National Center for Intermodal Transportation
&
Economic Development

Increasing the Recruitment and Retention of Women in the Transportation Industry

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Abstract

This report summarizes two projects that were study was based on the notion that an in-depth exploration of women's experience in the transportation industry might enlighten industry professionals about what approaches are best for recruiting and retaining women in the transportation industry. Project #1 consisted of focus groups with women currently in transportation positions. Two broad questions were developed in order to focus attention on gathering data that would lead to a textural description and a structural description of the qualitative experiences of the participants: What is your experience as a woman in the transportation industry? And what contexts or situations have influenced or affected your experience as a woman in the transportation industry? Results suggest that women take entry-level positions due to wanting stable employment and have found this within the transportation industry. Both managerial and non-managerial level women reported finding barriers to promotion and they found it helpful to have a mentor, and that matching one's skills and values to that of the industry were positively correlated with job satisfaction, liking ones job, and career satisfaction. Perceived barriers for recruiting and retaining women in transportation included good pay and benefits, earning respect from knowing your job, job security, and opportunities for growth. Personality traits that were related to success in the transportation industry include being assertive, confident, reliable, ability to see the "big picture," and having a "thick skin."

The purpose of the Project #2 was to identify predictors of career choice and stability in the transportation industry in order to create a profile that could be used to recruit and retain female transportation employees. Following on the results of the information obtained from the focus groups in Project #1 a survey based on Super's (1973) work values theory, Organizational Commitment (Meyer & Allen (1997), Supervisor Support, Job Satisfaction, Holland's (1973) six occupational types (RIASEC), and a set of general questions were developed and distributed to female students and professionals at various settings and gatherings including transportation. A total of 187 useable questionnaires were obtained and analyzed. Results from descriptive statistics, comparisons of means and hierarchical stepwise regression analyses provided data on the relative contribution of values, interests, organizational commitment, supervision, job preference, and job satisfaction as they affect career choice and change in transportation professionals and the general population. Results of this study revealed three main predictors of career change: feeling like your values are being met at current job, your organization's values and mission are worth supporting, and reliance on your immediate supervisor when things get tough at work. The results also yielded statistically significant models of career choice that accounted for 64.5% of the variance in pursuit and 77% of the variance in acceptance of transportation jobs. The models indicated that women interested in practical hands on work tasks, and in a predictable and somewhat routine environment are more likely to want to accept a position in transportation. Women who are interested in leadership, work challenges involving problem solving and variety in tasks are also more likely to pursue a career in transportation. Women who have an interest in a more social and interactive work environment, and an environment that is artistic are less likely to pursue a career in transportation. Being confident of success and being an effective employee along with an awareness of the possibility that these are male dominated jobs is predictive of a greater likelihood of pursuing a job in transportation.

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Project #1

The Bureau of Labor Statistics reports that as of 2009, women comprised 46.8 %of the total United States labor force. The female workforce is projected to account for 46.9 % of the total labor force in 2018 and is expected to contribute the majority 51.2 % of the increase in total labor growth between 2008 and 2018 (United States Department of Labor Women's Bureau, 2009). However, there are sectors of labor in which gender inequality is still prevalent. For example, women comprise only 24.5 % of the transportation industry. As of 2008, only 10.4 % of all civil engineers in the United States were women. In transportation and modal occupations, which includes a range of positions from baggers and stock handlers to bus drivers and pilots, the percentage of full-time employed female transportation workers totaled only 13 %n 2009 (Bureau of Labor , 2007). In the present year of 2016, men still greatly disproportionally hold the jobs within the transportation industry.

Within the next 15 to 20 years, the transportation industry is projected to face a staffing shortage at all levels of the industry due to an aging workforce and failure to recruit new employees at the rate of projected retirement (Sussman, 1999). Most administrators agree that there is a necessity to attract and develop highly qualified professionals in order to address these needs. Based on demographic surveys it is clear that women are underrepresented in the transportation industry and are potentially an untapped resource for future labor. For unknown reasons, women are reluctant to start or maintain a career in the transportation industry. This study was based on the notion that an in-depth exploration of their experience might enlighten industry professionals about what approaches are best for recruiting and retaining women in the transportation industry.

Review of Current Literature

During a review of the current literature, only one research study was found that attempted to explore the gender inequality of women in the transportation industry. Hanson and Murakami (2010) recognized the gender discrepancy in the U.S. transportation sector. They realized that the gender inequality statistics within the transportation industry were of interest for two reasons: (1) gender inequality may be best explained in terms of lack of equal opportunity for men and women within the industry and (2) women may not be attracted to the industry due to a gap in education or lack of role models. They also recognized the limited talent pool of women for the transportation industry. This phenomenon may be due to the lack of recruitment of women, and advertising characterizing transportation jobs as non-traditional roles for women. Educating women the roles available to them in the transportation industry, and modifying advertisements to highlight such roles could provide value to recruitment. The Women's Labor Bureau defines a job non-traditional for women if less than 25 percent of that labor force is made

up of women. (Women's Labor Bureau, 2009). The transportation industry still clearly meets criteria for a non-traditional career choice for women today. Why have engineering and transportation jobs not made this transition? With regard to the underrepresentation of women in the transportation industry, Hanson and Murakami (2010) stated, "Not only does this gender imbalance limit women's opportunities for interesting and well-remunerated work, it deprives the transportation field of a vital source of talent".

In order to try and understand the circumstances for this gender underrepresentation, Hanson and Murakami (2010) interviewed eight women leaders in the transportation industry. The participants had all worked within the transportation industry for many years and were recommended to the researchers by the planning committee for the Transportation Research Board conference. The interviewees were: Brenda M. Bohlke, President of Myers Bohlke Enterprise, Great Falls, VA; Marsha Anderson Bomar, AICP, President, Street Smarts, Duluth, GA; Linda Figg, President, FIGG Engineering Group, Tallahassee, FL; Carla Holmes, PTOE, Founder, Carla Holmes Engineering, Ellenwood, GA; Linea Laird, Project Manager, Washington State Dept. Of Transportation, Seattle, WA; Wendy Lopez, Vice President, URS Corporation, Dallas, TX; Kim Thatcher, Owner, KT Contracting Company, Inc., Salem, OR; and Doris Willmer, President, Willmer Engineering, Atlanta, GA.

The researchers' questioning sought to understand reasoning behind women not being attracted to the industry. The interviews were also geared towards uncovering recommendations that leaders in the field understood and may be able to share in order to increase gender equality. Several themed recommendations by the leaders emerged. Prominent suggestions included connecting with children and young people through schools and existing programs to advertise the roles of women in science and engineering, as well as building relationships through networking within the industry to connect women and attract awareness to women looking for positions. Other recommendations included, pay it back, by supporting other women in transportation. Also, get involved at the local level in school and community programs so others can learn about what you do, be an ambassador, seek opportunities to represent the profession, be visible, be accessible, and inspire someone (Hanson and Murakami, 2010).

The transportation leaders also recommended participation in industry organizations and taking leadership positions in those organizations to show the proficiency and capability of women within the transportation industry. They found that becoming a mentor to aid other women significantly helped to advance the careers of women: "Early in your career, find a mentor, whether a woman or a man. A mentor can help you learn skills to advance and help build your network" (Hanson and Murakami, 2010). Lastly, they recognized that the transportation industry needs to ensure flexibility in the workplace for female employees to accommodate family schedules and create part-time positions. Although the described study is insightful, limitations to the researchers' understanding of the female workforce development should be recognized. The researchers failed to interview both managerial and non-managerial level

women within the industry. They also did not interview women within different roles and occupations of the industry to better understand the vast array of issues. The small sample of eight high-powered female executives most likely skewed results and overlooked additional essential explanations.

