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ABSTRACT

This paper explains the process used to validate the construct validity of the Factors Influencing Pursuit of Higher Education Questionnaire. This questionnaire is a literature-based, researcher-developed instrument which gathers information on the factors thought to affect a person's decision to pursue higher education. The questionnaire includes 10 scales: parental influence, extended family support, peer support, locus of control, relative functionalism, glass ceiling effect, financial aid concerns, influence of mentors, presence of role models, and general preparation for college. The questionnaire was completed by 434 college students enrolled in general studies classes at two southeastern universities in the spring of 1997. Results indicate that the questionnaire has a high degree of internal consistency. Reliability estimates for the 10 scales included in the questionnaire ranged from adequate to excellent. Overall, the questionnaire was determined to have satisfactory construct validity for use in further investigations of the factors which influence individuals to pursue higher education. The questionnaire is appended. (Contains 42 references.) (DB)

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Factors Influencing Pursuit of Higher Education:

Validating a Questionnaire

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Abstract

The purpose of this study was to validate the construct validity of the Factors Influencing Pursuit of Higher Education Questionnaire. This questionnaire is a literature-based, researcher-developed instrument which gathers information on the factors that are thought to have an impact on a person's decision to pursue higher education. Results from the data indicate that the questionnaire has a high degree of internal consistency. Reliability estimates for the 10 scales included in the questionnaire ranged from adequate (.54) to excellent (.90). Based on the data collected from this study, the researcher concluded that the questionnaire is a construct valid instrument which can potentially be used to conduct further investigations of the factors which influence individuals to pursue higher education.

Factors Influencing Pursuit of Higher Education: Validating a Questionnaire

With increasing technological advancements and changing foreign economic conditions (Leon, 1993), it is becoming increasingly more important for American workers to obtain the education needed to keep America competitive in the work place of the 21st century. In many cases, this will mean an increased demand in the number of college graduates emerging from the classrooms of America's colleges and universities. Because minorities represent the largest growing population in America, the need to increase the college graduation rate will be strongest for minorities (Drummond, 1995). Currently, minorities comprise 13% of the population in the United States. Several reports (Astone & Nunez-Wormack, 1991; Lankard, 1994; Wittmer, 1992) estimate that by the year 2000, minorities will account for 33% of the United States population. By the year 2020, the number could grow to 43%. Although the number of minorities in America is on the rise, their corresponding rate of participation in higher education is not (Carter & Wilson, 1993). The proportion of minorities entering higher education has stagnated, and in some cases, even declined over the past two decades (Congressional Budget Office, 1992; Nagle, 1988). Statistics on the changing demographics of minorities in America accentuates the need for educators to find creative measures for drawing more minorities into college classrooms (Drummond, 1995).

Before educators can increase the number of minority college graduates, they must first know and understand the factors that motivate a person to pursue higher education. Researchers have identified several variables thought to have an impact on that decision. Among those factors are social variables, cultural determinants, locus of control beliefs, availability of financial assistance, elements of the educational process, and general preparation for college. Among the

social factors are variables such as parental influence, extended family support, peer support, and the presence of role models and mentors.

Several researchers suggest that variables such as parental income (Donnelly, 1988; Haberman,1987) and parental expectations (Seginer, 1982) have a significant impact on children's academic success. Seginer's (1982) research results indicated "that high achieving children tend to come from families who have high expectations for them" (p. 4). A study by Jay and Augelli (1993) found that the level of family support is also a strong predictor of college retention among college freshmen. Hsiao (1992) further reported that, "Parents, siblings, and friends who have no experience of college or its rewards may be non-supportive or even obstructionist" (p. 1) toward the efforts of those who seek a college degree.

While parents exert the most significant long-term impact on children's future educational plans, other researchers have documented the impact of peer influence on daily school performance. Results by Steinberg, Dornbusch, & Brown (1992) revealed that there are racial differences in how peers influence academic achievement. Among some minority groups (African-American, Hispanic, and to some degree, Native Americans) adolescent peers exert pressure among themselves to not conform to mainstream American values (Fordham & Ogbu, 1986). These students denounce academic success by failing to put forth the effort and time needed to be successful in school. When children from these groups do decide to be successful, they often experience a type of "social death" (Fordham & Ogbu, 1986). Name calling, social isolation, and rejection are but a few of the social consequences experienced by some high achieving minority adolescents. These high-achieving students also express difficulties in finding study groups composed of their same race peers (Steinberg, Dornbusch, & Brown, 1992).

Consequently, high achieving minority students are often forced to seek solace with peers of other races. When these attempts are thwarted, they face even further isolation and alienation (Fordham & Ogbu, 1986). This demotivating social alienation is especially prevalent among high achieving African American adolescents (Fordham & Ogbu, 1986).

As for Asian American peer group influence, researchers suggest (Steinberg, Dornbusch, & Brown, 1992) that there is a stronger emphasis on success and achievement. Within these peer groups, children find encouragement and support for their school efforts through group study, explanations and interpretations of assignments, and praise for good grades. When comparing the peer support of Asian American students with that of their minority peers, one can understand why Asian American students generally out perform their minority peers in the academic arena (Sue & Okazaki, 1990).

Other researchers point to the presence role models and mentors as being social factors which influence individuals to participate in higher education. While a mentor can be defined as one who provides guidance and counseling to another in terms of academic and career pursuits (Leon, 1993), a role model can be defined as one who leads by positive example (Adams, 1992). Recent research (Adams, 1992; Leon, 1993) indicates that strong relationships with mentors and images of positive role models are pivotal factors which influence a person's desire to not only pursue college, but also in terms of choosing future occupational pursuits. For some groups, particularly minorities, a shortage of role models and mentors begins in elementary school and continues throughout college (Merisotis, 1990; Russell, 1991). Because African American and other minorities often have fewer role models from which to learn the value of higher education

(Obiakor, et. al, 1993), they and other minority children are often unaware of the potential economic benefits of higher education (Drummond, 1995; Merisotis, 1990).

