

AN EXPLORATORY STUDY OF THE REASONS WHY ADULT STUDENTS
ATTEND, PERSIST, AND COMPLETE GRADUATE HOMELAND SECURITY
PROGRAMS

by

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AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

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Abstract

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As one might expect with a new field like homeland security studies, little research concerning student enrollment, persistence, and attendance patterns has been conducted to date. This study used the Dillman Tailored Design Mode of Internet Survey methodology to collect data (Dillman 2007; Dillman, Smith, & Christian, 2009). Data were collected from students attending homeland security-related graduate programs during the 2009 fall semester. Data concerning program delivery modes (online, face-to-face, and hybrid) and generational demographics (Baby Boomers, Generation X, Generation Y), were used as the basis to examine the elements of student enrollment, persistence, and completion patterns in this study. In order to accomplish data reduction and decrease error, an Exploratory Factor Analysis (EFA) was conducted to sort loaded factors from the 30 item survey instrument. Eight factors were obtained all with over $|.7|$ load values including four having positive values and four having negative values. These eight factors were used as dependent variables to conduct a MANOVA with generational

demographic and program delivery mode as independent variables in order to determine if any significance existed. Significance was discovered between one of the four factors and the two independent variables with low to medium effect size based upon partial eta squared. The intersection of the two dependent variables of generational demographic and program delivery mode was not found to be significant. Further MANOVA with the four negative load factors of EFA were found to be significant in regards to program delivery mode and the intersection of program delivery mode and generational demographic. The significance found was with low to medium effect size based upon partial eta squared.

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Approved by:

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W. Franklin Spikes

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Table of Contents

List of Figures	xi
List of Tables	xii
Acknowledgements.....	xiii
Dedication.....	xiv
CHAPTER 1 - Introduction	1
Background.....	2
Dissertation Focus.....	4
Context of the Topic	5
How the research relates to existing knowledge about the topic.....	7
Reasons Adults Participate in Higher Education.....	8
Reasons Adults Persist in Higher Education	8
Reasons Adults Persist in Higher Education	9
Baby Boomers and Generation X.....	9
Delivery modes resident, online, and hybrid	10
Research Framework	11
Statement of the Research Problem	11
Research Questions.....	11
Statement of the Purpose of the Research	12
Hypotheses	12
Definitions.....	13
Limitations	14
Assumptions.....	15
Procedures.....	16
Design and Variables	16
Analysis of Data.....	18
Research Instrument	19
Survey Instrument.....	19
Significance of the Study.....	20

Summary	21
CHAPTER 2 - Literature Review	22
Introduction.....	22
Adults Participating in Higher Education	22
Reasons Adults Persist in Higher Education	24
Reasons Adults Complete Higher Education.....	25
Graduate Students and Participation, Persistence, and Completion	27
Baby Boomers and Generation X.....	28
Program Delivery Mode	29
The Cost of On-line Instruction	29
Comparable Cognitive Growth	31
Programs Virtually Worldwide.....	33
Marketing Opportunities for Higher Education	34
Attacks of 9/11 and Homeland Security.....	36
Summary	37
CHAPTER 3 - Methodology	38
Introduction.....	38
Research Questions and Hypotheses	38
Research Design Overview.....	39
Instrumentation	39
Sample	40
Instrument Design.....	40
Resources Used to Execute Survey	41
Instrument Validity and Reliability	43
Respondent Engagement Strategy	44
Assumptions.....	45
Data Analysis Procedures	45
Summary.....	47
CHAPTER 4 - RESULTS.....	48
Introduction.....	48
Overview.....	48

Data Collection Procedures	49
Demographic Characteristics	54
Dependent Variables.....	59
Exploratory Factor Analysis	60
Independent Variables	63
MANOVA	63
Follow Up MANOVA	66
Summary.....	68
CHAPTER 5 - Discussion	70
Introduction.....	70
Summary of the Study Design	70
Discussion of Findings.....	70
Research Questions.....	71
Recommendations for Further Research.....	75
Implications	76
Appendix A - Survey Instrument.....	91
Appendix B - Homeland Security Program List.....	101
Appendix C - Mailed Contact Letter	103
Appendix D - Internal Review Board Approval for Human Subjects	104
Appendix E - Pattern Matrix of Survey Items	105

List of Figures

Figure 4.1 Annual Household Income	56
Figure 4.2 Semester Hours Completed	57
Figure 4.3 Program Delivery Modes	58

List of Tables

Table 4.1 Reported Percent by Race of Sample and NCES 2008 Data	55
Table 4.2 KMO and Bartlett's Test.....	61
Table 4.3 Exploratory Factor Analysis Pattern Matrix on Subscale (SS) Items.....	62
Table 4.4 Test for Homogeneity of Variance for Four Dependent Variables	64
Table 4.5 Test Between Subjects to Determine Effects.....	66
Table 4.6 Test Between Subjects to Determine Effects.....	67

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Dedication

I would like to dedicate this dissertation to my children, Kayla, Dominick and Caleb Cupp. You encompass many of the reasons that I wanted to finish this degree. I hope that in some way this achievement can be a model for you in the pursuit of your own dreams. You are each special in my heart and provide me so much joy and happiness that I cannot adequately express it here. I hope that each one of you will continue to follow and pursue your own life path.

CHAPTER 1 - Introduction

“On that perfect autumn morning, the United States had around 280 million people, was the richest country in history, and spent hundreds of billions of dollars a year on national security. Yet 19 young Arabs from al Qaeda, a Muslim extremist network trained in Afghanistan, evaded checks in three major U.S. airports, hijacked four planes, brought down the 110-story World Trade Center, smashed one side of the Pentagon and targeted another building in Washington, D. C. and killed three thousand people (May, 2007, p.1).”

This study investigated the relationships between student reported perceptions of participation, persistence and completion of Homeland Security graduate degree programs with the delivery mode (face-to-face, online, and hybrid) and generational demographic of the participants (Baby Boomers and Generation X). The instrument was designed, piloted, and administered by the researcher and had three separate subscales to measure student reported perceptions. These perceptions relate adult student reasons to participate, persist, and complete a graduate degree within the emerging field of study of homeland security. The study tried to discover any relationships between gender and social economic status as they relate to the other variables. This chapter includes information about the background of this research study, statement of the problem, research questions, limitations and definition of terms.

Background

Homeland security as a field of study in the United States is relatively new. The events of 9/11 (the Al-Qaeda sponsored terrorist attacks which took place on September 11, 2001 that destroyed the World Trade Center in New York City and damaged the Pentagon in Washington, D.C.) impacted the manner in which the federal government, citizens, and the military interact in case of threats to our national security, including the homeland. The mindset of the entire nation changed. Threats to the United States homeland have occurred throughout our history. From the colonial period through World War II, the U.S. mainland was threatened by attack by outside forces on a number of occasions. However, the emerging threat of transnational terrorism manifested itself in the nearly simultaneous, coordinated targeting of four separate passenger airplanes by 18 Al-Qaeda terrorists. The attack was perpetuated by individuals using brute force, box cutters, knowledge of piloting passenger aircraft, and using that aircraft fully loaded with fuel as a weapon. The planning, training, and logistics of these attacks took place on United States soil (May, 2007). The asymmetric aspect of these attacks was that the terrorists flew these airplanes into prominent political venues. Only sheer determination and early cell phone warnings allowed the passengers aboard of one airplane to thwart their hijackers' plan. They eventually caused the aircraft to crash in a field in Pennsylvania versus reaching the terrorists' intended target. Recently the target of that fourth plane was identified. According to CNN reports, during the military tribunal of Osama Bin Laden's driver, Salim Ahmed Hamden, verified that the United Airlines Flight 93 that crashed in Pennsylvania was actually supposed to hit the "dome" or US Capitol building (Jamie McIntyre and Laurie Ure, 2008).

These events unfolded almost in real time through the conduit of our national media. Many Americans witnessed the second plane, United Airlines Flight 175, hitting the South Tower of the World Trade Center in New York City. This shared tragedy, an occurrence many Americans experienced together, killed over 3,000 people. This common experience caused a number of reactions. The American mindset changed dramatically on September 11, 2001. Some ways were temporary but many others were permanent. One political policy change was in the military threshold necessary to attack other states that may harbor non-state, international terrorists. “Many policymakers claim that the risks of adjusting and lowering military thresholds are outweighed by the advantages of employing technology to target those terrorists” (Kaag, 2008, p.4). No breach of security has occurred of that magnitude in modern U.S. history to compare our reactions or subsequent changes in policy. To prevent further attacks in the future, a number of actions were taken.

One action was the creation of a new cabinet level department called the Department of Homeland Security (Public Law 107-296, 2002). This new department merged the parts of twenty-two different organizations into one in charge a number of responsibilities. These included training of federal, state, and local authorities in order to respond to major disasters, investigations of terrorist attacks, and critical infrastructure protection. Another major change was to the U.S. military doctrine in the new operations manual Field Manual 3-0 (FM 3-0, 2008). This field manual now reports that defense support to civil authorities is one of the four major operations that the US Army must conduct. Another major action at the federal level was the creation and subsequent development of a national strategy concerning homeland security. This strategy was first

established in 2002 and further defined in 2007 (National Homeland Security Strategy, 2007). These three major actions, along with many others, were all outcomes designed to prevent future attacks and mitigate any attacks if they did occur.

These changes also placed requirements upon institutions of higher education within the United States to develop new programs to meet a need in this emerging field. The requirement was for students to be educated in both practitioner and research-based areas within homeland security. Both of these areas were new and graduate programs were quickly developed to academically prepare individuals in a number of higher education institutions. Grants and research funding from the Department of Homeland Security increased the pace in which some of these programs were developed. Other institutions, seeing a growing need for graduate level education in this emerging field, developed their own unique degree programs to meet this perceived and real educational need.

Dissertation Focus

This research study explored the reasons why adults enroll, persist, and complete graduate homeland security degree programs. Homeland security as a field of study is emerging in importance since the attacks of 9/11. A number of studies have researched why adults enroll in educational opportunities (Boshier, 1977; Boshier & Collins, 1985; Blunt & Yang, 2002; Houle, 1961) and why adult want to participate in higher education (Merriam, Cafferella & Baumgartner, 2007, & Wlodkowski, 2008). Still others have researched why adults persist in educational situations (Castles, 2004; Free, 1985; Liu & Liu, 1999; Tinto, 2002) and that this persistence “requires confidence and commitment to both short-term educational goals and long-term career goals” (MacKinnon-Slaney, 1994,

p. 270). Other researchers have investigated the reasons why adults complete or persist in educational programs (Donohue & Wong, 1997; Houle, 1961; Palmore, Cleveland, Nowlin, Ramm, & Siegler, 1979; Pascarella & Terenzini, 2005; Walberg, 1997). However, there are no empirical data on students enrolling, persisting, and completing homeland security graduate degree programs.

This research examined the interaction of factors affecting enrollment or participation, persistence, and completion and generational demographic of participants and the program delivery mode. These interactions seek to specifically address any possible correlation between factors of age (Baby Boomer versus Generation X) and also the manner in which the graduate degree program is delivered (face to face, online, or hybrid). These factors could directly influence how graduate degree programs are offered in the future and by what generational demographic will participate.

Context of the Topic

The population of this research study was 67 graduate homeland security degree programs associated with the Center for Homeland Defense and Security (CHDS) located at the Naval Post Graduate School in Monterey, California. This institution began a partnership with all homeland security education institutions called the University and Agency Partnership Initiative (UAPI) in 2004. This partnership includes the 67 graduate Homeland Security degree programs that are the population of this research study. Another organization associated with the CHDS and the UAPI institutions is the Homeland Security and Defense Education Consortium Association (HSDECA). This organization which was originally founded under the oversight and financial assistance of the Northern Command (NORTHCOM), the Department of Defense Combatant

Command that has responsibility for the continental United States. HSDECA is made up of civilian and military institutions of higher education dedicated to the instruction of adults in homeland security and defense subjects.

Adult students participate in these graduate degree programs for a variety of reasons. Some of those reasons may be tied to areas of continued employment including bridge employment in the case of older adults. This is an area that may significantly impact the adult workforce in the next 10 to 15 years. Homeland security is one of those career fields that require educated professionals and the national security interest of the United States is tied directly to having available professional to fill jobs in a wide variety of positions. Other reasons may be generational in nature and be part of the Baby Boomer generation seeking to stay in the labor pool by transitioning to homeland security as a career occupation choice. Data on those participating in these graduate programs have significance in educating an adequate number of homeland security professionals.

One reason that impacts all job opportunities, including those in homeland security, in the next 10 to 15 years is the demographics of generational age groups. Generational differences may impact these job opportunities and availability based upon the numbers of persons in different generational age groups. This supposition is compounded and highlighted by the imminent retirement of large groups of older workers as much as "40 percent of the workforce over the next ten years" (Forman and Carlin, 2007, p. 46). This is illustrated when looking at Baby Boomers, those who were born from 1946-1964, who account for approximately 76.7 million people. Individuals who make up Generation X, those who were born between 1965 and 1985, account for approximately 49.1 million people (NAS Insights, 2006). This difference in total

available workers particularly impacts homeland security as a field of study due to the critical nature of the work occupations involved. Shortages in this field of study, based on the number of different disciplines affected, could impact the safety of our national interests.

These programs are offered in a variety of formats. With the maturation of instructional technology, more and more new programs, like homeland security, are being offered through distance education. Another aspect of the study examined if there are significant differences between participants responses and their mode of instruction. There are three different instructional modes that will be examined. They are online, resident, or a mixture (hybrid or blend) of both delivery modes. Exploring and defining the relationships between generational differences, if found, may require program planners to institute or at least account for difference in generations of adult students when developing and providing these graduate programs. This would also allow program developers the flexibility to design programs specifically targeted at generational groups of adults and to market those programs more effectively.

How the research relates to existing knowledge about the topic

This research is about a emerging field of study and the ability to educate adults for employment in this field. There are a number of studies conducted over the last 30 years on the subject of adults, job skills, and job placement (Betz & Klein, 1996; Betz & Luzzo, 1996, Dendinger, Adams, & Jacobson, 2005; Free, 1985). Studies sought to "determine if the existing college program were consistent with the needs of graduates in order to secure employment and perform effectively in the workplace" (Murray, 1994, p. 67). Murray (1994) also included determination of "human relations skills, conceptual

skills and technical skills for employment" (p. 68). Other research has compiled data on students who came back to obtain additional education as adults (Free, 1985). Another study investigated adult students who completed an "instructional program that included training in employability and job readiness" (Staszewski, 1997, p.107).

Reasons Adults Participate in Higher Education

A number of studies in the past researched adult participation in educational activities. Some described adult learners as individuals being oriented by goals, social activity, or learning (Houle, 1961). These findings have been repeated by subsequent studies (Boshier & Collins, 1985). Instruments that measure adult participation factors (Blunt & Yang, 2002) have been tested and evaluated. Complexities in the lives of adult students impact their motivation and reasons to participate in higher education (Bye, Pushkar, & Conway, 2002).

