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# Understanding the Impact of Extrinsic and Intrinsic SCM Career Choice Factors on Career Satisfaction

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**ABSTRACT:** Attracting and retaining supply chain management (SCM) talent is a major concern in industry. This exploratory study utilized survey research methods to obtain perceptions of intrinsic and extrinsic career choice factors and career satisfaction held by individuals working and educated in SCM. Means tests and hierarchical regression were used to identify career choice factors and to examine the effects of intrinsic and extrinsic criteria on career satisfaction. Leadership opportunities emerged as most important to predicting career satisfaction. Other important predictors were also of an intrinsic nature, which is consistent with classic needs theory. This paper expands the application of needs theory and career theory in SCM. Individuals who place more value on careers that provide leadership opportunities, responsibility, and earnings potential are more likely to be satisfied with their careers. Managers seeking to design career paths that satisfy talent should develop a plan that aligns with what individual's value.

**Keywords:** *Supply Chain Management, Logistics, Career Theory, Needs Theory, Selection, Retention, Turnover, Career Satisfaction, Intrinsic, Extrinsic.*

## 1. Introduction

Attracting and retaining operations and supply chain management (SCM) talent is a major concern among practitioners (Keller & Ozment, 2009). The global industrialized workforce is maturing and nearly 50% of senior-level managers will likely retire in the next decade (Wolff et al, 2009). This void left at the senior-level has impact on other levels (mid, entry) as well and thus organizations are seeing a shortage of talent at most supply chain occupational levels. One should not find it surprising that researchers have been calling for additional research on SCM career choices, shifts, expectations and overall talent retention (e.g., Autry & Daugherty, 2003; Cottrill, 2010; Min & Lambert, 2002; Williams, Garver, & Taylor, 2011).

Career shifts (e.g., promotions, quits, discharges) are concerning because they can have a negative impact on operations and overall firm performance (Glebbeek & Bax, 2004; Kacmar, Andres, Van Rooy, Steilberg, & Cerrone, 2006). Employees working in supply chain roles are no exception as they have been shown to contribute in establishing sustainable competitive advantage (Daugherty et al., 2000; Lambert & Burduglu, 2002; Richey et al., 2006), which most firms cannot afford to jeopardize. Moreover, the direct cost of employee turnover can range from 20% to 150% of a transitioning employee's annual salary (Hinken & Tracey, 2000; 2006; Ton & Huckman, 2008). In addition, career shifts occur more often than what some might expect or might realize. A recent report from a longitudinal study from 1979 to 2011 of people born in the U.S. in the late 1950s and early 1960s (i.e., baby boomers) found the average person held 11 different jobs from age 18 to age 44 (<http://www.bls.gov/news.release/pdf/nlsoy.pdf>). In 2010, the median number of years that a worker in the U.S. had been with their current employer was 4.4 years, while the median employee tenure in the transportation and material moving occupation was 4.0 years (<http://www.bls.gov/news.release/pdf/tenure.pdf>). Before these issues become an even costlier burden on the SCM industry, it is important that businesses learn more about SCM careers in order to manage imminent career shifts and to provide satisfying SCM careers that in turn attract and retain exceptional talent.

One mechanism for understanding career shifts is understanding career choice, or selection. SCM researchers have specifically called for understanding supply chain career selection factors

and potential drivers of career satisfaction (e.g., Cooper et al., 2008; Keller & Ozment, 2009; Lynagh, Murphy & Poist, 1999; Yi, 2012). Organizations with top supply chains, like Starbucks and Intel ([www.gartner.com/technology/supply-chain/top25.jsp](http://www.gartner.com/technology/supply-chain/top25.jsp)), are responding to issues related to turnover and retention by placing greater emphasis on understanding SCM careers (Cottrill, 2010; Solomon, 2010). Therefore, having a better understanding of potential drivers of SCM career choice and selection can help facilitate successful recruitment/retention strategy development efforts. Understanding SCM careers is an important part of maturing as a discipline and is critical to preserving successful performance. Therefore, this study will examine career perceptions of individuals educated in SCM to identify factors that reflect their choices and that influence satisfaction in a SCM career. In short, this study examines factors in SCM career choice that may influence career satisfaction.

The following section of the paper reviews literature concerning career choice, needs, and satisfaction and establishes connections to SCM literature. The next section presents the research methods and the results of this study. The concluding sections discuss the research findings and resulting implications for practitioners and educators.

## 2. Literature Review

This section begins by defining the career, then discusses career theory and needs theory, followed by a description of the concept of career satisfaction. The literature review section also describes several career studies that relate to turnover and retention across various industries and makes connections to SCM and the overall purpose and objectives of this research. The following synthesis of literature aims to further the understanding of SCM careers.