No other published studies of women's perceptions or experiences within the transportation industry could be located. A large body of research was found which more broadly addressed the issue of women's lack of entry into male-dominated career fields. The two subsets of this research appear to be studies attempting to define a model of women's career development and studies that seek to understand the specific demographic factors that predict the interest in, entry, and retention of women in a variety of industries.

Various theories exists that attempt to explain gender-based differences in career development. Relationally focused theory for example predicts that women prefer career fields that they believe reflect a relationship focus. The theory holds that for women feeling trusted or supported by their organization is essential, and this may be less likely to occur in male dominated fields such as the transportation industry (Crozier 1998; Sokjer-Petersen & Thorssell, 2008). Social cognitive theory suggests that rather than a relational focus, women's career development is influenced by career self-efficacy beliefs and behaviors that reflect these beliefs (Farmer, Wardop, Anderson, & Riesinger, 1995). Expansionist theories suggest that workplace distress is related to underutilization of skills, perception of limited opportunities, and heavy job demands in both men and women (Barnett & Hyde, 2001; Sullivan & Mainiero, 2006). Expansionist theory explains differences in entry and retention of women in male dominated fields as a byproduct of differences in evaluation of opportunities for success in the field. It is unclear if these perceptions are accurate given the climate of the transportation industry, or if they are a result of lack of information or understanding about the opportunities available. Demographic factors have been shown to influence women's entry and persistence in male dominated career fields. Other factors include the presence of a role model (Quimby & Desantis, 2006), career self-efficacy (Farmer et al., 1995), perception of barriers (Rivera et al, 2004), demographic factors (Rosen & Korabik, 1990), work life balance (Whitmarsh, et al., 2007), and workplace factors (Crozier, et al. 1998). As no studies focusing specifically on the experience of women in the transportation industry could be located, it is unclear to what extent the various developmental theories and population variables apply to this group.

Method

Phenomenological research "seeks to understand a common experience in order to develop practices or policies or to develop a deeper understanding about the nature of the phenomenon" (Creswell, 2007, p. 60). Based upon the recommendations of Moustakas (1994) two broad questions were developed in order to focus attention on gathering data that will lead to a textural description and a structural description of the experiences and ultimately provide an

understanding of the qualitative experiences of the participants: What is your experience as a woman in the transportation industry? And what contexts or situations have influenced or affected your experience as a woman in the transportation industry?

Moustakas (1994) suggests that other questions may be asked but should be follow up to the initial broad questions. The following questions are based on a review of the literature on women in male dominated fields and factors that influence career entry, development and attrition, and were the used for the interviews and focus groups: What factors influenced your entry into the transportation industry? Has mentorship been important in your career development? What are your current career goals? What barriers do you perceive to achieving goals? Would you consider quitting your job? Under what conditions? If no, what factors keep you in your position? What is the role/status of women within your organization? Do you know anyone who has experienced sexual harassment in the work place? Was it reported? What was the response? Have you had a "gap" in your employment history? If so, why did you leave and why did you return? What were the five or fewer major events that helped your career? What five or fewer hindered your career development?

In order to begin answering these important questions the authors interviewed women who were currently working in upper management positions at a variety of transportation companies across the country. Surveys and focus groups were also administered to women in other non-managerial level jobs at the same companies in order to get a wide perspective. The findings from these interviews, surveys, and focus groups will be discussed, as well as suggestions for recruiting and retaining more women in the transportation workforce.

Participants

Participants were 26 female employees from three transit agencies in a major metropolitan area. Participants included 9 females in managerial positions, and 17 females in non-managerial positions. Managerial level women were interviewed individually, while non-managerial level women participated in focus groups. A focus group was conducted at each agency, and one page surveys were completed at that time. The focus groups consisted of four, five, and eight participants.

Procedures

Focus groups and individual interviews were semi-structured and included broad questions such as:

- What is your experience as a woman in the transportation industry?
- What contexts or situations have influenced or affected your experience as a woman in the transportation industry?

Follow-up to initial broad questions included:

- What factors influenced your entry into the transportation industry?
- Has mentorship been important in your career development?
- What are your current career goals?
- What barriers do you perceive to achieving goals?

Measures

Role model salience: The Influence of Role Models Scale (IRMS, Basow & Howe, 1980);

Influence of others: The Influence of Others on Academic and Career Decisions Scale (IOACDS, Nauta & Kokaly, 2001).

Perceived barriers: Career Barriers Inventory (CBI-R, Swanson et al., 1996).

Career self-efficacy: Occupational Self Efficacy Scale (OSES, Betz & Hackett, 1981).

Relational: Relational interdependent self nonstructural scale (RISC, Cross, 2000)

Additional open-ended questions on the survey included:

- What were 3 major events that helped or hindered your career?
- What are the major barriers to achieving your career goals?
- What factors keep you in your current position and make you want to stay working in this job?

Results

Selected Focus Group Comments

The following comments from the focus groups were selected. They are not reproduced verbatim, but rather paraphrased to illustrate the key points interviewees made during the interviews.

- You have to become more of a man than they are, but you have to know when to turn it on and off.
- This is the boys club. I'm not held to the same standards.
- It's really a man's world. It doesn't matter how much you know. That's how I feel. You don't have to have negative experiences to see it.
- Don't come in and say, "I don't have somebody to watch the baby." This isn't the place for that.
- You have to be assertive. You have to have self-confidence and know what you're talking about.
- In the outside world there is a stigma that it's a man's world not glamorous at all.
- People stay here forever - because the benefits are better than anywhere else.
- There's not a real desire to put women in higher management positions.
- I came here for a summer job and I never left.
- The work rules are what they were a hundred years ago with nights , weekends and holidays. The fact of the matter is not too many people are willing to do them.
- Once I was able to be part of the bigger picture that was very satisfying.
- Had I not gotten into the apprenticeship program then I probably would have left.
- Now there is an easier path for women, but I'm sure it's still difficult to go into the predominantly male workforce.
- A lot of younger generation workers don't seem to be interested in shift work.

Survey Results

Results of the analysis of survey data and responses to focus groups with women in both management and hourly positions revealed that there were significant correlations between job satisfaction and a number of key variables. To the extent that women reported a good match between their values and skills (matching skills = $r(24) = .548, p < .01$; matching values = $r(24) = .646, p < .01$) and also perceived the possibility of career advancement (career advancement =

r(24) = .552, p < .05) and promotion (promotion = *r(24) = .440, p<.05)* they also reported significantly higher levels of job satisfaction. In addition, high satisfaction with their overall career was most significantly correlated with the presence of a mentor (mentor presence = *r(24) = .587, p <.01).* Finally, in terms of retention, the results clearly indicated that a high degree of belongingness (belongingness = *r(24) = .811, p < .01*) was highly correlated with a desire to stay on in the same organization. Thus, from an overall perspective, retention is related to the quality and strength of the relationships in the workplace.

Women who had an informal mentor (male or female) felt that they had been helped to be successful in their job by supporting them and telling them about promotions. Mentorship played an additional supportive role in encouraging younger females to apply for promotions as well as training programs that would lead to career advancement. Some women reported, "Had I not gotten into the apprenticeship program then I probably would have left"; "Once I was able to be part of the bigger picture that was very satisfying". Perceived barriers to recruiting women into the organization may consist of women not wanting to do manual labor jobs, long hours and unpredictable work schedules, and that the industry is still seen as a "man's world." Insight into this perception of a "man's world" was made evident through several significant comments of female participants: "You have to become more of a man than they are, but you have to know when to turn it on and off"; "This is the boys club, I'm not held to the same standards"; "Don't come in and say, 'I don't have somebody to watch the baby'. This isn't the place for that". Conversely, study participants reported the benefits of being in the transportation industry as good pay and benefits, the respect that is earned by knowing your job, job security, and opportunities for growth and advancement. "People stay here forever. We stay because the benefits are better than anywhere else".

