

Relationship of Career Exploratory Beliefs to Career Certainty of Undergraduate Agriculture Students



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Abstract

This study investigated the relationship of career exploratory beliefs to certainty in a sample of undergraduate agriculture students. The findings of the study indicated freshmen and senior students were moderately certain about their career choice and held moderate career exploratory beliefs. Career certainty was significantly related to several career exploratory belief dimensions. Multiple regression analysis indicated that career certainty could be predicted from one career exploratory belief dimension, Certainty of Career Exploration Outcome (CCEO), for both freshmen and senior students. Implications of the findings are discussed and recommendations are provided for enhancing the career development experiences of undergraduate students enrolled in colleges of agriculture.

Introduction/Conceptual Framework

A fundamental aspect of the career development process is exploring different options and vocational areas (Whiston and Keller, 2004). Often, adolescence is a time of vocational exploration when individuals begin to gather occupational information so they can begin to consider which vocations may be possibilities for them. However, according to Super (1990), career exploration may occur throughout the life-span, and may be especially pertinent during career transitions such as job loss (Zikic and Klehe, 2006). The career exploration process can be stressful because it may elicit difficult questions and concerns about one's self and the future (Jordaan, 1963).

Career exploration has been defined as purposive behaviors and cognitions that afford access to information about occupations, jobs, or organizations that was not previously in the stimulus field (Stumpf et al., 1983). Career exploration is an important kind of vocational behavior that includes learning about the self and from the environment to help decide about a career direction, to ease adjustment to work, and to enhance performance (Blustein, 1992; Jordaan, 1963; Stumpf et al., 1983). The two major sources of career exploration consist of environmental exploration and

self-exploration (Stumpf et al., 1983). Environmental exploration allows the individual to gain knowledge about career opportunities and the realities of different jobs, whereas self-exploration leads to knowledge about one's own interests and abilities (Hardin et al., 2006). Together, environmental and self-exploration provide information about how well one's interests and abilities match specific occupations, which in turn facilitates the selection of an appropriate and meaningful occupation. Tools that can help individuals engage in career exploration include career assessment inventories and experiential activities designed to provide a realistic preview of an occupation or position (e.g., internships, formal mentoring programs) (Eby et al., 2005).

Stumpf et al. (1983) developed a process model of career exploration involving three primary areas: 1) exploration process, 2) reactions to exploratory behavior, and 3) beliefs about exploratory behavior (Figure 1). The exploration process is concerned with four primary behaviors: 1) where an individual explores, 2) how one explores, 3) how much one explores, and 4) what one explores. The second area, reactions to exploratory behavior, involve an individual's feelings about the information acquired or not yet acquired as well as the amount of anxiety or stress experienced during the exploration process (Stumpf et al., 1983). Finally, the assumption that career exploration is a conscious process implies that, at any given time, individuals are acting upon a set of beliefs and perceptions. Therefore, it is essential to consider an individual's beliefs about career opportunities. In terms of the beliefs about exploratory behavior, Stumpf et al. (1983) reasoned that it is important to know an individual's perceptions of the labor market and expectations of attaining career goals, instru-

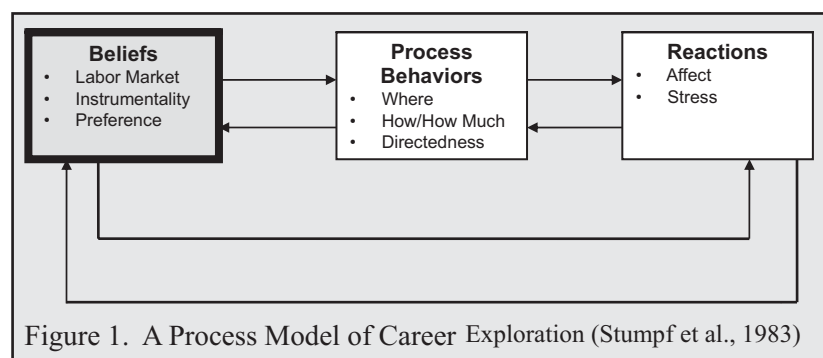


Figure 1. A Process Model of Career Exploration (Stumpf et al., 1983)

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mentalities (i.e., usefulness) of exploratory behaviors for achieving career goals, and the degree of importance placed on obtaining one's career preference.