### *2.1 Career Definition, Theory, Satisfaction, & Research Purpose*

Hall (1976) defined a career as an "individually perceived sequence of attitudes and behaviors associated with work-related experiences and activities over the span of a person's life" (p. 4). Earlier research (e.g., Super, 1957) defined a career simply as an employer-employee relationship characterized primarily by natural advancement and extrinsic reward (Sullivan & Baruch, 2009).

Consequently, career research has focused mainly

on the objective physical component, viewing a career as a sequence of advancing jobs (Sullivan & Arthur, 2006). Early career theory emphasized the set stages or natural progressions within a specific vocation, whereas recent theory puts forward the idea of work (careers) being boundaryless (e.g., Arthur, 1994; Arthur & Rousseau, 1996). Contemporary career theory suggests that careers are much more than a mere sequence of jobs and tend to have both objective (physical) and subjective (psychological) aspects that need consideration to understand career satisfaction and success (Arthur & Rousseau, 1996; Evetts, 1992; Hall, 1976; Sullivan & Arthur, 2006).

Many early needs theorists emphasized the importance of managing both intrinsic and extrinsic factors of work (e.g., Herzberg, Mausner, & Snyderman, 1959; Maslow, 1943; McClelland, 1961; Vroom, 1964). Herzberg's influential two-factor theory suggests people have two distinct sets of needs and that different work elements can meet these needs, which in turn can result in satisfaction with work. Herzberg referred to the first set of needs as extrinsic hygiene factors, which are basic conditions that surround work and careers such as salary, security, policy, relationship with peers and supervision. Herzberg claims that when hygiene factors are present they will not increase motivation or lead to satisfaction with work. Alternatively, Herzberg argues that these basic conditions must be present in work (or a career) to prevent dissatisfaction. If extrinsic factors are absent, it can lead to dissatisfaction. Herzberg identified a second set of needs referred to as growth needs or motivators. Needs in this category include responsibility, advancement, recognition, and the work itself. When these intrinsic factors for growth are present or met, it will increase motivation and enhance the level of satisfaction with the work encompassed in a job or a career (Herzberg et al., 1959).

Career satisfaction is the satisfaction one derives from intrinsic and extrinsic career components such as compensation, sense of security, and opportunity for advancement (Greenhaus, Parasuraman & Wormley, 1990; Judge et al., 1995, p. 487). Career satisfaction is a key predictor of career success that is comprised of both intrinsic and extrinsic components, and is therefore measured by using both subjective and objective indicators (Ng, Eby, Sorensen, & Feldman, 2005). There is a need to explore the possible influence of personal factors

(e.g., relationships) and contextual factors (e.g., industry salary) in career research (Ng et al., 2005; Sullivan & Baruch, 2009).

*2.2 Non-Supply Chain Management Career Studies*

A number of career selection and retention studies have been performed that focus on non-business professionals. McCabe et al. (2005) determined that six major factors determined why nurses in Australia selected their profession: intrinsic attraction to nursing, extrinsic rewards (pay), employment security, entry-level job support, influence of others and travel opportunities. In addition, the top four specific reasons for selecting nursing were interesting and challenging work, ability to help others, ability to work closely with people and job security. Thomas (2008) determined that medical graduates in Australia and New Zealand selected psychiatry as a career because of: interest in the field, work-life balance, patient contact, challenge and complexity, and an ability to help people. Howard (2008) reported that African American workers who selected public school teaching careers rated intrinsic career choice factors (opportunity to work with children, importance of teaching and societal contribution) significantly higher than extrinsic factors (salary, fringe benefits). Gibb et al. (1988) found that U.S. Navy pilots remained in the profession primarily because of intrinsic motivators, specifically enjoyment of flying and self-esteem. Blau (2007) examined occupational (career) turnover by measuring the level of occupational satisfaction held by medical technologists using Greenhaus, Parasuraman, and Wormley's (1990) five-item career satisfaction scale. The study, using logistic regression, found that career satisfaction was a significant correlate with occupational turnover.

A number of career selection and retention research efforts exist that focused on non-supply chain business majors and professionals. Felton et al. (1994) reported that, compared to other Canadian business majors, students choosing a career in public accounting: (1) more heavily emphasize long-term earnings on job market conditions, (2) place less importance on intrinsic factors, (3) place less importance on initial earnings and (4) had more exposure to high school accounting. Additionally, Heinze (2008) found that college undergraduates at four Southeast U.S. universities who intended to major in Information Technology: (1) had positive attitudes towards IT, (2) had an interest in computers and (3) were more likely to be males.

Messmer (2006), the CEO of the largest finance and accounting professionals staffing firm, claimed that the retention of experienced financial professionals depends on four key satisfaction drivers: (1) attractive compensation/benefits, (2) supportive work environment, (3) career development (training) and (4) flexibility (work-life balance).