Several researchers have investigated the influence of culture as it relates to pursuing higher education. Relative Functionalism is one cultural factor that affects academic achievement and achievement motivation. Sue and Okazaki (1990) defined relative functionalism as the way individuals or groups perceive the function of education in comparison to other noneducational pursuits. To the degree that many minorities perceive limited chances of success in areas outside of the educational arena, these groups typically turn to academic pursuits in order to reach their aims of self-improvement.

The concept of "relative functionalism" has been used to explain the ascendance of Asian Americans to the top of the academic success ladder (Sue & Okazaki, 1990). Statistics on the academic success rate of Asian Americans, as compared to their successes in other areas, leads to an intuitive understanding of the plausibility of the relative functionalism theory (Tan, 1994; Sue & Okazaki, 1990). When looking at other nonacademic opportunities for success, the salience of Asian Americans is few. For example, in areas such as sports, entertainment, politics, and business, there are few images of highly successful Asian Americans. This phenomena may appear to produce a type of glass ceiling effect, and subsequently Asian Americans may opt for academics as a means of breaking through that ceiling.

The glass ceiling effect occurs when a person, or group or persons, perceive the opportunities for success in a particular job or jobs to be blocked. According to Mickelson (1990) some minorities are more likely to experience the glass ceiling effect as it relates to academic achievement. The glass ceiling concept partly explains why the academic performance of

African, Hispanic, and Native American students lags behind that of their Asian and Anglo American counterparts. In turn, this perceived glass ceiling engenders certain minority groups with a sense of hopelessness and despair when it comes to competing for jobs traditionally held by Anglo Americans (Fordham & Ogbu, 1986). Failing to realize the connection between academic success and later employment, some minority students spend less time and effort on schoolwork than their Asian and Anglo American peers (Steinberg, Dornbusch, & Brown, 1992).

Although there are differences between races in terms of perceived opportunities for educational achievement, it must be noted that all races view education as being important (Tan, 1994; Scott-Jones & Clark, 1986; Steinberg, Dornbusch, & Brown, 1992). Results of a study conducted by Steinberg, Dornbusch, and Brown (1992) highlighted that children across the races place an equal value on the benefits of education. Children in this study tended to believe that in the long run, a good education pays off. Hence, it was not the belief in the value of a good education that differentiated between students' performance, rather it was the belief placed on the consequences of not getting a good education. In the case of Asian American children "their stronger fear that educational failure will have negative consequences" (Stevenson, Chen, & Uttal,1990, p. 519) motivated them to study harder and apply themselves to their course work. Conversely, African and Hispanic American children tended to express indifference toward academic failure (Graham, 1994), despite their belief that doing well in school would lead them to better jobs in the future. These children tended to believe that they would succeed in life, even if they performed poorly in school.

Numerous theories have been developed to explain or understand how individuals assign cause to their academic performance. Two, somewhat related, theories are the attribution theory

and locus of control theory of achievement motivation. According to Covington (1992) the attribution theory relates to how people interpret the causes of their success and failures. Locus of control, on the other hand, relates to the mechanisms by which individuals assign those causes; it addresses how individuals interpret the causal factors associated with their successes and failures. There are two dimensions along the locus of control spectrum; they are the dimensions of internal and external loci of control. According to Covington (1992) and Graham (1994), individuals who adopt an internal locus of control ascribe their successes and failures to their own efforts and abilities. Whereas individuals who adopt an external locus of control see both success and failure as being factors beyond their control.

It has been a widely held belief that minorities, particularly African Americans, possess lower degrees of the internal locus of control variable than their Anglo-American counterparts (Graham, 1994). However, in an extensive review of 140 articles of relating to African-American educational psychology, Graham (1994) found that concerning academic achievement, research literature failed to support this claim. Other researchers (Stevenson, Chen, & Uttal, 1990; Willig, Harnisch, Hill, & Maher, 1983) have also conducted studies which failed to support this claim.

In terms of other minorities and locus of control, the data (Tan, 1994; Sue & Okazaki, 1990) reveals that Asian and Anglo-American school children tend to be more internal about their locus of control beliefs. These two groups are more likely to interpret success and failure as being factors which they can control, and they will consequently act to exert that control. On the other hand, Hispanic and other minorities tend to be more external in their locus of control (Willig, Harnisch, Hill, & Maher, 1983). As a result, these groups often view success and failure as being factors over which they have little control; therefore, their motivation to achieve is

frequently lower than that of their Anglo and Asian American counterparts. In turn, this lowered motivation manifests itself in the academic failure that is so prevalent among minorities (Fordham & Ogbu; 1986; Graham, 1994; Scott-Jones & Clark, 1990).

Probably the one variable with the largest impact on student participation in higher education is the availability of financial aid. Since 1976 the availability of financial aid has continually declined. Between 1980 and 1987 federal support of financial aid programs decreased by 11%. Yet the number of students needing financial aid increased by 20% (Donnelley, 1987). Similarly, Carter and Wilson (1993) reported that the 1990-dollar value of the Pell Grant was one-fifth of the value it held in 1975. They also reported since 1970, that the availability of college-work study programs has decreased by 50%. Not only has financial aid to students decreased, funding for higher education, has also declined. For the 1990-1991 school year, most colleges and universities experienced cutbacks in funds for higher education. To compensate for the funding deficits, many schools increased their tuition rates (CBO, 1992). Consequently, those schools saw lower enrollment rates during the fall of 1992.