Although the process behaviors of the career exploration model have received the greatest attention in the literature; previous research (Blustein, 1988; Blustein, 1989a; Stumpf et al., 1983; Stumpf and Lockhart, 1987) has suggested that internal cognitive processes, such as one's beliefs about the perceived utility or instrumentality of exploratory behavior might serve to elicit and sustain subsequent exploratory behavior (Blustein, 1989a). Specifically, exploratory beliefs refer to an individual's perceptions of the labor market and expectations of attaining career goals; instrumentalities of search behaviors for achieving career goals, and the degree of importance an individual places on obtaining specific career preferences (Stumpf et al., 1983). Beliefs about the values of career exploration affect one's motivation to explore (Stumpf, 1992). These beliefs are influenced by the success of previous efforts at career exploration, the levels of stress experienced, and initial differences (Stumpf et al., 1983).

Similar to career exploratory behavior, career certainty is a precursor to career choice. Hartung (1995) defines career certainty as the degree to which individuals feel confident about their vocational plans. Stumpf et al. (1983) reasoned that two dimensions of career certainty are relevant to the career exploration process: 1) the employment outlook which refers to how favorable the employment possibilities look in one's career area, and 2) the certainty of career exploration outcomes, which is the degree of certainty one feels that he/she will attain a desired position. The importance of career certainty cannot be overemphasized. For example, Orndorff and Herr (1996) and Schulenberg et al. (1993) found that young adults with greater career certainty are more likely to engage in career planning activities and to identify their work values. They also found that the presence of certainty can contribute to more effective career behaviors.

Previous research has examined how career exploratory beliefs relate to various career-related behaviors. For example, Blustein (1988) examined the theoretical and empirical relationships between motivational processes and career exploratory beliefs and behaviors. Findings indicated that intrinsic and extrinsic sources of motivation were positively related to career exploratory beliefs. In a study conducted by Stumpf and Lockhart (1987), they examined the relationships between gender, work-role salience, and work preferences with beliefs about career exploration and also examined the relationships of beliefs about exploration with exploratory behaviors. Their findings indicated relationships among work-role salience, work preferences, beliefs about career exploration, and exploratory behaviors which suggested that career exploration is not only a behavioral process but a motivational process as well.

Finally, Blustein (1989a) sought to determine if greater levels of environmental and self-exploratory activity and exploratory beliefs were associated with higher levels of commitment to a vocational choice. Blustein's findings indicated that certain exploratory beliefs (i.e., internal search instrumentality beliefs) were associated with the planning phase of career decision-making, and environmental exploration was predictive of vocational commitment. Despite these findings, no studies were found that examined the relationship between career exploratory beliefs and career certainty, and in only one study (see Mako, 1990) have aspects of the career exploration process and career certainty been a dual focus of study.

Purpose/Objectives

The purpose of this study was to determine the extent to which career exploratory beliefs influence the level of certainty of students enrolled in a college of agriculture. The objectives of this study were to:

1. Identify the career exploratory beliefs of undergraduate agriculture students.
2. Describe relationships between career exploratory beliefs and career certainty.
3. Determine if career exploratory beliefs explain a significant proportion of the variance in level of career certainty.