*2.3 Supply Chain Management Career Studies*

Few studies exist that focus on career satisfaction and retention issues in SCM, and even fewer studies look specifically at career expectations and selection. Lynagh et al. (1996) found that the majority of both men (85%) and women (69%) working in logistics were satisfied or very satisfied with their logistics job, with salary having a significant impact on satisfaction.

Much of the research regarding career satisfaction in SCM has been focused on operational roles as it is a major challenge. The truckload motor carriage industry typically experiences turnover rates in excess of 100%. Min and Lambert (2002) attribute this high turnover to high demand for trucking services, the limited supply of qualified labor, and ineffective human resource management. Research suggests that logistics operations can minimize turnover and retention problems and increase worker satisfaction by providing things such as higher pay, effective dispatching, supervisor-fit, person-organization fit, career advancement opportunities and employee-friendly policies that promote more time close to home, for example (see Autry & Daugherty, 2003; Keller, 2002; Williams, Garver, & Taylor, 2011).

Satisfaction and retention in management presents similar challenges as to what is experienced in logistics operations. Cook and Gibson (2000), for example, reported that 3PL junior manager retention rates decreased 12% per year for the first three years, yielding a mean retention rate of 67%. The authors of the study attributed the turnover at the junior manager level to better financial offers, less than desirable job locations, poor fit with corporate culture, termination for inadequate performance, and the lack of challenge in job or career. Daugherty et al. (2000) suggested that supply chain organizations could increase manager retention by offering enhanced compensation and by providing development opportunities.

From studies that examined career expectations

and choice, Gibson and Cook (2003) found that logistics undergraduate students seeking entry level positions in SCM valued opportunity for advancement, anticipated job satisfaction, positive company culture, salary offered, job security, training provided, and challenging and interesting work. Knemeyer and Murphy (2004) discovered that marketing undergraduates were more perceptive to challenge, opportunities for advancement, and gender friendliness in a potential career in logistics.

When reviewing literature from a variety of disciplines, including logistics and SCM, a mix of both extrinsic and intrinsic factors were important to work and satisfaction. However, literature was inconclusive with respect to identifying the specific factors or set of factors (extrinsic or intrinsic) that are most important to logistics and SCM professionals. This study focuses on identifying key extrinsic and intrinsic career selection factors that predict satisfying SCM careers because SCM career satisfaction is essential to successful SCM manager recruitment and retention. In this field, management recruitment and retention are critical because (1) there is more business demand for SCM managers than universities can supply; (2) massive baby-boomer retirements in SCM are exacerbating this shortfall; (3) globalization and market volatility are requiring managers to have new SCM skills which creates a shortage of talent with these skills; and (4) SCM managers have a unique role in businesses as a bridging function that interacts with the other critical corporate functions to manage inventory flow globally between a myriad of suppliers, the company, and many customers. SCM managers are required to have a unique mix of capabilities (e.g., global knowledge, communication skills, analytical skills, risk management skills, etc.) that is hard to find (Cottrill, 2010). It is critical that companies fill these SCM skill gaps to remain competitive (Daugherty et al., 2000; Richey et. al., 2006), as it has been shown that SC disruptions can devastate corporate performance and profitability (Hendricks and Singhal, 2005; Kacmar et al., 2006).

Table I lists the set of extrinsic hygiene factors alongside the set of intrinsic motivator factors included in the present study. Based on previous studies and classic management theory, two overarching hypotheses are proposed:

Hypothesis 1a-e: The perception of each extrinsic career selection factor (e.g., salary, career location, career security) will have a significant association

with career satisfaction.

Hypothesis 2a-i: The perception of each intrinsic career selection factor (e.g., advancement opportunity, leadership opportunity, challenging work) will have a significant association with career satisfaction.

3. Methodology

A self-report questionnaire was selected to obtain the perceived importance that logistics and SCM professionals place on extrinsic and intrinsic factors

(i.e., career selection criteria) when they made the choice to major in Logistics/SCM and assume it as their chosen career path. The majority of respondents were in managerial positions (e.g., Logistics Manager, Procurement Manager, Executive; further description of sample below). Participants were asked to respond to the following statement, “When choosing logistics/SCM as your career major/concentration, how important were each of the following” items, specifically those shown in Table I. All items were assessed on a 5-point scale ranging from 1 (not important) to 5 (very important).

