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Abstract

The intention of this study was to better understand the significant underrepresentation of women in the transportation industry. The present study examined the relationships between female high school students' anticipation of a sexist workplace climate in transportation workplaces, perceived subjective norms about transportation work, and intentions to pursue a career in the transportation industry, using the Theory of Reasoned Action (TRA). A sample (N = 132) of female high school students completed measures of anticipated sexism in transportation careers, perceived subjective norms, and transportation career intentions. Results of a regression analysis indicated that higher perceived subjective norms were a statistically significant predictor of female high school students' transportation industry career goals, and that anticipating a sexist workplace climate did not significantly predict female high school students' transportation industry career goals. Moderation analyses indicated that participant race/ethnicity moderated the relationship between perceived social norms and transportation career intentions, with the relationship being significant and positive for White students, but non-significant for Latina students. To date, this is the only study to examine the relationships between transportation career intentions, perceived subjective norms, and anticipating a sexist workplace climate in high school females, and as such has implications for future research and industry recruitment efforts.

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THE ROLES OF PERCEIVED SUBJECTIVE NORMS AND ANTICIPATED SEXISM

IN WOMEN'S INTENTIONS TO PURSUE A CAREER IN TRANSPORTATION

—

A Dissertation Presented to

The Faculty of the Morgridge College of Education

University of Denver

—

In Partial Fulfillment

of the Requirements for the Degree

of Doctor of Philosophy

—

by

Elizabeth C. Johnson

August 2016

Advisor: Patton O. Garriott

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The intention of this study was to better understand the significant

underrepresentation of women in the transportation industry. The present study examined

the relationships between female high school students' anticipation of a sexist workplace

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relationship between perceived social norms and transportation career intentions, with the

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Chapter 1 : Introduction

Background of the Problem

In 2013, unemployment in the United States reached 7.6 % (U.S. Department of Labor, Bureau of Labor Statistics, 2013). Despite this staggering rate, the transportation industry proclaims that there is an increased demand for employees in the transportation workforce to keep up with the rising demand for transportation services (U.S. Department of Transportation, 2012). Although one would think that the current economic climate would make it less challenging to attract, recruit, hire, and retain competent individuals to keep up with the demand for services, the United States (U.S.) Department of Transportation (2012) states the transportation industry lacks "good access to non-traditional labor pools (e.g. individuals with disabilities, demobilizing military personnel, or women)" (U.S. Department of Transportation, 2012). Beyond merely filling current and future workforce shortages, the U.S. Department of Transportation identified a desire to increase the proportion of underrepresented groups employed in all levels of the transportation workforce by "improv[ing] pathways into various levels of transportation occupations for all, with a special focus on women and underrepresented populations" (p. 1). The best way to "improve pathways" for women and underrepresented populations into transportation occupations, however, has not yet been fully understood, likely

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because the *origins* of the underrepresentation of women in the field is not yet fully understood. Despite women's near equal participation rate (49.6%) in the U.S. labor force, current census data suggests that only 5% of employed women work in production, transportation, and material moving occupations, and that within this field, women account for a mere 13% of employees (U.S. Department of Labor, 2010). Interestingly, the underrepresentation of women in the transportation industry persists across race/ethnicity (U.S. Bureau of Labor Statistics, 2011). According to the U.S. Bureau of Labor Statistics (2011) an average of 5.1% of White women, 6.7% of Black women 6.9% of Asian women, and 10.1% Latina women, are employed in the transportation industry, versus an average of 16.8% of White men, 24.6% of Black men, 13.0% of Asian men, and 21.8% Latino men (U.S. Bureau of Labor Statistics, 2011). Formal research into the origins of gender discrepancy in the transportation workforce has yet to be conducted, making it difficult to discern if the underrepresentation of women is the result of issues in recruitment, retention, or other contextual factors.

Judith Lorber's (1992) seminal work "Seeing is Believing: Biology as Ideology" details the ways in which assumed differences between women and men have led to "gendered" occupations. To the detriment of both men and women, socially constructed notions about what is men's versus women's work has effectively linked certain occupations to certain genders (e.g. machine work is men's work), and shaped the way women see some lines of work as viable or unviable. In 2011, the U.S. Department of Transportation (2010) held its first *National Dialogue*

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for Women in Blue-Collar Transportation Careers. Specifically focused on addressing the unique challenges faced by women working in skilled, blue-collar transportation careers, male and female representatives from 25 national transportation organizations discussed the image of women working in blue-collar transportation careers, and recruitment and retention for women working in these areas. The *National Dialogue* (2011) yielded important information about women's desire for improved outreach and awareness efforts, skills training, and the creation of a "healthy and respectful work environment that recognizes women in the transportation industry." In discussing the need for an improved work environment, participants stated a desire for increased awareness of incidents of discrimination and exclusion within the workplace, training for management for addressing discrimination concerns, programs in diversity training, team building, respectful behaviors "at all levels," and the recognition and addressing of potential concerns for women regarding their family/work life balance.

Proceedings from the *National Dialogue* (2011) suggest that a unique challenge faced by women in the transportation industry relates to their experiences in the workplace. Their request for heightened awareness around workplace discrimination and exclusion, in conjunction with their desire for diversity training programs and respectful behaviors across roles, may provide important clues about the gender gap in transportation. More specifically, these proceedings lead one to wonder, are women choosing not to pursue a career in transportation—a male dominated field—because they anticipate experiences of sexism in the workplace?

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For the purposes of this study, anticipating sexism in transportation workplaces, serves as an indicator of attitudes about the transportation workplace.

Proceedings from the *National Dialogue* (2011) may also suggest that, in addition to the *attitudes* women may hold about transportation workplace climate, their decision to pursue or not pursue lines of transportation work may also be influenced by *subjective norms* regarding work in this field. Subjective norms refer to perceived social pressure to perform or not to perform a given behavior, based upon an individual's belief that referent individuals may approve or disapprove of performing this given behavior (Ajzen, 1991). With regards to work, subjective norms can be influenced by the gender-based stereotypes held about specific industries. Examples of potential subjective norms regarding the transportation industry include beliefs such as transportation work is "men's work," and inherently masculine in nature, which may be experienced by some women as social pressure/cues that they do not belong in transportation jobs. In her work, *Gender, Race, and Class in Silicon Valley*, Hossfeld (1990) explains,

> One way in which patriarchal ideology affects workplace culture is through t he "gendering" of workers. The forms of work culture that managers encourage, and that women workers choose to develop, are those that reaffirm traditional forms of femininity. This occurs in spite of the fact that, or more likely because, the women are engaged in roles that are traditionally defined as non-feminine: factory work and wage earning. Although factory work and wage earning are indeed traditions long held by working-class women, the dominant ideology that such tasks are "unfeminine" is equally traditional (p. 264).

The request for the creation of a healthy and respectful work environment, heightened recognition of women in the transportation industry, and increased

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acknowledgment of potential concerns for women regarding their family/work life

balance in the *National Dialogue* (2011) may provide clues about the perceived

subjective norms regarding work in the transportation field, and important

information about the gender gap in transportation. More specifically, these requests

may reflect a non-inclusive climate within the transportation industry for female

employees, which may encourage some women to feel they do not belong in

transportation jobs. Substantial empirical research exists to support the link between

subjective norms and behavioral intention for women. In examining condom-use

intention, Baker, Morrison, Carter and Verdon (1996) found that subjective norms

were a significant predictor of intention to use condoms for women with steady or

casual partners, unlike men with casual partners, for whom subjective norms were not

significant predictors of condom use intention. Similarly, Montano and Taplin (1991)

used the TRA to predict mammography participation, and found subjective norms to

be significantly associated with mammography participation in a sample of 946

women, age 40 and above. Research findings such as these, and proceedings from

conferences like the *National Dialogue for Women in Blue-Collar Transportation*

Careers (2011) lead one to also wonder, are women choosing not to pursue a career

in transportation because they believe referent individuals may disapprove of this

vocational choice?

Statement of the Problem

The transportation industry states that it would like to increase the

representation of women in all modes and levels of the transportation workforce, but

has yet to conduct research into the origins of this underrepresentation. To better attract and recruit competent female employees, a better understanding of why women are underrepresented in the transportation industry is needed. Greater knowledge of the connection between women's attitudes regarding anticipated sexism in transportation workplaces, women's subjective norms about transportation work, and women's transportation career intentions may enhance our understanding of gender differences in transportation careers and could potentially provide useful direction for transportation recruitment personnel. The specific purpose of this study is to examine predictors of transportation career choice among female high school students using the theory of reasoned action (TRA). The TRA proposes that one's intention to perform a behavior is influenced by one's *attitudes* and *subjective norms* about that behavior. Using a descriptive cross-sectional quantitative research design, the study will explore the relationships among attitudes regarding anticipated sexism in transportation workplaces, women's subjective norms about transportation work, and women's intentions to pursue a career in the transportation industry. Exploring the links between attitudes, subjective norms, and behavioral intention in the vocational domain could have powerful individual and social implications for women, and could be useful in gaining a clearer understanding of patterns in women's vocational intention.

Importance of Studying the Problem

According to the U.S. Bureau of Labor Statistics (2011) women are markedly underrepresented in the field of transportation relative to their share of total

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employment. Gender discrepancies in the workforce are important to consider, as they may echo larger gender inequities such as unequal distribution of power and influence, unequal access to education, and unequal opportunity to develop personal ambitions, interests and talents. Gender discrepancies in the workforce may also echo unequal opportunity for financial independence, unequal ability to share responsibility for children, and unequal freedom from coercion, intimidation and gender-based violence (United Nations Population Fund, 2008). Because the transportation industry proclaims an increased demand for employees to help meet the growing demand for transportation services (U.S. Department of Transportation, 2012), this industry has the potential to provide employment for many individuals in need of work. To increase the number of women in the field of transportation—and subsequently decrease gender discrepancies in this industry—a better understanding of the origins of women's underrepresentation is needed.

Research Questions and Hypotheses

Research question 1. Is there a relationship between female high school students' transportation industry career goals and their perceptions of anticipated sexism in the vocational domain?

Hypothesis 1. A significant inverse relationship between female high school students' transportation industry career goals and their perceptions of anticipated sexism in the vocational domain exists.

Research question 2. Will perceptions of anticipated sexism and perceived subjective norms predict female high school students' transportation industry career goals?

Hypothesis 2a. Perceptions of anticipated sexism and perceived subjective norms will predict female high school students' transportation industry career goals.

Hypothesis 2b. Higher perceptions of anticipated sexism in the field of transportation will significantly predict lower transportation industry career goals for female high school students.

Hypothesis 2c. More positive perceived subjective norms for pursuing a career in transportation will significantly predict transportation industry career goals for female high school students.

Exploratory analysis. As people have advocated for examining group differences in the TRA (Prestholdt, Fisher, Bienn, & Clemons, 1984; Linnehan, Konrad, Reitman, Greenhalgh, & London, 2003), and racial/ethnic differences in transportation employment have been reported (see Table 1), an exploratory analysis was performed to capture potential intersectionality of race/ethnicity for the predictor variables anticipated sexism and perceived subjective norms. Table 1 displays the U.S. Bureau of Labor's percentages of persons employed in transportation jobs by race/ethnicity in 2011 (U.S. Bureau of Labor Statistics, 2011). Because this analysis was exploratory, no formal a priori hypothesis were made.

Table 1

Percentage of Persons Employed in Transportation Jobs by Race/Ethnicity (2011)

Race/Ethnicity	Percentage Men	Percentage Women
White	16.8	5.1
Black	24.6	6.7
Asian	13.0	6.9
Latina/o	21.8	10.1

Definition of Key Terms

    Sexism. Many definitions exist for the term *sexism*, depending on discipline, intended use, and lens. Marriam-Webster (2013) defines *sexism* as: prejudice or discrimination based on a person's sex, and the "behaviors, conditions, or attitudes that foster stereotypes of social roles based on sex." Marilyn Frye (in Di Leo, 2006) defines *sexism* as "cultural and economic structures which create and enforce the elaborate and rigid patterns of sex-marking and sex-announcing which divide the species, along lines of sex, into dominators and subordinates" (p. 845). Examples of sexism include unequal compensation, imbalanced treatment, sexist attitudes, violence, rape, discriminatory hiring practices, harassment, unequal distribution of duties, resources, and rewards in a workplace. Other examples of sexism include unequal distribution of power and influence, unequal access to education, unequal opportunity to develop personal ambitions, interests and talents, unequal opportunity for financial independence, unequal ability to share responsibility for children,

and unequal freedom from coercion, intimidation and gender-based violence (United Nations Population Fund, 2008).

Anticipated sexism. The perception that prejudice or discrimination based on a person's sex is probable, or likely to happen.

Subjective norms. Perceived social pressure to perform or not to perform a given behavior, based upon an individual's belief that referent individuals may approve or disapprove of performing this given behavior (Ajzen, 1991).

Attitudes toward a behavior. Favorable or unfavorable evaluations of a given behavior, and/or the belief that the consequences of performing a given behavior are desirable or undesirable (Eagly & Chaiken, 1993).

Chapter 2: Literature Review

The Transportation Workforce

The field of transportation is estimated to employ 12,232,000 individuals in the United States (U.S.), and broadly encompasses work in the industries of transit and ground passenger transportation, pipeline, air, rail, water and truck transportation, and warehouse and storage (U.S. Bureau of Labor Statistics, 2010). Positions in the field of transportation vary widely between these industries, and offer work in diverse arenas such as vehicle operation, equipment manufacturing, pipeline operation, infrastructure construction, and secondary support services among many others (U.S. Department of Labor, Bureau of Labor Statistics, 2010). Specific occupations in this broad field include positions such as airline pilots, locomotive engineers, sailors, marine oilers, gas compressors, gas pumping station operators, electrical installers and repairers, tire builders, postal service mail carriers, bicycle repairers, and crossing guards (U.S. Department of Labor, Bureau of Labor Statistics, 2010). Other positions include aircraft cargo handling supervisors, ship loaders, traffic clerks, couriers, travel agents, flight attendants, baggage porters, and equipment cleaners.