Methods/Procedures

The target population for this study consisted of all freshmen and seniors (N = 1,284) enrolled in a college of agriculture located in a Midwestern state. A purposive sample of freshmen students (n = 132) enrolled in freshmen orientation courses and senior students (n = 177) enrolled in senior capstone/seminar courses from eight academic departments of the college were used in the study. Students were selected from these two grade levels because of the researcher's interest in understanding developmental differences among undergraduate students (Esters, 2008). Hence, selected departments were targeted from those that offered either a freshmen orientation and/or senior capstone courses. Moreover, individuals making important academic or career decisions gather information about occupations, academic programs, schools or workforce trends, to varying degrees (Gore, Bobek, Robbins, and Shayne, 2006).

The instruments used to collect data for the study consisted of the Certainty Scale items of the Career Decision Scale (Osipow, 1987) and the Career Exploration Survey (CES; Stumpf et al., 1983) as well as items requesting demographic information. The first two items of the CDS which comprise the Certainty Scale provide a measure concerning the degree of certainty an individual feels in having made a decision about a career. Responses are recorded on a 4-point Likert-type scale ranging from 1 (not at all like me) to 4 (exactly like me). Scores on the Certainty

Scale can range from 2 to 8 with higher scores indicating greater certainty. Osipow et al. (1976) reported test-retest reliabilities of .90 and .82 for the CDS using two separate samples of college students. There is a substantial body of evidence supporting its reliability and validity (Hackett and Watkins, 1995; Slaney, 1988). Internal consistency reliability for the current study was .81.

Level of career exploratory beliefs was assessed using selected scales from the Career Exploration Survey (Stumpf et al., 1983). Specifically, scales corresponding to the CES career exploratory beliefs were used in this study. These scales included the three-item Certainty of Career Exploration Outcome (CCEO) scale; three-item External Search Instrumentality (ESI) scale; four-item Internal Search Instrumentality (ISI) scale; four-item Method Instrumentality (MI) scale; and the four-item Importance of Obtaining Preferred Position (IOPP) scale. Because the CES was originally developed with undergraduate and graduate business students, minor modifications in wording were also made to the CCEO and MI scales. Specifically, the CCEO item, "At the specific job you prefer (e.g., CPA accountant)" was changed to "At the specific job you prefer (e.g., commodity broker, patent attorney, agriculture teacher)." In addition, the MI items, "Planning a detailed job search" and "Developing a specific process for investigating firms" and was changed to "Planning a detailed job search in my anticipated career area" and "Developing a specific process for investigating firms or organizations in my anticipated career area."

The CCEO scale measures the degree of certainty an individual feels he/she will attain a desired position. The three CCEO items used Likert-type scales with a 5-point response format ranging from 1 (not certain) to 5 (very certain). External Search Instrumentality assessed the probability that exploring the environment for career opportunities will lead to obtaining career goals. The three ESI items used Likert-type scales with a 5-point response format ranging from 1 (very low probability) to 5 (very high probability). Internal Search Instrumentality measured the probability that reflection on past career behavior and retrospection will lead to obtaining career goals. The three ISI items also used Likert-type scales with a 5-point response format ranging from 1 (very low probability) to 5 (very high probability). The Method Instrumentality scale measured the probability that being intended and systematic in one's career exploration will lead to obtaining career goals. The

four Method Instrumentality items used Likert-type scales with a 5-point response format ranging from 1 (very low probability) to 5 (very high probability). The Importance of Obtaining Preferred Position measured the degree of importance placed on one's career preference. The five IOPP items used Likert-type scales with a 5-point response format, 1 (not important) to 5 (very important). Possible scores for the CCEO and ESI scales could range from 3 to 15 while possible scores for the ISI and MSI scales could range from 4 to 20. Possible scores for the IOPP scale could range from 5-25.

Stumpf et al. (1983) reported internal consistency reliabilities of .67 to .89 for the scale used in this study. For the present study, internal consistency reliabilities were .89 (CCEO), .71 (ESI), .82 (ISI), .86 (MI), and .73 (IOPP). These scales also exhibited construct and predictive validity in previous research which is reported in detail by Stumpf et al. (1983).