Table I

<i>Extrinsic and Intrinsic Career Selection Factors and Item Measures</i>	
Extrinsic (Hygiene) Factors	Intrinsic (Motivator) Factors
a. Starting Salary	a. Advancement Opportunity
b. Flexible Career Path (policy)	b. Leadership Opportunity
c. Job/Career Location (work condition)	c. Responsibility
d. Job/Career Security	d. Fast Paced Work (work itself)
e. Demand for Skills (work condition; security)	e. Perceived Future Earnings
	f. Contribution to Society
	g. Challenging Work (work itself)
	h. Respected Profession
	i. Prestige

3.1 Measures

Measures for the independent and dependent variables were created following prior academic research. In particular, academic research on logistics and SCM careers (e.g., Knemeyer & Murphy, 2004) and student career choice was reviewed (e.g., Paolillo & Estes 1982; Auyenug & Sands 1997; McCabe et. al 2005) to create a list of career selection attributes for each respondent to rate importance. After an initial list of attributes was developed, it was presented to 100 current undergraduate students for discussion and validation of wording of influencing factors. Expert input from a small group of researchers from SCM and logistics and from industrial/organizational psychology helped finalize the questionnaire that resulted in 14 single-item measures, conceptually five extrinsic and nine intrinsic. Overall (global) single-item measures, such as prestige, were prompted from relevant domains found in previous literature and, therefore, used parsimoniously as representative attribute

indicators that summarize the essence of each domain for this exploratory study (Bergkvist & Rossiter, 2007).

3.1.1 Extrinsic Factor Items (Independent Variables)

Five extrinsic factors were used for this study. Starting salary is the initial pay a worker receives when he or she looked to join the logistics and supply chain management profession (Knemeyer & Murphy, 2004). A flexible career path is a semi-structured pathway of work and vocations that are defined implicitly or explicitly in industry or employer policy or upheld in their actions to the extent that the pathway is apparent to the individual when charting a course for their career going forward. Career location is the established settings and localities of work that one will experience in a career (Dickmann & Mills, 2009). Career security is the probability that a career will continue for an individual. Demand for skills is the skill content in a particular career that is a requirement of

employment, which includes academic qualification and professional qualification.

3.1.2 Intrinsic Factor Items (Independent Variables)

Nine intrinsic factors were used in the present study. Advancement opportunity is the perceived opportunity for growth within the company or industry in terms of progression or promotion in title, rank, and/or responsibility in a career. Leadership opportunity is the perceived opportunity to guide and influence a group of people to achieve a goal. Responsibility is the variety and perceived importance presented in a given career. Fast paced, exciting work is the real or perceived tempo and dynamic nature of the work embodied in a career. Future earnings potential is the perceived compensation that one expects in the course of a given career. Contribution to society is the real or perceived influence a career has on society. Challenging work is the anticipated yet controllable encounters and events that are part of a career (Knemeyer & Murphy, 2004). Respected profession is the perceived admiration and appreciation associated with a particular career, while Prestige is the reputation and stature or importance of a career (Duffy & Sedlacek, 2007).

3.1.3 Career Satisfaction (Dependent Variable)

Career satisfaction is the satisfaction, fulfillment and gratification one derives from intrinsic and extrinsic career components (Judge et al., 1995). Each respondent was asked to evaluate their current level of SCM career satisfaction using a 5-point scale ranging from 1 (very dissatisfied) to 5 (very satisfied).

3.2 Sample

A database of alumni of a University based in the United States was obtained. Specifically, the database contained contact information for individuals that had graduated with a major related to supply chain management (e.g., logistics management, supply management). The electronic survey was successfully delivered to 632 recipients. Electronic mail reminders were sent three weeks after the initial survey was released. Two hundred and thirty two responses were collected, for a response rate of nearly 37%. The responses were cleaned (e.g., eliminating duplicates; eliminating respondents that did not work in the SCM field; eliminating respondents with missing data) which

left 204 useable responses for the analysis (32%).

Job titles varied greatly as this was an open-ended question on the survey. Effort was taken to classify each job title accordingly. This included content analyzing job titles and creating classifications that condensed the job titles. Three academic researchers created initial categories and classified job titles into each. This process included several iterations until there was complete consensus on all respondent job titles and classifications. This resulted in 14 as executives, 108 as managers/supervisors, 53 as analysts, and 29 as other (others include SCM consultants, purchasing agents, and SCM marketing professionals). The average age of the respondents was nearly 30 and the average number of years of work experience was seven.

4. Results

4.1 Analysis 1: Means Analysis

A means analysis was undertaken in order to determine the importance that alumni assigned to 14 different selection criteria when they made the decision to major in Logistics/SCM and assume it as a career path. Mean scores were calculated for each of the 14 items and an overall within subjects F-test was run to test whether the differences observed across the 14 means were significantly non-random. The results of this test were significant at the 99% confidence level. Given the significance of the overall within subjects F-test, individual paired t-tests were performed on a post-hoc basis for each pair of means. Table II presents the results of a series of paired t-tests and lists attributes from most important to least important. At the 95% level of confidence, significant differences were found between 63 of the 85 pairs tested. Four more pairs of means significantly differed at the 90% level of confidence.