Discussion

Based on the results of this study, it seems evident that having a mentor is an important part of female workforce development within the transportation industry. The presence and influence of a mentor was strongly correlated with career satisfaction on the administered survey and was talked about positively both in the managerial level individual interviews and non-managerial level focus groups. Formal mentorship for women and other minorities within the industry should therefore be explored further as a way to improve the recruitment of women into the industry. Having a supportive relationship within the organization may help explain and therefore increase retention of women within transportation. Promotions and opportunities for training women in order to promote career advancement also had a significant impact on job satisfaction and retention. It was clear that budget cuts in the recent years have led to fewer training opportunities, that are missed by female workers who desire more training opportunities. Most saw training as extremely helpful for moving up and learning new skills. It should be recognized that training was found to be more accessible for some over others because it is

challenging to take classes with an unpredictable work schedule. Making training opportunities accessible and available to all female employees may increase satisfaction and retention.

Results suggest that women take entry-level positions due to wanting stable employment and have found this within the transportation industry. The majority of women in this study entered the transportation industry by default and reported that they had no intentions of making a career in the field. Both managerial and non-managerial level women reported finding barriers to promotion. Both groups reported that they found it helpful to have a mentor to guide them through the process of understanding what credentials they needed as well as how to apply for advancements. Discrepancies were found between entry-level positions and those women in management. It appeared that women in entry-level positions were less satisfied with their jobs than those in management positions. Further, those in entry-level positions had more barriers to promotion than those women in management although all levels reported barriers.

Additionally, having a perception of matching one's skills and values to that of the industry was positively correlated with career and job satisfaction. Perceived barriers for recruiting and retaining women in transportation included issues such as women not wanting to do manual labor jobs, long hours and unpredictable work schedules, and that it is still seen as a "man's world." Perceived benefits of being in the transportation industry included good pay and benefits, respect is earned by knowing your job, job security, and opportunities for growth. Personality traits that are seen as being related to success in the transportation industry include being assertive, confident, reliable, ability to see the "big picture," and having a "thick skin." Internships may be a good introduction to the transportation industry. Most of the women we interviewed got into transportation "by accident" and stayed because they saw the potential benefits. It may also help "weed out" people who quit shortly after being hired.

Some problems with recruitment and retention were seen more as a generational issue, rather than a gender issue. For example, younger people don't want to work on the weekends and holidays and therefore do not stay in the position for very long. More research is needed to explore this issue and determine possible solutions, such as more information related to shift work at the time of hiring. A larger scale study is needed to test the generalizability of the findings in different parts of the country. Future studies will also seek to incorporate issues related to experiences of minority groups and differences between both private and public transportation sectors. Effectiveness of any existing policies related to recruitment and retention of women and minorities should be explored.

Project #2

Introduction

Workforce planners have become increasingly concerned about the ability of the transportation industry to field an effective and diverse work force to deliver services and programs to consumers over the next decade. Program growth, new technologies, budget constraints, an inadequate number of midlevel managers, and staffing shortages due to an aging workforce and lack of new recruitment, fuel these challenges (Diewald, 2004). It has been estimated that 40 to 50 percent of the existing transportation workforce are nearing retirement (Martin, 2001). Recruitment into the transportation industry and employee retention is crucial to maintaining the industry's success. To successfully recruit and retain employees, there is a need to cultivate an interest in young people, and to understand the factors that influence persons' decisions to take jobs in transportation or to change careers into or out of the industry. Due to the fact that hiring can often cost upwards of $100,000 to recruit, train and place a qualified candidate, it is it is imperative that recruiters and managers have a clear picture of who is likely to succeed and stay working in the industry.

Previous research shows that individuals tend to change to careers more congruent with their personality types (Donohue, 2005). Literature reveals that job satisfaction, ability to maintain a suitable lifestyle, geographic location, and family commitments are indicators of career persistence (Alexander, Lichtenstein, Joo Oh, & Ullman, 1998; Smart, & Peterson, 1994; Donohue, 2005). Variable and long work hours make it difficult for employees in the transportation industry to attain an adequate work-life balance. Smith & Canger (2004) found that high levels of supervisor agreeableness, emotional stability, extroversion, kindness and trust are related to employee job satisfaction and commitment. Philbrick and Sherry (2004) found that high school and college students most interested in pursuing a transportation career are individuals who have conventional type interests, value employee assistance programs, labor/management relations, career stability, travel opportunities, and opportunities for career advancement and leadership. The transportation industry is in need of identifying factors specific to the industry that predict career choice and change in in job seekers and current transportation professionals in order to adequately recruit and retain employees.

The present study sought to improve recruiters and managers ability to identify women likely to pursue, accept and remain on a job in the transportation industry. Analysis of a number of questionnaires designed to measure occupational interests, values and attitudes were identified and administered to a sample of women in the general population and also to persons employed in the transportation industry. Results of these analyses provided a descriptive profile of persons likely to purse, accept and remain working in the transportation industry.

Method

Participants

Study participants include persons who were members of the Women in Transportation organization and graduate students enrolled at a medium sized university.

Procedure

Surveys were distributed to students and professionals at a College of Business Marketing Roundtable, a sample of women psychology students, and to members of the Women in Transportation Society.

Measures

Work values. Work values were measured using a series of 18 items based on Super's (1970) work value inventory. Respondents were asked to what degree certain values such as: Travel, Creativity, Altruism, etc. influenced their decision to take a job in the transportation industry. These items were responded to on a 5 point Likert type scale ranging from 1 (to a little or no degree) to 5 (to a very great degree).

Organizational commitment. The extent to which respondents felt that the mission and objectives of the organization were consistent with their own or that they felt committed to the mission and values of the organization was measured using the six continuance commitment items from Meyer & Allen's (1997) organizational commitment questionnaire. These items were responded to on a 5 point scale ranging from 1 (to a little or no degree) to 5 (to a very great degree).

Satisfaction with Supervision. Satisfaction with supervision was measured using a modified version of the House and Wells (1978) supervisor support questionnaire. These items were responded to on a 5 point Likert type scale ranging from 1 (to a little or no degree) to 5 (to a very great degree).

Holland Types. Preference for and interest in certain vocational activities was measured with an abbreviated set of six items designed to measure general interest in the six main occupational types assessed by the Holland's (1973) vocational theory. These six types include: Realistic, Investigative, Artistic, Social Enterprising and Conventional work environments and occupational activities. These items were responded to on a 5 point scale ranging from 1 (to a little or no degree) to 5 (to a very great degree).

Job satisfaction . Job satisfaction was measured by asking participants general questions about their satisfaction with their current job (e.g. to what degree do you feel very satisfied with this job). These items were responded to on a 5 point scale ranging from 1 (to a little or no degree) to 5 (to a very great degree).

Intention to Pursue/Accept/Quit . Respondents' overall intent to pursue a career in transportation was assessed using single item measures that asked: "To what extent are you likely to pursue a job in the transportation industry?", "To what extent are you likely to accept a job in the transportation industry?", and "To what degree are you likely to quit your job in the transportation industry?" These items were responded to on a 5 point scale ranging from 1 (to a little or no degree) and 5 (to a very great degree).

Analysis

To determine what factors were related to persons considering career change or choice a predictive model was used based on stepwise regression analysis: Occupational values, organizational commitment, supervision, RIASEC typology, and job satisfaction. The models developed showed the effect of progressively adding a significant predictor from each of the sets of variables (after determining what was not significant).

Results

Participants

There were 187 respondents to the survey consisting of 154 females and 33 who did not provide a response about their gender. Respondents' ages ranged from 16 – 67 years old with mean of 28.2 years and a range from 20 to 67. The ethnic breakdown was: 147 white (71%), 11 Asian (5.3%), 9 Latino (4.3%), 4 African American (1.9%), and 36 unanswered (17.4.%). 65 respondents (23.3%) were students. Years of experience working in the transportation industry ranged from 0 – 43 years with a mean of 9.6 years however, 50.7 percent (N=105) had never worked in transportation. The education level of respondents ranged from some college education to completion of a doctoral degree. Results of the descriptive analysis indicate that non-transportation professionals have some interest in pursuing a job in transportation (see Figure 1).