Reasons Adults Persist in Higher Education

Adults persist in higher education for a variety of reasons. Intrinsic and extrinsic motivation styles are predictors of persistence in college students. Students who persisted in their studies had higher initial levels of intrinsic motivation toward academic activities than did students who dropped out and extrinsic motivation did not predict persistence (Vallerand and Bissonnette, 1992). Literature suggests a meaningful relationship between type of motivation and student persistence, achievement, autonomy, (Glastra, Hake, & Schedler, 2004) and age. Involvement is a key component to adult persistence in educational opportunities. Individuals that are more involved both academically and socially are more likely to persist (Astin, 1984; Nora, 1987; Pascarella & Terenzini, 1980). The more they see those interactions as positive and themselves as

integrated into the institution as valuable members the more likely they persist (Rendon, 1994). Student commitment is also an important factor in adults participating in higher education. Personal commitment to an academic goal or occupational goal is the single most important determinant of persistence in college (Cope & Hannah, 1975).

Reasons Adults Persist in Higher Education

One reason that impacts the decision for adults to participate in higher education is financing that pursuit. Depending upon the date of the research, different findings concerning the importance of the relation between student financial support for higher education and persistence exist. Money for attending higher education opportunities in the past had significant effects on student retention (Astin, 1975). Later studies, however indicated that the evident surrounding the effects of financial aid were mixed at best (Pascarella and Terenzini, 1991). The one form of financial aid that seems to have “measurable effects on student development is a grant from the college” (Astin, 1993, p. 213). Besides financial assistance the individual intentions regarding participation in higher education at a specific institution are important predictors of the likelihood of degree completion (Panos & Astin, 1968; Weingartner, 1981; Wilder & Kellams, 1987; and Rodgers & Pratt, 1989).

Baby Boomers and Generation X

A recent study conducted by the American Association for Retired People (AARP) found that “80 percent of Baby Boomers plan to continue working (at least part time) until the age of 65” (Loi & Shultz, 2007, p. 275). “By 2012, more than half of all workers will be over the age of 40. Rising levels of education and larger numbers of

women in the labor force are likely to accelerate work force aging” (Shultz & Adams, 2007, p.21).

Adults seek to make sense of disruptive change by integrating it into their existing cognitive schema. Young people who are still in the formative years have their cognitive schema shaped by the change and its social and historical repercussions (Picher, 1994; Scott, 2000; Lyons, et. al, 2007). This is particularly important when the curriculum and field of study is homeland security due to the large number of possible students from the Baby Boomer generation. These students may be attending graduate level education in order to build upon previous knowledge and skills that is applied within large field of homeland security. Also, Baby Boomers have a different set of life experiences that shape their understanding of history and U. S. cultural events than the Generation X group (Montgomery, Blalock, & Paxton, 2003) . Another aspect of this part of the study is the characteristics of individuals or generations to obtain and maintain job skills. Members of “Generation X is sensitive to how a job improves and adds to their personal portfolios of skills and capabilities” (Montgomery, Blalock, & Paxton, 2003, p. 117). Generation X individuals are younger and are seeking these job skills earlier in their career. Baby Boomers may be seeking these skills as a way to increase their career opportunities past retirement.

Delivery modes resident, online, and hybrid

Research studies have “compared the effectiveness of online instruction to traditional face-to-face instruction, findings from these studies have been markedly mixed” (Lim, Kim, Chen, & Ryder, 2008, p. 113). This is one reason to consider the differences between the program offerings across the graduate programs of homeland

security. Another important consideration is to determine if a relationship exists between Baby Boomers and a certain type of instructional mode and Generation X participants and still another instructional delivery mechanism. There may be differences that exist between the generational age groups that require adjusting of programs. These differences may require higher education institutions to consider marketing of programs to different generational age groups based upon delivery mode. Still another aspect of this part of the study is “the independent learning nature of the online environment forces students to assume equal responsibility for their own learning” (Johnston, 2008, p. 497). There may be a difference between the generational age groups and how they react to receiving their instructional primarily through online.

Research Framework

Statement of the Research Problem

There is a lack of research on graduate degree level education for adults in the emerging field of homeland security. Identification of the reasons adults enroll, persist, and complete these programs is important for future program development and tailoring current programs to meet student needs.

Research Questions

The research study was primarily exploratory; however, it was guided by the following research questions.

1. What are the reasons adults enroll in a graduate homeland security degree program?

2. Once enrolled, what are the reasons that they would persist in the graduate homeland security degree program?

3. If they persist, what are the reasons that adults complete a graduate degree within the emerging field of study of homeland security?

Statement of the Purpose of the Research

A number of earlier studies researched the motivation, participation, and persistence of adults in higher education programs (Astin, 1975; Boshier, 1977; Pascarella & Terenzini, 1991; St. John & Starkey, 1995; Fujita-Starck, 1996; Pascarella & Terenzini, 2005). This study explored the reasons adults enroll, attend, and complete graduate degrees within the emerging field of study, homeland security. Current literature supports a number of motivations for enrolling, persisting, and completing higher education programs. No study exists that seeks to address all three phases of adult participation in a higher education program within the framework of a homeland security graduate degree program. This study sought to provide this type of information.

Hypotheses

1. H₀: There is no relationship between the reasons adults enroll in graduate Homeland security degree programs and their generational demographic that varies by program delivery mode.

2. H₀: There is no relationship between the persistence of Baby Boomer generational demographic and Generation X generational demographic in homeland security graduate degree Programs with regards to program delivery mode.

3. H₀: There is no relationship between the reasons that Baby Boomer generational demographic and Generation X generational demographic complete homeland security graduate degree programs.

Definitions

Adult – individuals who are 25 years old and older (Kasworm, 2003).

Baby Boomer participants – Individuals who were born between 1946-1964 (Doll, 2008).

Complete – It is those students who have finished 75 percent of the classes associated with their graduate program of studies.

Distance education program format – defined as 80 percent or more of student to teacher interaction, instruction, assignments, and assessment feedback means are derived from a means of telecommunication, computer or other distributed education delivery modes (Allen & Seaman, 2007).

Enroll – refers to those students registered in a given school unit (Planty, et. al., 2008), for classes during the fall semester of 2009.

Generation X participants – Individuals who were born between 1965-1976 (Gravett & Throckmorton, 2007).

Homeland security – “a concerted effort to prevent and disrupt terrorist attacks, protect against man-made and natural hazards, and respond to and recover from incidents that do occur” (Bellavita, 2008, p. 24).

Homeland Security and Defense Education Consortium Association (HSDECA) – “A network of teaching and research institutions focused on promoting education, research, and cooperation related to and supporting the homeland security / defense

mission. The consortium is committed to building and maintaining a community of higher education institutions supporting this mission and the overall homeland security effort through the sharing and advancement of knowledge,” (HSDECA Website, 2008, paragraph 2).

Homeland security graduate programs – A set number of graduate degree programs as described on the website of the Center for Homeland Defense and Security operated by the Naval Post Graduate School. For purposes of maintaining a steady-state number of institutions those represented are those on the website as of 1 August 2009.

Hybrid program format – defined as interaction, instruction, assignments, and assessment feedback means are derived from between 30 to 79 percent from telecommunication, computer or other distributed education delivery modes (Allen & Seaman, 2007).

Millennials – Individuals who were born between 1977-1997 (Gravett & Throckmorton, 2007).

Persist – It is a way to measure how a student continues with a program (Berger & Lyon, 2005).

Resident program format – defined as no more than 30 percent of student to teacher interaction, instruction, assignments, and assessment feedback means are derived from telecommunication, computer or other distributed education delivery modes (Allen & Seaman, 2007).

Limitations

The limitations of this study are to the population of adult participants in homeland security graduate degree programs within the U. S. associated with the CDHS

and UAPI website. This is a total of 59 institutions and 67 degree programs listed in Appendix A. This study is also limited to those participants who were enrolled and taking courses during the fall term of 2009. Other limitations include only associations can be made about this population including “the correlational design precludes making statements of causality.”(Dendinger, Adams, & Jacobson, 2005, p. 51). One other issue is interpreting factor analysis based on using a heuristic, a solution that is convenient even if not absolutely true. There could be more than one interpretation that can be made using factor analysis and as already stated, factor analysis cannot identify causality.

The study only addressed those graduate homeland security programs located on the URL <http://www.chds.us/?partners/institutions&i=masters> that had an established relationship with the Naval Post Graduate School. There may be some sampling error effects based upon the source of this purposive sample. Some of the sampling error is that programs not represented in the sample include five different medically oriented homeland security graduate degree programs. The self-reported reasons for these students enrolling, persisting, and completing their programs may differ and are not represented in the study results.

Assumptions

Assumptions within this study include that the participants are willing to complete the surveys via the web. There exists the possible difference between the willingness of Baby Boomer participants to fill out the survey in an online format versus the willingness of Generation X participants to fill out the survey in the same format. This was accounted for by using the Dillman Tailored Design Mode of survey development and follow-up (Dillman, 2007; Dillman, Smyth, & Christian, 2009). Another assumption is

that the Tailored Design Mode of surveying respondents would increase the response rate. An expected response rate runs for most internet and email surveys is 25-30 percent (Fraze, Hardin, Brashears, Haygood, & Smith, 2003; Greenlaw & Brown-Welty, 2009; Hart, et. al., 2009; Kiernan, Kiernan, Oyler, & Gilles, 2005; Shih & Fan, 2008; Sills & Song, 2002).

Procedures

This survey was administered during the first weeks of fall 2009 semester. The data were collected and transferred to the researcher via Axio. Axio is the Kansas State University (KSU) sponsored electronic software package used to collect data through online survey modes. The data were analyzed using descriptive statistics, Exploratory Factor Analysis (EFA), and Multivariate Analysis of Variance or MANOVA (Tabachnick & Fidell, 2007; Hair, Black, Babin, & Anderson, 2010). MANOVA is used when there are multiple independent variables (discrete) and multiple dependent variables (continuous).

Design and Variables

The population, sample, and accessible stratified representative sample are depicted below:

μ = 67 graduate programs across the United States

N = accessible population 67 of these programs

n= purposive sample of respondents which includes at least 300 students

Using a stratified representative sample, a representative sample of programs, and maintaining positive contact with homeland security Program Directors assisted in alleviating some of the effects of those identified extraneous variables. As of August 1, 2009 there were 67 different programs on the Center for Homeland Defense and Security (CHDS) website maintained by the Naval Post Graduate School (NPS). These institutions are part of a University and Agency Partnership Initiative (UAPI) that the CHDS set up and continues to grow. The number of programs on this website fluctuates as programs are dissolved and new ones are implemented. For the purposes of this study the 55 institutions that maintained 67 programs on the website as of August 1 2009 were the programs used (See Appendix B). Some institutions have more than one graduate degree program registered on the partnership website with NPS.

The independent variables within the study include the naturally occurring groups of Baby Boomer participants and Generation X participants. Another independent variable was the mode of delivery of the program format. The dependent variable within this study is the three subscales of student perceptions from the survey instrument developed by the researcher. A total of three subscales were used with ten questions within each subscale. One measured self reported perceptions of participation, one for factors of persistence, and the third measured factors influencing retention or completion of the homeland security graduate degree programs (See Appendix A). Each individual question was subjected to Exploratory Factor Analysis (EFA) to reduce the data and determine the factors causing variance within the sample. These factors, upon completion of several statistical screening processes, were subjected to a 2 x 3 two-way MANOVA.

Analysis of Data

Using the Statistical Package for Social Sciences (SPSS), in coordination with Kansas State University Office of Mediated Education (for internet survey distribution and collection), University Compliance Office (Internal Review Board approval of survey instrument), and College of Education, the researcher tabulated the data with an Exploratory Factor Analysis (EFA) and a two-way Multivariate Analysis of Variance (MANOVA). (Tabachnick & Fidell, 2007, Hair, et. al., 2010).

The 2 x 3 two-way MANOVA model for this study is as follows:

$$\begin{array}{ccc} 2 & \times & 3 \\ \text{GD} & & \text{PDM} \end{array}$$

The three subscales covering enrollment, persistence, and completion were be subjected to an Exploratory Factor Analysis (EFA). This reduced the data collected to several factors that served as the dependent variables for the MANOVA. The Generational Demographic (GD) was one independent variable and the Program Delivery Mode (PDM) was the other independent variable.

The two-way MANOVA analyzed and determined possible correlations with the factors obtained from the survey instrument through Exploratory Factor Analysis (EFA). The survey also included demographic information to obtain data on age (Baby Boomer or Generation X), gender, number of courses completed in program, undergraduate degree, and social economic status. “These statistics (multivariate) provide insights into relationships among variables that may more closely resemble the complexity of the ‘real’ world”(Tabachnick & Fidell, 2007, p. 5).

The analysis included seeking for statistical significance of the relationships within the two-way MANOVA. However, that was not be the only statistical analysis conducted. “The size of the effect should be measured and evaluated using absolute differences” (Carver, 1978, p. 390). This is because virtually any study can be made to show significant results if one uses enough subjects regardless of how nonsensical the content may be (Hay, 1963). Partial eta squared (η_p^2) was used to quantify the effect size, and with the statistical significance, help demonstrate the results of this study. This effect size is one that measures proportion of explained variance (McCoach & Siegle, 2009) versus differences in sample means.

Research Instrument

Survey Instrument

The survey instrument is in Appendix A. This survey is divided into four distinct parts. The first three are student self report responses to questions about their perceptions of reasons to enroll, persist, and complete their graduate degree in homeland security programs.

Section I: Student responses to questions about reasons that enrolled or decided to participate in the homeland security graduate degree program they are in. A total of 10 questions comprised this subscale measuring section.

Section II: Student responses to questions about reasons they are persisting in their homeland security graduate degree program. A total of 10 questions comprised this subscale measuring section.

Section III: Student responses to questions about reasons they complete or be retained in their homeland security graduate degree program. A total of 10 questions comprised this subscale measuring section.

Section IV: Demographic data (including independent variables of generational demographic and program delivery mode). Also included are gender, hours completed, undergraduate degree, and social economic status. These additional data were collected for descriptive purposes.

A pilot study using the initial draft of the survey was conducted. Two different institutions were solicited to assist in this pilot. A total of 15 students were sent the initial draft of the survey. This pilot was conducted in accordance with Dillman's Tailored Design Mode of instrument preparation (Dillman, 2007; Dillman, Smith, & Christian, 2009). The pilot determined the functionality of the Axio survey system, ensured that the system works as advertised, and practiced collecting and downloading the data. This pilot also provided an opportunity to change any questions based upon pilot study input.

Significance of the Study

Homeland security is an emerging field of study that provides a number of occupational opportunities for individuals of all ages. The challenges facing the U.S. in terms of homeland security require skilled professionals in a variety of occupations and across generational labels to provide dependable public service. The ability of higher education to provide learning opportunities may be dependent upon bridging the gap between Baby Boomer and Generation X workers in a variety of occupations including the field of homeland security. Program planners may need to market to niche sectors in the labor population in order for programs to develop, survive, and maintain steady

tuition streams. Marketing graduate programs in this field or other fields of study to two broad age groups (Baby Boomers and Generation X) based on likes and preferences will help institutions of higher education develop program with age specific content and applicability.