Data were coded and analyzed using the Statistical Package for the Social Sciences (SPSS version 14.0). Descriptive statistics used included frequencies, percentages, means, and standard deviations. Inferential statistics used included Pearson and point biserial correlations and stepwise multiple regression. Relationships were described using Davis's (1971) conventions. Data were analyzed separately for freshmen and senior students allowing for grade level comparisons as well as to assess for different patterns of relationships. Effect sizes were interpreted using Cohen's (1988) criteria.

Results

Due to the sampling methods used in this study, results are not generalizable to any larger population. Three-hundred nine students participated in the study. Over half the students were classified as seniors. Ninety-seven percent of the students were Caucasian. Sixty-four percent of the students in the study were male and 36% were female. Seventy-four percent of the students were from rural areas and 26% were from urban areas.

Students represented each of the eight academic departments. Eighteen percent of the students in the

Table 1. Means and Standard Deviations for Career Certainty and Career Exploratory Beliefs (n = 309)

Variable	Freshmen (n = 132)		Seniors (n = 177)	
	M	SD	M	SD
Career Certainty ^a	3.02	.59	3.20	.69
IOPP ^b	3.79	.82	3.75	.99
MI ^c	3.44	.75	3.47	.79
ISI ^c	3.28	.69	3.29	.68
ESI ^c	3.22	.69	3.09	.67
CCEO ^d	2.94	1.00	2.82	1.29

Note. Scale: ^a1 = Not At All Like Me; 2 = Only Slightly Like Me; 3 = Very Much Like Me; 4 = Exactly Like Me; ^b1 = Not Certain; 2 = Somewhat Certain; 3 = Moderately Certain; 4 = Certain; 5 = Very Certain; ^c1 = Very Low Probability; 2 = Low Probability; 3 = Moderate Probability; 4 = High probability; 5 = Very High Probability; ^d1 = Not Important; 2 = Somewhat Important; 3 = Moderately Important; 4 = Important; 5 = Very Important.

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study were enrolled in the departments of agricultural economics and natural resource, ecology, and management followed by agricultural biosystems engineering and animal science with 15%. Fourteen percent of the students were enrolled in the department of horticulture and 10% of the students indicated that their majors were in the departments of agricultural education and agronomy.

The first objective of this study was to identify the level of career certainty and career exploratory beliefs of undergraduate agriculture students. Level of career certainty was measured using the Career Certainty items of the Career Decision Scale (Osipow, 1987). Table 1 provides grade level comparisons of the career certainty scores. The mean career certainty score for freshmen was 3.02 (SD = .59). The mean certainty score for seniors was 3.20 (SD = .69). Both groups' mean scores indicate greater certainty in having made a decision about a career.

Level of career exploration was assessed using selected scales from the Career Exploration Survey (Stumpf et al., 1983). Table 1 shows the grade level comparisons of the career exploratory beliefs scores. The mean IOPP score for freshmen was 3.79 (SD = .82) while the mean score for seniors was 3.75 (SD = .99) indicating that freshmen and seniors both felt that it was important to obtain their preferred position. The mean MI score for freshmen was 3.44 (SD = .75) while the mean score for seniors was 3.47 (SD = .79) indicating a moderate probability that being intended and systematic in their career exploration will lead to obtaining career goals. Similarly, the mean ISI score for freshmen (M = 3.28, SD = .69) and seniors (M = 3.29, SD = .68) indicating a moderate probability that reflection on past career behavior and retrospection will lead to obtaining career goals. The mean ESI score for freshmen was 3.22 (SD = .69) while the mean score for seniors was 3.09 (SD = .67) indicating a moderate probability that exploring the environment for career opportunities will lead to obtaining career goals. Furthermore, the mean CCEO score for freshmen was 2.94 (SD = 1.00) and seniors (M = 2.82, SD = 1.29) indicating that both groups of students held a moderate level of certainty that they will attain a desired position.

