true with a significant number of .034.

Coefficients

Model 4	B	Std. Error	Beta	T	Sig
(Constant)	-2.833	.746		-3.798	.000
Attitude	.495	.193	.274	2.562	.013
SN	.786	.185	.474	4.255	.000
PBC	.441	.203	.210	2.178	.034

a. Dependent Variable: Majoring in SCM

ANOVA

Model 4	Sum of Squares	df	Mean Square	F	Sig.
Regression	110.967	3	36.989	33.677	.000
Residual	56.015	51	1.098		
Total	166.982	54			

a. Dependent Variable: Majoring in SCM
 b. Predictors: (Constant), PBC, Attitude, SN

R Square

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
4	.815	.665	.645	1.048

Discussion and Implications

Interpreting the Results:

Attitude

The data showed that attitude was a significant predictor towards majoring in supply chain management. This means that whether or not a woman likes the idea of supply chain management as a career or has a good attitude towards supply chain management will affect their choice to major in it. Compatibility was significant towards attitude at .000. Personal relative advantage was not significant in determining attitude at .258. Significance in compatibility indicates that women who view supply chain management as compatible with family life, would work well with their desired lifestyle, fit their personality, and enjoyable to learn will be more likely to have a better attitude towards majoring in supply chain management. Personal relative advantage being insignificant indicates that women believing that they can be successful in a supply chain management career, can personally benefit from said career, or agree that there are many opportunities for growth in supply chain management has no effect on their attitude towards majoring in supply chain management.

Subjective Norm

Model 2 could not be tested because normative influences had to be eliminated due to internal inconsistencies. If this study was to be conducted again, it is recommended that more than one variable be created to test subjective norm. An example would be to include survey questions that ask about internal normative beliefs and external normative beliefs.

Perceived Behavioral Control

Perceived behavioral control included efficacy and facilitating conditions. Facilitating conditions proved to be insignificant towards women's perceived behavioral control towards majoring in supply chain management. This is indicative that whether or not women have the resources, knowledge, and ability to pursue a career in supply chain management is insignificant towards their perceived behavioral control of majoring in supply chain management. Efficacy, however, is significant towards the perceived behavioral control of women in regards to majoring in supply chain management.

Women who believe that they can be a supply chain management executive, know how to pursue a career in supply chain management, believe that they would be able to grow in a career in supply chain management, and believe that they could contribute to their organization in a supply chain management role, will have a higher perceived behavioral control towards majoring in supply chain management.

Behavioral Intention

Model 4 tested attitude, subjective norms, and perceived behavioral control towards the behavioral intention of majoring in supply chain management. All three hypotheses proved to be significant. Of the three hypotheses, subjective norm was the most significant towards majoring in supply chain management. This shows that women believe that people who are important to them or who influence their decisions think that they should pursue a career in supply chain management. Those individuals influence the women's decision to major in supply chain management.

Implications:

This data gives us valuable information as to how women can be recruited and retained into the supply chain management major. It is evident that personal relative advantage and compatibility positively influence women's attitude towards supply chain. Universities can approach this by educating incoming freshman how majoring in supply chain management can be advantageous for them and how it can be a fit in their lifestyle. Incoming women may not understand how vast the supply chain sector is. By educating them about the various types of careers that are encompassed by supply chain, they can find the type of career that would best suit them.

Efficacy also proved to be significant towards women's perceived behavioral control. Universities can use this information by empowering the young women. The University could increase the young women's self-efficacy by introducing them to mentors. By connecting students to successful women in supply chain, the students can learn about how those professionals became successful and receive advice and mentorship from them. This could lead the students to believe that they too, can become successful in supply chain management.

Overall, attitude, subjective norm, and perceived behavioral control were all significant towards the behavior of majoring in supply chain management. Subjective

norms was the most significant. Universities should consider not just the student, but the individuals who influence their target students when recruiting young females into the major. This may be family members, friends, and professors. Orientation is a great time to reach out to families and the students to introduce them to the major. An organization could be created to connect young females with their peers in the major to establish a supportive environment. This could help retain women in the major when they have a support group to guide them through their education.