Other aspects of this generational comparison are gender and race. “Very few studies have examined the joint impact of gender and age on work-related criteria. Virtually no empirical studies have examined whether the effects of aging on employment consequences differ across racial categories” (Shultz & Adams, 2007, p.52.) Based upon the exploratory nature of this research study and the additional descriptive data collected, possible gender and race relationships with generational demographic.

Summary

The field of homeland security is vital and will continue to be important to the national security interests of the United States. Providing programs to service a diverse population increases the likelihood that those programs are going to survive and thrive into the 21st Century. The ability for adults to obtain additional knowledge to serve in occupations within homeland security is imperative to national security interests of the US. If relationships between recognized content areas, generational age groups, and program delivery modes do exist with statistical significance and at least moderate effect size, then those results could assist in the development of programs of graduate instruction to better prepare individuals for the work place. The reasons that adult participate in these programs may have a dramatic impact on how graduate students are advised and homeland security graduate degree programs are marketed in the future.

CHAPTER 2 - Literature Review

Introduction

This chapter includes a review of literature on adult motivation, persistence, and retention in higher education, and generations and homeland security graduate programs. The literature from these areas provides the theoretical underpinnings for the research questions exploring the relationships between these factors as they relate to adults within a generational demographic (Baby Boomers versus Generation X) and program delivery mode (online, face-to-face, and hybrid) while participating in graduate homeland security programs. This review of related literature is divided into six sections. The first section addresses a review of literature on adult participation in higher education. Section two describes persistence factors for adults in higher education. The next section concerns the literature surrounding adult completion of higher education programs. The fourth section discusses the literature related to generational demographics including Baby Boomers and Generation X adult higher education members. The fifth section details the literature concerning program delivery modes including face-to-face, online, and hybrid. The sixth section describes the need for homeland security education.

Adults Participating in Higher Education

“If we are ever to understand the total phenomenon of continuing education, we must begin by understanding the nature, the beliefs, and actions of those who take part” (Houle, 1961, p. 10). There are number of studies that have focused on participation motivation of adult learners. These include works on the reasons adult choose to learn or not based upon orientations to learning (Houle, 1961). Houle defined adults into three different learning orientations; those who are goal oriented, learning oriented, or activity

oriented. Later other researchers used a check list format for respondents to indicate how important various reasons for participation were to them (Johnstone & Rivera, 1965; Carp, et. al, 1973). While others sought to assess the importance of the reasons for adult participation in educational activities (Sheffield, 1964; Burgess, 1971; Boshier, 1971, 1977, & 1985). Boshier (1977) developed the Education Participation Scale (EPS) in order to research and further define Houle's study of motivational orientations (Morstain & Smart, 1974). This study yielded a number of specific factors that expanded motivation of adults (Boshier, 1971). These factors include social relationships, external expectations, social welfare, professional advancement, escape/stimulation, and cognitive interest. These finer distinctions of Houle's findings are possible, but the three learning orientations are fundamental adult learning motivations (Boshier & Collins, 1985; Henry & Basile, 1994; Morstain & Smart, 1974). Other researchers repeated these results through subsequent studies (Morstain & Smart, 1974; Boshier & Collins, 1985). Boshier (1985) continued to improve his EPS instrument and now the 1991 version now defines seven factor structure of motivation to participants: communication improvement, social contact, education preparation, professional advancement, family togetherness, social stimulation, and cognitive interest in a particular subject. (Fujita-Starck, 1996). Other instruments that measure adult participation factors (Blunt & Yang, 2002) have been tested and evaluated. Surveys have consistently reported factors that are related to why for adults to participate in higher education; these include educational experience, work status, social class, and age (Kerns, 2006; St. Clair, 2008). Still further research has determined that complexities in the lives of adult students impact their motivation and

reasons to participate in higher education (Bye, Pushkar, & Conway, 2002; Kasworm, Polson, & Fishback, 2002).

In 1969 the National Center for Education Statistics (NCES) began conducting national triennial surveys (Henry & Basile, 1994). These surveys have differed in focus over the years. First, only “organized instruction” (NCES, 1974, p. 2) was considered. In later surveys the NCES “broadly defined adult education as any educational course or activity taken part-time and adults anyone reporting to be seventeen years or older” (Henry & Basile, 1994, p. 66). One of the significant motives for adult participation “found that 64 percent of the 1984 NCES study as the single most important reason for enrollment, was to secure a new job or to advance in a job.” (Henry & Basile, 1994, p. 66).

Reasons Adults Persist in Higher Education

Persistence “can legitimately be considered a necessary, if not sufficient, condition for degree attainment” (Pascarella & Terenzini, 1991, p. 370). Adults persist in higher education for a variety of reasons. Involvement matters to adult persistence in educational opportunities. Individuals that are more involved both academically and socially are more likely to persist (Astin, 1984; Nora, 1987; Pascarella & Terenzini, 1980). The more they see those interactions as positive and themselves as integrated into the institution as valuable members the more likely they will persist (Rendon, 1994). Intrinsic and extrinsic motivation styles are certainly predictors of persistence in college students (Vallerand & Bissonnette, 1992). “Students who persisted in their studies had higher initial levels of intrinsic motivation toward academic activities than did students who dropped out and extrinsic motivation did not predict persistence” (Bye, Pushkar, &

Conway, 2007, p. 27). Literature also suggests a relationship between type of motivation and student persistence, achievement, autonomy, (Glastra, Hake, & Schedler, 2004) and age.

Student commitment (or persistence) is also an important factor in adults continuing to participate in higher education. Individual commitments can take on two distinctive forms. Those include goal and institutional orientations (Tinto, 1993). “Goal commitment refers to a person’s commitment to personal educational and occupational goals” (Tinto, 1993, p. 43). This goal is defined as “personal commitment to either an academic or occupational goal is the single most important determinant of persistence in college” (Cope & Hannah 1975, p. 19). Intrinsic and extrinsic motivation styles are predictors of persistence in college students. Students who persisted in their studies had higher initial levels of intrinsic motivation toward academic activities than did students who dropped out and extrinsic motivation did not predict persistence (Vallerand & Bissonnette, 1992). The more adults see those interactions as positive and themselves as integrated into the institution as valuable members the more likely adults will persist (Kasworm, Polson, & Fishback, 2002; Rendon, 1994). Student commitment is also an important factor in adults participating in higher education. Personal commitment to an academic goal or occupational goal is the single most important determinant of persistence in college (Cope & Hannah, 1975).

Reasons Adults Complete Higher Education

Studies of reasons for completing a bachelor’s degree are very mixed (Pascarella & Terenzini, 2005). One finding that does stand out is that some “students enrolled in private (versus public) institutions have a statistically significant net advantage in the

likelihood of completing their bachelor's degree" (Pascarella & Terenzini, 2005, p. 385). Studies also show that students from a variety of census periods (such as four, five, and six years) for estimating graduation rates find again that students attending private (versus public) colleges are more likely to complete their bachelor degree or go on to graduate school (Astin, Tsui, & Avalos, 1996; McCormick & Horn, 1996; Porter, 1990).

One factor that impacts the decision for adults to complete higher education is financing that pursuit. Depending upon the date of the research, different findings concerning the importance of the relation between student financial support for higher education and persistence exist. Money for attending higher education opportunities in the past (Astin, 1975) had significant effects on student retention and completion. Later studies, however, indicated that the evidence surrounding the effects of financial aid was mixed at best (Pascarella and Terenzini, 1991). The one form of financial aid that seems to have "measurable effects on student development is a grant from the college" (Astin, 1993, p. 121). Research on the direct effects of student aid on persistence and completion is very important for adult students, "since they are more price sensitive than traditional undergraduates" (St. John & Starkey, 1995a, 1995b).

Besides financial assistance the individual intentions regarding participation in higher education at a specific institution are important predictors of the likelihood of degree completion (Panos & Astin, 1968; Rodgers & Pratt, 1989; Weingartner, 1981; Wilder & Kellams, 1987). Other reasons such as family, work, and peers are also important in the demands of higher education for adults (Kasworm, 2008). Adults often have to negotiate with peers, family, and work to meet and complete the demands of higher education (Polson, 2003).

Graduate Students and Participation, Persistence, and Completion

More and more adults are enrolling and attending graduate school programs.

“Enrollment in graduate programs increased from 1.3 to 2.2 million (67 percent) between 1976 and 2006 and is expected to reach 2.3 million in 2008” (Planty et al., 2008, p. 16). According to these projections, graduate enrollment will exceed 2.6 million by 2017 (Planty et al., 2008). Adults comprise an increasingly larger portion of college and university students (Kasworm, Sandmann, & Sissel, 2000; Kerns, 2006). Along with this increase in graduate enrollment new conditions have come about such “as higher education becomes increasingly important for success in a society that has become knowledge and technology-oriented, persistence is more important than ever” (Berger & Lyon, 2005, p. 26).

Almost all research on student participation, persistence, and completion factors up to this point in time was on freshmen students (Astin, 1979; Boshier, 1977, 1985; Pascarella & Terenzini, 1991, 2005; Tinto, 1993) two year college students (Mortensen, 2005) and completions of four year college students (Houle, 1961; Pascarella & Terenzi, 1991, 2005; Tinto, 1993). Little or no research has been conducted about the relationships of these factors and participation, persistence, and retention of graduate students. The Council of Graduate Schools website (2009) states “CGS has launched a project to study completion and attrition in master’s degree programs, a topic about which virtually nothing is currently known” (para. 1).

Baby Boomers and Generation X

While Baby Boomers are defined in a number of ways, they are generally regarded as being those people with birth-years of 1946-1964 (Doll, 2008; Loi & Shultz, 2007; Lyons, Duxbury, & Higgins, 2007). Generation Xers are also defined a number of ways. Usually however they are thought of as being people with birth-years of 1965-1976 (Doll, 2008). These are the two generation demographics that represent the first independent variable for this research study. These two generation demographic groups represent approximately 80 million people from the Baby Boomer generation and 46 million people from the Generation X demographic (Doll, 2008; Gravett & Throckmorton, 2007; Lancaster & Stillman, 2005).

A recent study conducted by the American Association for Retired People (AARP) found that “80 percent of Baby Boomers plan to continue working (at least part times until the age of 65” (Loi & Shultz, 2007, p. 275). “By 2012, more than half of all workers will be over the age of 40. Rising levels of education and larger numbers of women in the labor force are likely to accelerate work force aging” (Shultz & Adams, 2007, p.21). This provides a reason to investigate the relationships that Baby Boomers may have with Generation X participants, program delivery modes, and reasons adult participate, persist, and complete graduate degrees in Homeland Security.

Adults seek to make sense of disruptive change by integrating it into their existing cognitive schema, young people who are still in the formative years will have their cognitive schema shaped by the change and its social and historical repercussions (Picher, 1994; Scott, 2000; Lyons, et. al, 2007). This is particularly important when the

curriculum and field of study is Homeland Security. Baby Boomers have a different set of life experiences they shape their understanding of history and US cultural events than the Generation X generational group. This could lead to differences in the generational groups adopting or understanding the HSDEC content areas and how they perceive their importance in a homeland security program. Another aspect of this part of the study is the characteristics of individuals or generations to obtain and maintain job skills. “Generation X is sensitive to how a job improves and adds to their personal portfolios of skills and capabilities” (Montgomery, et. al., 2003). Generation X individuals are younger and are seeking these job skills earlier in their career. Baby Boomers may be seeking these skills as a way to increase their career opportunities past retirement.

Program Delivery Mode

Program delivery mode is the manner in which students receive instruction for purposes of this study. This section is divided into five subsections that discussed the factors surrounding modes of program delivery. Section one discusses the costs of online versus face-to-face instruction. Section two details whether online instruction can provide comparable cognitive (learning) growth to face-to-face instruction. In section three is the discussion on whether or not on-line instruction can provide viable programs to virtually anywhere in the world. Section four surveys the implications of marketing opportunities for higher education through the assistance of on-line education. The final section covers the issues surrounding the program development of adult instruction.

The Cost of On-line Instruction

One of the considerations when using cost as a metric is the proposed differences between traditional face-to-face instructional mode and online mode. Within the model

described by Bates in 1995, costs are the second item for consideration when making the strategic decisions of choosing what technology to use (Bates, 2003).

Many buildings that house new information technology systems are not wired, setup or physically accessible for easy transformation to on-line education platforms. Much of the infrastructure considerations included with an on-line program have to take into consideration the costs of remodeling. Most universities have old buildings without adequate conduits for wiring or asbestos fillings within walls that need to be removed before modern cabling can be installed (Bates, 2003). Researchers point out the strategic decisions that institutions of higher education are making with regards to offering programs online. These decisions usually include the outlay of large amounts of money to build the technology platforms necessary to implement online programs and courses.

The cost of on-line instruction is a characteristic that some would use as a deciding factor in approaching this learning environment and delivery mode (Osman, 2005). On-line learning is emerging as a viable means to reduce cost while catering to higher expectations of students (Osman, 2005). Higher education institutions may choose to make courses available via the Internet for various reasons including cost reduction, this helps reach a global student population (Milheim, 2004). However, administrations must make the strategic decisions that require administrative buy in and demand long-term commitment to the livelihood of on-line instruction (Downey, 2001). That long-term buy in may include different compensation terms for faculty members. The cost of on-line instruction may include increasing or adjusting the compensation to instructors. A total of 64 percent of faculty members at four year institutions in a recent

survey were compensated for distance courses with normal, on-campus salary (Howell, Williams, & Lindsay, 2003).

Costs in general for on-line or distance education delivery modes is not treated the same by all higher education institutions. Capital costs were regarded as non-recurrent costs – though the short life of some capital items, particularly in the information technology area, means that institutions are treating such budgets as recurrent items (Rumble, 2001). Another problem is the failure to annualize course development for distance education given the length of life over which courses last (Rumble, 2001). Costs of all kinds, no matter how they are accounted for, are associated with on-line instruction. The cost of course development, media used, the decisions associated with information technology platforms, and the hiring of information technology personnel.

Comparable Cognitive Growth

Some have stated that the medium of instruction does not matter. Clark (1983, 1994) argued that the instructional mode is the “active ingredient” (Bernard, et al, 2004). Clark argued that virtually any medium, properly applied can fulfill the conditions of quality instruction (Bernard, et al, 2004). The medium, whether face-to-face or on-line is the transmission mode of instruction. Arguments over its role and purpose in student learning do take on meanings within the on-line instruction delivery mode. Another aspect of this argument is from Cobb (1997), he stated that the efficiency of the medium can be judged by how much of the learner’s cognitive work it performs (Bernard, et.al, 2004).