Transit and ground passenger transportation. According to the U.S. Census Bureau (2013), approximately 470,400 individuals are employed in the field of Transit and Ground Passenger Transportation, which includes work in Urban

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Transit Systems, Interurban and Rural Bus Transportation, Taxi and Limousine Services, School and Employee Bus Transportation, and Rail Transportation. The U.S. Bureau of Labor Statistics (2013) estimates that earnings in this field average $17.23 an hour, with employees typically obtaining an average of thirty-three work-hours a week. In 2012, Bus and truck mechanics and diesel engine specialists obtained the highest grossing salary with a mean annual income of $43,380. The annual mean salaries of school, transit, and intercity bus drivers were approximately $31,000, while taxi/limousine drivers averaged $26,000 (U.S. Bureau of Labor Statistics, 2013).

Air transportation. As of 2013, 447,000 individuals were estimated to be employed in the field of Air Transportation in the United States (U.S. Bureau of Labor Statistics, 2013). Jobs in this industry include aircraft mechanics, service technicians, airline pilots, copilots, and flight engineers, cargo and freight agents, flight attendants, reservation and transportation ticket agents, and travel clerks (Occupational Employment Statistics, 2013). In 2012, airline pilots obtained the highest grossing salary with a mean annual income of $130,320, cargo and freight agents earned approximately $40,000, while reservation and transportation ticket agents and travel clerks averaged $36,000 (Occupational Employment Statistics, 2013).

Freight transportation. According to the U.S. Census Bureau (2013), there are approximately 918, 800 individuals working in the field of Freight Transportation. This broad industry includes positions such as motor vehicle operators, administrative

support workers, shipping, receiving, traffic clerks, and material moving workers, with mean earning estimates at $20.18 an hour. In 2012, chief executives in freight transportation obtained the highest grossing salary with a mean annual income of $152,730. Motor vehicle operators were estimated to earn an annual mean wage of $41,340; administrative support workers earned $53,920; shipping, receiving, and traffic clerks earned $32,280; and material moving workers were estimated to earn $31,640.

Women in the transportation workforce. Women constituted 46.9% of the total labor force in 2012 (U.S. Bureau of Labor Statistics, 2013). In 2010, approximately 41% of women were employed in management, professional, and related occupations, 32% worked in sales and office occupations, 21% were employed in service occupations, 5% worked in production, transportation, and material moving occupations, and 0.9% worked in natural resources, construction, and maintenance occupations (U.S. Department of Labor, 2010). The unemployment rate for women in 2010 was 8.6% with Asian women having the lowest unemployment rate at 7.5%, and Black women having the highest unemployment rate at 13.8% (U.S. Department of Labor, 2010). Despite this representation, women continue to be underrepresented in some fields, and overrepresented in others. According to the U.S. Department of Labor (2013)

> In 2011, women accounted for at least 50 percent of all workers within several industry sectors: financial activities, education and health services, leisure and hospitality, and other services. However, women were substantially underrepresented (relative to their share of total employment) in agriculture, mining, construction, manufacturing, and in transportation and utilities (p. 2).

Within the transportation industry, women are estimated to comprise only 13% of full-time employed workers in the field (Hanson & Murakami, 2010). Table 2 displays the U.S. Department of Labor's (2013) annual averages of employed persons in transportation by detailed industry and sex for 2011.

Table 2

Annual Averages of Employed Persons by Detailed Industry and Sex (2011)

Industry	Total Employed (in thousands)	Percentage Women
Transportation and utilities	7,200	22.6
Transportation and warehousing	5,957	22.6
Air transportation	509	35.3
Rail transportation	246	10.5
Water transportation	67	18.8
Truck transportation	1,739	11.8
Bus service and urban transit	505	36
Taxi and limousine service	234	11
Pipeline transportation	57	18.8
Scenic and sightseeing transportation	34	No Data
Services incidental to transportation	801	23.9
Postal Service	711	39.7
Couriers and messengers	693	20
Warehousing and storage	361	23.5

Table 3 displays the U.S. Department of Labor Women's Bureau 2008 employment figures and percentages for women in selected transportation occupations, adapted from Hanson and Murakami (2010).

Table 3

Employment Figures and Percentages for Women in Selected Occupations (2008)

Occupation	Total Individuals Employed	Women Employed	% Women
Supervisors, transportation and material-moving workers	208,000	43,000	20.5
Civil engineers	346,000	36,000	10.4
Construction and building inspectors	93,000	9,000	9.5
Industrial truck and tractor operators	568,000	51,000	8.9
Construction managers	1,244,000	102,000	8.2
Engineering managers	109,000	7,000	6.3
Motor vehicle operators, all others	74,000	4,000	5.5
Driver/sales workers and truck drivers	3,388,000	167,000	4.9
Heavy vehicle and mobile equipment service technicians/ mechanics	217,000	2,000	1.1
Bus/truck mechanics and diesel engine specialists	358,000	3,000	0.9
Highway maintenance workers	103,000	2,000	1.9

Despite women's near equal participation (49.6%) in the U.S. labor force, disparities continue to exist within the types of work women pursue (U. S. Bureau of Labor Statistics, 2013). Table 2 and 3 highlight this underrepresentation of women in specific transportation industries and occupations. As mentioned previously, current census data suggests that 5% of employed women work in production, transportation, and material moving occupations, and that within this field, women account for a mere 13% of employed persons (U.S. Department of Labor, 2010).

The Theory of Reasoned Action in the Workplace

Transportation industry personnel are interested in understanding why the underrepresentation of women exists in the field transportation. One useful framework for understanding behavior such as the process of vocational choice is the theory of reasoned action (TRA). The TRA proposes a link between a person's beliefs and their behavior, positing that the likelihood of an individual performing a given action is influenced by one's attitude toward the behavior, and subjective norms (Ajzen, 1991). The theory's originating authors, Ajzen and Fishbein (1973), stipulate that the TRA applies to only those behaviors under volitional control, which can depend upon factors such as time, money, skills, and the cooperation of others. Ajzen (1991) states, "collectively, these factors represent people's actual control over the behavior. To the extent that a person has the required opportunities and resources, and intends to perform the behavior, he or she should succeed in doing so" (p. 182).

The TRA suggests that an individual's intentions are shaped by two factors: *subjective norms,* and *attitudes* the individual holds toward the given behavior (Ajzen, 1991). The basic premise of the theory is that when attitudes are favorable, and subjective norms are positive, intentions to perform a given behavior will be stronger (i.e., attitudes + social norms = behavioral intentions). Figure 1 shows the basic conceptual model of the theory of reasoned action.

Attitude Toward Behavior

Behavior

Behavioral Intention

Subjective Norm
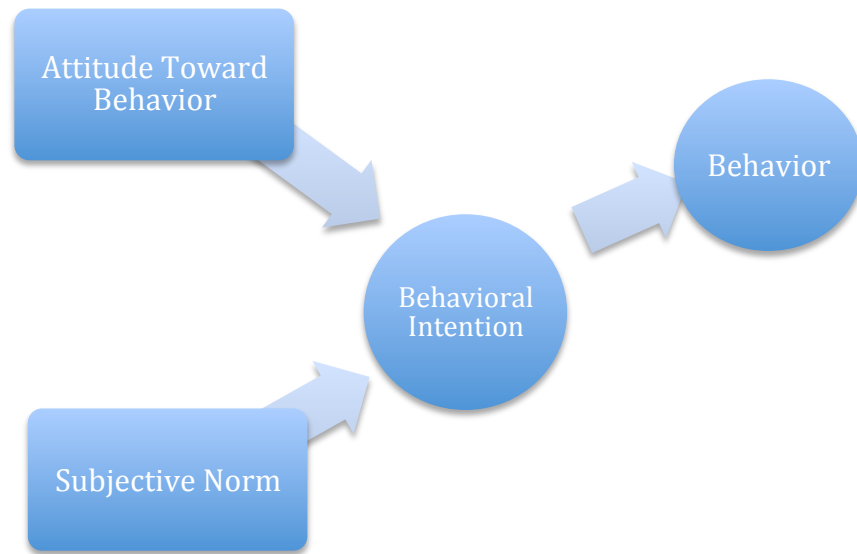
Figure 1. Theory of reasoned action. Adapted from Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research.* Reading, Mass: Addison-Wesley.

Attitude toward the behavior. The first determinant of behavioral intention proposed by the TRA is an individual's attitude toward the behavior. According to Ajzen (1991), this construct describes whether or not an individual has a favorable or unfavorable evaluation of a given behavior, and whether or not an individual believes the consequences of performing this behavior are desirable or undesirable (Eagly & Chaiken, 1993). The formation of attitudes toward a behavior in the TRA is posited to evolve in a similar fashion as the Expectancy-Value Model of Attitudes, proposed to Fishbein and Ajzen's (1975). Ajzen (1991) writes,

> Each belief links the behavior to a certain outcome, or to some other attribute such as the cost incurred by performing the behavior. Since the attributes that come to be linked to the behavior are already valued positively or negatively, we automatically and simultaneously acquire an attitude toward the behavior.

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In this fashion, we learn to favor behaviors we believe have largely desirable consequences and we form unfavorable attitudes toward behaviors we associate with mostly undesirable consequences (p. 191).

In this study, the *attitudes* of interest are those attitudes women may hold about transportation workplace climate. As discussed previously, proceedings from the *National Dialogue* (2011) regarding the request for heightened awareness around workplace discrimination and exclusion, diversity training programs, and respectful behaviors across roles, may suggest overt and covert forms of sexism exist in transportation workplaces. It is possible that anticipating sexism as a consequence of working in a transportation career may discourage some women from pursuing this line of work. In the current study anticipating sexism serves as an indicator of attitudes women may hold about transportation workplace climate. According to the tenets of the TRA, perceptions of negative consequences of transportation careers may ultimately impact intention to purse transportation work (Ajzen, 1991).

Subjective norms. The second determinant of behavioral intention proposed by the TRA is an individual's subjective norms. According to Ajzen (1991), this construct refers to perceived social pressure to perform or not to perform a given behavior, based upon the individual's normative beliefs of referent individuals who may approve or disapprove of performing a given behavior (Ajzen, 1991). The TRA posits that the deeper an individual's motivation to comply with the referent individual or group, the stronger the normative belief.

In this study, the *subjective norms* of interest are the social pressures/cues women may experience about transportation work. As discussed previously,

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proceedings from the *National Dialogue* (2011) regarding the request for heightened

recognition of women in the transportation industry, and increased acknowledgment

of potential concerns for women regarding their family/work life balance may suggest

that women experience social pressures/cues that transportation work is "men's

work," and that they do not belong in transportation jobs. The evaluation of

transportation work as masculine or "men's work," may encourage some women to

believe society or referent individuals may disapprove of them engaging in this line

of work. According to the tenants of the TRA, subject norms such as these, may

ultimately impact intention to purse transportation work.

Empirical support. The theory of reasoned action has been used in studies

with a variety of populations, and has accumulated empirical support, including its

utility in explaining the behavioral intentions of women. In their study examining

cultural and gender differences in vocational decision patterns among 191 job

seekers, Van Hooft, Born, Taris, and Van der Flier (2006) found that attitude and

subjective norms were significantly related to participants' application intentions.

These variables successfully accounted for 76% of the variance in application

intentions, and the TRA was deemed a "valid framework to predict job application

decisions" (p. 163-4). Sheppard, Hartwick, and Warshaw (1988) conducted two meta-

analyses to explore the effectiveness of the TRA, and found strong evidence for the

predictive utility across conditions. In a study investigating the intention to engage in

software piracy, Aleassa, Pearson and McClurg (2011) used the TRA with data

collected from 323 undergraduate business students. Their study found that attitudes

toward software piracy and subjective norms were significant predictors of intention to engage in software piracy, consistent with the tenants of the TRA. Jaidi, Van Hooft, and Arends (2011) surveyed 80 graduates in France to examine the relationships of different information sources on job pursuit behavior, and actual job choice. Their study supported the relationships in the TRA, finding that recruitment advertising and positive word of mouth related positively to job pursuit intention and behavior. In investigating physical activity behavior in 297 Canadian, postmenopausal women, researchers found 44% of the variance in physical activity intentions was explained by instrumental attitude ($\beta= 0.33$), affective attitude ($\beta=0.29$), descriptive norms ($\beta= 0.19$), and self-efficacy ($\beta=0.24$), suggesting the theory's usefulness in understanding physical activity intentions and behavior in postmenopausal women (Vallance, Murray, Johnson, & Elavsky, 2011). In a study exploring the relationships between women's career intentions, their gender-role attitudes, and the subjective norms of their romantic partners and parents, Vincent, Peplau, and Hill (1998) analyzed longitudinal data from 105 women surveyed in 1973 and 1987. Results of their study supported the relationships of the TRA, and indicated that women's gender-role attitudes and the perceived subjective norms of referent individuals in their lives significantly predicted career intentions and career behavior.

Perceived Sexism in the Workplace

Sue et al. (2007) suggest that the expression and impact of discrimination on an individual or group can vary widely. Types of discriminatory may include "unconscious communications that convey rudeness and insensitivity," "conscious,

deliberate and either subtle or explicit racial, gender, or sexual-orientation based attitudes, beliefs, or behaviors that are communicated to marginalized groups through environmental cues, verbalizations, or behaviors," and "often unconscious communications that exclude, negate, or nullify the psychological thoughts, feelings, or experiential reality" of marginalized populations (Sue, 2010). Contrary to what many believe to be inconsequential indignities, discrimination is a "constant, continuing, and cumulative experience" that may inform anger and frustration, depleted psychic energy, lowered feelings of subjective well-being, self-esteem and worthiness, physical health problems, and shortened life expectancy (Brondolo et al., 2008; Clark, Anderson, Clark, & Williams, 1999; Franklin, 1999; King, 2005; Noh & Kasper, 2003; Smedley & Smedley, 2005; Solorzano, Ceja, & Yesso, 2000; Sue, Capodilupo, & Holder, 2008; Wei, Ku, Russell, Mallinckrodt, & Liao, 2008; Williams, Neighbors, & Jackson, 2003; Yoo & Lee, 2008, as cited in Sue , 2010). Additionally, the emotional toll of victimization can include "feelings of shame, self-blame, humiliation, rage…a sense of intrusion, violation, and vulnerability" (Ridley, 2005).

Sexism. According to the U.S. Equal Employment Opportunity Commission (2013), sexism describes less favorable treatment of an individual "because of his or her connection with an organization or group that is generally associated with people of a certain sex." According to the Code of Federal Regulations,

> Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment when (1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment, (2) submission to or rejection of

such conduct by an individual is used as the basis for employment decisions affecting such individual, or (3) such conduct has the purpose or effect of unreasonably interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment (U.S. Equal Employment Opportunity Commission, 2011).