The resultant outcome of financial aid reductions and budget cuts is that less money is available for those who need financial assistance. Minorities are generally the hardest hit by financial cutbacks. Hence , the declining availability of financial assistance has had a negative impact on minority enrollment rates in higher education (Kerka, 1993). Regrettably, research shows that even when financial assistance is available, some students may not know how to find it (Obiakor, et. al, 1993).

In addition to social and cultural factors that influence an individual's decision to pursue higher education, there a various elements in the educational process that also influence that

decision. For instance, the classroom environment itself plays a role in the motivation to achieve. The largest single factor within the classroom is the teacher's response to student effort. A study by Scott-Jones and Clark (1986) revealed that teachers respond differently to the school performance of minority and nonminority students. Results from their data revealed that teachers look for and reward achievement-oriented behaviors more often in Anglo American children than in minority children. In addition, teachers tend to have lower expectations and standards for minority students. The data further revealed that teachers gave more praise and reinforcement to Anglo American children labeled as gifted and exhibited more criticism and scorn toward minorities who were similarly labeled as gifted. The results of this research leads one to conclude that minority students are less likely to receive encouragement from teachers to pursue higher education.

Other elements in the educational process which influence individual participation in higher education are factors such as guidance and career counseling (Donnelley, 1988; Merisotis, 1992) and high school recruiting programs (Donnelley, 1988). Without information on how to take college admissions test, how to fill out college applications, college application filing procedures and deadlines, and where to go for financial assistance, many students miss out on key information needed for enrolling in college. Left to navigate this enrollment quagmire on their own, many students give up in frustration and never enter the halls of higher education.

Many educators have written papers which address the issue of the underrepresentation of minorities in higher education. Most educators would also agree that this underrepresentation is an issue of great concern. Yet, little has been done to quantitatively assess the factors which influence minorities to pursue education. More research is needed to determine just how much

social, cultural, and educational processes impact a person's decision to obtain a college degree. It is only with a firm understanding of these forces that educators can begin to design recruitment and retention programs that will ultimately lead to successfully drawing larger numbers of minorities into the classrooms of America's colleges and universities. If educators are to strive toward bringing more minority group members into the realm of academic achievement, then they must investigate and employ motivational strategies that will entice them into the realm.

The purpose of this study was to investigate the construct validity of the Factors Influencing Pursuit of Higher Education Questionnaire. The main intent was to administer the questionnaire to a large group of traditional college students and make revisions to the questionnaire as required.

Method

The researcher used a literature-based, rational factors approach to develop the Factors Influencing Participation in Higher Education Questionnaire (FIPHE). The statements used in this questionnaire were derived from literature that addresses the variables thought to have an impact on person's decision to pursue a college education. The objective of the study was to develop validate a questionnaire that can be used to gather information on the factors that influence a person to pursue higher education.

A pilot test of 21 participants revealed that the scales of the FIPHE are internally consistent. The internal consistency of the items were evaluated through a statistical procedure called a reliability analysis. Coefficient alpha measured the overall intercorrelations among items on the scales (Avry, Jacobs, & Razavieh, 1996). Internal consistency estimates ranged from -.09 to .90.

The face validity of the questionnaire was also assessed during the pilot study. Face validity refers to the how well an instrument measures what it is supposed to measure (Avry, Jacobs, & Razavieh, 1996; Groth-Marnat, 1990; Marble, 1997). During the pilot study, several individuals, students and professors, were asked to assess the face validity of the questionnaire. Reviewers were asked to review the questionnaire and make comments regarding (a) the wording of items, (b) whether items seemed appropriate with regard to the purpose of the questionnaire, and (c) the sequence and flow of the items. Changes were made as suggested by participants in the pilot study.

The pilot study was further used to assess the content validity of the questionnaire. Content validity refers to the extent to which an instrument contains a sampling of the items from the area of interest (Fink & Kosecoff, 1985; Standards for Educational and Psychological Testing, 1985). According to Avry, Jacobs, & Razavieh (1996), an instrument is judged to have content validity if "evidence is gathered by careful and critical examination by expert judges of the test to determine the relationship between the test and the defined universe" (p. 163). During the pilot study, several university professors with experience in dealing with college student recruitment and retention programs were asked to evaluate the content validity of the FIPHE. The reviewing officials indicated that the FIPHE contained a representative mix of statements that address factors which influence individuals to pursue higher education. Because content validity is not generally expressed in a quantitative fashion, the judgement of the reviewing officials was accepted as support for the content validity of the questionnaire (Fink & Kosecoff, 1985; Groth-Marnat, 1990; Pedhazur & Schmelkin, 1991).

Participants

Participants were college students enrolled in general studies classes at two southeastern universities during the Spring 1997 quarter. A total of 650 questionnaires were distributed among the two campuses. Four hundred and eighty seven questionnaires were returned for a response rate of 75% for both colleges. Fifty-three of the returned questionnaires (8%) were not used in data calculations because of missing or unusable information. College 1 was a large, traditional, land-grant university. Participants from this university were 296 undergraduate students enrolled in three sections of a Social Science course. College 2 was a smaller, nontraditional college. Participants from College 2 were 96 undergraduate students enrolled in 6 sections of an Introduction to Psychology course. Because the students from both colleges were enrolled in required general education courses, the participants were considered to be representative of the students enrolled at each university.