After looking at the role of this medium, the effectiveness of this medium comes into question. The effectiveness of any instructional delivery mode cannot be found in

just one study. A review from all points of view is necessary in order to determine the whether there is comparable cognitive growth in on-line instruction to already proven traditional instructional modes. One mode for reviewing all the quantitative data pertaining to the effectiveness of on-line instruction is meta-analysis. Meta-analysis makes it possible to combine studies with different sample sized by extracting an effect size from all studies (Bernard, et al, 2004). This allows a researcher the ability to take into account all of the effects from a number of different studies. Cohen's d is a sample-size-based index of standardized difference between a treatment and control group that can be averaged in a way that test statistics cannot (Bernard, et al, 2004). This meta-analysis also allows for exploration of what might be responsible for the variability in the findings across media, instructional design, and students participating. The analysis over a number of sources seems to be in general disagreement whether on-line instruction is better or not than traditional instructional modes (Miller, Cohen, & Beffa-Negrini, 2001). "Through the meta-analysis discussed earlier a total of 318 studies conducted from 1985 to 2002 was conducted" (Bernard, et al, 2004). The findings of that meta-analysis cover a number of subjects including student reaction, retention, and attitude. "The variability had a tremendous range with effect sizes (g) in achievement outcomes ranging from -1.31 to +1.41" (Bernard, et al, 2004). There were instances where on-line instruction outperformed traditional instruction by more than 50 percent and other instances where traditional instructional group outperformed the on-line instruction group by 48 percent or more (Bernard, et al, 2004). Thus, it is still inconclusive if one looks at the delivery modes based on this rather comprehensive meta-analysis of instructional

modes. This further reinforces the findings that cognitive achievement of distance learning students and traditional classroom students is comparable (Brannan, 2005).

Programs Virtually Worldwide

The availability of instruction virtually worldwide provides a set of challenges to administrators developing on-line education and instructional programs. “With increased use of the Web to support teaching and learning, there are new possibilities and new efficiencies with respect to setting and assessing student assignments (Collis, De Boer, & Slotman, 2001). Understandably the use of the Internet has some higher education administrators at odds with previous management techniques. Other aspects of this challenge include the opportunity that world wide access to educational programs give higher educators a new mechanism for feedback. The giving of feedback in higher education is often not well exploited (Collis, De Boer, & Slotman, 2001). Feedback is important and the global reach of virtual programs gives educators another tool to use. Feedback can be given just-in-time (Collis, De Boer, & Slotman, 2001). The instructor can leverage this technology in the area of feedback even more. The instructor can shift some of the task of giving feedback to the students themselves (Collis, De Boer, & Slotman, 2001).

Higher education institutions can provide their courses on the Internet and compete effectively in remote international markets (Osman, 2005). On-line instruction provides a different environment for students to use. As one student noted:

“I believe that the distributed learning experience was more learning-centered primarily because it was more of a forum for posting investigation of or reflections on questions for the students. In fact, it allowed students to raise more questions and post those replies to classmates. How’s that for multiple loop learning – we were able to continue to reflect upon [each others] reflections”(Petrides, 2002)

This environment is global and provides unique opportunities not available in the traditional classroom. This new classroom also has room for disadvantaged students. “Both economically disadvantaged and under-served student populations can benefit from an on-line educational environment” (Donley, 2000, p. 175).

Marketing Opportunities for Higher Education

As competition to produce and provide knowledge, and facilitate learning becomes global, it is imperative for educational institutions to restructure their network solutions (Osman, 2005). Educational institutions may choose to make a course available via the Internet. One of those reasons may be “to remain competitive and cutting edge in the market” (Milheim, 2004). On-line instruction should take advantage of both a delivery mode but a skill that students learn and will use later in the work place. This is critical, as once students graduate from higher education, they will be expected to use technology in their professions and higher education should prepare them for this

challenge (Brannan, 2005). Higher education institutions should consider taking this as a blueprint for marketing on-line instruction into the 21st Century.

There are reports of the rapid pace of technological change occurring in higher education. This change is transforming the manner in which institutions manage and market their programs. Colleges and universities are rushing to embrace these technological challenges and opportunities, as competition for students and resources remains a forceful variable in the higher education marketplace (Donlevy, 2000). This is still relevant today with more and more programs being offered to meet the demands of traditional and non-traditional students.

Between 1997 and 2001 internet-based instruction has roughly tripled, from 22 in 1997 to 60 percent in 2001 (Beffa-Negrini, Miller, & Cohen, 2002; Sloan & Newman, 2007). This is the new market for all educational venues especially higher education. There is a growing appeal and acceptance of online learning (Amrein-Beardsley, Foulger, & Toth, 2007). This appeal is a valuable marketing tool for an increasing larger pool of potential students. Students are shopping for courses and programs that meet their demanding schedules and circumstances (Howell, Williams, & Lindsay, 2003). Another part of marketing is finding a way to put together old and new instructional delivery modes.

A mixture of both on-line and traditional learning modes into a blended or hybrid approach is an attempt to make the best instructional environment out of both. “Those who use blended learning environments are trying to maximize the benefits of both face-to-face and on-line modes – using the Web for what it does best and using class time for what it does best” (Mortera-Gutierrez, 2006). This is another marketing avenue for new

and improved programs in higher education. Instructors want to include some advantages of on-line instruction and face-to-face instruction, add on-line instruction activities to their courses (Smith & Kurthen, 2007).

Attacks of 9/11 and Homeland Security

The attacks that occurred on September 11, 2001 forever changed the United States. It was a “day of unprecedented shock and suffering the in the history of the United States” (May, 2007, p. 35). The nation was not prepared. “The Trade Center burned for a hundred days” (Wright, 2007, p. 415). The attacks did not only kill Americans. People who died in the Trade Center represented 62 countries and almost every ethnic and religion in the world (Wright, 2007). “Al-Qaeda had aimed its attacks at America, but it struck all of humanity” (Wright, 2007, p. 416). Can we avoid this situation in the future? How did this happen? After studying the events of 9/11, a bipartisan investigation commission determined that “the institutions charged with protecting our borders, civil aviation, and national security did not understand how grave this threat could be (May, 2007, p. 36). One of the commission recommendations was the newly formed Department of Homeland Security should “assess the types of threats that the country faces and the readiness of the government to respond to those threats”(The 9/11 Commission Report, 2002, p. 428). In order to do this and enable Americans to serve in a variety of other positions, education above the baccalaureate level was required.

In 2002, the idea of homeland security as a needed graduate level emerging field of study was identified, “to secure our homeland, a rigorous, sequential, and progressive program of professional education in homeland security is essential” (McIntyre, 2002).

Later, President Bush unveiled the “President’s High Growth Job Training Initiative” in 2003 which included the identification that homeland security was one of the 14 high demand sectors (Homeland Security Trends Analysis 2007-2008, 2007). This need for education was also described in terms of what employer need from graduate education in homeland security (Workshop on National Needs, 2007). Most people in the interim have agreed in the need for graduate education in homeland security; however criteria, courses, and degrees requirements are still being identified (CIP Report, 2009).

Summary

The use of on-line instruction and all the aspects of student, teacher, institution, course ware and platform are important in program development. The literature review indicated that there are costs associated with on-line instruction as it relates to face-to-face instructional modes. The literature also suggests that on-line instruction is fundamentally no different than traditional instructional modes when the variability factors of student reaction, retention, and attitude were considered. On-line programs can be developed and offered virtually anywhere in the world with the use of information technology. This opens the doors for marketing to a much broader global marketplace but also provide opportunities for disabled persons to seek the same kinds of learning possibilities. Finally, program development of on-line instruction is not so different than program development encountered by institutions of higher education in the past. Stakeholders must be provided information so that developers get buy in. This is the first and most important step in on-line program development.

CHAPTER 3 - Methodology

Introduction

This chapter includes information about the methodology used within this study. The research questions are followed by an overview of the research design and a detailed discussion of the creation of the survey instrument. The discussion continues with assumptions of the research, details of the study design, data collection procedures, and the data analysis procedures.

Research Questions and Hypotheses

The following research question and hypotheses were used in this study:

Research Questions

What are the reasons adults enroll in a graduate homeland security degree program?

If they enroll, what are the reasons that they would persist in the graduate homeland security degree program?

If they persist, what are the reasons that adults complete a graduate degree within the emerging field of study of homeland security?

Research Hypotheses

H₀: There is no relationship between the reasons adults enroll in graduate homeland security degree programs and their generational demographic that varies by gender, ethnicity, and program delivery mode.

H₀: There is no relationship between the persistence of Baby Boomer generational demographic and Generation X generational demographic in homeland security graduate degree Programs with regards to program delivery mode.

H₀: There is no relationship between the reasons that Baby Boomer generational demographic and Generation X generational demographic completing homeland security graduate degree programs.

Research Design Overview

This research is an exploratory study to determine if any relationship exists between enrollment, persistence, and completion of Homeland Security graduate program students and their generational demographic and program delivery mode. The survey was developed based upon adult education theoretical underpinnings for student enrollment, persistence, and completion of higher education (Astin, 1975, 1984, 1993; Boshier, 1971, 1977; Castles, 2004; Pascarella & Terenzini, 1998, 2005; Tinto, 1993, 2002).

Instrumentation

The research instrument was designed based upon the literature review of adult education theory surrounding participation, persistence, and attainment in higher education (Astin, 1975, 1984, 1993; Boshier, 1971, 1977; Castles, 2004; Pascarella & Terenzini, 1998, 2005; Tinto, 1993, 2002). Also referenced are the concepts of Baby Boomers versus Generation X generation demographic as the first independent variable and program delivery mode (face-to-face, hybrid, and online) as the second independent variable (Doll, 2008; Gravett & Throckmorton, 2007; Lancaster & Stillman, 2007).

Sample

Although the sample is based upon the 67 programs that are shown in Appendix B, the survey collected data from adult students. It is unknown how many students were within the population. The main consideration for the target sample was to achieve a representative sample with at least 300 respondents based upon the requirements for conducting Exploratory Factor Analysis and MANOVA (Tabachnick & Fidell, 2007; Hair, et al., 2010).

Instrument Design

The instrument found in Appendix A was developed using the Tailored Design Method research and established online survey development techniques (Dillman, 2007; Dillman, Smith, & Christian, 2009; Sue & Ritter, 2008). This instrument had three subscales one each associated with enrollment, persistence, and completion of higher education within homeland security graduate programs. The subscales are followed by demographic data that includes the independent variables selected for study. This was an exploratory study thus no pre-existing instruments were available for use and required development and piloting of a new instrument to fulfill the needs of this research study.

Each of the three subscales constitute a set of dependent variables, one set to measure student enrollment factors, one set to measure student persistence factors, and finally one set to measure student completion factors. The independent variables are Generational Demographic (Baby Boomer versus Generation X) and Program Delivery Mode (online, face-to-face, or hybrid). Multivariate Analysis of Variance (MANOVA) is used to assess the statistical significance of the effect of one or more independent variables on a set of two or more dependent variables (Tabachnick & Fidell, 2007;

Weinfurt, 2008). One reason to use this type of multivariate analysis is “social and biological sciences usually have one of two reasons for using a multivariate approach: controlling Type I error and taking into account the correlation between dependent measure through multivariate analysis of effects” (Weinfurt, 2008, p. 251).

A 7 point Likert scale was used. This instrument was delivered to the program directors with the use of Kansas State University (KSU) Mediated Education resources. The list of programs and degrees is found in Appendix B. The second contact made to each homeland security graduate program director via the Executive Director of the Homeland Security and Defense Education Consortium Association (HSDECA). Dr. Lydia M. Staiano sent a hard copy of the contact letter (Appendix C) to each identified program director on HSDECA letterhead. These letters were followed by correspondence from the researcher as to how KSU Mediated Education would execute the IRB approved survey instrument to each of them. The directions included how to disseminate the survey, questions about the administration of the survey, and accounting of how many students were sent the survey in each program.

Resources Used to Execute Survey

The Homeland Security and Defense Education Consortium Association (HSDECA) is an organization of higher education institutions in the United States organized to support, foster, and sustain homeland security as an emerging field of study. This includes military and civilian institutions currently exploring, documenting and developing the framework to become the accreditation and credentialing body for all homeland security programs within the United States. Representatives of HSDECA

agreed to help with follow-up efforts with respondents to assist in increased response rates associated with the survey instrument.

The Center for Homeland Defense and Security (CHDS) is an organization within the Naval Post Graduate School that developed a graduate homeland security program designed for federal, state, and local officials in 2003. They are a recognized leader organization within the field of homeland security education at the higher education level. Another organization within the Naval Post Graduate School is the Center for Homeland Defense and Security (CHDS), University and Agency Partnership Initiative (UAPI). This institution is a leader in graduate degree homeland security education. The UAPI is a Department of Homeland Security (DHS) funded project that CHDS conducts every year with partnered universities and agencies. CHDS also has assimilated a list of graduate programs and has a moodle, pass word protected, organizational website for direct interaction with possible program directors sample participants. CHDS has already requested information that is pertinent to this research study.

The KSU Mediated Education office has been contacted. This resource assisted in the design, distribution, and data collection of the survey instrument. Initial contact with Lloyd Walker was made. The University Research Compliance Office (URCO) is another resource the researcher leveraged in the conduct of this study. The researcher submitted one IRB research application for another doctoral level course.

Instrument Validity and Reliability

Since the instrument that was developed by the researcher for use in this study, several validity and reliability factors must be taken into account in order to have some measure of confidence that the data collected is meaningful, accurate to some measure degree, and with stand scrutiny of fellow researchers in this field of study.

The content-related evidence of validity refers to the content and format of the instrument (Dillman, 2007; Dillman, et. al., 2009; Howell, 2008; Tabachnick & Fidell, 2007). The content and format of this research instrument must be consistent with the definition of the variable and the sample of subjects to be measured. Careful consideration of the wording and context of each factor for each of the three subscales was taken.

The criterion-related evidence of validity refers to the relationship between scores obtained using the instrument and scores obtained using one or more other instruments or measures which is often called a criterion (Dillman, 2007; Dillman, Smith, & Christian, 2009; Howell, 2008; Tabachnick & Fidell, 2007). The issue is how well do such scores estimate present or predict future performance of a certain type? This should be answered during the pilot phase of the survey implementation. A pilot study of the survey was conducted prior to use of the survey in the research study. Two different institutions were contacted and provided 15 total students to assist in the pilot study. A total of six students completed the survey. These 15 students were not used as respondents during the general research study. The pilot study assured that the respondents were able to answer the questions and the researcher had no problems retrieving the data from the Axio survey system. The pilot found that all six students

completed the survey between eight and ten minutes, well within the recommended guidelines for web surveys (Dillman, 2007; Dillman, Smith, & Christian, 2009). Also, the researcher was able to retrieve and study the data. There were no apparent anomalies within the six respondent's answers to the questions. The researcher also contacted the program directors of the two pilot programs and asked them if any student had any problems obtaining the URL and completing the survey. The program directors responded back to the researcher by stating no student had any problems with completing the pilot survey.