Many instances of sexism go unreported, however some sex-based discrimination does get disclosed. Table 4 displays the total number of sex-based discrimination charges filed from 2006-2012 according to the U.S. Equal Employment Opportunity Commission (2013).

Table 4

Total Number of Sex-Based Discrimination Charges Filed (2006-2012)

	2006	2007	2008	2009	2010	2011	2012
Filed	23,247	24,826	28,372	28,028	29,029	28,534	30,356

Although the U.S. Equal Employment Opportunity Commission's definition of sexism acknowledges some organizational/cultural forms of discrimination, their definition focuses more on the individual-level of discrimination. A broader, and perhaps more comprehensive definition of the term sexism, includes reference to the organizational, cultural and economic structures that foster stereotypes, prejudice and/or discrimination based on a person's sex (Di Leo, 2006). Examples of sexism not only include unequal compensation, imbalanced treatment, sexist attitudes, violence, rape, discriminatory hiring practices, intimidation, and harassment, but unequal distribution of duties, resources, and rewards in a workplace, unequal distribution of power and influence, unequal access to

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education, unequal opportunity to develop personal ambitions, interests and talents, unequal opportunity for financial independence, and unequal ability to share responsibility for children (United Nations Population Fund, 2008).

Sexism has been the subject of much research, and has been linked to psychological distress. For example, researchers investigated whether hostile sexism would play a unique role in the negative evaluations and discrimination against women who applied for a "masculine-typed managerial role" (Masser and Abrams, 2004). Participants in the study evaluated curriculum vitaes from male and female candidates, and were asked to rate the candidate on twelve traits such as friendliness, helpfulness, conceitedness, and arrogance. Additionally, participants were asked to provide responses on the Ambivalent Sexism Inventory, a 22-item inventory that measures the strength of an individual's sexist attitudes. The authors found that hostile sexism was related to the negative evaluation, and lower employment recommendations of a female candidate for a masculine-typed position (Masser & Abrams, 2004).

In a similar study, Latu et al. (2011) investigated implicit gender stereotypes of successful managers. In their investigation, 301 college students were asked to complete the Hostile and Benevolent Sexism Scales, Ambivalent Sexism Inventory, and Successful Manager Implicit Association Test. Results of their study indicated that male participants were more likely to implicitly associate men with successful managerial traits and women with unsuccessful managerial traits. Additionally,

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results indicated that implicit gender stereotypes predicted hypothetical workplace outcomes, such that both male and female participants assigned more workplace rewards to male managers (Latu et al., 2011).

Ohse and Stockdale (2008) investigated the mediating effect of sexist attitudes on age and sexual harassment perceptions, and the moderating effect of age on gender, sexist attitudes and perceptions. Using a sample of 965 university employees and students, the authors found a positive relationship between age and sexual harassment perceptions. Results indicated that age did not moderate correlations with gender or sexist attitudes, and that hostile sexism partially mediated age and sexual harassment perceptions.

Using a sample of 87 college-educated White women, Miner-Rubino, Settles, and Stewart (2009) examined the moderating effects of sensitivity to sexism and perceptions of the workplace climate on the relationship between the gender of the participants' superior, and her well-being, defined as job satisfaction and general health. The results of their investigation indicated that female employees experienced more positive well being when working in an environment they experienced as having a positive climate, under a female superior. Conversely, results indicated that women experienced lower well-being when working in an environment they experienced as having a negative climate, under a female superior.

Klonoff and Landrine (1995) developed The Schedule of Sexist Events, a measure intended to capture the gender-specific stressors in women's lives as measured through 1) Sexist Degradation and its Consequences; 2) Sexist Discrimination in Distant Relationships; 3) Sexism in Close Relationships; and 4) Sexist Discrimination in the Workplace. Yoder and McDonald (1998) examined the reliability and validly of the last of these four subscales, Sexist Discrimination in the Workplace, by administering the subscale to 44 female firefighters. Evidence for both reliability and validity of the subscale was found, and results indicated that the more sexist events these women experienced in the past year, the greater the job stress associated with token status, with "being a pioneering woman," and with being treated differently.

In a study of male and female job satisfaction in the transportation/logistics industry, Johnson, McClure, and Schneider (1999) found that despite non-significant difference in job satisfaction, statistically significant differences existed between adult men and women in perception of the existence of a "glass ceiling" in the transportation/logistics sector of the economy. In response to the question, "based on your personal opinion, is there a 'glass ceiling' (i.e., an invisible barrier generally barring women from career advancement beyond some point) in the logistics/transportation industry?" Johnson, McClure, and Schneider (1999) found,

Women overwhelmingly thought it was present in many companies, while males were much less sure of its existence. Specifically, about 75 percent of women thought there was a "glass ceiling" in the transportation/logistics sector of the economy, compared to only about 33 percent of the male respondents (p. 16).

In their study, Johnson, McClure, and Schneider (1999) also included space for narrative responses to survey items, and gathered important qualitative data regarding women's positive and negative experiences within the field of transportation. One respondent noted, "I hope to be a good role model for other women in my company. I want to prove that women can excel in senior management positions" (p. 14), another stated, "I was pre-law, and knowing what I know now, I'd pursue law and work as an advocate for women's rights (p. 15)." In discussing their study's finding regarding the gender perception of the "glass ceiling," Johnson, McClure, and Schneider (1999) stated, "this is certainly a troubling finding, one that strongly suggests further investigation into the extent of the problem within the field, as well as study into possible avenues of remedy" (p. 9).

Sipe, Johnson, and Fisher (2009) examined 1,373 undergraduate students' (women = 38.7%, men = 58.6%). perceptions of anticipated gender discrimination in the workforce, to compare students' perceptions against previous research that suggests the existence of work-place gender discrimination. The researchers collected data using the Gender Issues Survey, an instrument used to measure 1) gender-based discrimination and sexual harassment in the work experience; and 2) subjective outcomes of gender discrimination and sexual harassment on career satisfaction and perceptions of career advancement (Sipe, Johnson, & Fisher, 2009). Results of the study indicated that students perceived gender discrimination as being of little

significance in their own careers or the careers of women in business, and that they

perceived they would likely enter a gender-neutral workplace. Although diverging

perceptions of the impact of gender discrimination on career satisfaction and

advancement were anticipated by the researchers, responses on the Gender Issues

Survey were more pronounced than expected. Approximately 90% of students

reported that women would not have fewer opportunities for networking and

mentoring because of their gender, and approximately 90% of students reported that

their opportunities for advancement, networking, mentoring, and pay would not be

affected by their gender.

In addition to research on the impact of gender discrimination on occupational

goals, research has also focused on how race/ethnicity intersect with gender in terms

of career aspirations (Mau, 1995; Wilson & Wilson, 1992; Mau & Bikos, 2000). In a

study examining the impact of race/ethnicity, gender, and socioeconomic status on

the career goals of 22,000 U.S. adolescents, Howard et al. (2011) found significant

main effects for gender, socioeconomic status, and ethnicity, Of particular interest to

the present study, Howard et al. (2011) also found a significant gender × ethnicity

interaction for career aspirations. Results of the gender × ethnicity interaction indicate

that for both White and Native American groups, females aspired to careers with

higher prestige than males. Results also indicated that across racial/ethnic group,

females aspired to careers requiring more education than males. Lastly, Howard et al.

(2011) found that Native American males aspired to careers with both lower prestige

and educational requirements than males of all other racial/ethnic groups.

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The demonstrated intersectionality of race/ethnicity and gender on career aspirations in is important to consider within the present study. As it is the intention of this study to explore pertinent variables in vocational decision-making for females, the results of Howard et al. (2011) underline the need for examining group differences, and may suggest that the intersection of demographic variables influence the way adolescents cultivate career aspirations.

Chapter 3: Methods and Participants

Participants

Inclusion criteria for the sample was: (1) currently enrolled in a high school, and (2) age 14-18 years old. Exclusion criteria included (1) any student under the age of 14 or over the age of 18. Student demographic information included sex, age, race/ethnicity, and current high school grade level. White/European American students and Latina/o students were anticipated to constitute the highest percentages of participants, based on student populations of the high schools serving as sites for data collection, although a substantial proportion of Vietnamese students were also anticipated. High school participants were deemed appropriate for this study, as literature suggests that many entry-level jobs in the transportation industry require a high school education or equivalent (U.S. Department of Labor, Employment and Training Administration, & DTI Associates, 2007). Additionally, high school participants were deemed appropriate as research suggests high school is an important period for vocational decision-making (Super, 1985).

Sample Size. This study aimed to obtain enough participants to observe at least a medium effect size. Using G*Power software (Faul, Erdfelder, Lang, & Buchner, 2007), an a priori power analysis was conducted to determine the appropriate sample size for simple linear regression, which was the primary statistical

analysis. For the linear multiple regression (fixed model; R^2 deviation from zero) with 2 predictors, an alpha level of .05, power of .80, and an expected medium effect size (0.25), the required total sample size was 42 participants. This study anticipated observing at least a medium effect size, but aimed to observe a small effect size (=.02); requiring a total sample size of 485 participants. The actual sample size obtained for the study was 132, sufficient to observe medium and large effect sizes.

Measures

This data was collected as part of a larger study examining the participation of individuals currently underrepresented in the transportation industry, entitled *Factors Affecting Recruitment And Retention of The Intermodal Transportation Workforce: Inclusion, Advancement & Selection* (APPENDIX G).

Demographic questionnaire. Four demographic items were included in the study to gather information of participants' age, sex, race/ethnicity, and current grade level.

Perceived subjective norms (Arnold et al., 2006). Four items assessed perceived subjective norms associated with careers in the transportation industry. Items were rated on a 7-point Likert-type scale, rated from 1 (*strongly disagree*) to 7 (*strongly agree*). Sample items include: "Most of my family probably think I should work in the transportation industry;" "If I worked in the transportation industry, most of my family would be proud;" "Most of my friends probably think I should work in the transportation industry;" and "If I worked in the transportation industry, most of my friends would be proud." Validity for the scale has been shown in past studies in

which subjective norms significantly correlated with attitudes and behavioral intentions, (Arnold et al., 2006). Arnold et al. (2006) used similar items to measure intention to work for the UK's National Health Service (NHS), and included the items: "Most of my family and/or friends probably think that I should work for the NHS as a qualified member of staff," and "If I worked for the NHS as a qualified member of staff, most of my family and friends would be proud." Arnold et al. (2006) found the scale scores yielded an alpha coefficient of 0.79 and that subjective norms predicted behavioral intentions. Similarly, in studying ethnic minority–majority group differences in job search behavior in adults, Van Hooft et al., (2004) found the scale yielded an alpha coefficient .89. In the current study, the items assessing participants' perceived subjective norms associated with careers in the transportation field yielded an alpha coefficient of .87.

Anticipated sexism (Carr et al., 2000; Sipe, Johnson, & Fisher, 2009). Participants' perceptions of anticipated experiences of sexism in the transportation workplace were assessed with four, 5-point Likert-type items. Participants rated items on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items include: "In my future job, I will probably be treated differently because of my gender;" "In my future job, I will probably experience sexist remarks or behavior because of my gender (such as insults, rude jokes, or sexual advances);" "In my future job, I will probably have a harder time getting hired than people of the opposite gender;" and "In my future job, I will probably experience discrimination because of my gender." These four items were adapted from the Gender Issues Survey (GIS)

(Sipe, Johnson, & Fisher, 2009), a 52 Likert-item survey designed to assess work-place gender-based discrimination and sexual harassment. More specifically, the GIS assesses the subjective outcomes of gender discrimination and sexual harassment on perceptions of career advancement, and career satisfaction (Sipe, Johnson, & Fisher, 2009). These four items were chosen for the present study because they appeared to be most appropriate with regard to content and readability for high school participants. A prompt directed participants to answer questions about anticipated sexism under the assumption that they intended to enter a career in the transportation industry.

Developed upon the research of Carr et al. (2000), the GIS is comprised of six subscales which include Gender Discrimination of Self, Gender Discrimination of Others, Sexual Harassment of Self, Sexual Harassment of Others, Gender Discrimination Response To Self, and Sexual Harassment Response to Self. For the purposes of this study, the four GIS items were used, with two items drawn from the Gender Discrimination of Self subscale and two items drawn from the Sexual Harassment of Self subscale.

In prior research, the eight items on the Gender Discrimination of Self subscale yielded a coefficient alpha of .72. To evaluate validity, Sipe, Johnson, and Fisher (2009) performed a factor analysis, which suggested, "the theorized factor structure existed with the present data" (p. 342). The six items on the Sexual

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Harassment of Self subscale yielded a Cronbach's coefficient of 0.89 in prior research, and "a principal axis factor analysis with varimax rotation was performed to ensure the scale was valid" (Sipe, Johnson, & Fisher, 2009, p. 341).

As mentioned previously, the four items used in this study were chosen specifically, because they appeared to be most appropriate with regard to content and readability for high school participants. In the current study, the items assessing participants' perceptions of anticipated experiences of sexism in the transportation workplace yielded an alpha coefficient of .92.

Behavioral intentions. Three items assessed behavioral intention in this study. The first item provided participants with the names of eight transportation Fortune 500 companies, and then asked, "Assuming you could work at a company such as those listed above, how likely is it that you would work in the transportation industry?" Participants were directed to rate their likelihood of working in the transportation industry using a 5-point continuum ranging from 1 (*little or no likelihood)* to 5 (*a very good degree of likelihood*). This item has been used in research on perceptions of the transportation industry, which revealed it correlated in theoretically expected ways with Holland codes (Philbrick & Sherry, 2004). Alpha coefficient information regarding this item is unavailable.

For the purposes of this study, two additional items were created to improve measurement of behavioral intentions. The first item asked participants, "Using the scale (0 to 9) below, rate how seriously you would consider an occupation in the transportation industry as a career for yourself," with "0" representing not very

seriously, and "9" representing very seriously. The second item was rated on a 6-point Likert-type scale, rated from 1 (*very strongly disagree*) to 6 (*very strongly agree*). Participants were asked to rate the extent to which they agreed with the statement: "I intend to enter a career in the transportation industry." Intention scale scores were summed to create a total score, with higher scores being indicative of higher intentions. In the current study, the items assessing participants' behavioral intention to pursue a career in transportation yielded an alpha coefficient of .71.