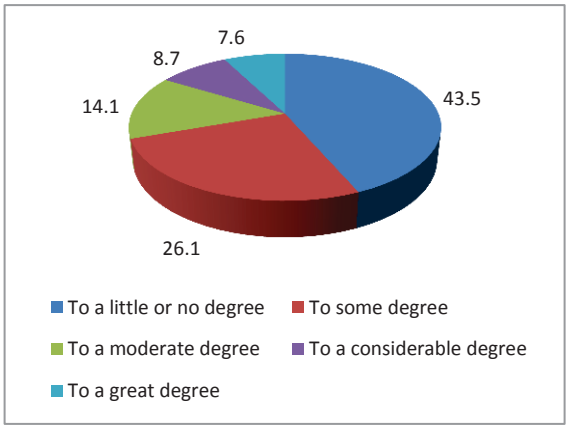
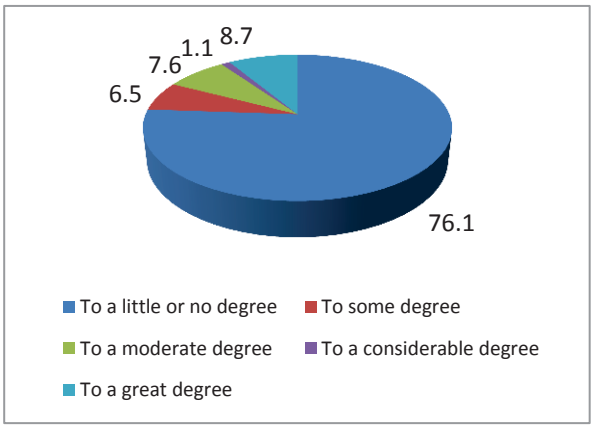
Likely to Accept	Likely to Pursue
	
43.5% say "to a little or no degree"	76.1% say "to a little or no degree"

Figure 1. Percent likely to pursue and or accept a position in transportation.

The results indicate that, for women not currently employed in a transportation job, there is a low likelihood of them accepting (7.6%) or pursuing (8.7%) a job in transportation. However, if we compare the two groups, those currently in transportation with those not in transportation, we can see that there are a number of key differences between those who have a job in transportation versus those who do not. As can be seen in the following table, travel opportunities, a social work environment, a wiliness to prioritize person life over job, a high level of recognition, a sense of achievement and utilization, and autonomy differentiate those in transportation from those not in transportation. More specifically, those currently in transportation are more likely to place less of an emphasis on travel opportunities, having a social environment while at work, having challenges or problems to solve at work, and prioritizing personal life over work responsibilities. Those in transportation jobs also placed a lower value on having a recognizable job title but more emphasis on being able to fully use their potential and to make accomplishment and to be autonomous and make their own decisions. It may be that some of these differences may exist simply due to the fact that some women are employed and some are not. There might also be some generational differences in these responses as well. These differences highlight what is important to those in the transportation industry and suggest key items or questions to ask them.

Table 1 Value differences between women employed vs non-employed in transportation.

	Trans Job (N=77)	No Trans Job (N=102)	
	Mean		P<
Career stability, security & a well-defined career path?	3.64	3.81	0.33
Potential for significant financial reward?	3.86	3.70	0.33
Travel Opportunities?	3.51	2.91	0.00
Competitive fringe benefits (health & retirement)?	3.77	3.60	0.33
Geographic location of company?	3.88	3.76	0.50
A social environment while at work?	3.71	2.85	0.00
Challenges & Problem Solving	3.52	4.15	0.00
Creativity & using new approaches?	3.68	3.97	0.07
Putting personal life first and your job second?	3.86	3.06	0.00
A high level recognizable job title (i.e. CEO, CFO, etc)?	3.42	2.38	0.00
Flexible hours/work schedules?	3.65	3.56	0.61
Achievement, accomplishment & use of abilities	3.96	4.32	0.02
Altruism	3.79	3.48	0.08
Autonomy making decisions	3.56	3.97	0.01
Comfort (job security & good working conditions)?	3.94	3.99	0.72
Safety (supportive , predictable, work environment)	3.83	3.90	0.65
Status (potential for advancement & leadership	3.57	3.23	0.07

Note: Shaded cells indicate significant differences p<.01.

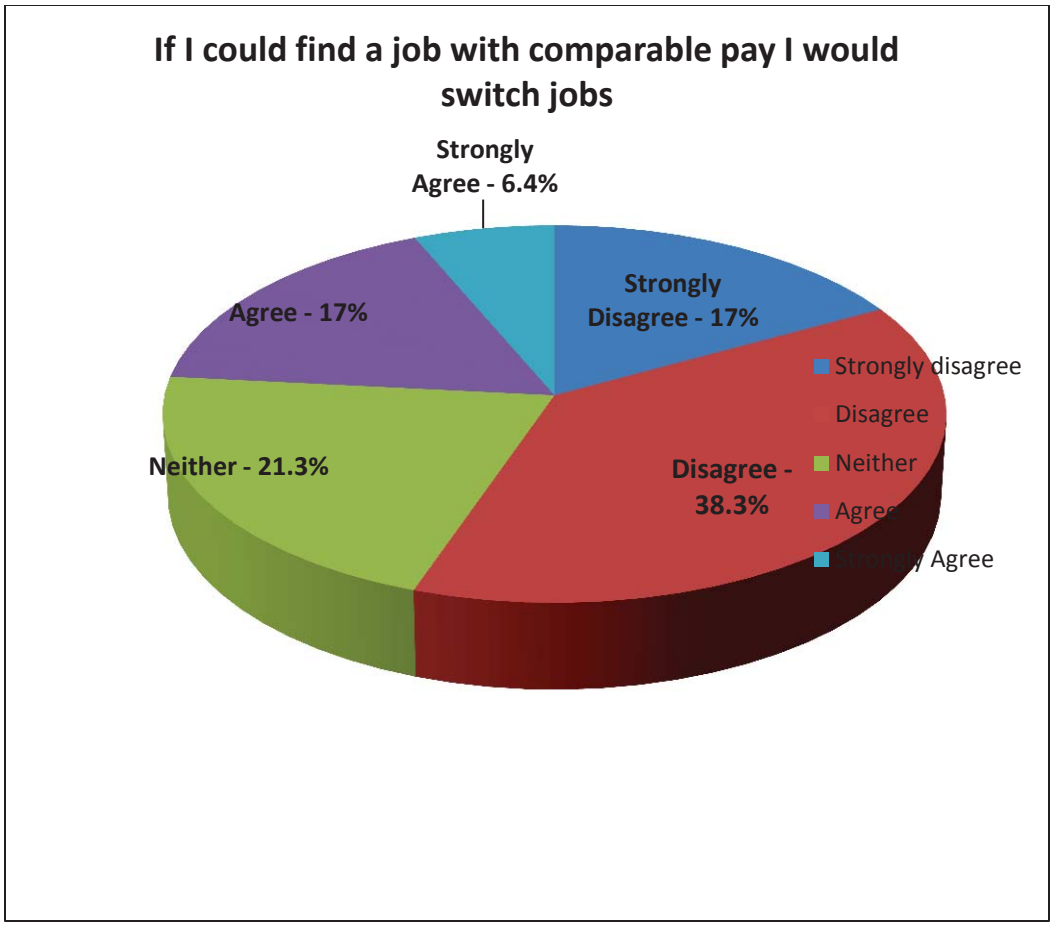
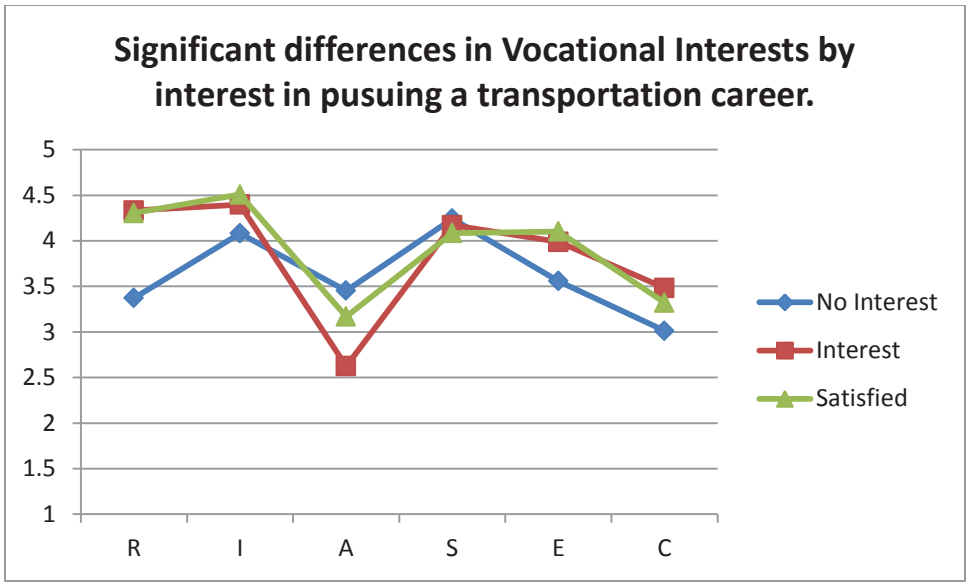