Instruments

The Factors Influencing Pursuit of Higher Education Questionnaire (FIPHE) is a literature-based, researcher-developed survey which contained 115 closed-ended statements. The closed ended-statements were chosen for two reasons: (a) "because they have proven themselves to be more efficient and ultimately more reliable" (Fink & Kosecoff, 1985, p. 26), and (b) because they tend to place respondents in the same frame of reference for responding to items on the questionnaire (Avry, Jacobs, & Razavieh, 1996). To minimize the possibility of response bias (Salant, & Dillman, 1994) the questionnaire contained both positively- and negatively-worded items. Negatively worded items were reverse scored before they were entered into statistical procedures. The items were distributed across three sections and among 10 scales.

Section 1contained eight items that solicited demographic data from the participants. The eight items addressed the participants' age, student status, name of university, ethnicity, gender, college major, employment status, number of hours worked the week prior to completing the questionnaire, and annual income. Because several of the demographic items were considered sensitive items (age, number of hours worked, annual income), participants responded to these items by selecting responses that represented a range of values rather than by selecting a single value. Research by Fink and Kosecoff (1985) indicated that responding to ranges causes such sensitive items to appear less personal.

Section 2 consisted of 79 statements that addressed factors thought to influence a person's decision to pursue higher education. Table 1 shows the scales along with a listing of the items included in each scale. Participants used a Likert-type scale to indicate their level of agreement or disagreement with each statement. Participants recorded their responses by marking either 1=(N/A), 2=(Strongly Disagree), 3=(Disagree), 4=(Agree), or 5=(Strongly Agree) next to each statement. Section 2 contained the following scales.

1. Parental Influence was a 12-item scale that gathered information on the degree to which parents influence a person's decision to pursue higher education. The pilot study produced an alpha of .90.

2. Extended Family Support Scale consisted of 12 statements that assessed the degree to which family members, other than parents, influence a person's decision to pursue higher education. The pilot study produced an alpha of .80.

3. Peer Support was a 13-item scale that assessed the degree to which peers influence a person's decision to pursue higher education. The pilot study produced a reliability estimate of .90 for this scale.

4. Locus of Control consisted of 15 items which were designed to assess a person's perceived locus of control as it relates to pursuing higher education. The pilot study revealed a reliability estimate of .81 for this scale.

5. Relative Functionalism consisted of 13 items that assessed a person's perception of the relative function of pursuing higher education. The pilot study generated a reliability estimate of .57 for this scale. Because of the low coefficient alpha estimates that were obtained from the results of the pilot study, several of these questions were reworded before being included in the current study.

6. Glass Ceiling Effect consisted of a nine items that assessed the degree to which individuals believe their opportunities to pursue certain aspirations to be limited or blocked. The pilot study generated an alpha coefficient of -.09 for this scale. The original scale contained only four items. It is possible that the small number of items had a negative impact on the scale's reliability. To attempt to increase the reliability of this scale, three items were added to the scale. In addition, the negative alpha coefficient may be attributed to the fact that the majority of the participants in the pilot sample were nontraditional, working-age college students; most had been in the work force for over 20 years.

7. Financial Aid Concerns was an 8-item scale that addressed the importance of financial aid in a person's pursuit of higher education. The pilot study yielded an alpha coefficient of .55.

Section 3 contained 36 statements that were divided among three scales. Participants responded to these statements by marking either 0=(N/A), 1=(NO), or 2=(YES), next to each statement. Statements in this section were fact based and did not lend themselves to attitude rating scales such as the Likert used in Section 2. Section 3 consisted of three scales: Influence of Mentors, Presence of Role Models, and General Preparation for College.

The Presence of Mentors and Role Models (PMRM) Scale originally consisted of 15 items in the pilot study. Data from the pilot study revealed a Cronbach's alpha coefficient of .88. Because it is possible for a person to serve as a role model without necessarily being a mentor, the researcher separated these factors into two scales, Influence of Mentors and Presence of Role Models, for the present study. The IM scale consisted of 11 statements which addressed the influence of mentors during secondary school. The scale attempted to determine the degree to which secondary school guidance counselors and teachers influence an individual's decision to pursue higher education. The PRM scale was a 7-item scale that contained statements that gathered information on the presence of role models in the lives of the individuals responding to the questionnaire.

General Preparation for College was a fifteen-item scale that assessed a person's general preparation for college. The pilot study revealed a Cronbach's alpha of .78 for this scale.

Procedures

Participants were recruited through the course instructors. Each instructor read an announcement which detailed the requirements for the study. Participants were given the questionnaires to complete at home. Participants returned completed questionnaires either to their instructors or to a place designated by the researcher. The questionnaires were coded to maintain

the confidentiality of the participants. Each participant signed an informed consent statement. Participants were granted extra credit for returning completed questionnaires. Each instructor determined the amount of extra credit granted for participating in the study. Participants were also given the opportunity to enter their names into a drawing for $75.00.

Design and Statistical Analyses

The study was a quasi-experimental design. The nature of the research precluded both the need for randomly assigning participants to groups and for establishing a control group (Avry, Jacobs, & Razavieh, 1996). Because the researcher's main purpose was to develop a questionnaire that was internally consistent, a reliability analysis was performed on the data. The reliability analysis assessed the internal consistency of the questionnaire; it measured the degree to which the items contained in the scales on the questionnaire measured a unitary construct (Hair, Anderson, Tatham & Black, 1995; Pedhazur & Schmelkin, 1991). Cronbach's alpha provided the index of internal consistency for each of the 10 scales. Cronbach's alpha is a statistical index that is especially useful for determining the internal consistency of instruments where responses on the scale, such as Likert-type scales, can take on a range of scores (Avry, Jacobs, & Razavieh, 1996). According to Westhuis and Thayer (1989), coefficient alpha is the best measure of reliability because it "provides a good estimate of the major source of measurement error, sets the upper limits of reliability, [and] provides the most stable estimate of reliability" (p. 157). The full questionnaire is located in Appendix A.