The significance of the results do indicate, despite some scale compression issues (means all above the midpoint), significant differences in the perceived importance of the criteria were found between the majority of the attributes. The mean test results indicate that alumni placed the greatest importance on a mix of extrinsic and intrinsic factors when selecting Logistics/LCM as their major. The five most important criteria overall were job security (4.175 out of 5), demand for logistics/SCM skills (4.073), opportunities for advancement (4.059), leadership opportunities (3.874) and perceived future earnings

potential (3.869). Other factors viewed as important were those in close proximity to the grand mean (3.71), specifically flexible career path (3.825), flexible job locations (3.685), and fast paced, exciting work (3.678). The three least important criteria were starting salary (3.483) the prestige of the profession (3.262) and ability to make a contribution to society (3.330).

**Table II**  
*Comparison of Scale Means and Results of Paired T-Tests of Significant Differences in Mean Importance from Analysis 1*

Within Subjects F test: F = 19.050, p < .001														
Career Selection Criteria	Mean <sup>1</sup>	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Job/Career Security	4.175													
2. Logistics/SCM Skills in Demand and Growing	4.073	ns												
3. Opportunities for Promotion/Advancement	4.059	ns	ns											
4. Opportunities for Leadership	3.874	*	*	*										
5. Perceived Future Earnings Potential	3.869	*	*	*	ns									
6. Flexible Career Path	3.825	*	*	*	ns	ns								
7. Flexible Job/Career Location Geographically	3.685	*	*	*	**	*	**							
8. Fast Paced, Exciting Work	3.678	*	*	*	*	*	**	ns						
9. Respected Profession	3.585	*	*	*	*	*		ns	ns					
10. Challenging work	3.573	*	*	*	*	*	*	ns	ns	ns				
11. Significant Responsibility	3.505	*	*	*	*	*	*	*	ns	ns	ns			
12. Starting Salary	3.483	*	*	*	*	*	*	*	*	ns	ns	ns		
13. Ability to Make a Positive Contribution to Society	3.330	*	*	*	*	*	*	*	*	*	*	*	**	
14. A Profession that Carries Prestige	3.262	*	*	*	*	*	*	*	*	*	*	*	*	ns

<sup>1</sup> 1 = not important; 5 = very important, \*p < .05; \*\*p < .01, ns = not significant (p = .10)

4.2 Analysis 2: Regression Analysis

A regression analysis was performed in order to examine the relationships between the criteria used to select a career in Logistics/SCM and career satisfaction. The dependent variable in the regression model was the current level of satisfaction respondents have with their career in the logistics/SCM field. The predictor variables were respondent recollections of the level of importance they attached to the 14 different career-related criteria at the time they made the decision to select logistics/SCM as their career, specifically when they chose logistics/

SCM as their major in college. A hierarchical multiple stepwise regression analysis was used to test relationships between the dependent and predictor variables. In the hierarchical regression, the demographic variable Age was used as a control variable by entering its effect into the model first followed by the predictor variables. Age was controlled for in this analysis for the following reasons: 1) the predictor variables were respondent assessments of the importance they attached to certain criteria back when they were in college and thus age could have an effect on their ability to make these recollections; 2) older respondents will have

had more career experience and time to work in the industry without leaving, and thus, they might be disproportionately more likely to be satisfied with their career in logistics/SCM.

The stepwise approach was used in order to sort through the effects of the large number of potentially related predictor variables. Both forward and backward stepwise procedures were performed and both approaches produced the same reduced model. The results of the hierarchical regression analysis are presented in Table III, and indicate that the overall model is significant; F = 6.97 and p < .001, and produces an R-Square of .150. In addition, it should be noted that neither the overall nor the reduced model showed any evidence of multicollinearity. Comparisons of the zero order and partial correlations for each predictor show that no variable (not even the insignificant predictors) experienced a sign change, and the variance inflation factors (VIFs) for the predictors were all less than 1.6 which is well below 10, the generally accepted threshold for a multicolliearity problem (Bowerman & O’Connell 2003; Hair, Black, Babin, & Anderson, 2010; Webster 1998).

Analysis of the predictor variables indicates that one is significant at the 95% level, and three are marginally significant using a 90% confidence level, which characterizes the exploratory nature of the

current study (Hair et al., 2010). The results indicate the following four career selection criteria (listed in order of impact based on standardized beta weight) were predictors of satisfaction with a career in logistics/SCM: opportunities for leadership (beta weight = .185), a respected profession (beta weight = -.129), significant responsibility (beta weight = .127), and future earnings potential (beta weight = .121). Interestingly, the variable a respected profession had a significant negative relationship with career satisfaction indicating that the more importance that was placed on having a career in a respected profession the less satisfied one is with their career in logistics/SCM. Thus, the model suggests that people who placed more value on careers that provide leadership opportunities, significant responsibility and future earnings potential and place less value on how respected they think the profession is, are more likely to be satisfied with a career in logistics/SCM.