Another aspect of the survey instrument that required careful study is reliability or consistency for each individual from one administration of an instrument to another from one set of items to another. Conducting an alpha coefficient is one check on the internal consistency of an instrument (Campbell & Stanley, 1963; Dillman, 2007; Dillman, et. al., 2009; Howell, 2008).

Respondent Engagement Strategy

The following section describes the Dillman methodology of conducting engagement for survey data collection and follow-up to increase response rates (Dillman, 2007; Dillman, et. al., 2009). The first is a respondent-friendly questionnaire (survey). That link was sent to all program directors via KSU Mediated Education during the first two weeks of the Fall Semester. Four follow-up contacts were conducted via mail and email (with HSDECA input in initial and final contact). The correspondence was personalized and included a follow-up thank you and reminder some 14 days after the initial contact (Dillman, 2007; Dillman, et. al., 2009). A final replacement of the email

link was sent out to the program directors after 30 days to complete the suggested survey engagement strategy (Dillman, 2007; Dillman, et. al., 2009).

Assumptions

The following assumptions guided the data collection procedures of this study:

1. All program directors have access to email.
2. All potential respondents have access to email.
3. Survey instrument can be piloted during summer before fall term 2009.
4. The participants in the study provided honest answers.

Data Analysis Procedures

The data were analyzed using Multivariate Analysis of Variance or MANOVA. This statistical analysis provided “insights into relationships among variables that may more closely resemble the complexity of the ‘real’ world (Tabachnick & Fidell, 2007, p. 5). This analysis is more likely to give at least partial answers to questions that could not be asked at all in the univariate framework (Tabachnick & Fidell, 2007). The SPSS software program identified any statistical significance of the data presented. However, statistical significance is not the only way to answer research questions (Carver, 1978). It does not convey information about the practical importance of the difference or effect size (Tabachnick & Fidell, 2007). The researcher used partial eta squared η_p^2 (Howell, 2008) to measure the effect size of any statistical difference found within the data analyzed. This effect size is usually measured from small = .01 to medium = .06 to large = .14 (Huck, 2008). These are the generally acceptable guidelines used for experimental

research. Larger values could be expected in non-experimental research such as this research study (Tabachnick & Fidell, 2007).

Prior to determining statistical significance or effect size the data must be screened. There are prescribed ways to screen data used in MANOVA analysis. Several of these rules of thumb determine if the data is usable or requires modification. MANOVA is susceptible to Type I and II errors based upon outliers. Outliers dramatically affect MANOVA data analysis. Thus outliers must be measured using a Mahalanobis Distance test (Tabachnick & Fidell, 2007). This measurement ensures that the outlier is not too far out of parametric guidelines for a bell curve and can be included in the statistical analysis. Otherwise if a positive test results the researcher has three acceptable options: change, transform, or eliminate outliers from the sample (Tabachnick & Fidell, 2007, p. 74). Another issue with any statistical analysis is missing data. The researcher has three acceptable options: delete cases, estimate, or use mean substitution. The only issue associated with missing data is to report in the final edition of this manuscript what if any measures were used to reduce missing data from the final analysis. The final rule of thumb that specifically is related to MANOVA is the cell structure of the analysis. It will look something like the depiction below:

The model of the 2 x 3 two MANOVA for this study is as follows:

$$\begin{array}{ccc} 2 & X & 3 \\ GD & & PDM \end{array}$$

The three subscales covering enrollment, persistence, and completion was subjected to an Exploratory Factor Analysis (EFA). This reduced the data collected to several factors that served as the dependent variables for the MANOVA. The

Generational Demographic (GD) was one independent variable and the Program Delivery Mode (PDM) served as the other independent variable.

The 2 x 3 two-way MANOVA analyzed and determined possible correlations with the factors obtained from the survey instrument through Exploratory Factor Analysis (EFA). The survey also included a demographic information to obtain data on age (Baby Boomer or Generation X), gender, the number of courses completed in program, undergraduate degree, and social economic status. “These statistics (multivariate) provided insights into relationships among variables that may more closely resemble the complexity of the ‘real’ world” (Tabachnick & Fidell, 2007, p. 5).

Summary

A survey instrument was used to collect data about student perceptions on their enrollment, persistence, and completion of Homeland Security graduate programs. The survey instrument also collected data on the student generation demographic and program delivery mode. These data were analyzed using Multivariate Analysis of Variance (MANOVA) to determine relationships between the enrollment, persistence, and completion subscale scores and the student generation demographic and program delivery mode. The analysis with the assistance of the SPSS determined if any relationships between the subscales of dependent variables and the independent variables exist and what they are.

CHAPTER 4 - RESULTS

Introduction

This chapter reports the findings of this study, including an overview of the study, a discussion of the data collection procedures, the demographic data of the sample, and descriptive and summary statistics for the dependent and independent variables. Based on the research question and hypotheses, the variables are discussed as to whether there are relationships between factors self-reported affecting enrollment, persistence, and completion of adults in homeland security graduate programs and the independent variables of generational demographic and instruction delivery mode. The relationships are discussed first as factors found during exploratory factorial analysis (EFA) and then through Multivariate Analysis of Variance (MANOVA) between the identified dependent and independent variables.

Overview

This study investigated the possible relationships that exist between the reasons adults enroll, persist, and complete graduate homeland security programs and the generational demographic and instructional delivery modes used. The researcher developed the graduate student survey Appendix A. This survey was sent to a total of twenty different subject matter experts in the field of college recruitment, persistence, completion, and graduate homeland security programs in order to increase the construct validity and content validity (Burns, 1996; Dattalo, 2008; Hair, et. al., 2010; Kline,

2009). The responses from these subject matter experts provided substantive comments that helped with survey instructions, question wording, and collection of demographic data.

Data Collection Procedures

The study population consisted of all students attending graduate homeland security programs that were affiliated with the Naval Post Graduate School as of August 1, 2009 that were enrolled in classes during the fall 2009 term. The institutional review board for Kansas State University approved the research project. Based on this IRB, the researcher would contact only program directors and they would contact students directly. The researcher would not contact any students directly.

A purposive sample of 59 institutions with 67 different graduate degree programs was contacted via phone calls in May and July 2009, through their respective program directors. A listing of addresses, email addresses, and points of contact was generated through these initial contacts with program directors. Two institutions no longer offered the degrees listed from the Naval Post Graduate website sample source and two programs never returned phone calls or emails. There were 55 institutions, with 63 different graduate degree programs who responded favorably to participating in the research study. This provided an initial response contact rate of 96.4 percent. This initial response contact rate equates to recent institutional surveys with program directors that were “personally contacted in advance and 97.5 percent agreed to participate” (Hart, et. al, 2009, p. 17).

The second contact was a personalized regular mail letter (Appendix C) sent to these 55 institutions. The Executive Director of the Homeland Security and Defense

Education Consortium Association (HSDECA) signed each letter and attached a personal note requesting that the respective program director consider completing the research study participation requirements. These letters were sent during the last week of August 2009.

The researcher identified ten subject matter experts in the field of adult education, specifically those who had conducted research in participation, persistence, and completion within higher education. These ten were selected based on those included within the literature review of this research study. The researcher also selected ten persons within the homeland security graduate programs of higher education. The researcher selected these subject matter experts based upon their interest in the research study and previous interactions with the researcher.

There were a total of eight subject matter experts, four from the adult education and four from homeland security that responded with comments on the survey. The researcher received responses that included clarification of questions, improving sentence structure, suggested grouping of questions, demographic categories better defined, and inclusion of additional demographic categories (total annual household income). These substantive comments were incorporated into the survey where appropriate. The final modified survey was then used in the research study.

The modified graduate student survey instrument in Appendix A was uploaded to the Kansas State University, Office of Mediated Education Axio Web survey software system. A separate offering for each institution was created on the Axio system in order to track responses by institution. The researcher built a unique Uniform Resource Locator (URL) for each survey offering within the Axio survey software. Using a

modified TDM (Dillman, Smith, Christian, 2009), the researcher contacted the program directors via personalized email with an embedded Axio URL survey link (Sax, Gilmartin, & Bryant, 2003). A survey offering was created in the Axio survey system for each of the 55 institutions that responded favorably to the initial contact. Each institution was sent their own unique URL survey offering. The initial offering was for three weeks. Within the TDM, there is “little or no guidance on optimal timing sequence for web surveys” (Dillman, Smith, & Christian, 2009, p. 279). Also, the best fit for the research study was to send the URL embedded emails so that the program directors would see them first thing in the morning (Trouteaud, 2004). This study showed that invitations sent midday were “significantly less likely to respond than those who received it before working hours” (Dillman, Smith, & Christian, 2009, p. 280). Therefore, all 55 personalized email third contacts were created and sent out during the night and evening of September 15, 2009. In an effort to reduce non response bias in respondents, the researcher promised all of the program directors an executive summary of the results if they did participate in the research study. This was not a financial incentive (Dillman, Smith, & Christian, 2009, p. 238-240) which has shown to reduce non response bias “by pulling in respondents who otherwise might not answer the questionnaire.” There are “few options outside of incentives and follow-up paper or telephone surveys have been offered in the literature” (Troutead, 2004, p. 385). However, the executive summary was an incentive used to entice the program directors to cooperate with the researcher. They were required to send the URLs to students enrolled in their fall term 2009 classes, and send the researcher the number of students that the survey was sent to in order to calculate response rates.

During the three week survey offering and follow-up phone calls to non-responsive program directors, a total of 11 programs self-selected and declined to participate in the research study. This left a total of 44 programs remaining in the sample. During the survey offering a number of actions were conducted to increase the institutional and individual response rates. First all programs that had not responded after the first week of the survey offering were contacted. A number of issues were discovered during the phase of survey collection. A total of 10 programs had the wrong email, program coordinator had changed (since July 2009), assistants were on maternity leave, procedures internal to their organization had changed (new Dean of their college was installed), and phone numbers changed. The survey email was resent to the correct email address and to the current program coordinator. The survey with digital IRB was sent to several programs where the Dean of the college had changed. A total of eight email queries from program directors were answered with regards to the survey and procedures to conduct the data collection. In instances in which survey instruments were resent due to incorrect email address or changes in administrative personnel a follow up telephone calls were made within two weeks. The Executive Director of HSDECA was contacted after communications with three different program directors who did not receive the second mail contact describing the research. The Executive Director of HSDECA resent those letters to those three program directors who stated that the letter would help with internal approval procedures of their institutions. These reasons included the response rates from institutions and individuals, as well as the number of institutions that did not get the regular mail letter from HSDECA or the URL embedded email in a timely manner.

Near the three week mark, focused emails were sent to three different programs where the response rates were less than 10 percent in an effort to increase the response rates of those programs. The Axio survey offerings were extended another week for the 44 programs that were still in the study sample.

A total of 19 out of 44 institutions participated in the research study for an institutional response rate of 43.18 percent. This institutional response rate is very near recent institutional response rates of 45-49 percent participation in surveys (Hart, et. al., 2009) and better than other levels for institutional participation rate of 35.7 percent (Baruch & Holton, 2008; Converse, et. al., 2008). A total of 891 students were sent the graduate student survey instrument with a total of 364 students completing the survey instrument. This provided an initial individual response rate of 40.85 percent. This response rate is within current and recent web survey response rates across a number of academic disciplines (Fraze, Hardin, Brashears, Haygood, & Smith, 2003; Greenlaw & Brown-Welty, 2009; Hart, et. al., 2009; Kiernan, Kiernan, Oyler, & Gilles, 2005; Shih & Fan, 2008; Sills & Song, 2002).

Upon review of the survey data there were a number of cases with missing data. A total of 36 respondents (n = 328) did not complete some portion of the 40 questions within the survey. This represents 9 percent of the total responses received. A missing case analysis was conducted using the Missing Case Analysis with SPSS 18.0 to determine if the remaining cases were similar to the dropped cases “on certain variables” (Cohen, 2003, p. 434), ensure they were missing at a random rate across the entire data set, and to ensure the total number of missing cases is small enough and n is large enough that there is no statistical difference between the total data set and those cases dropped

(Cohen, et. al., 2003; Field, 2005; Hair, et. al., 2010). This total of 36 missing cases was excluded from further statistical analysis based upon a list wise deletion (Cohen, et. al., 2003; Field, 2005; Hair, et. al., 2010).

The final response rate for the sample was 328 out of 891 or 36.81 percent. This percentage for web based survey collection is within the rates from the literature ranging from 13 percent to 43 percent (Cook, Heath, & Thompson, 2000; Dillman, Smith, & Christian, 2009; Frazee, et. al., 2003; Hart, et. al., 2009; Kaplowitz, Hadlock, & Levine, 2004; Shannon & Bradshaw, 2002; Shih & Fan, 2008).

These data were compiled into an Excel spreadsheet from the Axio survey system. These raw research data were then copied onto a flash drive, a terabyte drive, a hard drive on a laptop, and a writable CD. This was to ensure that if any data corruption occurred, the raw data could be recovered and used. The data file for SPSS was set up to receive the research data (Ho, 2006; Leech, Barrett, & Morgan, 2008; Weinberg & Abramowitz, 2007). After the data file was complete the research data was copied into SPSS from the Excel format.

Demographic Characteristics

The respondents were asked to provide information about their gender, age, race, household annual income, percentage of degree program completed, and program delivery mode. Data indicated that 60.4 percent of the respondents were men and 32.1 percent were women. The remaining respondents, 7.4 percent, did not report their gender. The sample also included a total of 18.86 percent in the Baby Boomer Generational Demographic, 65.26 percent in Generation X. Another 15.86 percent that were not

within those ranges (primarily the Generation Demographic Millennial comprised this total with 14.07 percent).

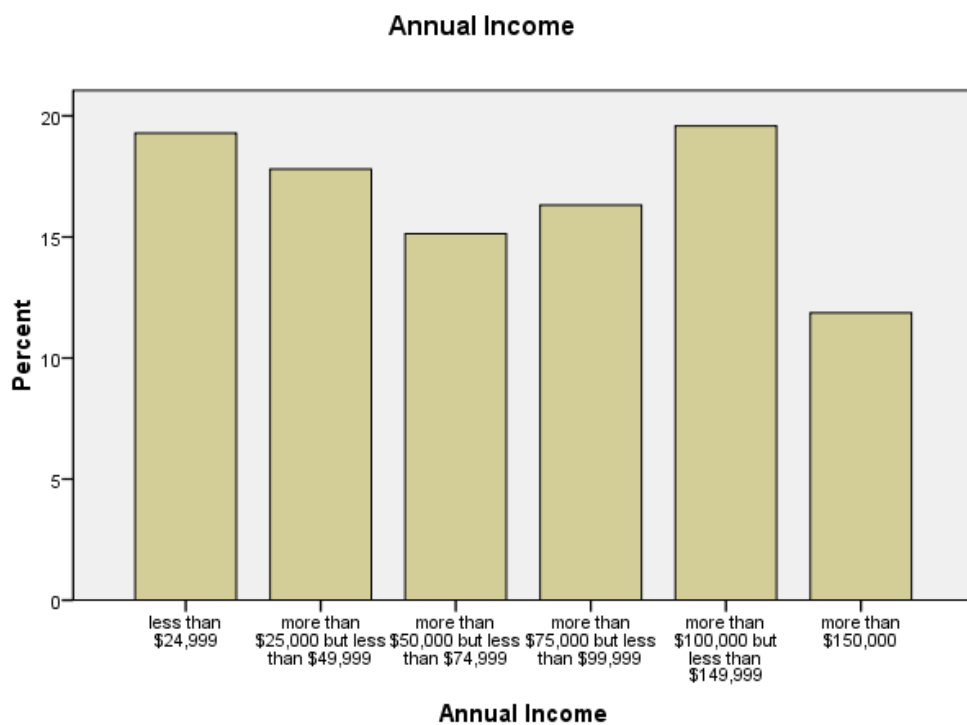
As shown in Table 4.1, the most recent NCES national data concerning the racial composition of all graduate students, (Planty, et. al, 2008, p. 147) and the racial composition of the research sample were very similar except for blacks.