Procedure

A feminist lens provided an overarching framework for the study, as this lens seeks to understand the nature of gender inequality, examines women's social roles, experience, and interests in a variety of fields, and is grounded in the assumption that women generally experience subordination. This study represents an effort to examine the underrepresentation of women in the transportation field, and may facilitate further research.

Data was collected using instruments in accord with tenets of the TRA from adolescents ($N = 293$) attending three different secondary schools in the Denver Metropolitan area. Schools were selected based on issues related to feasibility, ease, and permission to sample. Eligible participants were presented with information about the purpose and nature of the study during class time by their teacher, and were informed, verbally and in writing, that their participation was voluntary. Consent and assent forms were distributed to students in class, and signed copies were collected one week after distribution. Students who did not present their teacher with signed

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consent and assent forms were not allowed to participate in the study. Participants and

their parents did not interact directly with this investigator, unless they had questions

or concerns about the study, in which case they were provided with information to

email or call the primary investigator. As a substantial portion of Spanish-speaking

and Vietnamese-speaking students were anticipated to participate in the study,

consent forms, assent forms, and survey items were translated into Spanish and

Vietnamese for participants and their parents. A professional translation service was

used to ensure the accuracy of the translated material, and translations were further

confirmed by a third party. School personnel who speak in the primary language of

the participants were also available to assist students with any questions they had

about the study upon receiving assent forms.

Students participating in the study completed the survey online, or via paper-

and-pencil. For those students who completed the survey online, they were instructed

to access the online survey during class time on classroom computers. For those who

took the paper-and-pencil surveys, they received their survey via their teacher, and

were instructed to complete the survey during class time.

The protocol for the study was submitted to and approved by the University of

Denver Institutional Review Board (IRB).

Analysis

Using hierarchical multiple regression, 'intention to pursue a career in

transportation' (criterion variable) was regressed on 'anticipated sexism' and

'perceived subjective norms' (predictor variables) to examine whether the predictor

variables significantly predicted intention to pursue a transportation career. In addition, to assess the role of various demographic characteristics, age, race/ethnicity, and current grade level were entered into the equation in a block prior to the other independent variables.

Example: $Y = Intercept + (Beta_1 * D_1 + Beta_2 * D_2 + Beta_3 * D_3) + Beta_4 * X_1 + Beta_5 * X_2$

Y (Raw score on Intentions)

D_1 – age

D_2 – race/ethnicity

D_3 – current grade level

X_1 (anticipated sexism)

X_2 (perceived subjective norms)

Chapter 4: Results

Preliminary Analyses

  Missing data. 155 women entered the study and completed the questionnaire. For the purposes of the present study, participants were excluded in the data analyses if they responded to less than 80% of the questionnaire items, or did not responded to all three questionnaire items measuring behavioral intentions. Data from 15 participants were excluded due to missing data, and the data was then assessed for univariate and multivariate outliers. 3 univerate outliers (beyond 3 standard deviations) and 5 multivariate outliers (beyond the critical value of 26.13) were removed, resulting in a total of 132 participants being included in the study. Prior to running any statistical analyses, the missing data for the 132 participants were analyzed and found to be missing at random, using Little's (1988) MCAR test.

  Assumptions of normality. All variables had acceptable levels of skewness and kurtosis, using -2.0 and 2.0 as a threshold range. Assumptions of linearity, multicollinearity, and homeoscadecity were tested and found tenable. Descriptive statistics, correlations, standard deviations, means, and alpha coefficients of the study's variables are presented in Table 5.

Internal consistency. The reliability of measures was assessed to determine if estimates of internal consistency in this study were similar to those in the normed data. Using a Cronbach's alpha coefficient threshold of 0.70, data from this study demonstrated adequate internal consistency, as displayed in Table 5.

Table 5

Descriptive Statistics of Study Variables

	α	M	SD	Min	Max	BI 1	BI 2	BI 3
Anticipated Sexism (AS)	0.915	2.45	0.4					
AS 1		2.56	1.25	1	5	-0.069	-0.065	0.111
AS 2		2.55	1.28	1	5	-0.083	0.061	0.126
AS 3		2.33	1.11	1	5	-0.088	-0.017	0.064
AS 4		2.35	1.15	1	5	-0.086	0.005	0.118
Subjective Norms (SN)	0.865	2.68	0.47					
SN 1		2.19	1.29	1	7	0.042	0.293	0.311
SN 2		3.12	1.58	1	7	0.253	0.358	0.18
SN 3		2.38	1.41	1	7	0.023	0.396	0.372
SN 4		3.04	1.67	1	7	0.234	0.444	0.285
Behavioral Intention (BI)	0.705	2.36	0.68					
BI 1		2.08	1.27	0	5	⁻	0.488	0.423
BI 2		3.16	2.43	0	10	0.488	⁻	0.685
BI 3		1.93	1.09	1	6	0.423	0.685	⁻

Main Analyses

Correlations. It was hypothesized that a significant inverse relationship between female high school students' transportation industry career goals and their perceptions of anticipated sexism in the vocational domain exists. Results of a

correlation analysis indicated a non-significant correlation between intention to pursue a career in transportation and anticipating workplace sexism. $r = 0.019$, $p > .05$. Results did however indicate a significant correlation between intention to pursue a career in transportation and perceived subjective norms. $r = 0.421$, $p < .01$.

Hierarchical multiple regression. It was hypothesized that higher perceptions of anticipated sexism in the field of transportation and more positive perceived subjective norms for pursuing a career in transportation would significantly predict transportation industry career goals for female high school students. To explore the extent to which anticipated sexism and perceived subjective norms predicted females' intentions to pursue a career in transportation, a two-step hierarchical multiple regression was conducted with 'intention to pursue a career in transportation' regressed on 'anticipated sexism' and 'perceived subjective norms.' Statistical analyses of data were conducted using the Statistical Package for the Social Sciences, version 22.0 (SPSS 22.0). The alpha level was set at .05, and correlation coefficients were considered small if r was .20 to .39, moderate if r was .40 to .69, large if r was .70 to .89, and very large if r was .90 to 1.0 (Cohen, 1988). Cohen's (1988) guidelines were used to determine the strength of effect size (r^2): small effect size = .01, moderate effect size = .06 and large effect size = .14.

A stepwise regression analyses was performed to determine whether 'anticipated sexism' and 'perceived subjective norms' predicted intention to pursue a career in transportation, Specifically, a demographic cluster was entered as Step 1, which was found to be not significant, ($p > .05$). In Step 2, 'anticipated sexism' and

'perceived subjective norms' were entered, and resulted in a significant Δr^2 of .180, p < 05. The TRA variables (perceived subjective norms and anticipated sexism) accounted for 18% of the variance in intention to pursue a career in transportation. 'Perceived subjective norms' was the only significant predictor of transportation career intentions in the model, $\beta = .427, p < .001$, as 'anticipated sexism' was found not to be a significant predictor, $\beta = .012, p > .05$. Results of this two-step hierarchical multiple regression thus suggested that subjective norms, but not anticipated sexism, were a significant, positive predictor of females' transportation career intentions.

Exploratory analysis. As researchers have advocated for examining group differences in the TRA (Prestholdt, Fisher, Bienn, & Clemons, 1984; Linnehan, Konrad, Reitman, Greenhalgh, & London, 2003), an exploratory analysis was performed to test whether the relationship between predictor (anticipated sexism and perceived subjective norms) and criterion variables depended upon participants' race/ethnicity. This exploratory analysis was assessed via stepwise regression analyses and a simple slopes analysis, using race/ethnicity as a binary variable with White and Latina responses.

The procedures recommended by Frazier, Tix and Barron (2004) were conducted to examine the moderating role of race/ethnicity in the relationship between anticipated sexism, perceived subjective norms, and intentions to pursue a career in transportation. First, the predictors anticipated sexism and perceived subjective norms were centered, and the interaction terms anticipated sexism X

race/ethnicity and perceived subjective norms X race/ethnicity were created. Two

parallel regression analyses were performed with intention to pursue a career in

transportation as the outcome variable. In each regression equation, age and class

rank were entered into Step 1, as control variables. In Step 2, anticipated sexism and

perceived subjective norms were entered into the regression equation. In Step 3,

interaction terms were entered. Race/ethnicity was entered into the equation as a

binary variable, using White and Latina responses, as these racial/ethnic groups were

highest in frequency (see Table 6).

Table 6

Participant Frequency by Race/Ethnicity

	Frequency	Percent	Valid Percent	Cumulative %
White (non-Hispanic)	29	22.0	22.0	22.0
African American	10	7.6	7.6	29.5
Asian American	12	9.1	9.1	38.6
Native American	1	.8	.8	39.4
Biracial/Multiracial	4	3.0	3.0	42.4
Other	5	3.8	3.8	46.2
Latina	71	53.8	53.8	100.0
Total	132	100.0	100.0	

In Step 1 of the regression, using anticipated sexism as the predictor, the

demographic variables contributed .007% of the variance. In step 2, the predictor

variables accounted for .01% of the variance, resulting in a non-significant Δr^2 of

.009, $p > .05$. In Step 3, the interaction term accounted for no additional variance, and did not produce a significant Δr^2 (see Table 7). Therefore, it was determined that race/ethnicity did not moderate the relationship between anticipated sexism and intention to pursue a career in transportation.

Table 7

Regression Analysis using Anticipated Sexism as Predictor

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.084[a]	.007	-.015	4.10200	.007	.323	2	92	.725
2	.125[b]	.016	-.017	4.10673	.009	.788	1	91	.377
3	.126[c]	.016	-.028	4.12878	.000	.031	1	90	.862

In the second regression, using perceived subjective norms as the predictor, the first step of the regression accounted .007% of the variance, and was not significant. The second step of the regression accounted for an additional 16% of the variance, and was statistically significant, $p < .001$. In step 3, the interaction term resulted in a significant Δr^2 ($R^2 = .04$, $p = .023$) (see Table 8). Therefore, it was determined that race/ethnicity moderated the relationship between perceived subjective norms and intention to pursue a career in transportation.

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Table 8

Regression Analysis using Perceived Subjective norms as Predictor

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
					R Square Change	F Change	df1	df2	Sig. F Change
1	.084 a	.007	-.015	4.10200	.007	.323	2	92	.725
2	.415 b	.172	.145	3.76515	.165	18.198	1	91	.000
3	.468 c	.219	.184	3.67845	.046	5.340	1	90	.023

The interaction term was a statistically significant predictor in the regression equation, β= -.39, p = .023. Thus, to better illuminate the moderating effect of race/ethnicity on the relationship between perceived subjective norms and intention to pursue a career in transportation, a simple slopes analysis was performed. In this phase of analysis, simple slopes were calculated for perceived subjective norms for White and Latina subgroups (coded "0" and "1" respectively).

Results of simple slopes analyses (see Figure 2) indicated that the slope was significant for White women (b = 3.10, β = .70 p = .009) but not for Latina women (b = .90, β = .31, p = .114), suggesting that the relationship between perceived subjective norms and intention to pursue a career in transportation was stronger for White, than Latina women.
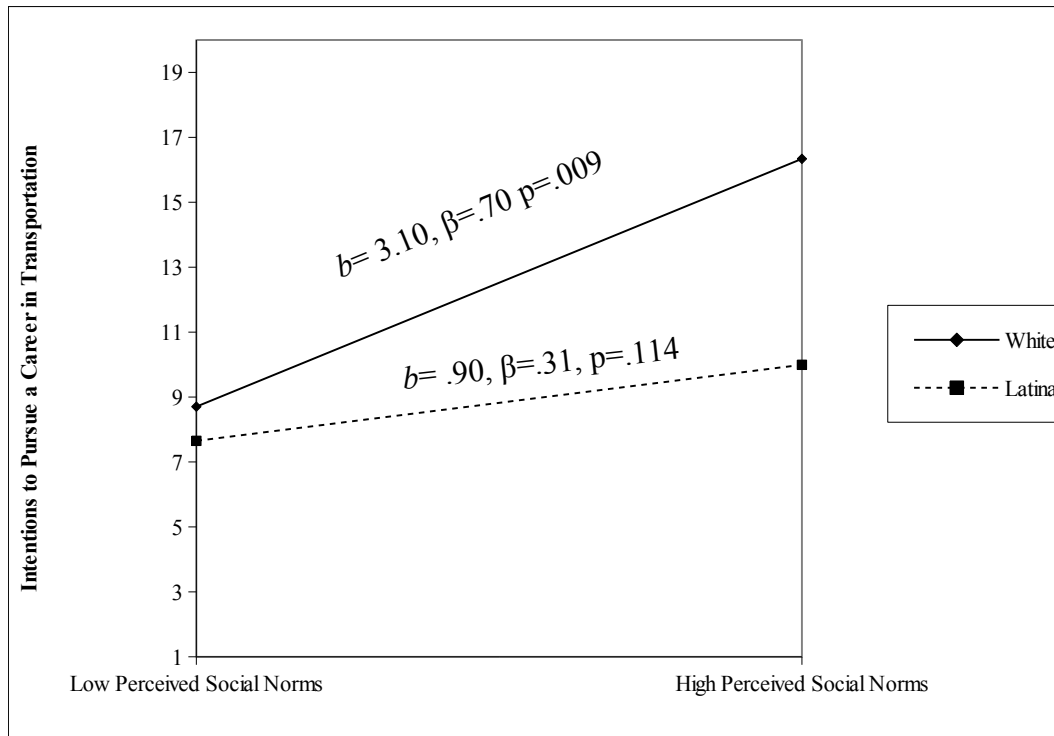
Figure 2. Two-way Interaction Effect for Binary Moderator.

Chapter Summary

Four hypotheses and an exploratory analysis were tested. Support was not found for Hypothesis 1, which suggested an inverse relationship between female high school students' transportation industry career goals and their perceptions of anticipated sexism in the vocational domain. Results of correlational analysis suggested that an inverse relationship between female high school students' transportation industry career goals and their perceptions of anticipated sexism in the vocational domain did not exist.

Partial support was found for Hypothesis 2a, which examined the influence of perceptions of anticipated sexism and perceived subjective norms on female high

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school students' transportation industry career goals. Results of the hierarchical multiple regression suggested that only perceived subjective norms, and not perceptions of anticipated sexism, contributed unique variance to models predicting female high school students' transportation industry career goals.