The significant direct relationship observed between the control variable and the dependent variable indicates that older respondents tend to be more satisfied with their SCM careers. Since the relationship between age and career satisfaction is significant but is not the focus of the current study, the inclusion of age in the regression model as a control variable is deemed to be necessary.

**Table III**  
*Stepwise hierarchical regression analysis of the effects of the importance of different career selection criteria on satisfaction with a career in Logistics/SCM, controlling for age*

Final Model, R-Square = .150, F = 6.97, p = <.001,			
Career selection criteria	Mean*	Standardized beta weight	Significance
Starting Salary	3.48		ns
Perceived Future Earnings Potential	3.87	.121	.077
Opportunities for Promotion/Advancement	4.06		ns
Opportunities for Leadership	3.87	.185	.009
Flexible Career Path	3.83		ns
Flexible Job/Career Location Geographically	3.68		ns
Significant Responsibility	3.50	.127	.076
Job/Career Security	4.17		ns
Logistics/SCM Skills in Demand and Growing	4.07		ns

Challenging work	3.57		ns
Fast Paced, Exciting Work	3.68		ns
Ability to Make a Positive Contribution to Society	3.33		ns
Respected Profession	3.59	-.129	.065
A Profession that Carries Prestige	3.26		ns
<b>Control variable – entered in first block</b>	29.74	.247	<.001
Age			

\* scale of 1 = not important to 5 = very important

4.3 Analysis 3: Matrix Analysis combing the results of analysis 1 and 2

Based on the results of both the means analysis and the regression analysis, a 3 x 2 summary matrix was developed. From the means analysis, the 14 different career selection criteria were divided into two groups: higher importance and lower importance. Criteria with a mean importance score less than the overall grand mean of 3.71 were classified as having lower importance while those with means greater than or equal to the grand mean of 3.71 were classified as having higher importance. From the regression analysis the 14 criteria were grouped into three categories: positively related to career satisfaction, negatively related to career satisfaction and not related to career satisfaction. Predictor variables that had a significant relationship with career satisfaction were put into the first two categories while those that were not found to be significant predictors of career satisfaction were classified in the last category. Thus, each of the 14 criteria were categorized as belonging to one of the following six cells: higher importance positive predictors of satisfaction, higher importance negative predictors of satisfaction, higher importance non-predictors of satisfaction, lower importance positive predictors of satisfaction, lower importance negative predictors of satisfaction, and lower importance non-predictors of satisfaction (see Table IV).

As the matrix indicates, perceived future earning potential and opportunities for leadership are intrinsic factors that are classified as higher importance positive predictors of career satisfaction. This indicates that these two criteria not only play an important role in attracting students to the field but also that alumni (i.e., logistics/SCM professionals) who consider these criteria to be important tend to

be more satisfied with their career in logistics/SCM. Significant responsibility was the only criterion classified as being a lower importance positive predictor of career satisfaction. This suggests that while this is not one of the top criteria in terms of attracting majors, those people in the field who do value this criterion tend to be more satisfied with their career.

Respected profession was the only criterion classified as a lower importance negative predictor of career satisfaction. This indicates that this criterion is not only unlikely to attract many students to the field of logistics/SCM, but also those who do consider it important tend to be less satisfied with their career. The criteria job security, logistics/SCM skills in demand and growing, opportunities for promotion /advancement and flexible career path were all classified as higher importance non-predictors. These are all important career selection criteria but they were not linked to career satisfaction. Finally, a profession that carries prestige, ability to make a positive contribution to society, starting salary, challenging work, flexible job locations geographically, and fast paced exciting work were all classified as lower importance non predictors. These criteria were not found to be important in terms of attracting majors nor related to future career satisfaction.

Table IV

Classification of career selection criteria based on mean importance and relationship with career satisfaction

	Lower Importance (mean < 3.71)	Higher importance (mean = 3.71)
Positively related to Career Satisfaction	Significant Responsibility	Perceived Future Earnings Potential Opportunities for Leadership
Not related to career satisfaction	A Profession that Carries Prestige Ability to Make a Positive Contribution to Society Starting Salary Challenging work Flexible Job/Career Locations Geographically Fast Paced, Exciting Work	Job/Career Security Logistics/SCM Skills in Demand and Growing Opportunities for Promotion/Advancement Flexible Career Path
Negatively related to career satisfaction	Respected Profession	

5. Conclusion

5.1 Discussion and Implications

5.1.1 Theoretical Implications

Anchored in career theory (Sullivan & Arthur, 2006) and needs theory (Herzberg et al, 1959), this research demonstrates that what is important in a career stretches beyond the traditional view of a career as being a linear sequence of jobs. This paper aligns with the changing nature of career theory and contributes to career literature by responding to calls for “researchers to focus on a broader range of subjective success criteria when striving to model and assess whatever career success means to the individuals and population(s) under consideration” (Helsin, 2005, p. 127). This paper, therefore, expands the application of needs theory and career theory to SCM and highlights the importance of managing factors that are important in a SCM career context by developing and empirically examining a model that included several intrinsic and extrinsic career choice factors in relation to SCM career satisfaction. Herzberg claimed that intrinsic factors are what increase motivation and enhance the level of satisfaction with work in a given career. The important predictors found by this study that best explain career satisfaction were congruent with classic needs theory in that they were mainly of an intrinsic sort. These predictors also provide support

for contemporary career theory (e.g., Arthur & Rousseau, 1996) that suggests that boundaryless career factors are those that are not contingent on a particular employer, like pay and positional power, but rest with individual values and expectation of personal growth, like perceived responsibility, respected profession, and work-life balance (Brousseau et al, 1996).