Figure 2. Intention to quit

It is also interesting to note that those in transportation jobs were very unlikely to leave their jobs if a job with comparable pay were available. As can be seen in the figure, 38.3% disagreed and 17% strongly disagreed with this proposition. This suggests that overall the group was satisfied with their jobs and thus provide a good comparison and benchmark for the non-transportation group.

Comparing the persons who are interested in pursuing a job in transportation to those who are not provides additional insight into career choice and acceptance. For example, as can be seen in Figure 3, women interested in pursuing a career in transportation tended to be more interested in practical and realistic job activities and less interested in artistic activities than those who have little interest.



Note: Vocational interest categories are defined by R- Realistic, I- Investigative, A- Artistic, S – Social, E – Enterprising, and C – Conventional.

Figure 3. Differences between women who would pursue or not pursue a career in transportation.

In addition, examining the results for those who are satisfied with their jobs in the transportation industry in comparison to those who are less satisfied, we can see that there is a similar split. Persons who are highly satisfied with their jobs in transportation score high on the realistic and practical job interests and comparatively low on the artistic interests.

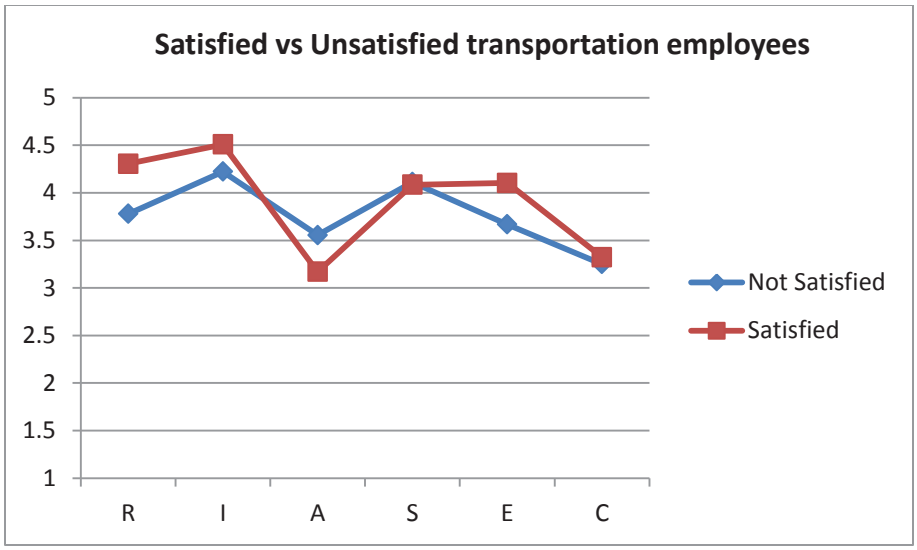


Figure 4.Vociational intersts of satisfied versus dissatisfied transportation incumbents.

If we plot the profile of interests of those who are interested in pursuing a career in transportation against those who are highly satisfied an interesting result emerges (see Figures 4 and 5). Namely, that the profiles of the highly satisfied persons are almost identical to the profiles of those who would pursue a career in transportation. The same pattern of interests is depicted in that those who are interested and satisfied score high on realistic and practical occupational interests and activities (see Figure 6). They also score high on problem solving and investigative interests. Those who have a low degree of interest in transportation jobs show a much higher level of interest in artistic and creative interests and activities.

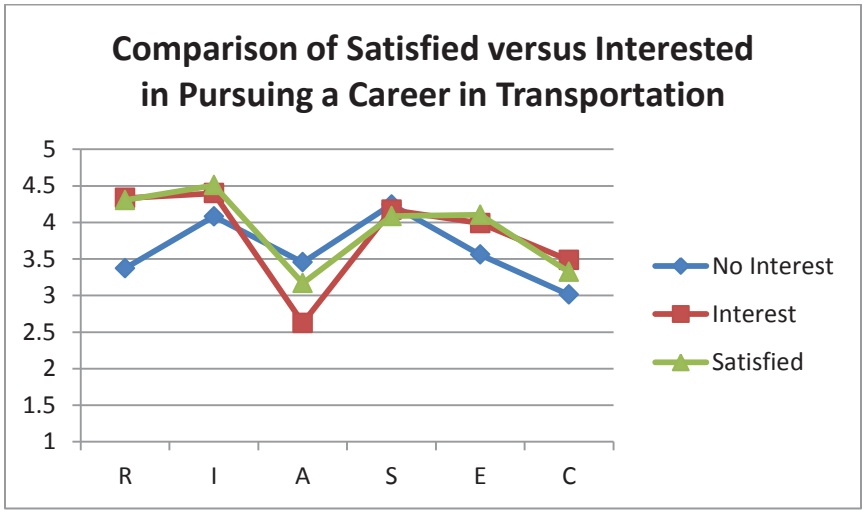


Figure 5 Profile of Satisfied versus Interested in Pursuing a Career in Transportation

Moreover, looking at the values profile of persons who are interested in pursuing a career in transportation we can see a similar pattern. Those who would pursue transportation have a much higher value for achieving status and also having some autonomy and independence in their work. They also value innovative new approaches to problem solving and the ability to achieve and accomplish and have a relatively high level of status in their jobs. Interestingly those interested in pursuing a career in transportation place a lower value on travel opportunities, a social environment at work, and a high level high visibility job. Thus, those that are interested in pursuing are very similar to those who are satisfied with similar values in their jobs.