The second objective of this study was to describe relationships between career exploratory beliefs and career certainty. Pearson and point bi-serial correlation

coefficients were used to describe the relationships (Table 2). The following scale was used to describe the strength of the relationships: .01-.09 = negligible; .10-.29 = low; .30-.49 = moderate; .50-.69 = substantial; and .70 or higher = very strong (Davis, 1971). For freshmen, there was a low negative relationship found between career certainty and gender ($r = -.11$). A low positive relationship was found between career certainty and IOPP ($r = .18$). The relationship between career certainty and MI was low positive ($r = .11$). The relationship between career certainty and ISI was negligible and negative ($r = -.05$) while the relationship between career certainty and ESI was negligible and positive ($r = .04$). The relationship between career certainty and CCEO was low positive ($r = .29$). For seniors, the relationship between career certainty and gender was negligible and positive ($r = .01$). Low positive relationships were found between career certainty and ISI ($r = .17$) and ESI ($r = .12$). The relationship between career certainty and IOPP was moderate positive ($r = .32$) while the relationship between career certainty and MI was negligible and

Table 2. Intercorrelations Among Career Certainty, Gender, and Career Exploratory Beliefs (n = 309)

Variable	Cert.	Gender	IOPP	MI	ISI	ESI	CCEO
1. Certainty	--	.01	.32*	.03	.17*	.12	.58*
2. Gender ^z	-.11	--	.00	.05	-.03	-.08	.01
3. IOPP	.18*	.03	--	.16*	.35*	.23*	.39*
4. MI	.11	.17	.08	--	.14*	.36*	-.04
5. ISI	-.05	.12	.15*	.31*	--	.51*	.31*
6. ESI	.04	.15	.11	.43*	.51	--	.35
7. CCEO	.29*	-.08	.28	-.16*	.02	.04	--

Note. ^z0=Male; 1=Female. Correlations below the diagonal are for 132 freshmen. Those above are for 177 seniors.

*P=0.05

positive ($r = .03$). Additionally, there was a substantial and positive relationship between career certainty and CCEO ($r = .58$).

The third objective of this study was to determine if career exploratory beliefs explain a significant proportion of the variance in level of career certainty. The dependent variable was career certainty which

Table 3. Regression Analyses for the Prediction of Career Certainty for Freshmen (n = 132) and Senior (n=177) Students

Predictors	R ²	b	p
<u>Freshmen (n=132)</u>			
CCEO	.09	.173	.000***
Constant		2.509	
<u>Seniors (n=177)</u>			
CCEO	.33	.308	.000***
Constant		2.329	

Note. CCEO = Certainty of Career Exploration Outcome

*** P=0.001

was measured by a composite score of the Career Certainty items of the Career Decision Scale. Independent variables included gender, IOPP, MI, ISI, ESI, and CCEO. Stepwise multiple regression was used to analyze the data. The analysis revealed that career certainty could be predicted from one career exploratory belief dimension, Certainty of Career Exploration Outcome, for freshmen students ($R^2 = .09$) (Table 3) which is a small effect size (Cohen, 1988). The regression analysis also revealed that career certainty could be predicted from the same exploratory belief dimension for senior students, however, the variance explained increased ($R^2 = .33$) which is a medium effect size (Cohen, 1988).

Discussion, Recommendations, and Implications

The purpose of this study was to determine the extent to which career exploratory beliefs influence the level of certainty of undergraduate agriculture students. Three-hundred nine students participated in the study with more than half being classified as seniors. A majority of the students were Caucasian males from rural backgrounds. Students in the study were pursuing bachelor's degrees in a number of disciplines including: agricultural economics, agricultural education, agronomy, and horticulture.

Overall, students in the study were relatively certain in having made a decision about a career. This finding is promising, especially for freshmen, considering that approximately 75% of first-year students express some degree of uncertainty toward their major and career (Gianakos, 1999; Titley and Titley, 1980). However, in terms of upper level undergraduates, this finding may indicate that these students are experiencing prolonged levels of uncertainty because they have not engaged in enough career development experiences to help them make better career decisions. Prolonged uncertainty about one's career goals can have a negative impact, especially for senior students with impending career decisions upon graduation. For example, Tinto (1993) noted that prolonged uncertainty often leads students to call into question the reason for their continued presence on campus.