Table 4.1 Reported Percent by Race of Sample and NCES 2008 Data

Race	Sample	NCES Data for Graduate Degrees 2005-2006
Black	2.4	9.9
American Indian or Alaskan Native	.9	.6
Asian/Pacific Islander	5.9	5.7
Hispanic or Latino	6.3	5.5
White	68.4	66.2
Nonresident Alien		12.1
Mixed Race/No Identification	10.1	
Missing	6.3	
Total Students	328	594,065

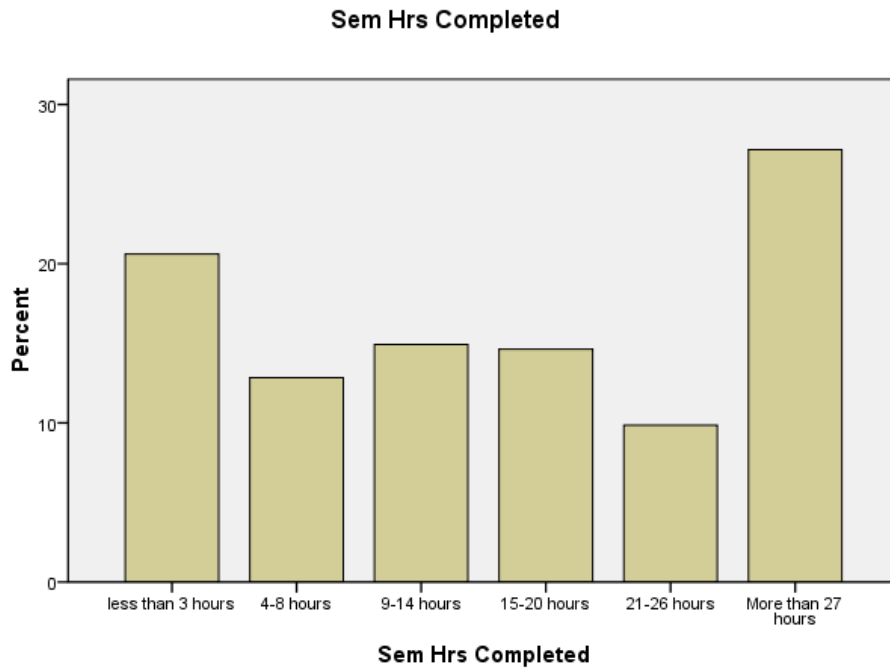
The annual household income was somewhat evenly dispersed across all reported categories. The six categories had self-reported percentages of 11 – 18 percent reported (see Figure 4.1).

Figure 4.1 Annual Household Income



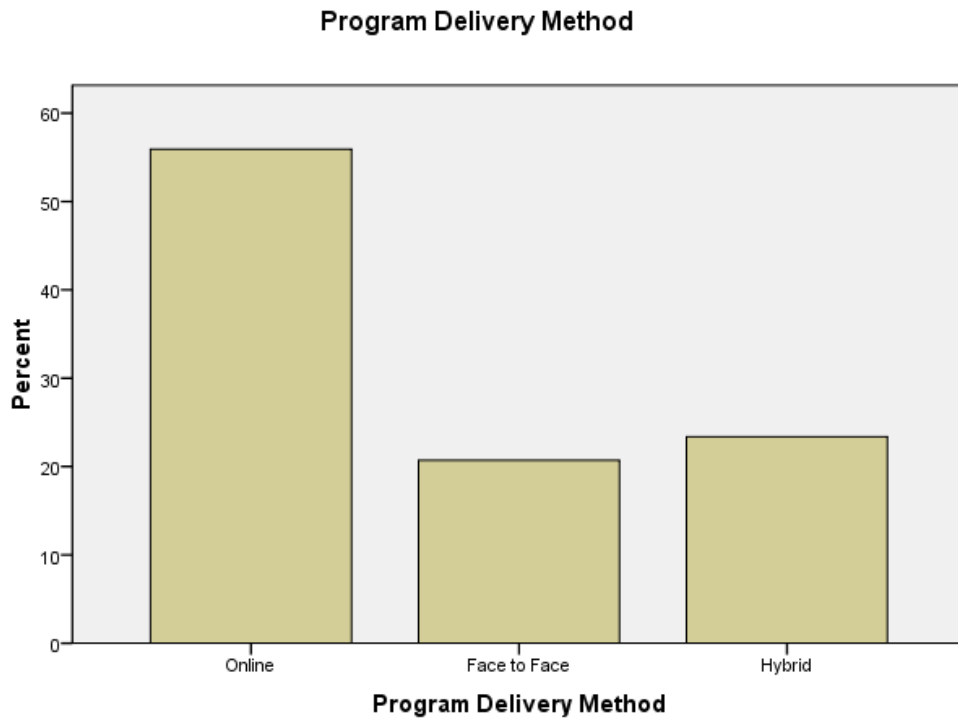
The number of semester hours completed was rather consistently dispersed across all reported categories. The six categories had percentages of 9 – 25 percent reported (see Figure 4.2).

Figure 4.2 Semester Hours Completed



Over half, 51.9 percent of the respondents were enrolled in online programs (see Figure 4.3). Of the remaining participants, 21.7 percent were participating in hybrid programs and 19.2 percent were students in face-to-face graduate degree programs. The reported program delivery mode represents an apparent increase in homeland security programs being offered in online and hybrid modes.

Figure 4.3 Program Delivery Modes



Dependent Variables

The dependent variables for this study were the three subscales (10 questions each for Enrollment, Continuing, and Completion) researcher designed survey instrument used to obtain data on student's reasons for enrollment, persistence, and completion of homeland security graduate degree programs. After completion of the data collection offering window the scales were first subjected to an internal test of reliability. It is suggested that "if you are using factor analysis to validate a questionnaire, it is useful to check the reliability of your scale" (Field, 2005, p. 666). A Cronbach's α was calculated on each of the three subscales using the Statistical Package of Social Sciences (SPSS) Graduate Pack 18.0. The first subscale (Enrollment) scored a .749 Cronbach's α . The second subscale (Continuing) scored a .775 Cronbach's α . The third subscale (Completion) scored a .736 Cronbach's α . Any score over a .7 is considered acceptable (Helms, et. al., 2006; Maijala, Luukkaala, & Astedt-Kurki, 2009; Maizura, Masilamani & Aris, 2009; Martinez, Stillerman, & Waldo, 2005).

The 30 variables that compose these three subscales were examined using an Exploratory Factor Analysis (EFA) in order to identify those items that cluster or are correlated with other items on the three subscales. Once the EFA was completed then a Multivariate Analysis of Variance (MANOVA) was conducted with these multiple dependent variables to determine any relationships between dependent and independent variables.

Exploratory Factor Analysis

The 30 Likert scale items that make up the three subscales for the graduate student survey instrument (Appendix A) were evaluated using Exploratory Factor Analysis (EFA). The software SPSS analyzed the 30 possible dependent variables in order to reduce the data for conducting a 2x3 two-way MANOVA. The product of the EFA would be a smaller number of dependent variables to conduct the MANOVA with and should increase the likelihood of discovering relationships between dependent and independent variables (Nokelainen, Tirri & Merenti-Valimaki, 2007; Schweigardt, Worrell, & Hale, 2001). EFA is a better choice than Confirmatory Factor Analysis (CFA) “which would be used to test theory” versus EFA which is “used to discover generate theory” (Henson & Roberts, 2006, p. 394).

Before conducting the EFA, there were several data screening procedures and statistics required to ensure adequacy of the process and increase the likelihood of the correct factors being selected at the end of the analysis. First, the reliability of factor analysis is very dependent upon sample size (Field, 2005). Several scholars state that a sample of 300 is the required amount to conduct this type of analysis (Comrey & Lee, 1992; Tabachnick & Fidell, 2007). Secondly, before the EFA is conducted, two statistical tests were conducted. The first is a Kaiser-Meyer-Olkin (KMO) statistic measure of sampling adequacy (Posserud, Lundervold, Steijnen, Verhoeven, & Morten, 2008). This statistic should be over .5 at a bare minimum (Field, 2005; Kaiser, 1974). A statistic value between .7 and .8 is good, .8 to .9 is great, and a value over .9 is superb (Field, 2005; Hutcheson & Sofroniou, 1999). The other statistic is the Bartlett’s Test of Sphericity. This statistic should be significant at the .05 level and tests whether the

correlation matrix is significantly different from an identity matrix (Leech, Barrett, & Morgan, 2008). The values are displayed in Table 4.2.

Table 4.2 KMO and Bartlett’s Test

Kaiser-Meyer-Olkin Measure of Sampling		.823
Bartlett’s Test of Sphericity	Approx. Chi-Square	5791.786
	df	435.000
	Sig.	.000*

*Computed using alpha = .05. Significance which means variables are correlated highly enough to provide reasonable basis for factor analysis.

There were a total of 8 components or factors found during the initial EFA using a direct oblimin rotation, Kaiser normalization, and come from a sample size greater than 300 (Boman, Curtis, Furlong, & Smith, 2006; Conway & Huffcutt, 2003; Field, 2005). All of the factors that achieved a greater than |.50| load are listed in Appendix E. The eight factors had four with positive values and four with negative values to influence the variance of the sample. All eight had a loading of greater than |.7| are considered good for acceptance (Kaiser, 1974; Houston, et. al., 2002; Mandigo, et. al., 2008). The top eight factors are listed in Table 4.3. These eight factors met a number of screening requirements before they could be identified and selected through EFA (Perez-Gonzalez, Garcia-Ros, & GoMez-Artiga, 2004; Henson & Roberts, 2006; Worley, Vassar, Wheeler, & Barnes, 2008).

All eight factors all had eigen values greater than 1.0 and provide a “meaningful solutions of greater than 50 percent of the variance” (Delaney, 2005, p. 157). They all

are visually consistent with the scree plot and consisted of 18 total items that supported the final conceptual framework and in fact explained 51.42 percent of the variance (Field, 2005; Henson & Roberts, 2006; Worley, Vassar, Wheeler, & Barnes, 2008).

Table 4.3 Exploratory Factor Analysis Pattern Matrix on Subscale (SS) Items

<i>Item</i>	<i>Factor^a</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
27. Accessibility to Faculty and Staff (COMP SS)		.748							
16. Potential Increase in Salary (CONT SS)			.938						
3. Reorganize My Work Life (ENROLL SS)				.790					
25. Peer Support (COMP SS)					-.776				
23. Family Member Support (COMP SS)						-.899			
28. Physical or Mental Disability (COMP SS)							-.809		
24. Work Life Support (COMP SS)								-.742	
29. Academic Success (COMP SS)									.870

ENROLL – Enrollment Subscale, CONT – Continuing Subscale, COMP – Completion Subscale

Extraction Modes: Principal Component Analysis

Rotation Modes: Oblimin Rotation and Kaiser Normalization

^a Rotation converged in 15 iterations.

Independent Variables

One of the independent variables for use in the 2 x 3 two-way MANOVA was the Generational Demographic (GD) for generational ranges of Baby Boomer and Generation X. The data collected on generational groups outside of these two ranges was omitted from future statistical processes. This allowed a pure independent data set for this variable. The other independent variable was program delivery mode (PDM) which includes online, hybrid, and face to face.

MANOVA

A MANOVA with a 2 x 3 array was conducted using the four highest factors from EFA (Reddy, Pfeiffer, & Files-Hall, 2007; Reiff, Hatzes, Bramel, Gibbon, 2001, Mulaik, 2010). Those four factors observed from EFA were: Accessibility to Faculty and Staff (AFS/COMP SS), Potential Increase in Salary (PIS/CONT SS), Reorganize My Work Life (RMWL/ENROLL SS) and Peer Support (PS/COMP SS). MANOVA “is used to assess the statistical significance of the effect of one or more independent variables on a set of two or more dependent variables” (Grimm & Yarnold, 2008, p. 245). A distinct advantage to use MANOVA over ANOVA is “when there are several dependent variables is protection against inflated Type I error due to multiple test of (likely) correlated dependent variables” (Tabachnick & Fidell, 2007, p. 244). The total $n = 364$ was reduced to 328 with the deletion of 36 missing cases via list wise mode after conducting a Missing Values Analysis with SPSS 18.0. Results of evaluation for assumptions of normality, linearity, multi-collinearity, and homogeneity of variance were satisfactory (Field, 2005; Henson, & Roberts, 2006; Leech, Barrett, & Morgan, 2008;

Tabachnick & Fidell, 2007; Wilkins & Matson, 2009). However, while testing the homogeneity of variance, the Reorganize My Work Life (RMWL/ENROLL SS) dependent variable scored significant ($>.05$) on the Levene's test. This indicated that the variances were significantly different and that the homogeneity of variance assumption was violated. The homogeneity of variance was run several more times in SPSS with different forms of transformation of the data set and the RMWL dependent variable continued to have a significant result on the Levene's test. The initial test for homogeneity of variance for the four dependent variables is displayed in Table 4.

Table 4.4 Test for Homogeneity of Variance for Four Dependent Variables

Variable	Based on	Levene Statistic	df1	df2	Sig
AFS (COMP SS)	Mean	.581	1	279	.447
	Median	.546	1	279	.461
	Median/Adjusted df	.546	1	267	.461
	Trimmed Mean	.573	1	279	.450
PIS (CONT SS)	Mean	2.336	1	279	.128
	Median	.421	1	279	.517
	Median/Adjusted df	.421	1	278	.517
	Trimmed Mean	2.141	1	279	.145
RMWL (ENROLL SS)	Mean	7.170	1	279	.008*
	Median	3.947	1	279	.048*
	Median/Adjusted df	3.947	1	273	.048*
	Trimmed Mean	6.496	1	279	.011*
PS (COMP SS)	Mean	.904	1	279	.343
	Median	.403	1	279	.526
	Median/Adjusted df	.403	1	277	.526
	Trimmed Mean	.931	1	279	.335

*Significance with Levene's test means that the variance of this variable are not significantly different, thus the homogeneity of variance assumption is violated.