An item-analysis was also performed on the individual items in each scale. This statistical analysis provided information on the internal consistency of single items as they related to the homogeneity of the scale to which they were assigned (Thorndike, 1967). The item analysis was

conducted by investigating the corrected-item total correlation for each item in a scale. The corrected-item correlation revealed the Pearson r between the score for each item in a scale and the combined scores of the remaining items (Norusis, 1993). Items with a correlation of .25 or higher were retained in the questionnaire. Items with lower correlations were either modified or removed from the questionnaire (Avry, Jacobs, & Razavieh , 1996; Thorndike, 1967).

Results

Fifty nine percent of he participants were female, and 41% were male. The ethnic composition of the sample was 79% White (n=311), 16% African American (n=64), 2% Hispanic (n=8), 1% Asian (n=5), and 1% (n=4) other. Forty two percent of the respondents were employed, and 58% were not employed. Fifty nine percent of the respondents indicated that they had not worked during the week prior to taking the questionnaire (n=231). Ninety seven percent of the participants did not have a college degree (n=379). Sixty seven percent of the participants indicated that they had been in college for one year (n=264). Two percent of the respondents indicated that they had been in college for more than four years. Eighty one percent of the respondents indicated that their annual income was less than $10,000. The largest number of participants (n=83) reported business as their major. The fewest number of participants (n=1) reported forestry as a major. Table 2 presents a summary of the demographic data.

Table 3 presents a summary of the descriptive statistics for the 10 scales. The scale means ranged from a low of 13.61 for the Glass Ceiling Effect scale to a high of 47.92 on the Preparation for College Scale. The standard deviation on the scales ranged from a low of 1.5 on the Role Models scale to a high of 5.94 on the Mentors scale. Coefficient alpha for the 10 scales ranged from a low of .54 to a high of .90.

Discussion

The purpose of this study was to asses the construct validity of the Factors Influencing Pursuit of Higher Education Questionnaire. Statistical analyses of results revealed that the instrument has a high degree of internal consistency. The demographic data from this study reveals the extent of the study's external validity (Pedhazur & Schmelkin, 1991). Based on the results from the questionnaire, the results can be generalized to traditional, unemployed college students across a range of college majors. The results cannot, however, be used to draw conclusions about large groups of minority students, nontraditional students, or students with disabilities. More research needs to be conducted to determine the discriminant and predictive validity of the questionnaire.

While most scales obtained an adequate (.54) to excellent reliability estimate (.90), the researcher did make some changes to the questionnaire. The Parental Influence Scale which obtained and alpha of .87 was not altered in any way. The results for this scale were consistent with the results from the pilot study where the obtained alpha was .90.

On the Extended Family Support Scale (.82), Items 40 and 41 were reworded because of their low corrected-item correlations with the total scores of the other items on the scale. The obtained alpha for this study was slightly higher than alpha (.82) from the pilot study.

On the Peer Support Scale alpha reached .77. Items 46, 47, 48, 49, and 62 were reworded because they did not appear to focus on the individual responding to the questionnaire. Item 51 was deleted from the scale. The obtained alpha for the scale was much lower than the alpha (.90) obtained from the pilot study. The researcher theorizes that this may be due to two things: (a) Participants in the pilot study were nontraditional college students; 15 of whom were enrolled in graduate programs. The participants in the pilot study also tended to associate with other

individuals who were also pursuing graduate degrees. (b) The wording of some questions may have been misleading for the subjects in the validation study.

The initial alpha for the Locus of Control Scale was .62. An item analysis resulted in Items 67, 71, and 73 being removed from the scale. Removing those negatively scoring items increased coefficient alpha to .74. The subsequent reliability analysis resulted in Items 87 and 88 being removed. Removing these items increased the internal consistency of the scale to .81. The final results generated an alpha that was the same as the alpha (.81) obtained in the pilot study.

Coefficient alpha for the Relative Functionalism Scale was .77. The initial item analysis resulted in Items 7 and 11 being removed because of their low correlation with the total score of the other items on the scale. Removing those items increased alpha to .78. Consequent to the resulting reliability analysis, Item 5 and Item 6 were removed from the scale; subsequently coefficient alpha was increased to .81. The final cut of items resulted in al alpha that was much larger than the alpha (.57) obtained in the pilot study.

An item analysis for the Glass Ceiling Effect Scale (.69) resulted in Item 92 being removed from the scale because of its low correlation with the total score of the other items on the scale. Removing Item 92 increased coefficient alpha to .69. The final cut of items resulted in an alpha that was much larger than the alpha (-.09) obtained in the pilot study. The researcher theorizes that this increased alpha may be a function of the differences between the participants in the pilot study and the participants in the validation study. Most of the participants in the pilot study were middle-age college graduates who had achieved a large measure of success in their existing careers. Hence, those participants would not be as likely to perceive a glass ceiling effect in their current positions. Conversely, participants in the validation study were mostly traditional collage age

students who had not yet begun a career. These participants may be likely to perceive obstacles to their career success.

The initial alpha estimate for the Financial Aid Concerns Scale was .57. One item, Item 77, was removed from the scale; thus, increasing alpha to .63. The alpha for this scale was slightly higher than the alpha (.55) obtained in the pilot study.

The Presence of Role Models Scale (.54) was moved to the demographic data section, and several of the items were changed to open-ended statements. There was no was to directly compare the obtained alpha with the alpha from the pilot study because this scale did not exist as a separate scale during that study.

Coefficient alpha for the Influence of Mentors Scale was .88. Item 54 was reworded and moved to the demographics section. Removing Item 54 from the scale increased coefficient alpha to .90. There was no way to directly compare the obtained alpha with the alpha from the pilot study because this scale did not exist as a separate scale during that study.