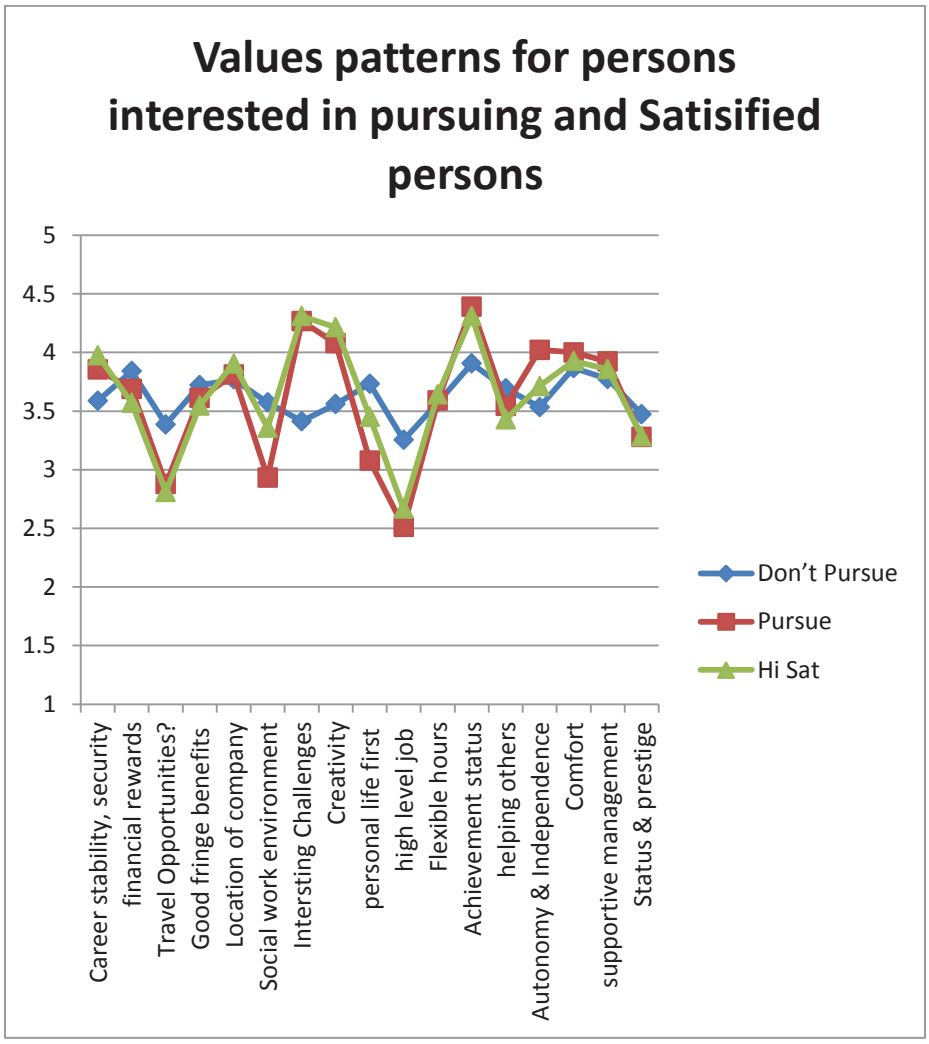


Figure 6. Values patters for persons interested in pursing jobs compared with satisfied incumbents.

Attitudes towards a predominantly male workforce

The other interesting finding of this project is the fact that persons who are interested in pursuing jobs in transportation are much more comfortable with being in a predominantly male workforce. The figure below reveals that respondents had a much more favorable view of taking a job and working with the opposite gender. More importantly it appears as if their level of self-efficacy is very high and that they believe that they would be competent to work in the field and be able to make a significant contribution. Thus, the issue of a predominantly male workforce comes in to play relative to a woman's sense of self efficacy and confidence regarding competing and contributing in a predominantly male workforce. Thus, these data suggest that self-efficacy and confidence are key components of a successful woman working in transportation.

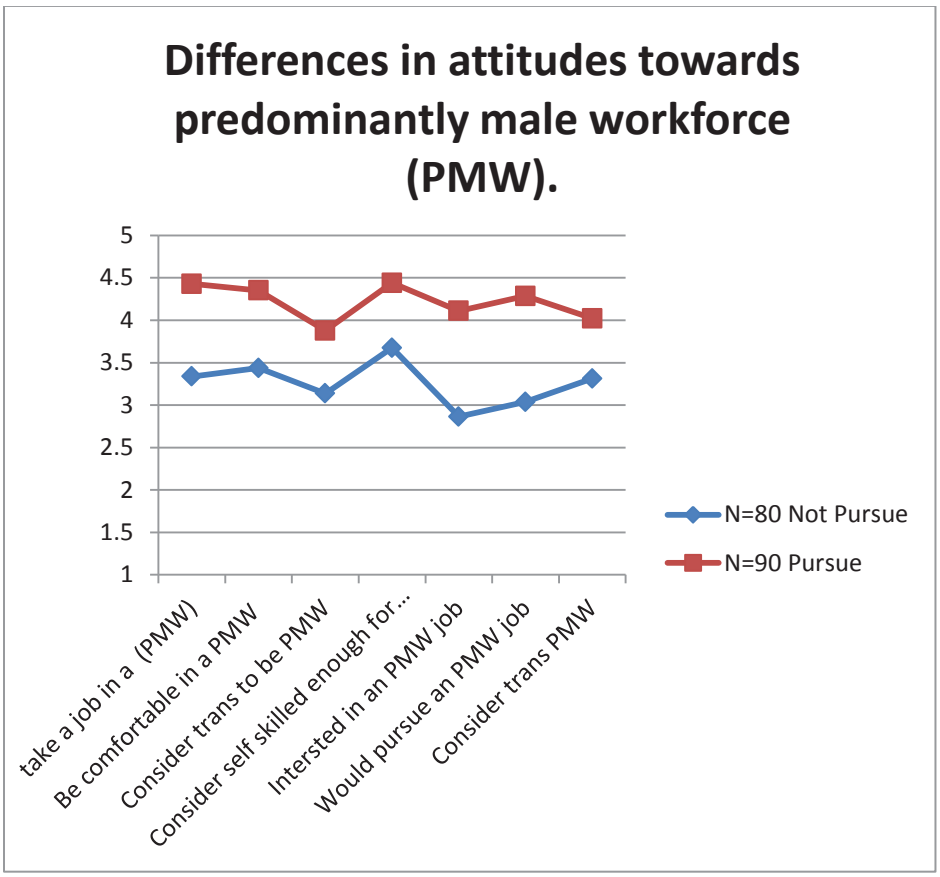


Figure 7. Attitudes towards jobs in predominantly male workforce.

Women interested in pursuing a job in transportation in a predominantly male workforce were significantly higher on all of the key attitudinal differences. Namely, they were confident that they had the skill and reported being comfortable with the fact that the workforce was predominantly male. Again, these results are validated by the fact that this pattern is similar to the responses of those female job incumbents who were highly satisfied with their jobs in transportation.