Support was not found for Hypothesis 2b, which suggested higher perceptions of anticipated sexism in the field of transportation would significantly predict lower transportation industry career goals for female high school students. Results of the hierarchical multiple regression suggested that perceptions of anticipated sexism in the field of transportation did not predict lower transportation industry career goals for female high school students, and were not statistically significant.

Support was found for Hypothesis 2c, which assumed more positive perceived subjective norms for pursuing a career in transportation would significantly predict transportation industry career goals for female high school students. Results of the hierarchical multiple regression suggested that more positive perceived subjective norms did in fact predict female high school students' transportation industry career goals, and were significantly significant.

Results of the exploratory analysis regarding potential intersectionality of race/ethnicity for the predictor variables suggested race/ethnicity was a moderating variable for perceived subjective norms, but not anticipated sexism (R^2=.009). More specifically, results of the exploratory analysis suggested the relationship between

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perceived subjective norms and intention to pursue a career in transportation was stronger for White, than Latina, women. Chapter 4 will discuss the implications of the results of this study.

Chapter 5: Discussion

This study investigated the relationships among female high school students'

attitudes regarding anticipated sexism in transportation workplaces, perceived

subjective norms about transportation work, and intentions to pursue a career in the

transportation industry. Additionally, this study investigated the potential

intersectionality of race/ethnicity for the predictor variables anticipated sexism and

perceived subjective norms on intention to pursue a career in the transportation

industry. The intention of this study was to gain information regarding the significant

underrepresentation of women in the transportation industry, and to better understand

the origins of this gender discrepancy as there has been a paucity of research in this

area. To date, this is the only study to examine the relationship between transportation

career intentions and anticipating a sexist workplace climate in high school females,

and as such yielded several valuable findings and implications.

Specific Findings and Implications

This study contributed to the research on women's vocational choice by

investigating the relationships between transportation industry career goals,

anticipated workplace sexism, and perceived subjective norms about transportation

work. Despite the large body of research indicating the existence of relationships

between attitudes, perceived subjective norms, and behavioral intention (Ajzen,1991),

previous studies have not assessed anticipated sexism as a predictor variable, and no studies have examined this variable with high school females.

Statistical support was found for Hypothesis 2c, which suggested that more positive perceived subjective norms for pursuing a career in transportation would significantly predict transportation industry career goals for female high school students. Results of moderation analyses showed that race/ethnicity moderated the relationship between perceived subjective norms and intention to pursue a career in transportation, but not the relationship between anticipated sexism and intention to pursue a career in transportation.

Consistent with the tenets of the TRA, perceived social pressure to perform or not to perform a given behavior (Ajzen, 1991), was shown to predict behavioral intention, which in this study was intention to pursue a career in transportation (Hypothesis 2c). Results of this study are consistent with previous research supporting the use of the TRA in predicting women's vocational choice (Vincent, Peplau, & Hill, 1998). One possible interpretation for the strength of perceived subjective norms in this model may relate to gender differences in socialization. It is possible that women may be socialized to be more interpersonally-orientated, and thus more motivated to comply with the opinions of referent individuals, which could explain the strength of perceived subjective norms in this model (Jordan et al., 1991; Knudson-Martin & Mahoney, 1996; Yagil, 1998). For the purposes of recruiting a more inclusive transportation workforce, results of this study suggest that females who may be most interested in pursuing a career in transportation are those females

who believe referent individuals would approve of their intention to pursue a career in transportation. It may also be of interest to transportation recruitment personnel to know that the TRA posits that the deeper an individual's motivation to comply with the referent individual or group, the stronger the normative belief (Ajzen, 1991).

Results of the exploratory analysis examining intersectionality of race/ethnicity for the predictor variables in this study suggest the relationship between perceived subjective norms and intention to pursue a career in transportation was stronger for White woman, than for Latina women. In the survey, the items used to assess perceived subjective norms included, "Most of my family probably think I should work in the transportation industry," "If I worked in the transportation industry, most of my family would be proud," "Most of my friends probably think I should work in the transportation industry," and "If I worked in the transportation industry most of my friends would be proud." One possible interpretation for these results may relate to cultural differences in vocational socialization. It is possible that White women may be more socialized to regard work in both traditionally feminine and masculine fields as viable options. Conversely, some research suggests Latina women may experience more socialization into traditional gender-roles, which could encourage some Latina women to regard traditionally masculine work as an unviable source of employment (Denner & Dunbar, 2004; Raffaelli & Ontai, 2004; Toro-Morn, 2008). If Latina women's vocational socialization encourages some to dismiss

traditionally masculine work and careers, it stands to reason that they would not anticipate members of their family and friends "to be proud" if they went into a traditionally masculine field, as survey responses suggest.

These results offer important implications for future research, and highlight the importance of the continued study into the role of race/ethnicity in women's vocational choices. Additionally, results of this study offer important implications for recruiting a more culturally inclusive transportation workforce, and offer important implications for clinical practice and training.

Implications for recruitment. For the purposes of recruiting a more culturally inclusive transportation workforce, recruitment personnel could employ several recruitment strategies intended to honor racial/ethnic differences in women's perceived subjective norms. One strategy would be to develop recruitment programming that uses culturally inclusive language and images to communicate the inclusion of heterogeneous groups of women in transportation occupations. Another strategy would be to use current female employees in the recruitment of other potential female employees. Additional strategies for transportation recruitment personnel include emphasizing the opportunities available for female employees to network and interact with other women, and highlighting opportunities to engage in mentorship with senior female employees. Relatedly, transportation recruitment personal could honor racial/ethnic differences in women's perceived subjective norms by developing relationships with culturally diverse professional associations and organizations. Other strategies include developing and explicitly highlighting

inclusive policies regarding issues of work/life balance, and highlighting company programs specifically designed for women. Lastly, placing vocational advertisements in venues that target women could also increase the number of female applicants, as demonstrated in a study exploring mechanisms related to successful recruitment of women in science, technology, engineering, and mathematics (STEM) fields (Glass and Minnotte, 2010).

Implications for clinical practice and training. Members of the mental health and academic community could also integrate the findings of this study to enhance clinical practice and training in the field of psychology. First, members of the mental health and academic community could strive to honor differences in the ways individuals of various cultural backgrounds make decisions about work and life by employing a culturally-inclusive approach to clinical practice and training. This could be achieved in part by validating clients' and students' experiential realities regarding disempowering social forces such as power, privilege, oppression, and discrimination. More specifically, members of the mental health and academic community could consider how various forms of systemic oppression like racism, sexism, classism, ageism, heterosexism, ableism, xenophobia, and size impact individuals' worldviews, and better consider how these disempowering social forces influence individuals' subjective well-being, vocational pursuits, etc. Secondly, members of the mental health, professional, and academic community could strive to create safe working and learning environments by clearly articulating non-discrimination policies, using culturally-inclusive language and decor, and by

highlighting relationships with culturally-diverse associations and organizations.

Lastly, members of the mental health and academic community could strive to

address social inequities by improving clinical and training service for historically

disenfranchised and disempowered groups. This could be achieved by developing

relationships with culturally diverse associations and organizations, and embedding a

social justice framework within clinical practice and training.

Limitations of the Study

Despite the positive implications of this study for future practice and research,

some limitations should be noted.

Participant age. Participant age (14-18) in this study may have impacted

responses to survey items. Although participant education level was consistent with

educational requirements for many entry-level positions in the transportation industry,

it is possible that the age of participants may have presented barriers in collecting

accurate data. Specifically, there is evidence to suggest that younger U.S. women may

regard workplace sexism as no longer being a pertinent societal issue in the United

States (Sipe, Johnson, & Fisher, 2009). In their work, *University Students'*

Perceptions Of Sexual Harassment In The Workplace: A View Through Rose-Colored

Lenses, Sipe, Johnson, and Fisher (2009) examined 1,373 undergraduate students'

(women = 38.7%, men = 58.6%) perceptions of anticipated gender discrimination in

the workforce, to compare students' perceptions against previous research that

confirms the existence of work-place gender discrimination. Results of the study

suggest that both male and female students perceived gender discrimination as being

of little significance in the careers of women, and that they anticipated entering a gender-neutral workplace (Sipe, Johnson, & Fisher, 2009). Specifically, approximately 90% of students reported that women would *not* have fewer opportunities for networking and mentoring because of their gender, and approximately 90% of students reported that their opportunities for advancement, networking, mentoring, and pay would *not* be affected by their gender.

Although it remains unclear exactly why young U.S. women are anticipating less sexism and/or gender discrimination in the workplace, one explanation could be that younger women are in the nascent stages of their feminist identity development. According to Downing and Roush's (1985) model of Feminist Identity Development, individuals in the first stage of their feminist identity development ("passive acceptance") "[do] not see the sexism in society...[do] not recognize it or...[deny] that discrimination and prejudice exist at the individual, institutional, and cultural levels of society (Gerstmann & Kramer, 1997, p. 328). Although progression through the stages of Downing and Roush's (1985) Feminist Identity Development model is non-linear and not contingent upon age, one could argue that, developmentally, some high school age females may reside in a feminist identity stage that is most consistent with the "passive acceptance" profile. With regards to the present study, it is possible that variability in participants' feminist identity development may explain how the relationships between anticipated sexism and transportation career goals proposed in this study were not supported, despite the anticipated sexism survey items achieving relatively mid-range means (~2.50).

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This phenomenon may explain the lack of empirical support for this study's primary three hypotheses (Hypothesis 1, Hypothesis 2a, and Hypothesis 2b), which all concern anticipated workplace sexism. In the present study, Hypothesis 1 proposed a significant inverse relationship between female high school students' transportation industry career goals and their perceptions of anticipated sexism; Hypothesis 2a suggested that perceptions of anticipated sexism and perceived subjective norms would predict female high school students' transportation industry career goals; and Hypothesis 2b suggested that higher perceptions of anticipated sexism in the field of transportation would significantly predict lower transportation industry career goals for female high school students. Considering the above-mentioned findings of Sipe, Johnson, and Fisher (2009), and the extrapolation regarding variability in feminist identity development, it is possible that the lack of empirical support for this study's Hypothesis 1, Hypothesis 2a, and Hypothesis 2b is explained by young U.S. women's perception of a gender-neutral work environment. In this study, survey items related to the notion of workplace-sexism included: "In my future job, I will be probably be treated differently because of my gender," "In my future job, I will probably experience sexist remarks or behavior because of my gender (such as insults, rude jokes, or sexual advances)," "In my future job, I will probably have a harder time getting hired than people of the opposite gender," and "In my future job, I will probably experience discrimination because of my gender." It stands to reason that if the some participants surveyed in this study do not perceive gender discrimination to be an unremitting societal issue in the United States, due to

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their feminist identity development stage, they would not highly endorse the survey items intended to capture the perception that prejudice or discrimination based on a person's sex is probable, or likely to happen.

Method bias. A second limitation of this study concerns method bias, which has historically been a limitation of research in the field of behavioral sciences (Podsakoff, MacKenzie, Lee, & Podsakoff , 2003). According to Podsakoff, MacKenzie, Lee, and Podsakoff (2003) various forms of method bias impact how participants respond to inquiry, and can thus threaten the validity of the results obtained. Two types of method bias which may have impacted participant responses in this study include item priming effects and mono-method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Cook & Campbell, 1979).

Item priming effects. In this study, the eleven survey items used were part of a larger, 95-item survey (see APPENDIX G) for a study entitled, *Factors Affecting Recruitment and Retention of Intermodal Transportation Workforce: Inclusion, Advancement, & Selection*. It is possible that the effect of answering items for the larger, 95-item survey could have primed participants to respond in alternative ways. For example, Podsakoff, MacKenzie, Lee, and Podsakoff (2003) suggest that, "asking questions about particular features of the work environment may make other work aspects more salient to respondents than these work aspects would have been if the questions had not been asked in the first place" (p. 884). To account for limitations regarding method bias, future studies may be aware of how to control for various sources of measurement error.

Mono-method bias. It is also possible that this study's measurement of participants' intentions to pursue transportation careers, rather than intention to pursue specific occupations within the transportation industry, may have potentially impacted the accuracy of responses. According to Cook and Campbell (1979), mono-method bias refers to the incomplete measurement of a construct, which threatens construct valididty and accuracy of responses. To account for the inaccurate or incomplete measurement of the construct of transportation work, future studies on the roles of anticipated sexism and/or perceived subjective norms on transportation career intention could investigate specific transportation occupations within this broad field (Cook & Campbell, 1979).

Measurement. Relatedly, a third limitation of the current study regards the fact that the measures used in this study were adapted from prior research using the TRA, and thus were not developed specifically for assessing transportation career choice. It would have been preferable to use instruments validated to measure attitudes, social norms, and intentions for transportation, however, no such measures exist at this time. In the absence of validated measures of transportation career decision-making, this study adapted previously used measures, which may have influenced responses, and consequently the generalizability of results.

Limited racial/ethnic diversity. A fourth limitation of the current study regards the limited racial/ethnic diversity of the participants surveyed. As 75% of study participants were Latina (53%) and White (22%), moderation analysis examining the role of race/ethnicity on the predictor variables was confined to these

two racial/ethnic subgroups. This limitation made multiple group comparisons difficult, and inhibited the ability to look at the moderating role of race/ethnicity for additional racial/ethnic groups. Analyzing data from multiple racial/ethnic groups could yield important information regarding group differences in the TRA, racial/ethnic differences in vocational behavior intention, and could improve the generalizability of results.

Recommendations for Future Research

The results of this study yield several implications for future research. Future research should attempt to illuminate the significant underrepresentation of women in the field of transportation by further exploring how workplace climate and stereotypes about transportation influence the development of women's transportation career intentions. As exploratory analysis in this study demonstrated that race/ethnicity moderated the relationship between perceived subjective norms and intention to pursue a career in transportation, future research could investigate other potential moderators, such as feminist identity development, on the relationship between perceived subjective norms and transportation career intentions. As speculated above, women's feminist identity development may impact women's perceptions of workplace climates, and subsequently impact their vocational intentions. Research into the relationships between feminist identity development and vocational patterns is scarce, and could be a valuable area of future research.

Secondly, future research may benefit from collecting data from a more culturally diverse and representative sample. In the current study, 75% of participants were Latina (53%) and White (22%), making multiple group comparisons difficult. Using data from a more culturally diverse and representative sample would allow researchers to examine the moderating role of race/ethnicity for multiple racial/ethnic groups, as opposed to just two subgroups. Additionally, the use of data from a more culturally diverse and representative sample to better understand the vocational decision-making characteristics of women could expand the generalizability of results.