5.1.2 Managerial Implications

While there are a myriad of factors to consider when designing an effective and efficient career path for logistics/SCM professionals within an organization, the regression results of this research suggest that logistics/SCM professionals who place more value on careers that provide leadership opportunities, significant responsibility and future earnings potential are more likely to be satisfied with their logistics/SCM careers. Therefore, operations and supply chain managers who seek to design career paths that satisfy and retain logistics/SCM professionals should consider the following.

Managers should develop a formal logistics/SCM career path plan as suggested in previously published research (Cook & Gibson, 2000; Dischinger et al., 2006). Such plans should enable the professional to engage in a number of successful



leadership opportunities. In the initial stages of an SCM career, this may be accomplished by using a leadership development program. Such programs may include rotational programs whereby SCM professionals spend predetermined amounts of time in specific functions before making a decision which path fits best for longer term assignments. For example, a manufacturing firm may take two years to develop a SCM professional by rotating through purchasing, planning, production, distribution, and customer service. During the course of the rotation, extra emphasis on leadership could be implemented through work on special projects.

Formal career path plans should ensure that each successive promotion or new position provides broader responsibility (e.g. managing more employees, a larger budget, more assets). Both scope of responsibility and expected outcomes should be increased. This may be accomplished by providing logistics/SCM professionals opportunities to manage at a higher level within a specific function (e.g. transportation) or by providing broader cross-functional or cross-organizational responsibilities (Autry & Daugherty 2003; Dischinger et al., 2006). Taking a motor carrier example, many entry-level positions can have an operational component such as dispatching or load-planning. The carrier could also develop tentative career paths and time frames for the entry-level personnel. In order to move up from load planning to routing, which is more responsibility, it is typically 18-24 months. However, it is noted that increased responsibility does not have to come in the form of a predetermined career path. Some SCM professionals, may find value in determining their own career path, one with increased responsibility.

Results in this study indicated that perceived future earning potential has an impact on satisfaction with the career path. As a result, firms should attempt to make sure the likely compensation for these positions is transparent and promoted to current logistics/SCM professionals. An effective method for accomplishing this task is to assign career mentors (senior managers in the organization) to guide younger logistics/SCM professionals along the organization's career path. Career mentors have been advocated in a number of previous studies (Autry & Daugherty, 2003; Cook & Gibson 2000; Williams, Garver & Taylor, 2011). In addition to making only earning information available, organizations could benefit from

transparency with the total compensation statement. Making information readily available on how much the organization contributes to retirement, insurance, and other benefits may be beneficial to keeping SCM employees satisfied.

Research results show that those who place a high importance on "respected profession" were less satisfied with their logistics/SCM career than those who place low importance on this factor. While respected profession seems to be of little importance to people when choosing their career, there are still many in the field who believe that logistics/SCM is not a well-respected profession. In their qualitative study, Goffnett et al. (2012) found that many within the SCM profession felt their career lacked respect among family, friends, and peers. This career choice misconception or misdirection appears to limit the amount of satisfaction some people experience in a logistics/SCM career. Therefore, senior manager in an organization should make a concerted effort to cross-functionally educate senior management regarding the impact that the supply chain managers have on: (1) adding customer value, (2) decreasing organization costs and assets and (3) improving financials. Senior managers should take advantage of external resources to make their case (e.g., logistics educators and supply chain organizations such as CSCMP, APICS, ISM). Additionally, having transparency into the career path and allowing SCM professionals to see growth and development in their careers may add value in developing the respect for the profession. For example, a retailing firm may want to show that their career path within the SCM domain eventually leads to an executive level position within the firm. As more and more firms gain a SCM seat in the corporate boardroom, it should be promoted so that SCM professionals do not have the perception that they will be stuck in the "backroom" for their careers.

Finally, senior logistics/SCM professionals should be ambassadors of the profession, educating everyone about the critical role that logistics plays in sustaining human life, providing a foundation for economic growth and defending freedom.

#### 5.1.3 Educator Implications

Obviously, given the results, educators can focus efforts on attracting students to a SCM major who value opportunities for leadership, significant career responsibility and high future earnings potential so

that these majors will be satisfied with their logistics/SCM careers.