The Preparation for College Scale obtained an initial alpha of .42. A review of the item analysis resulted in some extensive changes for this scale. First, the researcher excluded all items that had a corrected-item correlation of less than .25, if removing the item did not decrease alpha for the scale. The initial cut resulted in Items 83, 84, 107, 109, and 115 being removed from the scale. This cut increased alpha to .52. A second item analysis resulted in Items 82, 106, 108, and 110 being removed from the scale; increasing alpha to .63. Although Item 103 had a low corrected inter-item correlation with the scale, the researcher chose to reword the item and retain it in the scale. In addition, although Item 109 was initially removed from the scale because it of

its low correlation with the scale score, the researcher decided to reword this item and retain it in the scale.

Secondly, upon reviewing the item analysis on the Preparation for College scale, the researcher observed that the scale actually measured two constructs, secondary school support for college and university support information. This prompted the researcher to divide the scale into two scales. One scale was named Secondary School Preparation for College. This scale was composed of Items 85, 86, 103, 104, 105, 109, 111, 112, 113, and 114. The second scale was named University Support Services. Items included in this scale were Items 54, 82, 106, 107, 108, and 110.This scale was not on the original survey. It emerged as a result of items being pulled together from the item analyses. Because of the extensive changes to Preparation for College Scale, there was no way to accurately compare the obtained alpha with the alpha obtained from the pilot study.

Data from this study led the researcher to conclude that the FIPHE is a potentially valid instrument which could be use to provide educators with empirical knowledge of the factors which influence individuals to pursue higher education. The results could move educators beyond dialectical theory of what those factors are to a quantitative index of the relative importance of the factors which influence the decision individuals to pursue higher education. The results of this study could also be used to develop strategies for conducting future research using different populations.

As a follow-up study, the survey could be modified slightly and administered to high school juniors and seniors. The aim of this subsequent research would be to determine which factors influence the decision of high school students to attend college and whether or those factors

differentiate between college- and noncollege-bound high school students. Taken from a wider perspective, this survey could be used to conduct a multicultural study of the factors which influence the decision to pursue higher education. Data from such a study would reveal whether or not there are cultural differences in the factors which influence individuals to pursue a college education. Once again, such research would give educators a quantitative index of what those factors are and how those factors differ across the races. In addition, researchers could use the Factors Influencing Pursuit of Higher Education Questionnaire to investigate which factors influence high school drop outs to pursue Graduate Equivalency diplomas and later a college education.

With information gained from these studies, educators could design college orientation and recruiting programs which take this information into account. These programs could then be structured to address all factors which influence individuals to pursue a college education, instead of just one or two in isolation of the others. The data obtained from this study could result in programs which approach minority college recruitment from a multifactorial perspective and thus improve the potential success of such programs. The key strength of using this approach is that it could provide educators with quantitative data on what is important in terms of attracting minorities into the ranks of higher education.

The outcome of this research could also have potential implications for economists and politicians alike. When educators talk about educating college students, they talk indirectly about the economic future of this country (Drummond, 1995). For America, this means that if the country is to compete in the social, economic, and political spheres of international relations, then the country must ensure that the work force is provided with the resources they need to meet

the challenges of the upcoming century. For educators in particular, this means that we must provide an educated work force which is capable of meeting the demands of the 21st century work place. To do this, we must increase the income earning potential of minorities by first increasing their educational level. The outcome of this research could provide politicians and educators alike with a foundation for attracting more minorities into higher education.

While results of the study underscore the construct validity and the internal consistency of the questionnaire, the results also provided the researcher with information that was used to improve the questionnaire. Since Thorndike (1967) indicated that "selection based on internal consistency improves the reliability and homogeneity of the overall test" (p.214), the researcher used results from the item analyses to modify or remove items from the questionnaire. Items with negative or low corrected-item correlations with the scale to which they were assigned were either modified or removed from the questionnaire (Thorndike, 1967). Because of the changes made to the questionnaire, additional research needs to address how those changes affected the internal consistency of the scales to which those items were assigned. Further research also needs to be conducted to ascertain the discriminant and predictive validity of the questionnaire. In addition, future research should address whether the results generated from advanced statistical procedures (such as factor analysis and cluster analysis) performed on the questionnaire produce scales that are consistent with the scales generated by the rational factors approach.

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Table 1

Listing of Scales and the Assciated Items on the Scale

Scale	Items Included in Scale
Parental Influence	16, 17, 26, 27, 30, 31, 37, 38, 55, 56, 59, 60
Extended Family Support	18, 19, 20, 28, 29, 32, 33, 39, 40, 41, 42, 58.
Peer Support	21, 46, 47, 48, 49, 50, 51, 52, 53, 57, 61, 62
Locus of Control	63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 87, 88
Relative Functionalism	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
Glass Ceiling Effect	12, 13, 14, 15, 91, 92, 93, 94, 95
Financial Aid Concerns	74, 75, 76, 77, 78, 79, 80, 81
Presence of Role Models	96, 97, 98, 99, 100, 101, 102
Influence of Mentors	22, 23, 24, 25, 34, 35, 36, 43, 44, 45, 54
Preparation for College	82, 83, 84, 85, 86, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115

n=392

Table 2

Summary Results of the Demographic Section

Item	Category	n
Gender		
	Female	231
	Male	162
Age		
	20 years or less	289
	21-25	58
	26-30	18
	31-35	10
	36 and over	17
Race		
	White	311
	African American	64
	Hispanic	8
	Asian	4
	Other	4
Employed		
	Yes	204
	No	183
Hours Worked Prior Week		
	Zero	231
	1-10	28
	11-20	43
	21-30	24
	31 or more	66
Years in College		
	1 year or less	264
	2 years	68
	3 years	43
	4 years	8
	More than 4 years	8