Additionally, future research could employ a longitudinal approach, to better capture study participants' intention to pursue a career in transportation. Repeated observational study could be useful in uncovering important information regarding participants' intentions to pursue a career in the field of transportation and actual career behavior. More specifically, employing a longitudinal approach to investigate the role of anticipated sexism and perceived social norms on women's vocational choices could allow for researchers to use actual vocational behavior as a criterion variable, as opposed to using vocational intention. This is consistent with substantial empirical support using a longitudinal design in examining the utility of the TRA variables in predicting women's career behavior (Rexroat & Shehan, 1984; Almquist, Angrist, & Mickelsen, 1980; Bielby & Bielby, 1984; Vincent, Peplau, & Hill, 1998).

Lastly, future research could employ a qualitative approach, to better illuminate experiences of anticipated sexism and perceived subjective norms on transportation career intentions. During data analyses it was observed that the qualitative portions of the larger study, of which this study's items were nested, provided important information about the stereotypes associated with the field of transportation, many of which were masculine in nature, see Figure 3.
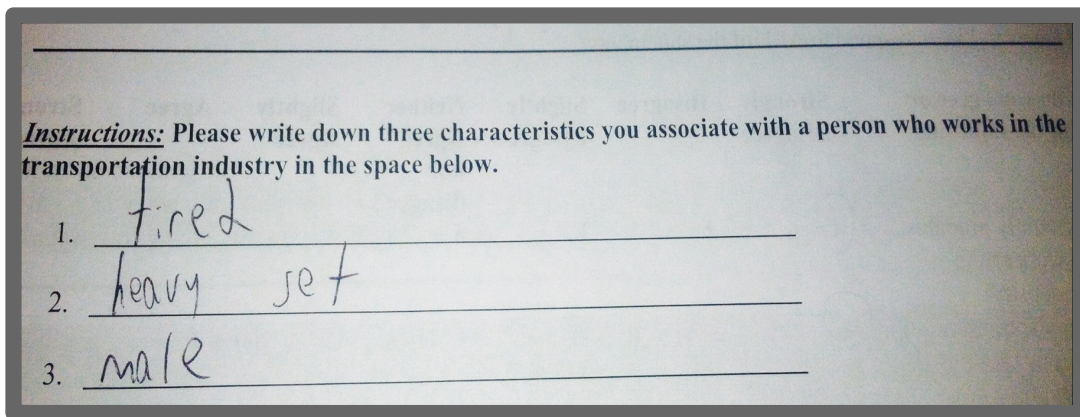

Figure 3. Qualitative Survey Item from Larger Career Development Research Survey.

As a primary intention of this study was to investigate perceptions of transportation workplace climates and stereotypes, qualitative items could provide important insights and trends in thought regarding this field. Relatedly, qualitative interviews with women working in transportation could yield important insights regarding women's actual career experiences in this field, and provide nuanced information about transportation workplace climates. The information drawn from qualitative items and qualitative interviews with women in the field of transportation could

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further be used to improve instruments used to measure attitudes, social norms, and intentions to pursue a career in transportation, potentially enhancing the generalizability of results.

Conclusions

As current census data suggests that 5% of employed U.S. women work in production, transportation, and material moving occupations, and that within this field, women account for a mere 13% of employees (U.S. Department of Labor, 2010), it beseeches the transportation industry to conduct research into the origins of this gender disparity. To date, there is limited research exploring this discrepancy, leaving many to wonder if the underrepresentation of women is the result of issues in recruitment, retention, or other contextual factors. It was the intention of this study to examine whether or not the underrepresentation of women in the field of transportation could be explained in part by perceptions that transportation workplaces are inherently sexist, and by perceptions that referent individuals would disapprove of women working in this male-dominated industry. The results of this study resulted in partial support for these perceptions, which contributes to the available literature on the development of women's transportation career intentions, and can serve as a platform for future research. Additionally, results of this study speak to the utility of the TRA in exploring women's vocational behavior. Future studies can build upon these findings to further illuminate the origins of gender discrepancy in transportation careers, and promote the successful recruitment of a more culturally inclusive transportation workforce.

References

Ajzen, I. (1991). "The theory of planned behavior". *Organizational Behavior and Human Decision Processes* 50 (2): 179–211.

Ajzen, I., & Fishbein, M. (1973). Attitudinal and normative variables as predictors of specific behavior. Journal of Personality and Social Psychology, 27(1), 41-57.

Aleassa, H., Pearson, J.M., & McClurg, S. (2011). Investigating Software Piracy in Jordan: An Extension of the Theory of Reasoned Action. The Journal of Business Ethics. February 2011, Volume 98, Issue 4, pp. 663-676.

Almquist, E. M., Angrist, S. S., & Mickelsen, R. (1980). Women's career aspirations and achievements: College and seven years after. Sociology of Work and Occupations, 7, 367-384.

Armitage, C. J., & Conner, M. (2009). 'Distinguishing perceptions of control from self-efficacy: Predicting consumption of a low-fat diet using the theory of planned behavior': Erratum. Journal Of Applied Social Psychology, 39(8), doi:10.1111/j.1559-1816.2009.00525.x

Arnold, J., Loan-Clarke, J., Coombs, C., Wilkinson, A., Part, J., & Preston., D. (2006). How well can the theory of planned behavior account for occupational intentions? *Journal of Vocational Behavior,* 69, 374–390.

Baker, S. A., Morrison, D. M., Carter, W. B., & Verdon, M. S. (1996). Using the theory of reasoned action (the TRA) to understand the decision to use

condoms in an STD clinic population. Health Education Quarterly, 23(4), 528-542.

Bandura, A. (1997). Self-efficacy: The exercise of control, 1st edition. New York: Worth Publishers.

Bielby, D. D., & Bielby, W. T. (1984). Work commitment, sex-role attitudes, and women's employment. American Sociological Review, 49, 234-247.

Brondolo, E., Brandy, N., Thompson, S., Tobin, J.N., Cassells, A., Sweeney, M., et al. (2008). Perceived racism and negative affect: Analysis of trait and state measures of affect in a community sample. *Journal of Social and Clinical Psychology,* 27, 150-173.

Clark., R, Anderson, N.B., Clark, V.R., & Williams D.,R. (1999). Racism as a stressor for African Americans. A biopsychosocial model. *American Psychologist*, 54(10), 805-16.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Erlbaum.

Cook, T. D., & Campbell, D. T. (1979). Quasi-experimentation: Design and analysis issues for field settings. Boston, MA: Houghton Mifflin Company.

Denner, J., & Dunbar, N. (2004). Negotiating femininity: Power and strategies of Mexican American girls. Sex Roles, 50(5/6), 301–314.

Di Leo, J. (2006). From Socrates to Cinema: An Introduction to Philosophy.McGraw-
Hill Companies.

Downing, N.E., &. Roush, K. L. (1985). From Passive Acceptance to Active
Commitment: A Model of Feminist Identity Development," The Counseling
Psychologist, Vol. 13, pp. 695-709.

Eagly, A. H., & Chaiken, S. (1993). The psychology of attitudes. Fort Worth:
Harcourt Brace Jovanovich College Publishers.
Equal Employment Opportunity Commission (2013). Enforcement &
Litigation Statistics: Sex-Based Charges. Retrieved from:
http://www.eeoc.gov/eeoc/statistics/enforcement/ sex.cfm

Equal Employment Opportunity Commission (2011). Regulations relating to Labor,
Title   29 Labor, Part 1604. Guidelines on Discrimmination Because of Sex.
Vol. 4 (2011-07-01). Retrieved from: http://www.gpo.gov/fdsys/pkg/CFR-
2011-title29-   vol4/xml/CFR-2011-title29-vol4-part1604.xml

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible
statistical power analysis for the social, behavioral, and biomedical
sciences. *Behavior Research Methods, 39*, 175-191.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An
introduction to theory and research.* Reading, MA: Addison-Wesley.

Franklin, A. J. (1999). Invisibility syndrome and racial identity development in

    psychotherapy and counseling African American men. *The Counseling*

    Psychologist, 27, 761–793.

Frazier, P. A., Tix, A. P., & Barron, K. E. Testing moderator and mediator effects in

    counseling psychology research. *Journal of Counseling Psychology, Vol*

    51(2), 157.

Gerstmann, E.A., & Kramer, D.A. (1997). Feminist identity development:

    Psychometric analyses of two feminist identity scales. *Sex Roles*, Volume 36,

    Issue 5-6, pp 327-348.

Glass, C., Minnotte, K., L. (2010) Recruiting and hiring women in STEM fields.

    Journal of Diversity in Higher Education, Vol 3(4), Dec, 2010. pp. 218-229.

Hammer, J. H., & Vogel, D. L. (2012). Assessing the utility of the

    willingness/prototype model in predicting help-seeking decisions. *Journal of*

    Counseling Psychology, 60, 83-97. doi: 10.1037/a0030449

Hanson, S., & Murakami, E. (2010). Women in Transportation. The United States

    Department of Transportation Federal Highway Administration: *Public Roads*

    Magazine, 73 (5).

Hossfeld (1990). Gender, Race, and Class in Silicon Valley. In Rothenberg, P.S.

    (2005). Beyond Borders: Thinking Critically About Global Issues. Worth

    Publishers; First Edition.

Howard, K. S., Carlstrom, A. H., Katz, A. D., Chew, A. Y., Ray, G., Laine, L., &
Caulum, D. (2011). Career aspirations of youth: Untangling race/ethnicity,
SES, and gender. Journal Of Vocational Behavior, 79(1), 98-109.
doi:10.1016/j.jvb.2010.12.002

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure
analysis: Conventional criteria versus new alternatives. *Structural Equation
Modeling*, *6*(1), 1-55.

Jaidi, Y., Van Hooft, E. J., & Arends, L. R. (2011). Recruiting highly educated
graduates: A study on the relationship between recruitment information
sources, the theory of planned behavior, and actual job pursuit. Human
Performance, 24(2), 135-157.

Johnson, J.C., McClure, D.J., &Schneider, K.C. (1999). Job Satisfaction of Logistics
Managers: Female versus Male Perspectives. *Transportation Journal*, Vol. 39,
No. 1, pp. 5-19.

Jordan, J., Kaplan, A., Miller, I., Stiver, I. & Surrey, J., (1991) *Women's growth in
connection*. New York : Guilford Press.

King, K. R. (2005). Why is discrimination stressful? The mediating role of cognitive
appraisal. *Cultural Diversity and Ethnic Minority Psychology*, 11, 202– 212.

Klonoff, E. A., & Landrine, H. (1995). The Schedule of Sexist Events: A measure of
lifetime and recent sexist discrimination in women's lives. Psychology Of
Women Quarterly, 19(4), 439-472. doi:10.1111/j.1471-6402.1995.tb00086.x

Knudson-Martin, C., (1996) Differentiation and self-development in the relationship

    context. *The Family Journal*, 4, 188–198

Latu, I. M., Stewart, T. L., Myers, A. C., Lisco, C. G., Estes, S., & Donahue, D. K.

    (2011). What we "say" and what we "think" about female managers: Explicit

    versus implicit associations of women with success. Psychology Of Women

    Quarterly, 35(2), 252-266. doi:10.1177/0361684310383811

Linnehan, F., Konrad, A. M., Reitman, F., Greenhalgh, A., & London, M. (2003).

    Behavioral goals for a diverse organization: The effects of attitudes,

    subjective norms, and racial identity for Asian Americans and Whites. Journal

    Of Applied Social Psychology, 33(7), 1331-1359. doi:10.1111/j.1559-

    1816.2003.tb01952.x

Lorber, J. (1993). Believing is Seeing: Biology as Ideology. *Gender & Society,* 7:

    568-   581, doi:10.1177/089124393007004006

Masser, B. M., & Abrams, D. (2004). Reinforcing the Glass Ceiling: The

    Consequences of Hostile Sexism for Female Managerial Candidates. Sex

    Roles, 51(9-10), 609-615. doi:10.1007/s11199-004-5470-8

Mau, W. C. (1995). Educational planning and academic achievement of middle

    school students: A racial and cultural comparison. Journal of Counseling &

    Development, 73, 518-526.

Mau, W., & Bikos, L. (2000). Educational and vocational aspirations of minority and

female students: A longitudinal study. Journal Of Counseling & Development,

78(2), 186-194. doi:10.1002/j.1556-6676.2000.tb02577.x

Miner-Rubino, K., Settles, I. H., & Stewart, A. J. (2009). More than numbers:

Individual   and contextual factors in how gender diversity affects women's

well-being. Psychology Of Women Quarterly, 33(4), 463-474.

doi:10.1111/j.1471-6402.2009.01524.x

Montano, D. E., & Taplin, S. H. (1991). A test of an expanded theory of reasoned

action to predict mammography participation. *Social Science & Medicine*,

32(6), 733-741.

Noh, S., & Kaspar, V. (2003). Perceived discrimination and depression: Moderating

effects of coping, acculturation, and ethnic support. American Journal of

Public Health, 93, 232–238.

Ohse, D. M., & Stockdale, M. S. (2008). Age comparisons in workplace sexual

harassment perceptions. Sex Roles, 59(3-4), 240-253. doi:10.1007/s11199-

008-9438-y

Philbrick, K. & Sherry, P. (2004). Final Report: Perceptions of the Intermodal

Transportation Industry Related to Recruitment and Retention of Human

Resources. National Center for Intermodal Transportation: Careers in

Transportation. Retrieved from: http://ncit.msstate.edu/PDF/Percep-of-the-

Intermodal-Transp-Industry-PHILBRICK-Final-Report.pdf

Pierce, C., Carew, J., Pierce-Gonzalez, D., & Willis, D. (1978) An experiment in

    racism: TV commercials. In C. Pierce (Ed.), *Television and education* (pp. 62-

    88). Beverly Hills, CA: Sage.

Podsakoff, P. M., MacKenzie, S. B., Lee, J-Y., & Podsakoff, N. P. (2003) Journal of

    Applied Psychology, Vol 88(5), Oct 2003, 879-903. doi: 10.1037/0021-

    9010.88.5.879

Prestholdt, P., Fisher, J. L., Bienn, B., & Clemons, T. (1984). Understanding students'

    intentions to drop out of high school. Southern Psychologist,2(1), 48-52.