Educators must show the opportunities that are available to logistics/SCM professionals throughout the public and private sector through assignments, lectures, handouts and podcasts. Educators can influence student performance in the class by providing clarity in career paths (Yi, 2012). Also, educators can attract leaders by developing an honor society and/or an operations and SCM student organization that has numerous leadership opportunities through officer positions. Additional leadership roles can be developed through student teams assigned to tackle community service projects or corporate consulting assignments. Educators could develop a service-learning class project with a local non-profit organization and allow operations and SCM students to develop supply chain solutions to the issues facing them, which is an example of a team-oriented task that can "make the class relevant to the real world, providing legitimacy to the course" (Yi, 2012, p. 73).

Educators in all business fields must be able to demonstrate and communicate the value provided by the field to an organization and society (Gibson & Cook 2003; Howard, 2008, Yi, 2012). Specifically, SCM educators must show that logisticians have significant responsibility by demonstrating the significant impact that logistician decisions can have on an organization's customer service, costs and profitability. In addition, the impact of logisticians on a country's defense, economic development and the health of its citizens must be demonstrated through cases, lectures, etc. In addition, educators can provide significant responsibilities to students by exposing them to a number of invigorating projects (Yi, 2012), such as student case / simulation competitions with other universities, student organization activities involving corporate consulting, student professional development events (e.g. career fairs) and community service events.

Educators should provide salary data that demonstrates excellent future earnings potential. Also, SCM professors should promote a dialogue between current majors and SCM alumni through career fairs, campus speaking engagements and IT capabilities such as LinkedIn (Gibson & Cook, 2003). In addition, SCM students should be exposed to operations and SCM professionals by attending

regional and national conferences and visiting corporations. A tool to assist educators with future earning potential can be a strong working relationship with the private sector. This may require educators to be active in professional trade organizations. Moreover, educators could develop and cultivate an alumni network. This would allow educators to track and promote the success of former students.

Educators should tout the growing respect garnered by the logistics/SCM field during its past 50 years as evidenced by increasing salaries and growing direct access to CEO's (Lambert, & Burduroglu, 2002). However, educators must continuously remind logisticians and SCM professionals that when critical material flow in a society or in operations is running smoothly, they are often unnoticed. When critical supply is disrupted, everyone notices that the logistics has failed!

Educators should also take cues from related recommendations to industry and prepare students using realistic job previews (Richard, et al., 1994). Logistics and SCM can often involve long hours, weekends, operational roles, and other factors that some may feel are "unglamorous". Educators need to present a realistic picture of the SCM function to those interested in the career path. If students are extremely focused on profession that garners respect, prestige, and the like, SCM opportunities may not be the best "fit" for this person. The evidence from this research indicates higher emphasis on these factors lead to reduced satisfaction with the SCM career. If this dissatisfaction continues, it is likely that these SCM professionals will transition to other career paths. Painting a realistic picture before a student heads down this path is something that educators should consider in their mentoring role.

#### 5.2 Closing, Limitations, and Future Research

This exploratory research identified a number of variables that predict career satisfaction, with opportunities for leadership being most prominent. Interestingly, the other factors that appear as marginally significant predictors of career satisfaction, specifically responsibility, respected profession, and perceived future earnings potential, were also of an intrinsic nature, which is consistent with classic needs theory and the seminal work of Frederick Herzberg. The study, however, had a number of noticeable limitations. First, a convenience



sample of alumni from a single university was used in this research, thus the generalizability of the study could be limited. Future research involving a larger, more diverse sample should be undertaken to validate or extend current research. Second, this study encompassed a broad range of logistics and SCM careers. The resulting influencers of career satisfaction identified herein may not be applicable to every function or career in logistics and supply chain management. A third limitation rests in the single-item measures used as extrinsic and intrinsic career choice predictors of career satisfaction and the single-item measure used for career satisfaction. Further research might explore the specific makeup of each domain to identify items that may offer greater definition and precision in measuring the variables used in the study and to enhance validity and reliability of each domain. For example, the variable of “opportunities for leadership” is significant in the current research. It is likely that this variable has multiple dimensions to it that may also play a role in career satisfaction. What specific type of supply chain leadership roles lead to career satisfaction? Furthermore, what happens to career satisfaction as leadership opportunities are promoted, planned for, and have a clear career path defined?

The areas of SCM job and career satisfaction are rife for future research. Areas needing more research include, but are not limited to: training/career development and career progression; on-boarding activities and job satisfaction/retention; the role of internships and mentoring in career development and retention; and SCM talent sourcing. As SCM truly is a multi-disciplinary function, it is likely that the human resource activities to support it may provide unique challenges that call for much needed future research. Further research might also capture the critical time element that is part of what defines the career by exploring perceptions of logistics and SCM careers via longitudinal studies.

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