Table 2

Summary Results of the Demographic Section (continued)

Item	Category	n
College Degree		
	None	379
	Associate	5
	Bachelor's	5
	Other	3
Annual Income		
	$9,999.00 or less	316
	$10,000 and $14,999	24
	$15,000 and $19,999	17
	$20,000 and $24,999	15
	$25,000 or more	20
College Major		
	Liberal Arts	55
	Engineering	47
	Business	83
	Education	33
	Science and Mathematics	33
	Architecture	25
	Agriculture	17
	Human Science and Engineering	22
	Veterinary Medicine	0
	Nursing	33
	Pharmacy	1
	Forestry	1
	Undecided	18
	Fine Arts	5
	Other	0
	Not Listed	18

Table 3

Summary of Descriptive Statistics for Scales Contained in the Factors Influencing Pursuit of Higher Education Questionnaire

Scale	Alpha	M	SD	Range
Parental Influence	.87	40.4649	5.6387	19.00 - 48.00
Extended Family Support	.82	38.3432	4.9652	21.51 – 48.00
Peer Support	.77	38.9603	4.7871	26.00 – 48.00
Locus of Control	.81	44.3568	4.1968	29.00 – 57.00
Relative Functionalism	.81	40.6624	4.6161	25.00 – 52.00
Glass Ceiling Effect	.69	13.6063	2.9073	7.00 – 22.00
Financial Aid Concerns	.64	20.1991	2.7438	11.65 – 29.00
Presence of Role Models	.54	15.2012	1.5004	11.00 – 18.00
Presence of Mentors	.90	33.8539	5.9353	11.00 – 44.00
Preparation for College	.63	47.9151	3.0886	37.00 – 57.00

Note: n=392 for all scales.

Appendix A

FACTORS INFLUENCING THE PURSUIT OF HIGHER EDUCATION QUESTIONNAIRE

Sandra M. Harris
Auburn University

SECTION 1

The purpose of this questionnaire is to gather information concerning the factors that influence a person's decision to pursue higher education. It should take you about 10 minutes to complete this survey. Completion of the survey is voluntary, and all responses will be kept confidential. Please answer each item as honestly as possible. Return the questionnaire to your instructor when you are finished. For each item below, place an "X" in the parentheses next to the item that applies to you.

1. Age:
( ) 20 or less ( ) 21-25 ( ) 26-30
( ) 31-35 ( ) 36-40 ( ) 41-45
( ) 46-50 ( ) 51-45 ( ) 56+

2. How many years in college: ( ) 1 year ( ) 2 years ( ) 3 years ( ) 4 years
( ) 5 years ( ) 6 years ( ) 7 years ( ) 8 years ( ) 9 or more years

3. Highest degree held: ( ) None ( ) Associate ( ) Bachelor
( ) Master ( ) Doctorate ( ) Other (specify)_____

4. Name of college:

( ) Alabama State University
( ) Auburn University
( ) Auburn University Montgomery
( ) Tuskegee University
( ) Troy State University, Montgomery
( ) University of Alabama
( ) Other (please specify
_____

5. Ethnicity (Race): ( ) African-American ( ) American Indian ( ) Asian
( ) Caucasian ( ) Hispanic ( ) Other (please specify)
_____

6. Gender/Sex: ( ) Male ( ) Female

(table continues)

Appendix A

7. Major area of study:

8. Are you employed? ( ) Yes ( ) No

9. How many hours did you work this past week: ( ) 0 (none) ( ) 1-10
( ) 11-20 ( ) 21-30 ( ) 31-40 ( ) 40+

10. Approximate annual income: ( ) $9,999 or less ( ) $10,000-14,999 ( ) 15,000-19,999 ( ) $20,000-24,999 ( ) $25,000-29,999 ( ) $30,000-34,999 ( ) $35,000+

SECTION 2

INSTRUCTIONS: Below this paragraph is a series of statements that address factors which influence a person's decision to pursue higher education. There are no correct answers to these statements. Therefore, it is important that you answer each item as honestly as possible. Complete the questionnaire by placing an "X" in the parentheses under the label which is closest to your agreement or disagreement with each statement. **If a statement does not apply to you, check the block labeled N/A. If a statement currently does not apply to you but has applied in the past, answer the statement as you would have in the past. When you finish the survey, please use a #2 pencil to transfer your Section 2 and Section 3 responses to the attached scantron sheet.**

1=(N/A), 2=(Strongly Disagree), 3=(Disagree), 4=(Agree), or 5=(Strongly Agree)

1. Getting a college degree will help me improve my social status.
2. Getting a college degree will help me get a better job.
3. I can gain a lot of knowledge about this world by getting a college degree.
4. I can meet professional people by getting a college degree.
5. I can become a better person without getting a college degree. **(R)**
6. I can earn a lot of money without getting a college degree. **(R)**
7. I can meet other college students without going to college. **(R)**
8. Getting a college degree will make me more successful.
9. College graduates routinely get the best jobs.
10. Getting a college degree is important for my future job opportunities.
11. I can build a better future without a college degree. **(R)**
12. I can major in any college subject that I want.
13. My race does not limit my choice of college majors. **(R)**
14. My gender does not limit my choice of college majors. **(R)**

1=(N/A), 2=(Strongly Disagree), 3=(Disagree), 4=(Agree), or 5=(Strongly Agree)