Raffaelli, M., & Ontai, L. L. (2004). Gender socialization in Latino/a families:

    Results from two retrospective studies. Sex Roles, 50(5/6), 287–299.

Rexroat, C., & Shehan, C. (1984). Expected versus actual work roles of women.

    American Sociological Review, 49, 349-358.

Ridley, C.R. (2005). Overcoming unintentional racism in counseling and therapy; A

    practitioner's guide to intentional intervention. New York: Sage Publications,

    Inc.

Roderick J. A. Little (1988) A Test of Missing Completely at Random for

    Multivariate Data with Missing Values Journal of the American Statistical

    Association Vol. 83, No. 404 (Dec., 1988), pp. 1198-1202.

Sexism. 2013. In *Merriam-Webster.com*. Retrieved July 8, 2013, from

    http://www.merriam-webster.com/dictionary/sexism.

Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. Journal of Consumer Research, 15(3), 325-343.

Sideridis, G. D., Kaissidis, A. & Padeliadu, S. (1998), Comparison of the theories of reasoned action and planned behaviour. British Journal of Educational Psychology, 68: 563–580.

Sipe, S., Johnson, C.D., & Fisher, D.K. (2009). University students' perceptions of gender discrimination in the workplace: Reality versus fiction. *Journal of Education for Business*, Vol 84(6), Jul-Aug, 2009. pp. 339-349.

Sipe, S. R., Johnson, C. D., & Fisher, D. K. (2009). University students' perceptions of sexual harassment in the workplace: A view through rose-colored lenses. *Equal Opportunities International, 28*(4), 336-350. doi:http://dx.doi.org/10.1108/02610150910954791

Smedley, A., & Smedley, B. D. (2005). Race as biology is fiction, racism as a social problem is real. *American Psychologist,* 60, 16–26.

Solórzano, D., Ceja, M., & Yosso, T. (2000). Critical race theory, racial microaggressions, and campus racial climate: The experiences of African American college students. *The Journal of Negro Education,* 69(1/2), 60–73.

Sue, D.W. (2010). Microaggressions in Everyday Life: Race, Gender, and Sexual
Orientation. John Wiley & Sons, Inc. Hoboken, New Jersey.

Sue, D. W., Capodilupo, C. M., & Holder, A. (2008). Racial microaggressions in the
life experience of Black Americans. Professional Psychology: Research and
Practice, 39, 329–336.

Sue, D. W., Capodilupo, C. M., Torino, G. C., Bucceri, J. M., Holder. A. M. B.,
Nadal, K. L. et al. (2007) Racial microaggressions in everyday life:
Implications for clinical practice. *American Psychologist, 62,* 271-286.

Sue, D. & Sue, D. (2008). Counseling the Culturally Diverse. Hoboken, NJ: John
Wiley & Sons.

Super, D. E. (1985). Coming of age in middletown: career in the making. American
Psychologist, 40, 405–414.

Terry, D. J., & O'Leary, J. E. (1995). The theory of planned behaviour: The effects of
perceived behavioural control and self-efficacy. British Journal of Social
Psychology, 34, 199-220.

Toro-Morn, M. I. (2008). Beyond gender dichotomies: Toward a new century of
gendered scholarship in the Latina/o experience. In H. Rodríguez, R. Sáenz, &
C. Menjívar (Eds.), Latinas/os in the United States: Changing the face of
America (pp. 277–293). New York, NY: Springer.

United Nations Population Fund (2008). Promoting Gender Equality. Retrieved from:

    http://www.unfpa.org/gender/resources_faq.htm#5

U.S. Department of Labor, Bureau of Labor Statistics (2013). Databases, Tables &

    Calculators by Subject: Labor Force Statistics from the Current Population

    Survey. Retrieved from: http://data.bls.gov/timeseries/LNS14000000

U.S. Department of Labor, Bureau of Labor Statistics (2013). Women in the Labor

Force: A Databook. BLS Reports, February 2013, Report 1040. Retrieved from:

    http://www.bls.gov/cps/wlf-databook-2012.pdf

U.S. Department of Labor, Bureau of Labor Statistics (2011). Occupational

    employment by race and ethnicity, 2011. Retrieved from:

    http://www.bls.gov/opub/ted/2012/ted_20121026.htm

U.S. Department of Labor, Bureau of Labor Statistics (2010). Women's Bureau

    Publications: Women in the Labor Force 2010. Retrieved from:

    http://www.dol.gov/wb/factsheets/Qf-laborforce-10.htm

U.S. Department of Labor, Bureau of Labor Statistics (2010). *Employment and*

    Earnings, January, 2010 Annual Averages. Retrieved from:

    http://www.bls.gov/opub/ee/empearn201101.pdf

U.S. Department of Labor, Employment and Training Administration, & DTI

    Associates (2007). Identifying and Addressing Workforce Challenges in

America's Transportation Industry. www.doleta.gov/brg/pdf/Transportation %20Report_final.pdf

United States Department of Transportation (2012). Research and Innovative Technology Administration: National Transportation Workforce Development. Retrieved from: http://www.rita.dot.gov/ntwd/next/index.html#recruit

U.S. Department of Transportation (2011). Proceedings from *Dialogue for Women in Blue-Collar Transportation Careers*. Online Dialogue Final Report: September   21, 2011. Retrieved from: http://www.dot.gov/sites/dot.dev/files/docs/women-blue-collar-dialogue-fall-2011.pdf

Vallance, J. K., Murray, T. C., Johnson, S. T., & Elavsky, S. (2011). Understanding physical activity intentions and behavior in postmenopausal women: An application of the theory of planned behavior. International Journal Of Behavioral Medicine, 18(2), 139-149.

Van Hooft, E. A. J., Born, M. Ph., Taris, T. W. & Van der Flier, H. (2004), Job search and the theory of planned behavior: Minority–majority group differences in The Netherlands. Journal of Vocational Behavior, Volume 65, Issue 3: 366–390.

Van Hooft, E. A. J., Born, M. Ph., Taris, T. W. & Van der Flier, H. (2006), Ethnic and Gender Differences in Applicants' Decision-Making Processes: An

Application of the Theory of Reasoned Action. International Journal of Selection and Assessment, 14: 156–166.

Vincent, P. C., Peplau, L., & Hill, C. T. (1998). A longitudinal application of the theory of reasoned action to women's career behavior.Journal Of Applied Social Psychology, 28(9), 761-778. doi:10.1111/j.1559-1816.1998.tb01730.x

Weathers, P. L., Thompson, C. E., Robert, S., & Rodriguez, J. (1994). Black college women's career values: A preliminary investigation. Journal Of Multicultural Counseling And Development, 22(2), 96-105. doi:10.1002/j.2161-1912.1994.tb00248.x

Wei, M., Ku, T-Y., Russell, D. W., Mallinckrodt, B., & Liao, K. Y-H. (2008). Moderating effects of three coping strategies and self- esteem on perceived discrimination and depressive symptoms: A minority stress model for Asian international students. *Journal of Counseling Psychology,* 55(4):451-62. doi: 10.1037/a0012511

Williams, D. R., Neighbors, H. W., & Jackson, J. S. (2003). Racial/ethnic discrimination and health: findings from community studies. *American Journal of Public Health,* 93(2):200-8.

Wilson, P. M., & Wilson, J. R. (1992). Environmental influences on adolescent educational aspirations: A logistic transform model. Youth & Society, 24, 52-70.

Yagil, D. (1998). Gender and age-related differences in attitudes toward traffic laws and traffic violations. Transportation Research Part F: Traffic Psychology And Behaviour, 1F(2), 123-135. doi:10.1016/S1369-8478(98)00010-2

Yoder, J. D., & McDonald, T. W. (1998). Measuring sexist discrimination in the workplace: Support for the validity of the Schedule of Sexist Events. Psychology Of Women Quarterly, 22(3), 487-491. doi:10.1111/j.1471-6402.1998.tb00170.x

Yoo, H. C., & Lee, R. M. (2008). Does ethnic identity buffer or exacerbate the effects of frequent racial discrimination on situational well-being of Asian Americans? *Journal of Counseling Psychology,* 55, 63–74.

APPENDIX A

DEMOGRAPHIC SURVEY ITEMS

Demographic Survey Items

Instructions: The following are some questions about you and your family. Please <u>fill in</u> OR <u>circle</u> the best description of you and your family members.

1. Your Age _____

2. Your Sex:

      a. Female

      b. Male

3. Your Race/Ethnicity:

a. Hispanic (please specific):

Mexican American____

South American____

Spanish American____
heritage): _____

Puerto Rican American____

Cuban American____

Central American____

b. White (non-Hispanic) ____

c. African American ____

d. Asian American____

      (please specify your ethnic

e. Native American____

f. Biracial/Multiracial____

      (please specify)_____

g. Other (please specify)

4. What is your current grade level (circle one)?

      a. Freshman

      b. Sophomore

      c. Junior

      d. Senior

APPENDIX B

ANTICIPATED SEXISM SURVEY ITEMS

Anticipated Sexism Survey Items

Instructions: Many factors can help or hinder a person's career plans. We are interested in learning about the types of situations that could help or hinder your plans if you were to pursue a career in the transportation industry. For the questions below, assume that you wanted to purse a job in the transportation field. Using the 1-5 scale, show how likely you believe you would be to experience each of the following situations.

How much do you agree or disagree with the following statements:	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. In my future job, I will be probably be treated differently because of my gender	1	2	3	4	5
2. In my future job, I will probably experience sexist remarks or behavior because of my gender (such as insults, rude jokes, or sexual advances)	1	2	3	4	5
3. In my future job, I will probably have a harder time getting hired than people of the opposite gender	1	2	3	4	5
4. In my future job, I will probably experience discrimination because of my gender	1	2	3	4	5

APPENDIX C

PERCEIVED SUBJECTIVE NORMS SURVEY ITEMS

Perceived Subjective Norms Survey Items

Instructions: Using the following scale, circle the number corresponding to your response on the line next to the statement. Please respond to ALL of the statements.

How much do you agree or disagree with the following statements:	Strongly Disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly Agree	Agree	Strongly Agree
1. Most of my family probably think I should work in the transportation industry	1	2	3	4	5	6	7
2. If I worked in the transportation industry, most of my family would be proud	1	2	3	4	5	6	7
3. Most of my friends probably think I should work in the transportation industry	1	2	3	4	5	6	7

How much do you agree or disagree with the following statements:	Strongly Disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly Agree	Agree	Strongly Agree
4. If I worked in the transportation industry, most of my friends would be proud	1	2	3	4	5	6	7

APPENDIX D

BEHAVIORAL INTENTION SURVEY ITEMS

Behavioral Intention Survey Items

1) Instructions: There are a number of different types of transportation companies. All of them have a wide range of departments and activities. Here are a few of the Fortune 500 companies, all of which posted a significant profit in the last fiscal year:

Union Pacific Railroad	UPS (small package)
United Airlines	American Presidents Shipping
Federal Express	Yellow Freight (Trucking)
Frontier Airlines	Amtrak

Assuming you could work at a company such as those listed above, how likely is it that you would work in the transportation industry?

Please rate from 1 (little or no degree) to 5 (very good degree): _____

2) Instructions: Using the scale (0-9) below, rate how seriously you would consider an occupation in the transportation industry as a career for yourself.

Not Very   **Very**

Seriously   **Seriously**

      0   1   2   3   4   5   6   7   8   9

3) Instructions: Please indicate the degree to which you agree or disagree with the statement below by circling the appropriate number.

How much do you agree or disagree with the following statements:	Very Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Very Strongly Agree
I intend to enter a career in the transportation industry	1	2	3	4	5	6

APPENDIX E

YOUTH ASSENT FORM

Youth Assent Form

Project Title: Factors Affecting Recruitment and Retention of the Intermodal Transportation Workforce: Inclusion, Advancement & Selection

Principal Investigator: Patton O. Garriott

DU IRB Protocol #: 2012-2347

You are being asked to be in a research study. This form provides you with information about the study. Please read the information below and ask questions about anything you don't understand before deciding whether or not to take part.

The goal of my research is to study factors that lead to high school students' educational and career choices. This study is funded by the National Center for Intermodal Transportation (NCIT). You are invited to participate because you are a student at X High School. If you agree to be part of this research study, you will be asked to complete a questionnaire during class time. A sample item from one of the questionnaires reads, "I performed well in biology courses in school." This will take about 15-20 minutes.

There are no risks associated with this study because the data collection is completely anonymous and the topic is not sensitive. You may benefit from being in this study by learning more about your career preferences.

If you agree to participate, you will be entered into a raffle for one of ten $25.00 gift certificates to Wal-Mart. You will not be expected to pay any costs related to the study.

To keep your information safe, your information will not be attached to any data, but a study number will be used instead. The data will be kept on password-protected computers and in a locked file cabinet. The researchers will retain the data for five years. The data will not be made available to other researchers for other studies following the completion of this research study and will not contain information that could identify you. The results from the research may be shared at a meeting. The results from the research may be in published articles. Your individual identity will be kept private when information is presented or published.

Although we will do everything we can to keep your records a secret, confidentiality cannot be guaranteed. Both the records that identify you and the consent form signed by your parent may be looked at by others:

- Federal agencies that monitor human subject research
- Human Subject Research Committee

All of these people are required to keep your identity confidential. Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records.

Also, if you tell us something that makes us believe that you or others have been or may be physically harmed, we may report that information to the appropriate agencies.

Some things we cannot keep private. If you give us any information about child abuse or neglect we have to report that to Child Protective Services. Also, if we get a court order to turn over your study records, we will have to do that.

Participating in this study is completely voluntary. Even if you decide to participate now, you may change your mind and stop at any time. If you decide to withdraw early the information or data you provided cannot be destroyed because it is not linked to you either directly or by a code.

The researcher carrying out this study is **Patton Garriott, Ph.D.** If you have questions about the study, you may call **Patton Garriott** at **303-871-6758.**

If the researchers cannot be reached, or if you would like to talk to someone other than the researcher(s) about; (1) questions, concerns or complaints regarding this study, (2) research participant rights, (3) research-related injuries, or (4) other human subjects issues, please contact Paul Olk, Chair, Institutional Review Board for the Protection of Human Subjects, at 303-871-4531, or you may contact the Office for Research Compliance by emailing du-irb@du.edu, calling 303-871-4050 or in writing (University of Denver, Office of Research and Sponsored Programs, 2199 S. University Blvd., Denver, CO 80208-2121).