The dependent variable RMWL based upon the Levene's test significance was dropped from the 2 x 3 two-way MANOVA. The three remaining dependent variables Accessibility to Faculty and Staff (AFS/COMP SS), Potential Increase in Salary (PIS/CONT SS), and Peer Support (PS/COMP SS) were used in the 2 x 3 two-way MANOVA along with the independent variable generational demographic (GD) and independent variable program delivery mode (PDM). The interaction was not significant, Wilks' $\Lambda = .987$, $F(6,548) = .59$, $p = .742$, partial eta squared effect size $\eta_p^2 = .006$. The main effect for Program Delivery Mode was significant, Wilks' $\Lambda = .939$, $F(6,548) = .59$, $p = .008$, partial eta squared effect size $\eta_p^2 = .031$. The main effect for generational demographic was not significant, Wilks' $\Lambda = .983$, $F(3,274) = 1.58$, $p = .197$, partial eta squared effect size $\eta_p^2 = .017$ (McDonald, Seifert, Lorenzet, Givens & Jaccard, 2002; Leech, Barrett, & Morgan, 2008; Phakiti, 2003; Trusty, Thompson, & Petrocelli, 2004; Weinberg & Abramowitz, 2007; Vacha-Haase & Thompson, 2004; Wilkins & Matson, 2009).

Partial eta squared η_p^2 as an effect size statistic that measures the proportions of explained variance (Levine & Hullett, 2002; McCoach & Siegle, 2009; Vacha-Haase & Thompson, 2004). This is especially true when an independent variable is a naturally occurring variable in both the sample and population (like generational demographic and program delivery mode) (Kline, 2004).

Follow-up tests of between subjects effects (Table 4.5) indicate that the effects of Program Delivery Mode on Peer Support (COMP) were significant with a small to medium effect size for η_p^2 (Cohen, 1988; Cohen, et. al., 2003; Huck, 2008; Kline, 2004, 2009).

Table 4.5 Test Between Subjects to Determine Effects

Effects of Program Delivery Mode (PDM) on and Potential Increase in Salary (PIS) and Peer Support (PS)

IV	DV	<i>df</i>	<i>F</i>	η_p^2	<i>p</i>
Program Delivery Mode	PIS	2	.583	.004	.559
	PS	2	6.63	.046	.002*
GD x PDM	PIS	2	1.16	.008	.316
	PS	2	.20	.001	.822

*Significant at .05 level.

Follow Up MANOVA

Based upon the exploratory nature of this research study and the sample size obtained a number of other MANOVA were conducted. These were conducted to observe or rule out any relationships that existed with other independent variables such as race, gender, annual income, and hours of graduate school completed. Through the course of these MANOVA a number of combinations were tried. However, none passed both the Box's and Levene's statistic tests and thus did not meet satisfactorily the four requirements of assumptions for MANOVA of normality, linearity, multi-collinearity, and homogeneity of variance (Field, 2005; Henson, & Roberts, 2006; Leech, Barrett, & Morgan, 2008; Tabachnick & Fidell, 2007; Wilkins & Matson, 2009).

A final MANOVA was conducted of the four negative factors found in the initial EFA. These factors were Peer Support (PS/COMP), Family Member Support (FMS/COMP), Physical or Mental Disability (PMD/COMP), and Work Life Support (WLS/COMP). All of these factors are from the completion subscale of the survey instrument. They all passed the Box's and Levene's test. The interaction was

significant, Wilks' $\Lambda = .923$, $F(8,546) = 2.2$, $p = .026$, partial eta squared effect size $\eta_p^2 = .031$. The main effect for Program Delivery Mode was significant, Wilks' $\Lambda = .923$, $F(8,546) = 2.8$, $p = .005$, partial eta squared effect size $\eta_p^2 = .031$. The main effect for generational demographic was not significant, Wilks' $\Lambda = .970$, $F(4,273) = 2.146$, $p = .075$, partial eta squared effect size $\eta_p^2 = .030$ (McDonald, Seifert, Lorenzet, Givens & Jaccard, 2002; Leech, Barrett, & Morgan, 2008; Phakiti, 2003; Trusty, Thompson, & Petrocelli, 2004; Weinberg & Abramowitz, 2007; Vacha-Haase & Thompson, 2004; Wilkins & Matson, 2009).

Follow-up tests of between subjects effects (Table 4.6) indicate that the effects of Program Delivery Mode on Peer Support (COMP) and Work Life Support (COMP) were significant with a small to medium effect size for η_p^2 (Cohen, 1988; Cohen, et. al., 2003; Huck, 2008; Kline, 2004, 2009). The tests of between subjects' effects also found the effects of the interaction of Generational Demographic and Program Delivery Method to Work Life Support (COMP) was significant with a small to medium effect size for η_p^2 .

Table 4.6 Test Between Subjects to Determine Effects

Effects of Program Delivery Mode (PDM) on Peer Support (PS) and Work Life Support (WLS) and Interaction effects on both

IV	DV	df	F	η_p^2	p
Program Delivery Mode	PS	2	6.63	.046	.002*
	WLS	2	5.98	.042	.003*
GD x PDM	PS	2	.196	.001	.822
	WLS	2	7.31	.050	.001*

*Significant at .05 level.

Summary

This research study developed, piloted, and implemented an exploratory graduate student survey containing three subscales intended to measure self-reported measures of student reasons for enrolling, persisting, and completing homeland security graduate degree programs. The subscales measures withstood statistical scrutiny and included extensive processes for content and construct validity, as well as acceptable internal consistency calculations of reliability.

The initial data analysis examined the sample size through the KMO statistics and Barlett's Test of Sphericity and concluded that the study sample size was adequate and the variables were correlated enough to warrant conducting a factor analysis. During the Exploratory Factor Analysis (EFA) it was established that eight components had significant loadings and identified four factors: Accessibility to Faculty and Staff (AFS/COMP SS), Potential Increase in Salary (PIS/CONT SS), Reorganize My Work Life (RMWL/ENROLL SS) and Peer Support (PS/COMP SS) that provided for over 51 percent of the total variance during that analysis. Those four factors (Accessibility to Faculty and Staff, Potential Increase in Salary, Reorganize my Work Life, and Peer Support) were used in a MANOVA to determine relationships between dependent and independent variables.

During the data screening phases of the MANOVA analysis it was determined that the Reorganize My Work Life (RMWL) tested significantly with the Levene's test. This was an indication that this variable violated the assumption of homogeneity of variance. Based upon this assumption violation, this variable was deleted before the 2 x 3 two-way MANOVA analysis was conducted. The MANOVA analysis established that

a main effect (Wilks' Λ) on Program Delivery Mode was significant. Follow-up ANOVAs established that a relationship exists between the Program Delivery Mode and Peer Support (COMP) variable with a small to medium effect size η_p^2 .

CHAPTER 5 - Discussion

Introduction

This chapter provides a summary of the study design, the research hypotheses and a discussion of the findings related to the research hypotheses. Also included are recommendations for further research and implications of the study.

Summary of the Study Design

The relationships between self-reported factors of enrollment, persistence, and completion and generation demographic and program delivery mode of homeland security graduate programs were investigated. The factors were the dependant variables for the study and were examined through the use of a researcher-designed survey instrument. The independent variables included the Generation Demographic (Baby Boomer versus Generation X) and the Program Delivery Mode (online, hybrid, and face to face).

Discussion of Findings

Adult students pursuing graduate degrees in the field of homeland security were the focus of this study. This research has a number of benefits for future program development, marketing of programs to students, and targeting those programs via program delivery modes. Initial assumptions made before conducting this research included some on the reliance and use of an automated survey software system to deliver the instrument to the student respondents. Students were enrolled in an institution of

higher education and would possess an email account and have access to the Internet. Respondents were required to use school email account for receiving the information from their institution and guidance from their graduate programs counselor, and instructions from their fall term instructors or program directors. The researcher could obtain data from many institutions quicker and more accurately. The research could continuously monitor near real time responses rates. This allowed for targeted communications to program directors to help increase response rates. It greatly reduced manpower and resources when the need to send reminders to all participating institutions. The researcher could continuously check for missing cases of data and make suggested changes to every corrections or suggestion through program directors if necessary. The researcher could increase the offering time period by one week to increase the overall response rate. Another observation is that many of the responses were collected during the weekends. A total of 45 percent of the sample were collected on Friday, Saturday, and Sunday.

Research Questions

What are the reasons adults enroll in a graduate homeland security degree program? Once enrolled, what are the reasons that they would persist in the graduate homeland security degree program? If they persist, what are the reasons that adults complete a graduate degree within the emerging field of study of Homeland security?

One of the most significant findings of this study was the development, piloting, and use of a graduate student survey instrument. Through analysis of the sample (n = 328) and Exploratory Factor Analysis (EFA) a number of reasons were identified by the respondents as factors why adults were enrolling, persisting, and completing graduate

homeland security degree programs. Upon completion of EFA a total of eight factors: Accessibility to Faculty and Staff, Potential Increase in Salary, Reorganize My Work Life, Peer Support, Family Member Support, Physical or Mental Disability, Work Life Support, and Academic Success were observed accounting for variance within the three subscale graduate student survey. Four of the factors were positive in value and four were negative in observed value. A total of four factors (Accessibility to Faculty and Staff, Potential Increase in Salary, Reorganize My Work Life, Peer Support) accounted for 51.2 percent of the total observed variance within the Exploratory Factor Analysis.

Based upon the analysis of the survey sample and comparisons of the sample to U.S. totals for graduate student completion, the reasons identified in this study should be replicable in other graduate student research studies. It is also possible that the results indicate that many of the reasons that adults enroll are the same as undergraduates but the persistence and completion factors are different in adults. Adults once enrolled in graduate programs like homeland security seems to be likely they will persist and complete. The observed results would also seem to show program directors in homeland security graduate degree programs that Reorganize My Work Life is a factor that needs consideration for enrolling new students. Also in Appendix E the other factors within enrollment with the highest loadings that may be considered by program directors for marketing are Increase in Salary and Possibility for Future Promotion within the enrollment subscale.

H₀: There is no relationship between the reasons adults enroll in graduate homeland security degree programs and their generational demographic that varies by program delivery mode.

Previously, researchers have conducted studies on why undergraduates and community college students enroll or participate in higher education programs (Boshier & Collins, 1985; Houle, 1961; Blunt & Yang, 2002). However, the reasons graduate students or students in homeland security programs participate are virtually nonexistent. Determining the reasons that graduate students and students in graduate homeland security degree programs is important in marketing new programs, understanding adult needs and desires, and providing access to institutions resources.

The reasons that adults enroll in graduate homeland security degree programs were established through the Exploratory Factor Analysis (EFA). A total of eight of the 30 items were observed. A total four factors Accessibility to Faculty and Staff, Potential Increase in Salary, Reorganize My Work Life, Peer Support were reported responsible for over 51 percent of the total variance. There were eight survey items from the Enrollment subscale of the survey instrument within these four factors (See Appendix E). There are only a total of 10 items in each of the three subscales. Having eight out ten in the total that provided for 51 percent of the total variance is substantial. It would seem that the observed results accounts for most of the enrollment scale reasons within the four factors produced with Exploratory Factor Analysis.

H₀: There is no relationship between the persistence of Baby Boomer generational demographic in homeland security graduate degree programs and Generation X generational demographic with regards to program delivery mode.

The second subscale of the survey instrument gathered data on self-reported perceptions identifying students' reasons for persisting in graduate homeland security

programs. The subscale had ten items total. A total of eight of those items were identified during the EFA of the thirty item survey subscales.

Persistence is important to undergraduate and community college students (Astin, 1984; Nora, 1987; Pascarella & Terenzini, 1980, 2005). Some of the same factors were used to develop the survey instrument used in this study. It is important to understand the relationship established in this study with Program Delivery Mode and Potential for Increase in Salary. Adults do have a need and desire to better themselves and increasing ones salary based upon persisting in a homeland security graduate degree program seems to be evident with the study respondents. There were also three survey items under to factor Accessibility to Faculty and Staff that were observed as important. These continuation or persistence reasons all seem to reflect that Interactions with Faculty and Staff, Positive Classroom Experiences, and Access to Institutional Resources are important to adults (See Appendix E).

H₀: There is no relationship between the reasons that Baby Boomer generational demographic complete homeland security graduate degree programs and Generation X generational demographic with regards to program delivery mode.

In this study, data on the reasons adults complete homeland security graduate degree programs were collected. These data were subjected to an EFA that determined that one of the four primary factors responsible for total variance was three factors concerning Peer Support. This factor was also negative instead of positive in terms of correlation. The other three factors positively influenced the overall variance.

Once this factor was identified through EFA, a MANOVA was conducted. This factor was not established as significant through the MANOVA but the tests of between

subjects effects determined significance and a small effect size of Peer Support to Program Delivery Mode. Peer Support influences across all three program delivery modes. This seems to suggest that no matter the Program Delivery Mode, Peer Support is not important in completion of graduate homeland security programs.

An exploratory MANOVA was conducted with the four negative values from the EFA. This MANOVA found significance and through the tests of between subject's effects Peer Support (COMP), Work Life Support (COMP), and the interaction between Generational Demographic and Program Delivery Mode was significant with Work Life Support (COMP). This demonstrates that these negative factors are significant with regards to completion in homeland security graduate degree programs and Generational Demographic and Program Delivery Mode.

Recommendations for Further Research

Based upon the results of this study, the following areas for further research are offered:

1. Little or no research exists on the reasons graduate students enroll, persist, and complete any degree program. The survey instrument developed as a result of this study could possibly be a starting point in conducting follow-on research on graduate students. Research in this area must continue and expand to other graduate education disciplines. Perhaps there should be some focus to begin longitudinal research studies for various graduate students. A bigger sample that reaches across multiple disciplines would be a good first step in developing such research. The barriers to enrolling, continuing, and completing graduate homeland security programs (See survey item on page

95) was collected but not reported. There were too many missing cases and too much non-response bias to report the results. This is a possible topic for further research and investigation.

2. The participants in this study were a sample of graduate students in homeland security degree programs with a relationship to the Naval Post Graduate School. In the future other homeland security programs and even graduate students in general could be researched to identify factors that influence their enrollment, persistence, and completion in degree programs. Questions still remain about whether this instrument is viable across all graduate degree programs and if the results of this study can be duplicated.
3. Research is needed into the relationships between the reasons undergraduate and community college students enroll, persist, and complete their programs and graduate students. This research study is based on *a priori* methodology from the previous research conducted with undergraduate students and community college students. If more research is conducted with graduate students in the areas of enrollment, persistence, and completion then the body of research on undergraduates must be examined.

Implications

Institutions of higher education are striving to keep enrollments in graduate programs during this time of recession. If administrators understand the reasons that graduate students enroll, persist, and complete homeland security degree programs then the use of limited recruiting and counseling resources across other disciplines could be more efficiently managed. Graduate programs in homeland security continue to be

developed and implemented in a number of new institutions. If those institutions understand the reasons why students will enroll in their programs and eventually complete them, then decisions on curriculum development, targeted generational demographic, and selection of program delivery mode would be easier. This study is the first step in the acquisition of data for program planning, program development, needs analysis, leveraging technology, and applying resources to meet the needs of students. There is very little empirical data on the homeland security as an emerging field of study at the graduate or undergraduate level of higher education.