The findings that freshmen and seniors students also held relatively moderate career exploratory beliefs is consistent with the findings of Esters (2008) who also observed that students were moderately engaged in career exploratory process behaviors. The findings of this study concerning students' moderate career exploratory beliefs also call into question students' perceptions of the career opportunities available in the agricultural industry. Moreover, this finding is interesting considering the recent reports (see Goecker, Gilmore et al., 2005; and Gilmore, et al., 2006) highlighting the number educational and career opportunities available in the agricultural industry.

Relationships among career certainty and the career exploratory beliefs dimensions ranged from negligible and negative to low positive for freshmen, while ranging from negligible and positive to substantial and positive for seniors. For freshmen, there was a significant low positive relationship between career certainty and Importance of Obtaining Preferred Position. Thus, the more importance an individual places on his/her career preference, the amount of certainty about a career decision increases. Additionally, there was a significant low positive relationship between career certainty and Certainty of Career Exploration Outcome. Therefore, as the level of certainty an individual feels that he/she will attain a desired position increases, the amount of certainty about a career decision increases. Similarly for seniors, there was a significant low positive relationship between career certainty and Importance of Obtaining Preferred Position as well as a significant substantial and positive relationship between career certainty and Certainty of Career Exploration Outcome. In addition, there was a significant low positive relationship between career certainty and Method Instrumentality which indicates that increased levels of being intended and systematic in one's career exploration will result in increased levels of certainty about a career decision. Although there had been no research which specifically examined the relationship between career exploratory beliefs and career certainty, the findings of this study are similar to Mako (1990) who found positive relationships between various career exploratory behaviors and career certainty.

Overall, the findings suggest that career certainty is related to Importance of Obtaining Preferred Position, Internal Search Instrumentality, and Certainty of Career Exploration Outcome, however, this does not prove a causal relationship. Nonetheless, students should be encouraged to explore their beliefs regarding career exploration which in turn may result in increased levels of career certainty about a career decision. For example, first-year career courses could be developed focusing on the career exploration process using as a theoretical foundation the Stumpf et al. (1983) model of career exploration. In doing so, instructors of these courses could emphasize the three components of the beliefs dimensions: labor market, instrumentality (i.e., usefulness), and preferences as it relates to the agricultural industry.

Most importantly, this study indicates that senior students are only moderately engaged in specific career exploratory behaviors. This is troubling considering the fact that career development in the senior year is influenced by the degree to which students have engaged in personal and career exploration (Imbimbo et al., 2005). Furthermore, not only is greater exploration presumed to lead to greater consideration of opportunities and ultimately a better choice of careers (Fouad, 2007) but engaging

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in career exploration is a necessary prelude to career maturity (Ochs and Roeseller, 2004). Imbimbo et al. (2005) noted that “students who arrive at their senior year having done little or no exploration will find themselves in a state of non-commitment and confusion.” (p. 192). Even more, these students may find themselves at graduation without a well-considered post-graduation plan.

Recommendations for Future Research

Although exploratory in nature, this study contributes to the body of literature regarding factors that influence career certainty, yet at the same time raises several questions which should guide future research. First and foremost, future research should focus on examining the relationship of career certainty and career exploratory behaviors of undergraduate students enrolled in colleges of agriculture. This is especially important considering that research related to both constructs has not been a focus of study in agricultural education. For example, future research could replicate this study to determine whether the findings can be generalized to students enrolled in other colleges of agriculture. Additional research should also be conducted to examine the Reactions to Exploratory Behavior dimension of the Stumpf et al. (1983) model to determine whether anxiety or stress variables influence students' level of career certainty.

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