15. Society limits my choice of college majors.
16. My father encouraged me to go to college.
17. My mother encouraged me to go to college.
18. My grandparents did not encourage me to go to college. **(R)**
19. My siblings (brothers and sisters) did not encourage me to go to college. **(R)**
20. My relatives (cousins, aunts, and uncles) did not encourage me to go to college. **(R)**
21. My friends encouraged me to go to college.
22. My high school teachers encouraged me to go to college.
23. My high school guidance counselor did not encourage me to go to college. **(R)**
24. My junior high school teachers did not encourage me to go to college. **(R)**
25. My junior high school guidance counselor did not encourage me to go to college. **(R)**
26. My mother is excited about me being in college.
27. My father is excited about me being in college.
28. My brother is excited about me being in college.
29. My sister is excited about me being in college.
30. My mother did not stress the importance of having a college education. **(R)**
31. My father stressed the importance of having a college education.
32. My grand parents stressed the importance of having a college education.
33. My other relatives stressed the importance of having a college education.
34. My high school teachers did not talk about the importance of having a college degree. **(R)**
35. My high school guidance counselor did not stress the importance of a college degree. **(R)**
36. My junior high school guidance counselor stressed the importance of having a college degree.
37. My mother told me about the demands of college.
38. My father did not tell me about the demands of college. **(R)**
39. My grandparents are aware of the demands of college.
40. My sister is aware of the demands of college
41. My brother is aware of the demands of college.
42. My other relatives are not aware of the demands of college. **(R)**
43. My high school teachers talked about the demands of college.
44. My junior high school teachers talked about the demands of college.
45. My junior high school guidance counselor talked about the demands of college.
46. My friends don't understand the demands of going to college. **(R)**
47. My friends think that having a college degree is important for getting a good job.
48. My friends believe a college education will improve their social status.
49. I still communicate with my high school friends.
50. I find it easy to make friends in the college setting.
51. My friends got poor grades in high school.
52. My friends think they can get high paying jobs without getting a college degree. **(R)**
53. I have not met any new friends during the time I have been in college. **(R)**
54. I have a faculty advisor who was assigned to help me make the transition into college life.
55. I can talk to my mother about my college experiences.

1=(N/A), 2=(Strongly Disagree), 3=(Disagree), 4=(Agree), or 5=(Strongly Agree)

56. I can talk to my father about my college experiences.
57. I can not talk to my friends about my college experiences. **(R)**
58. I can talk to my grandparents about my educational plans.
59. I can talk to my mother about my future career goals.
60. I can not talk to my father about my future career goals. **(R)**
61. I can not talk to my friends about my future career goals. **(R)**
62. I do not have a college student peer who I can talk to about my educational plans. **(R)**
63. I have the power to achieve my educational goals.
64. If I become unhappy with my life, I can do something to change it.
65. When bad things happen, I can make the best of the situation.
66. The good things that happen in my life are the result of my working to make them happen.
67. Each person controls his or her own fate.
68. Each person has the power to make life better or worse.
69. My grades reflect how much my professors like me.
70. I have no control of my future. **(R)**
71. The good things that happen in my life are a matter of luck. **(R)**
72. No matter how hard I work, I won't succeed at anything I do. **(R)**
73. Whatever will be in life will be.
74. I frequently worry about paying my tuition bill.
75. Without financial aid I can still get a college degree. **(R)**
76. My parents frequently worry about paying my tuition bill.
77. The number of Financial Aid Programs is increasing.
78. I don't know about the different types of Financial Aid Programs. **(R)**
79. I don't know where to go to find information on Financial Aid Programs. **(R)**
80. I am not likely to need financial aid in the future. **(R)**
81. If I need financial aid to help pay for my tuition, I'm not sure I would be able to get it. **(R)**
82. I feel that my high school education prepared me for the demands of college.
83. I found most of my freshman college courses to be easy.
84. I earned good grades in high school (2.5 or above).
85. I used tutors to help me study in high school.
86. I used tutors to help me study in junior high school.
87. I am going to college to make my mother proud of me.
88. I am going to college to make my father proud of me.
89. Getting a college degree will improve my self-esteem.
90. Getting a college degree will increase my self-pride.
91. My professors cannot limit my choice of college majors. **(R)**
92. My college grade point average will not limit my choice of jobs. **(R)**
93. I can be successful in any college major I choose.
94. My high school GPA limited my choice of college majors.
95. The university administrative office cannot limit my choice of college majors. **(R)**

SECTION 3

Complete the following statements by placing an "X" in the appropriate box. If a statement does not apply to you, check the block labeled N/A. If a statement currently does not apply to you but has applied in the past, answer the statement as you would have in the past.

1=(N/A), 2=(Strongly Disagree), 3=(Disagree), 4=(Agree), or 5=(Strongly Agree)
96. My mother graduated from college.
97. My father graduated from college.
98. One or more of my brothers has graduated from college.
99. One or more of my sisters has graduated from college.
100. I have several friends who are college graduates.
101. I don't know anyone who has graduated from college. **(R)**
102. None of my grandparents are college graduates. **(R)**
103. I received information about financial aid during high school.
104. My high school held briefings on the college application process.
105. I attended briefings on the college application process during high school.
106. I attended a Newcomer's Orientation Briefing at my college.
107. My college did not hold Newcomer's Orientation Briefings. **(R)**
108. College recruiters did not visit my high school.
109. I did not take advanced placement courses in high school. **(R)**
110. I had to take remedial preparation courses as a college freshman.
111. I did not take remedial education courses in high school. **(R)**
112. I did not take remedial education courses in junior high school. **(R)**
113. I was not part of a regular study group in high school. **(R)**
114. I was not part of a regular study group in junior high school. **(R)**
115. None of my high school friends went to college. **(R)**

Note: Items marked by an (R) indicates items that are reverse coded.

116. Please feel free to make written comments or suggestions on how the content of this questionnaire can be improved. Use the space provided below to write your comments.

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