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Appendix A - Survey Instrument

AXIO SURVEY

Graduate Student Survey

Survey Description:

Thank you for taking the time to participate in this survey. You were specifically selected to participate in this study based upon your attendance in a graduate degree program. Taking part in this survey is your opportunity to voice your opinion about your experiences while enrolled as a graduate student. The data you provide will be used to understand adult participation in graduate degree programs. The questionnaire takes about 10 minutes to complete.

Opening Instructions:

This study is of a research nature and offers no direct benefit to me as a participant to include monetary compensation. There are no known risks or discomforts associated with this study. I understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty or any adverse consequence to myself.

Next 

AXIO SURVEY

Graduate Student Survey

Page 1

Question 1

Please mark the appropriate response to the following statements concerning your experiences when enrolling in your current graduate program.

1 - Strongly Disagree | 2 - Disagree | 3 - Slightly Disagree
4 - Neutral | 5 - Slightly Agree | 6 - Agree | 7 - Strongly Agree

	1	2	3	4	5	6	7
1.1 The cost of classes was a factor when I decided to enroll in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2 I had to reorganize my family life when I decided to enroll in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.3 I had to reorganize my work life when I decided to enroll in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.4 I had to negotiate with family members when I decided to enroll in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.5 I had to curtail social activities when I decided to enroll in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.6 Family member support was a factor when I decided to enroll in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.7 Support from my peers was a factor when I decided to enroll in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.8 The possibility of a future promotion was a factor when I decided to enroll in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.9 Faculty support was a factor when I decided to enroll in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.10 Increased salary was a factor when I decided to enroll in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

AXIO SURVEY

Graduate Student Survey

Page 2

Question 2

Please mark the appropriate response to the following statements concerning your experiences continuing in your current graduate program.

1 - Strongly Disagree | 2 - Disagree | 3 - Slightly Disagree
4 - Neutral | 5 - Slightly Agree | 6 - Agree | 7 - Strongly Agree

	1	2	3	4	5	6	7
2.1 Support from family members is a factor for me to continue in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2 Support from my work life is a factor for me to continue in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3 Positive interactions with faculty and staff are important for me to continue in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.4 Student peer support is a factor for me to continue in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.5 Success in my studies is a factor for me to continue in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.6 Potential increase in salary is a factor for me to continue in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.7 The possibility of a future promotion is a factor for me to continue in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.8 I understand that there will be obstacles in my path as I continue in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.9 Access to institutional resources such as advising and counseling available to me are factors for me to continue in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.10 Positive experiences outside the classroom associated with my higher education institution are a factor for me to continue in my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Graduate Student Survey

Page 3

Question 3

Please mark the appropriate response to the following statements concerning the completion of your current graduate program.

1 - Strongly Disagree | 2 - Disagree | 3 - Slightly Disagree
4 - Neutral | 5 - Slightly Agree | 6 - Agree | 7 - Strongly Agree

	1	2	3	4	5	6	7
3.1 Having enough time to devote to my studies is a factor for me to complete my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2 I intend to continue and finish my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3 Support from family members is a factor for me to complete my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4 Support from my work life is a factor for me to complete my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.5 Student peer support is a factor for me to complete my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.6 Potential increase in salary is a factor for me to complete my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.7 Accessibility to faculty and staff, meaning my ability to communicate with them, is a factor for me to complete my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.8 I have a personal physical or mental disability that is a factor for me in completing my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.9 My academic success is a factor for me to complete my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.10 Accessibility to material resources (books, study notes, slides, etc.) is a factor for me to complete my current graduate program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

AXIO SURVEY

Graduate Student Survey

Page 4

Question 4

Please type in your response to the following question.

List any barriers that have prevented you from enrolling in, continuing, or completing your program of studies. Please explain strategies that you used to overcome these barriers?

Characters Remaining:

Next

AXIO SURVEY

Graduate Student Survey

Page 5

Question 5

Please type in the year that you were born.

Characters Remaining:

200

AXIO SURVEY

Graduate Student Survey

Page 6

Question 6

What is the program delivery mode for your graduate classes? Mark the appropriate response.

- Over 80% of the total or 24 semester hours or more in my degree program is offered online
- Less than 30% of the total or 9 semester hours or less in my degree program is offered online
- My program has both online classes and face to face classes (more than 30% or 9 semester hours face to face and not more than 80% or 24 semester hours is online)

Next

Graduate Student Survey

Page 7

Question 7

Please select your race.

- Black
- American Indian or Alaskan Native
- Native Hawaiian or Other Pacific Islander
- Asian
- Hispanic or Latino
- White
- If you do not wish to identify your race choose this selection
- If you identify yourself as more than one race, please note those races

Further comments about your response:

Next

AXIO SURVEY

Graduate Student Survey

Page 8

Question 8

Please mark your gender.

- Female
- Male

Next 

AXIO SURVEY

Graduate Student Survey

Page 9

Question 9

Please note your total annual household income based upon the ranges below.

- Less than \$24,999
- More than \$25,000 but less than \$49,999
- More than \$50,000 but less than \$74,999
- More than \$75,000 but less than \$99,999
- More than \$100,000 but less than \$149,999
- More than \$150,000

Next 

AXIO SURVEY

Graduate Student Survey

Page 10

Question 10

Please note the number of semester hours you have completed within this graduate program.

- Less than 3 hours
 - 4-8 hours
 - 9-14 hours
 - 15-20 hours
 - 21-26 hours
 - 27 hour or more
-

Next 

AXIO SURVEY

Graduate Student Survey

Page 11

Question 11

Please note the appropriate response for this statement. My graduate degree program has a total of ____ required semester hours for successful completion.

- 0-30 total hours
 - 31-33 total hours
 - 34-36 total hours
 - 37 or more total hours
-

Next

AXIO SURVEY

Graduate Student Survey

Page 12

Question 12

What percentage of your total degree program semester hours have you completed?

- 0-29%
- 30-49%
- 50-74%
- 75-100%

Done

AXIO SURVEY

Graduate Student Survey

Closing Message

Thank you for participating in this survey.

*Your survey has been successfully submitted.
Please close your browser to exit.*

Appendix B - Homeland Security Program List

Institution	Degree Offered
American Public University	MA in Homeland Security
Anna Maria College	MS in Emergency Management
Arkansas Tech University	MS Emergency Management and Homeland Security
Benedictine University	Masters in Public Health with a Concentration in Disaster Mgt
California University of Pennsylvania	Masters in Legal Studies: Homeland Security
Chaminade University	Homeland Security Master of Criminal Justice Admin Track
Drexel University	MS Emergency and Public Safety Services
Eastern Kentucky University Justice and Safety Center	Master's in Safety, Security and Emergency Management
Fairleigh Dickinson University	MS in Homeland Security
Florida Atlantic University	MBA in Crisis and Emergency Management
George Mason University	MPA Concentration in Emergency Mgt and HLS
George Mason University	MS in Biodefense
Georgetown University	MA Security Studies
Henley-Putnam University	MS in Terrorism and Counterterrorism Studies
Henley-Putnam University	MS in Intelligence Management
Henley-Putnam University	MS in Management of Personal Protection
Indiana University of Pennsylvania	MS in Science for Disaster Response
Jacksonville State University	MS in Emergency Management
Jacksonville State University	MPA with concentration in Emergency Management
Johns Hopkins University	(Data missing from website)
Long Island University	MS in Homeland Security Management
Louisiana State University	MS in Liberal Arts with a Minor in Disaster Management
Lynn University	MS in Emergency Planning and Management
Massachusetts Maritime Academy	MS in Emergency Management
Metropolitan College of New York	MPA in Emergency and Disaster Management
Millersville University	MS in Emergency Management
National Graduate School	MS in Homeland Security
National University	MS in Homeland Security and Safety Engineering
Naval Post Graduate School	Homeland Security Master of Arts Program
North Dakota State University	MA in Emergency Management
Northcentral University	MS in Business Administration with Homeland Security Specialty
Norwich University	MS in Business Continuity Management
Parkville University	MPA with concentration in Disaster & Emergency Management
Philadelphia University	MS in Disaster Medicine and Management
Purdue University	Masters with Specialization in Homeland Security
Richard Stockton College of New Jersey	MA in Criminal Justice with a Homeland Security Track
Rochester Institute of Technology	(Attempted to contact about program)
Saint Joseph's University	MS in Public Safety Management

Saint Joseph's University	MS Public Safety Management with a concentration in Law Enforcement
Saint Joseph's University	MS in Environmental Protection and Safety Management
Salve Regina University	M.S. in Administration of Justice: Concentration in Justice and Homeland Security
San Diego State University	Master of Science in Public Health - Specialization in Global Emergency Preparedness and Response; Interdisciplinary Master's Degree in Homeland Security
Siena Heights University	M.A. in Homeland Security
Siena Heights University	M.A. in Emergency Management
Siena Heights University	M.A. in Nuclear Power
Southwestern College	Master of Science in Security Administration
Texas A&M University	Master's Degree Program in Homeland Security
Towson University	Master In Homeland Security Management Degree (M.S.)
University of Colorado at Colorado Springs	Masters Degree Doctoral Studies
University of Connecticut	Master of Professional Studies Degree in Homeland Security Leadership
University of Denver	M.A in Homeland Security
University of Findlay	Masters in Environmental, Safety and Health Management - School of Environmental and Emergency Management
University of Nevada, Las Vegas	MS Crisis and Emergency Management
University of Oklahoma Health Sciences Center	MPH Public Health Preparedness & Terrorism response
University of Richmond (VA)	Master of Disaster Science; Bachelor of Applied Studies with Minors in Emergency Management, Business Continuity, Homeland Defense
University of Southern California	Master of Science in System Safety and Security
University of Tennessee	Homeland Security Concentration for M.S.N
University of Washington	Masters in Strategic Planning for Critical Infrastructures - Leadership Program for Homeland Security
Upper Iowa University	Master of Public Administration with Homeland Security Emphasis
Virginia Commonwealth University	Master of Arts in Homeland Security and Emergency Preparedness
Walden University	Online Master of Public Administration with a Specialization in Homeland Security Policy and Coordination
Webster University	Master of Arts in Business and Organizational Security Management
Wilmington College	Master of Science Administration of Justice; Concentrations in Homeland Security

Appendix C - Mailed Contact Letter

Dear Colleague:

A few weeks from now you will receive a request to support an important research project being conducted by O. Shawn Cupp. Shawn is an Associate Professor in the Department of Logistics and Resource Operations which is part of the U.S. Army Command and General Staff College (CGSC) located at Fort Leavenworth, Kansas. Shawn is also a Doctoral Candidate in the Adult and Continuing Education, Department of Educational Leadership in the College of Education within the Kansas State University (KSU).

The research study concerns the reasons that adults enroll, persist, and complete graduate degree programs within Homeland Security.

I am writing in advance because many of you will be busy very shortly with the business of enrolling and advising your students for the upcoming fall semester. However, this study is very important to the emerging field of Homeland Security.

Shawn will be contacting you this summer for your assistance in this research study. He will provide you all the details for the survey instrument distribution and data collection. The data collection will take place with students enrolled in your programs during the fall 2009 semester. We in HSDECA hope that you will fully participate in this initial, fundamental, adult education-centered research to help benefit our emerging field.

Thank you and best wishes for your program's continued success.

Lydia M. Staiano, PhD
Executive Director
Homeland Security and Defense Education Consortium Association (HSDECA)


Appendix D - Internal Review Board Approval for Human Subjects



University Research
Compliance Office
203 Fairchild Hall
Lower Mezzanine
Manhattan, KS 66506 -1103
785-532-3224
Fax: 785-532-3278
<http://urco.ksu.edu>

TO: W. Franklin Spikes
Educational Leadership
351 Bluemont

Proposal Number: 5133

FROM: Rick Scheidt, Chair 
Committee on Research Involving Human Subjects

DATE: June 29, 2009

RE: Proposal Entitled, "An Exploratory Study of the Reasons Adult Students Attend, Persist, and Complete Graduate Homeland Security Programs"

The Committee on Research Involving Human Subjects / Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is EXEMPT from further IRB review. This exemption applies only to the proposal - as written - and currently on file with the IRB. Any change potentially affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Based upon information provided to the IRB, this activity is exempt under the criteria set forth in the Federal Policy for the Protection of Human Subjects, 45 CFR §46.101, paragraph b, category: 2, subsection: i.

Certain research is exempt from the requirements of HHS/OHRP regulations. A determination that research is exempt does not imply that investigators have no ethical responsibilities to subjects in such research; it means only that the regulatory requirements related to IRB review, informed consent, and assurance of compliance do not apply to the research.

Any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

Appendix E - Pattern Matrix of Survey Items

<i>Exploratory Factor Analysis Pattern Matrix^a on Subscale (SS) Items^b</i>									
<i>Item</i>	<i>Factor</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
27. Accessibility to Faculty and Staff (COMP SS)		.748							
13. Interactions with faculty and staff (CONT SS)		.710							
20. Positive classroom experiences (CONT SS)		.658							
19. Access to institutional resources (CONT SS)		.653							
9. Faculty support (ENROLL SS)		.528							
16. Potential Increase in Salary (CONT SS)			.938						
26. Potential increase in salary (CONT SS)			.923						
17. Possible future promotion (CONT SS)			.920						
10. Increased salary (ENROLL SS)			.874						
8. Possibility of future promotion (ENROLL SS)			.805						
3. Reorganize My Work Life (ENROLL SS)				.790					
2. Reorganize my family life (ENROLL SS)				.768					
5. Curtail social activities (ENROLL SS)				.756					
4. Negotiate with family (ENROLL SS)				.658					
25. Peer Support (COMP SS)						-.776			
14. Peer support (CONT SS)						-.741			
7. Peer support (ENROLL SS)						-.501			
23. Family Member Support (COMP SS)						-.899			
11. Family Member Support (CONT SS)						-.892			
6. Family Member Support (ENROLL SS)						-.860			
28. Physical or Mental Disability (COMP SS)						-.809			
22. Intend to Finish (COMP SS)						-.710			
24. Work Life Support (COMP SS)								-.742	
12. Work Life Support (CONT SS)								-.733	
1. Cost of Classes (ENROLL SS)								-.528	
29. Academic Success (COMP SS)									.870
15. Success in Studies (CONT SS)									.753
30. Accessibility to Material Resources (COMP SS)									.621

ENROLL – Enrollment Subscale, CONT – Continuing Subscale, COMP – Completion Subscale, Extraction Modes: Principal Component Analysis, Rotation Modes: Oblimin Rotation and Kaiser Normalization

^a *Rotation converged in 15 iterations*

^b *Pattern Matrix only shows subscale items with a load of >|.50|*