I have read this paper about the study or it was read to me. I understand the possible risks and benefits of this study. I know that my participation in this study is voluntary. I agree to participate in this study: I will get a copy of this form.

Signature:_____   Date:_____

Print Name:_____

APPENDIX F

PARENTAL CONSENT FORM

Parental Consent Form

Approval Date: 6/11/13   Valid for Use Through: 6/11/14

Project Title: Factors Affecting Recruitment and Retention of the Intermodal Transportation Workforce: Inclusion, Advancement & Selection

Principal Investigator: Patton O. Garriott

DU IRB Protocol #: 2012-2347

You child is being asked to be in a research study. This form provides you with information about the study. Please read the information below and ask questions about anything you don't understand before deciding whether or not to let your child take part.

The goal of my research is to study factors that lead to high school students' educational and career choices. This study is funded by the National Center for Intermodal Transportation (NCIT). Your child has been invited to participate because they are a student at X High School. If you agree to let your child be part of this research study, they will be asked to complete a questionnaire during class time. A sample item from one of the questionnaires reads, "I performed well in biology courses in school." This will take about 15-20 minutes.

There are no risks associated with this study because the data collection is completely anonymous and the topic is not sensitive. Your child may benefit from being in this study by learning more about their career preferences.

If you consent and your child agrees to participate, your child will be entered into a raffle for one of ten $25.00 gift certificates to Wal-Mart. Your child will not be expected to pay any costs related to the study.

To keep your child's information safe, your child's information will not be attached to any data, but a study number will be used instead. The data will be kept on password-protected computers and in a locked file cabinet. The researchers will retain the data for five years. The data will not be made available to other researchers for other studies following the completion of this research study and will not contain information that could identify your child. The results from the research may be shared at a meeting. The results from the research may be in published articles. Your child's individual identity will be kept private when information is presented or published.

Although we will do everything we can to keep your child's records a secret, confidentiality cannot be guaranteed. Both the records that identify your child and the consent form signed by you may be looked at by others:

- Federal agencies that monitor human subject research
- Human Subject Research Committee

All of these people are required to keep your child's identity confidential. Otherwise, records that identify your child will be available only to people working on the study, unless you give permission for other people to see the records.

Also, if your child tells us something that makes us believe that they or others have been or may be physically harmed, we may report that information to the appropriate agencies.

Some things we cannot keep private. If your child gives us any information about child abuse or neglect we have to report that to Child Protective Services. Also, if we get a court order to turn over your child's study records, we will have to do that.

Participating in this study is completely voluntary. Even if your child decides to participate now, they may change their mind and stop at any time. If they decide to withdraw early the information or data they provided cannot be destroyed because it is not linked to them either directly or by a code.

The researcher carrying out this study is **Patton Garriott, Ph.D.** If you have questions about the study, you may call **Patton Garriott** at **303-871-6758.**

If the researchers cannot be reached, or if you would like to talk to someone other than the researcher(s) about; (1) questions, concerns or complaints regarding this study, (2) research participant rights, (3) research-related injuries, or (4) other human subjects issues, please contact Paul Olk, Chair, Institutional Review Board for the Protection of Human Subjects, at 303-871-4531, or you may contact the Office for Research Compliance by emailing du-irb@du.edu, calling 303-871-4050 or in writing (University of Denver, Office of Research and Sponsored Programs, 2199 S. University Blvd., Denver, CO 80208-2121).

I have read this paper about the study or it was read to me. I understand the possible risks and benefits of this study. I know that my child's participation in this study is voluntary. I consent to my child's participation in this study: I will get a copy of this consent form.

Signature:_____   Date:_____

Print Name:_____

APPENDIX G

CAREER DEVELOPMENT RESEARCH SURVEY

Career Development Research Survey

Instructions: The following are some questions about you and your family. Please <u>fill in</u> OR <u>circle</u> the best description of you and your family members.

1. **Your Age** _____

2. **Your Sex:**
   a. Female
   b. Male

3. **Your Race/Ethnicity:**

   a. Hispanic (please specify): ____

   Mexican American_____

   South American____
   Spanish American____
   your ethnic heritage): _____
   Puerto Rican American____
   Cuban American____
   Biracial/Multiracial____
   Central American____
   specify)_____

   specify)_____

   b. White (non-Hispanic)

   c. African American____

   d. Asian American____
       (please specify

   e. Native American____
   f.

       (please

   g. Other (please

4. **What is your current grade level (circle one)?**
   a. Freshman
   b. Sophomore
   c. Junior
   d. Senior

Instructions: Using the following scale, circle the number corresponding to your response on the line next to the statement. Please respond to ALL of the statements.

How much do you agree or disagree with the following statements:	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. I performed well in biology courses in school.	1	2	3	4	5	6
2. I have made simple car repairs	1	2	3	4	5	6
3. I was successful performing science experiments in school.	1	2	3	4	5	6
4. The artwork I created usually turned out well.	1	2	3	4	5	6
5. I have kept accurate records of my financial documents.	1	2	3	4	5	6
6. I have been able to sell a product effectively.	1	2	3	4	5	6
7. I have made repairs around the house.	1	2	3	4	5	6
8. I have done a good job of proofreading my papers for mistakes.	1	2	3	4	5	6
9. I have been successful when I used tools to work on things.	1	2	3	4	5	6
10. I have been successful caring for children.	1	2	3	4	5	6
11. I have received high scores on my math tests.	1	2	3	4	5	6

12. I have been successful at teaching people.	1	2	3	4	5	6
13. I have successfully persuaded people to do things my way.	1	2	3	4	5	6
14. I have done a good job writing poetry.	1	2	3	4	5	6
15. I have easily understood new math concepts after learning about them in class.	1	2	3	4	5	6
16. I have demonstrated skill at conducting research for my assignments.	1	2	3	4	5	6
17. I have successfully budgeted money for an activity.	1	2	3	4	5	6
18. I have been successful at creating a sculpture with clay.	1	2	3	4	5	6
19. I have been able to hold a conversation with all types of people.	1	2	3	4	5	6
20. I have done a good job at things that required physical labor (e.g., landscaping).	1	2	3	4	5	6

How much do you agree or disagree with the following statements:	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
21. I have done a good job at operating new computer programs (e.g., word processing).	1	2	3	4	5	6
22. I have done a good job at performing basic office work (e.g., filing).	1	2	3	4	5	6
23. I have been a successful leader in school.	1	2	3	4	5	6
24. I have done well in building things.	1	2	3	4	5	6
25. I have done well at public speaking.	1	2	3	4	5	6
26. I earned good grades in social science courses.	1	2	3	4	5	6
27. I have successfully supervised the work of others.	1	2	3	4	5	6
28. I have been successful at playing a musical instrument.	1	2	3	4	5	6
29. I have listened well to people who are having personal difficulties.	1	2	3	4	5	6
30. I received good grades in my art courses in school.	1	2	3	4	5	6

Instructions: Read each statement carefully. Indicate the degree to which you believe you have the abilities to complete the activities stated. When answering do not take into account whether you have actually performed the activity in the past or have been trained to perform the activity.

	Completely Unsure									Completely Sure
1. Help people who are upset or troubled.	1	2	3	4	5	6	7	8	9	10
2. Use algebra to solve mathematical problems.	1	2	3	4	5	6	7	8	9	10
3. Keep accurate records of payments or sales.	1	2	3	4	5	6	7	8	9	10
4. Write stories or poetry.	1	2	3	4	5	6	7	8	9	10
5. Operate power tools such as a drill press or grinder or sewing machine.	1	2	3	4	5	6	7	8	9	10
6. Take shorthand.	1	2	3	4	5	6	7	8	9	10
7. Perform a scientific experiment or survey.	1	2	3	4	5	6	7	8	9	10
8. Explain things to others.	1	2	3	4	5	6	7	8	9	10
9. Get people to do things your way.	1	2	3	4	5	6	7	8	9	10
10. Interpret simple chemical formulae.	1	2	3	4	5	6	7	8	9	10
11. Use logarithmic tables.	1	2	3	4	5	6	7	8	9	10
12. Arrange or compose music.	1	2	3	4	5	6	7	8	9	10
13. Make simple electrical repairs.	1	2	3	4	5	6	7	8	9	10
14. Design clothing, furniture or posters.	1	2	3	4	5	6	7	8	9	10
15. Write news stories or technical reports.	1	2	3	4	5	6	7	8	9	10
16. Change a car's oil or tire.	1	2	3	4	5	6	7	8	9	10
17. Talk with all kinds of people.	1	2	3	4	5	6	7	8	9	10
18. Participate in charity or benefit drives.	1	2	3	4	5	6	7	8	9	10

19. Manage a small business or service.	1	2	3	4	5	6	7	8	9	10
20. Program a computer to study a scientific problem.	1	2	3	4	5	6	7	8	9	10
21. Manage a small business or service.	1	2	3	4	5	6	7	8	9	10
22. Be a good public speaker.	1	2	3	4	5	6	7	8	9	10
23. Do a lot of paperwork in a short time.	1	2	3	4	5	6	7	8	9	10
24. Be a successful leader.	1	2	3	4	5	6	7	8	9	10
25. Type 40 words a minute.	1	2	3	4	5	6	7	8	9	10
26. Refinish furniture or woodwork.	1	2	3	4	5	6	7	8	9	10
27. Plan entertainment for a party.	1	2	3	4	5	6	7	8	9	10
28. Post credits and debits.	1	2	3	4	5	6	7	8	9	10
29. Make simple plumbing repairs.	1	2	3	4	5	6	7	8	9	10
30. Sketch people so that they can be recognized.	1	2	3	4	5	6	7	8	9	10

Instructions: Using the scale (0 to 9) below, please indicate the extent to which you agree or disagree with each of the following statements.

Getting a job in the transportation industry will likely allow me to:	Strongly Disagree		Disagree		Unsure		Agree		Strongly Agree	
1. … receive a good job offer	0	1	2	3	4	5	6	7	8	9
2. … earn an attractive salary	0	1	2	3	4	5	6	7	8	9
3. … get respect from other people	0	1	2	3	4	5	6	7	8	9
4. … do work that I would find satisfying	0	1	2	3	4	5	6	7	8	9
5. … increase my sense of self-worth	0	1	2	3	4	5	6	7	8	9
6. … have a career that is	0	1	2	3	4	5	6	7	8	9

valued by my family										
7. … do work that can "make a difference" in people's lives	0	1	2	3	4	5	6	7	8	9
8. … go into a field with high employment demand	0	1	2	3	4	5	6	7	8	9
9. … do exciting work	0	1	2	3	4	5	6	7	8	9
10. … have the right type and amount of contact with other people (i.e. "right" for me)	0	1	2	3	4	5	6	7	8	9

Instructions: Please rate your answer to the following statements.

	Enjoyable						**Unenjoyable**
1. Working in the transportation industry would be...	1	2	3	4	5	6	7

	Wise						**Unwise**
2. Working in the transportation industry would be...	1	2	3	4	5	6	7

	Bad						**Good**
3. Working in the transportation industry would be...	1	2	3	4	5	6	7

Instructions: Many factors can help or hinder a person's career plans. We are interested in learning about the types of situations that could help or hinder your plans if you were to pursue a career in the transportation industry. For the questions below, assume that you wanted to pursue a job in the transportation field. Using the 1-5 scale, show how likely you believe you would be to experience each of the following situations.

How much do you agree or disagree with the following statements:	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. In my future job, I will probably be treated differently because of my gender	1	2	3	4	5
2. In my future job, I will probably experience sexist remarks or behavior because of my gender (such as insults, rude jokes, or sexual advances)	1	2	3	4	5
3. In my future job, I will probably have a harder time getting hired than people of the opposite gender	1	2	3	4	5
4. In my future job, I will probably experience discrimination because of my gender	1	2	3	4	5

Instructions: Using the following scale, circle the number corresponding to your response on the line next to the statement. Please respond to ALL of the statements.

How much do you agree or disagree with the following statement:	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor disagree	Slightly Agree	Agree	Strongly Agree
1. Most of my family probably think I should work in the transportation industry.	1	2	3	4	5	6	7

2. If I worked in the transportation industry, most of my family would be proud.	1	2	3	4	5	6	7
3. Most of my friends probably think I should work in the transportation industry.	1	2	3	4	5	6	7
4. If I worked in the transportation industry, most of my friends would be proud.	1	2	3	4	5	6	7

There are a number of different types of transportation companies. All of them have a wide range of departments and activities. Here are a few of the Fortune 500 companies, all of which posted a significant profit in the last fiscal year:

• Union Pacific Railroad	• UPS (small package)
• United Airlines	• American Presidents Shipping
• Federal Express	• Yellow Freight (Trucking)
• Frontier Airlines	• Amtrak

Assuming you could work at a company such as those listed above, how likely is it that you would work in the transportation industry?
Please rate from 1 (little or no degree) to 5 (very great degree): _____

Instructions: Using the scale (0 to 9) below, rate how seriously you would consider an occupation in the transportation industry as a career for yourself.

Not very								**Very**	
Seriously								**Seriously**	
0	1	2	3	4	5	6	7	8	9

Instructions: Please indicate the degree to which you agree or disagree with the statement below by circling the appropriate number.

How much do you agree or disagree with the following statements:	Very Strongly Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Very Strongly Agree
1. I intend to enter a career in the transportation industry.	1	2	3	4	5	6

Instructions: **Please write down three characteristics you associate with a person who works in the transportation industry in the space below.**

1. _____

2. _____

3. _____

Instructions: **Using the characteristics you listed above, rate how similar you believe you are to the person you described.**

Not at All						**Very Much**	
0	1	2	3	4	5	6	7

Instructions: **Please indicate the degree to which you agree or disagree with the statement below by circling the appropriate number to the right of each statement.**

How much do you agree or disagree with the following statements:	**Very Strongly Disagree**	**Mostly Disagree**	**Slightly Disagree**	**Slightly Agree**	**Mostly Agree**	**Very Strongly Agree**
When I think of jobs in the transportation industry, I think of jobs that:	1	2	3	4	5	6
1. …Are boring						
2. …Are low paying	1	2	3	4	5	6
3. …Require limited skill	1	2	3	4	5	6
4. …Involve driving a truck	1	2	3	4	5	6

Instructions: **Please write down your three top choices for careers following the prompt below.**

I intend to become a…

    1. _____

    2. _____

    3. _____

You are now finished with the survey. Thank you for your time!