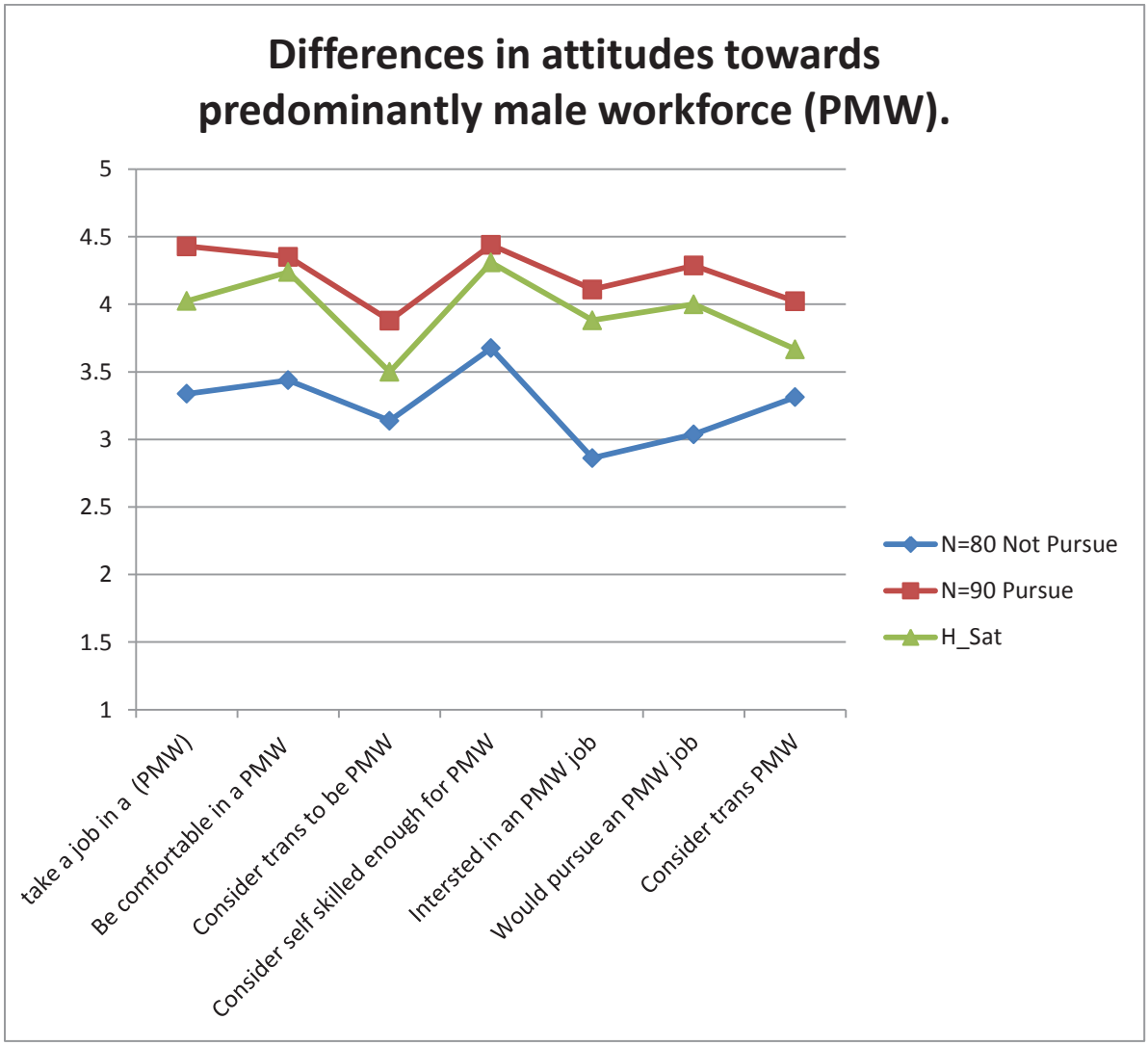


Figure 8. Attitudes differences towards PMW.

Intention to Quit

Results of comparative analysis of those persons who were likely to quit or to pursue another job revealed no statistically significant differences in terms of vocational interests. Additionally, no significant differences were found in the area of benefits or other job characteristics, self-efficacy, perceptions or discomfort with a male dominated work place. However, there were a number of statistically significant differences in values between those who intend to stay and those intending to quit. (See Figure 9.). Specifically, those intending to quit valued financial rewards, fringe benefits, a job with a higher status title, and overall more status and prestige. Interestingly, persons intending to quit also valued a more social and interactive work environment. Thus, their interests and values could probably be summarized as being more focused on a relationship oriented work environment.

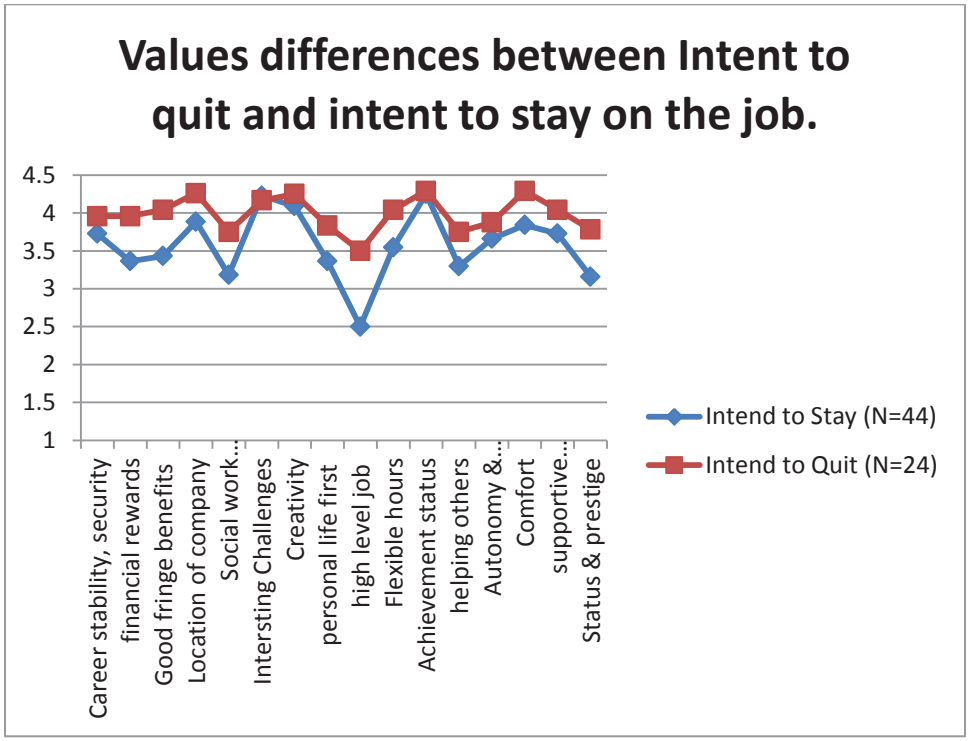


Figure 9. Differences in values by intention to quit.

Those intending to leave also agreed with the statement that their "values are being met at your current job." In fact, there was a statistically significantly lower response to this item by those intending to leave the organization. There was also a significant discrepancy in satisfaction between people who intended to leave the job in comparison to those who planned to

stay. Those intending to leave responded negatively to, "Very satisfied with this job" and "Like you fit with the organization you currently work." (t(1,66)=4.32,p<.001).

Regression Analyses

Pursuing a Career in Transportation

The regression analysis of pursuit of a career in transportation supported the previous analyses and indicated that interests, values and an awareness of the issues confronting women in a male dominated profession are factors influencing a decision to accept a position in transportation if offered. The model below was statistically significant and accounted for 64.5% of the variance (R2=.796, (F=29.120, (13,97), p<.001). The model indicates that women interested in practical hands-on work tasks, and a predictable and somewhat routine work environment are more likely to want to accept a position in transportation. Women who are interested in leadership, work challenges involving problem solving and some variety in tasks are also more likely to pursue a career in transportation. On the other hand, women who have an interest in a more social and interactive work environment, and an environment that is artistic, are less likely to indicate a desire to pursue a career in transportation. Competitive fringe benefits and getting paid less than their male counterparts are also less likely to preclude women from pursuing these jobs. Being confident of success and being an effective employee along with an awareness of the possibility that these are male dominated jobs is predictive of a greater likelihood of pursuing a job in transportation.

Table 2. Stepwise regression analysis of likihood of PURSUING careers in transportation.

Dependent Variable: How likely are you to PURSUE a career in transportation?	B	Std. Error	Beta	t	Sig.
(Constant)	-1.435	0.475		-3.025	0.003
Practical hands-on problems and solutions?	0.269	0.1	0.169	2.678	0.009
Artistic and creative use of forms, design, & patterns?	-0.099	0.071	-0.075	-1.397	0.166
Predictability, routine, details, & organization?	0.136	0.083	0.092	1.645	0.103
Leading people, directing projects, making decisions?	0.058	0.104	0.036	0.554	0.581
A social environment while at work?	-0.24	0.096	-0.177	-2.504	0.014
Challenges (Solving Problems, Variety, etc.)	0.156	0.107	0.095	1.452	0.150
A high level recognizable job title (i.e. CEO, CFO, etc.)?	-0.161	0.083	-0.124	-1.938	0.056
Comfort (job security & good working conditions)?	0.351	0.127	0.216	2.772	0.007
Competitive fringe benefits (health, retirement)?	-0.304	0.103	-0.212	-2.96	0.004
Women will encounter sexist remarks or behavior.	0.234	0.078	0.168	3.016	0.003
Women will be paid less because of their gender.	-0.234	0.08	-0.171	-2.922	0.004
I am confident I will succeed in Transportation	0.458	0.128	0.303	3.573	0.001
Confident will be effective in Transportation	0.344	0.139	0.242	2.473	0.015

Note: Shaded cells indicate significant differences p<.01.