NeXxus:

The University of Tennessee Department of Marketing and Supply Chain Management has started an initiative, NeXxus, in an effort to recruit women into the supply chain major. Efforts have included an open house to all underclassmen to introduce them to the department, answers questions about the major, dispel any misconceptions about supply chain, and connect the women with peers already in the program. NeXxus participants are also invited to the semi-annual Supply Chain Forum hosted by the Global Supply Chain Institute to connect students with supply chain professionals. The NeXxus initiative is still new, but there are high hopes that it will aid in the recruitment of young women into the major.

Universities around the country can consider an initiative similar to NeXxus on their own campuses. By creating a community of young female supply chain majors, recruitment and retention of women in the major could be increased.

Conclusions

In conclusion, researchers and universities alike should be able to use this study as a foundation in their attempts to increase females in supply chain management majors. It is evident that young women are likely to be influenced by attitude in terms of compatibility, by perceived behavioral control in terms of efficacy, and by subjective norms. By using those findings to their advantage, universities across the country can start initiatives to increase female participation.

Companies are looking to become more diverse in the workplace and to make their environments much more women and family friendly. By taking initiative, universities can make themselves more attractive for companies to recruit from. Not only will this result in more females entering the supply chain workforce, but this could also aid in recruiting supply chain majors of either gender.

It is an exciting time to be in supply chain management, as there is a projected need for logisticians in the coming years. As stated before, the gender gap between males and females in the field are extreme. Only 5% of supply chain executives are women. Having a more diverse and inclusive workforce of both men and women can bring together more ideas for innovation. By cultivating communities that encourage young women to enter the field, we can slowly integrate more women into the supply chain management world.

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Appendix

Construct	Cronbach's Alpha	Survey Items
Personal Relative Advantage	.759	<p>-I can be successful in a supply chain management career.</p> <p>-It will be easier for me to receive job offers than males because I am a female.</p> <p>-The supply chain management field is growing, so there are many opportunities for growth.</p> <p>-I can personally benefit from a career in supply chain management.</p>
Complexity	N/A	<p>-Supply chain management is an easy career choice.</p> <p>-Supply chain management, as a career, is difficult.</p> <p>-Supply chain management concepts are difficult to understand.</p> <p>-It will be difficult to balance a family and my career.</p> <p>-It will be difficult to move up in a company as a supply chain management professional.</p> <p>-The choice to major in supply chain management was an easy choice.</p>
Compatibility	.853	<p>-A career in supply chain management is compatible with my family life.</p> <p>-I enjoy learning about supply chain.</p> <p>-A career in supply chain management would work well with my desired lifestyle.</p> <p>-A career in supply chain management would fit my personality.</p>
Attitude	.789	<p>-I like the idea of supply chain management as a career option.</p> <p>-A career in supply chain management is a bad idea.</p> <p>-I have a good attitude towards supply chain management.</p>

Normative Influences	N/A	<ul style="list-style-type: none"> -I chose my major because of a friend or family influence. -I make my decisions based on others' opinions. -Whether or not I pursue a career in supply chain management is completely up to me. -My family believes I should pursue a career in supply chain management. -With respect to career choice, I want to do what my family thinks I should do.
Subjective Norm	.960	<ul style="list-style-type: none"> -People who are important to me like supply chain management. -People who are important to me think I should pursue a career in supply chain management. -The people who influence my decisions would think I should pursue a career in supply chain management.
Efficacy	.805	<ul style="list-style-type: none"> -I believe that I can be a supply chain executive. -I do not know how to pursue a career in supply chain management. -If I wanted to, I could pursue a career in supply chain management. -I would be able to grow in my career if I join the supply chain management profession. -I could contribute to my organization in supply chain management role.
Facilitating Conditions	.600	<ul style="list-style-type: none"> -I am in supply chain management because of scholarship money. -I have access to supply chain management professionals. -Pursuing a career in supply chain management is inconvenient. -Pursuing a career in supply chain management takes too much effort.

<p>Perceived Behavioral Control</p>	<p>.777</p>	<p>-I have the resources to pursue a career in supply chain management.</p> <p>-I have the knowledge to pursue a career in supply chain management.</p> <p>-I have the ability to pursue a career in supply chain management.</p> <p>-Whether or not I pursue a career in supply chain management is completely up to me.</p>
<p>Behavioral Intention</p>		<p>-I intend to pursue a career in supply chain management.</p>