Accepting a Career in Transportation

The regression analysis of accepting a career in transportation onto the independent variables also supported the previous analyses and indicates that interests, values and an awareness of the issues confronting women in a predominantly male workforce are factors that influence a decision to accept a position in transportation. The model below was statistically significant and accounted for 77.2% of the variance (R^2 =0.772, (F= 30.422, (11,99), p<.001) in the decision to accept a position in the transportation industry. The model indicates that women interested in practical hands on work tasks, and in a predictable and somewhat routine environment are more likely to want to accept a position in transportation. Also, women who are interested in the arts and a work environment that is social and interactive at work are less likely to accept a position in transportation. Women who are interested in achievement, but not necessarily a recognizable job title, and who prefer some job security and good working conditions, are also more likely to accept a position in transportation. Being aware of and willing to take a position in a predominantly male workforce is also predictive of a willingness to accept a job in transportation. Finally, having a strong sense of self efficacy in that one is confident that they will succeed in transportation and that she will be an effective employee in a transportation job is also predictive.

Table 3. Stepwise regression of liklihood of ACCEPTING a position in transportation.

Dependent Variable: How likely are you to ACCEPT a job in transportation?	B	Std. Error	Beta	t	Sig.
(Constant)	-0.950	0.567		-1.677	0.097
Practical hands-on problems and solutions?	0.428	0.110	0.292	3.903	0.000
Artistic and creative use of forms, design, and patterns?	-0.277	0.080	-0.227	-3.443	0.001
Predictability, definite procedures, routine, data, details, & organization?	0.099	0.098	0.073	1.011	0.315
A social environment while at work?	-0.370	0.105	-0.296	-3.509	0.001
Achievement (feeling of accomplishment & full use of abilities)?	0.573	0.121	0.385	4.743	0.000
A high level recognizable job title (i.e. CEO, CFO, PhD., etc)?	-0.302	0.090	-0.253	-3.345	0.001
Comfort (job security & good working conditions)?	0.216	0.126	0.144	1.717	0.089
Be likely to take a job in a field dominated by members of the opposite gender?	0.270	0.097	0.193	2.797	0.006
Women will face gender-specific biases or obstacles to their success.	0.191	0.092	0.133	2.074	0.041

Note: Shaded cells indicate significant differences p<.01.

Intention to Quit

Results of regression analysis of intention to quit onto the independent variables provides considerable insight also into the factors that would influence whether a woman would decide to leave her job. Results of the analysis produced a statistically significant equation that accounted for approximately 42% (R^2=.427, F(3,41)= 10.18, p<.001) of the variance in respondents reporting an intent to leaving their job. The factors in this equation were somewhat different from those of the previous models that indicated women likely to leave their jobs were likely interested in a higher level recognizable job title. In addition, they were less likely to indicate that their personal values were being met and that they were very satisfied with their jobs.

Table 4. Stepwise regression analysis of liklihood of quiting job in transportation.

Dependent Variable: That you want to quit this job	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	4.719	0.862		5.475	0
A high level recognizable job title (i.e. CEO, CFO, etc)?	0.243	0.112	0.267	2.173	0.036
Your values are being met at your current job	-0.420	0.236	-0.258	-1.776	0.083
Very satisfied with this job	-0.464	0.188	-0.368	-2.471	0.018

Discussion

The results of this study point to a number of key findings related to females pursuing, accepting and remaining in a transportation job. In regard to pursing and accepting a position in transportation, the study determined that for female job seekers, 76% were not interested in pursuing and 43.5% were unlikely to accept a job in transportation. Put another way, for those not currently employed in a transportation job, there is a low likelihood of and little interest in pursuing (8.7%) or possibly accepting (7.6%) a job in transportation. Thus, we would have to conclude that the overall popularity of work in this field among women is not great.

Because of the non-random nature of this sample which could limit its generalizability different results may be found for different samples and geographic locations. However, these results also point to a number of factors that are related to identifying persons who would be interested in working in the transportation industry. Specifically, those who would pursue transportation place a much higher value on achieving status at work and also having some autonomy and independence in their work. They also value innovative and new approaches to problem solving in addition to the ability to accomplish goals, achieve objectives and have a relatively high level of status in their jobs. They also score high on realistic and practical occupational interests and activities, as well as problem solving and investigative interests.

Those who have a low degree of interest show a much higher level of interest in artistic and creative interests and activities.

In terms of retention, the results of the analyses suggest that I women intending to quit transportation jobs valued financial rewards, fringe benefits, a job with a higher status title, and overall more status and prestige. Interestingly, those persons intending to quit also valued a more social and interactive work environment. These results correspond to the findings from the focus groups that put an emphasis on relationships at work as being important for women. In addition, it also points to the need identify clearer upwardly mobile career paths for women. If one of the significant differentiators for women is the lack of potential financial rewards, it may be related to the predominantly male dominated workforce and the fear of not getting promoted or advanced. These issues will need to be addressed with more focused investigations. Significant differences were also noted for those intending to leave on the issue of "values being met." This finding is consistent with other research which has identified organizational commitment as a key factor in predicting retention. It may be that those women deciding to leave no longer felt that the company's goals were consistent with their own values. Again, additional research will be needed in this area.

The regression analysis provides additional support for understanding intention to turnover. Namely, the top three predictors were recognizable job title, value congruence and job satisfaction. Thus, the regression analysis shows that the three strongest predictors and likely differentiators are related to career advancement and fit with the organization. These three predictors accounted for over 42% of the variance in intention to turnover. Thus from a retention perspective the data point to the need for a clear path to senior roles and the creation of value congruence.

The validity of these observations was supported in part by the fact that the profile responses of women who were interested in pursuing or accepting a transportation job were also very similar to the interests and values of persons who were already highly satisfied job incumbents.

Recommendations

The findings of this study provide a blueprint for organizations, employers and recruiters for both identifying high potential female prospects and what needs to be done to retain them.

The following characteristics are reflective of those who will have a stronger interest in transportation jobs and have less desire to leave the organization once hired.

1. *Women with a strong practical orientation to the workplace.*
2. *Women who desire some predictability and job security.*
3. *Women who have a firm commitment to the values and mission of the organization.*
4. *Women who will want to excel and compete and accomplish goals.*
5. *Women who are comfortable with a position with less name recognition.*
6. *Women who are aware of the gender imbalance in the workforce, and who are comfortable and confident that they can advance and excel in that environment.*
7. *Women who are comfortable with placing work priorities above personal priorities.*
8. *Women who have less desire for a social (relationship) oriented workplace.*
9. *Women who are not as dedicated to being in a high profile position.*
10. *Women who have a desire for autonomy and independence in the work place.*

This list of characteristics could easily be used by managers, recruiters, and candidates themselves to assess whether they are a good fit with the organization and the job. Turning these ten characteristics into a set of questionnaire items for a screening tool or a structured interview or other assessment selection test for pre-employment screening would be one way of utilizing this information. Additionally, these characteristics could be addressed in orientation briefings to persons considering the transportation industry for a job. By clearing identifying these key issues it should be possible to save time and focus only on those who have the highest likelihood of success in the long run.

Further research is needed to confirm the results of this study and to gain a better understanding of the interplay between work values, career satisfaction, supervision and organizational commitment on career choice and change.

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