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THE DETERMINANTS OF
TRANSPORTATION OFFICERS'
PURSUIT OF THE AFIT LOGISTICS DEGREE

THESIS

JAMES R. HALL
Captain, USAF

AFIT/GLM/LSR/89S-29

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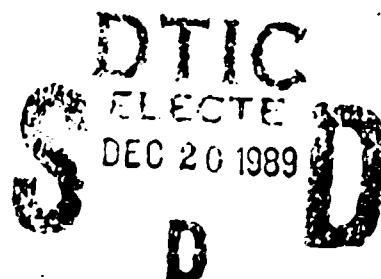
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THE DETERMINANTS OF TRANSPORTATION OFFICERS' PURSUIT
OF THE AFIT LOGISTICS DEGREE

THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Logistics Management

James R. Hall, B.S.

Captain, USAF

September 1989

Approved for public release; distribution unlimited

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I would also like to acknowledge the contributions of my wife, Alane, who endured the exhausting effects of sleep depravation created by my endless "night patrols" battling the computer during the Great Thesis Wars. Alane's love, understanding, and encouragement provided me the sustenance to vanquish the thesis foe.

Finally, I dedicate this thesis to my son, Justin, a true "AFIT baby," and my father John C. Hall Jr. My father instilled in me a desire to seek enlightenment, and now I must perpetuate that legacy and cultivate a thirst for knowledge in my progeny. The drive to emulate the character of my father as well as to set the example for my son inspired the completion of this project.

The leader of the band is tired and his eyes are growing old, but his blood runs through my instrument and his song is in my soul. My life has been a poor attempt to imitate the man. I am a living legacy to the leader of the band.

James R. Hall!

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Abstract

This study identified those factors that motivate civilians, Air Force officers, and transportation officers to pursue graduate education. The research investigated the correlation between the causal motivators towards graduate pursuit and the problem of not filling all of the Air Force Institute of Technology (AFIT) Graduate Transportation Management (GTM) student billets.

Three primary causal factors, each comprised of numerous secondary variables, were identified as influencing graduate attendance: 1. A student's background characteristics, e.g., social economic status, aptitude, high-school curriculum and educational track placement; 2. A student's undergraduate experiences, e.g., integration with the institution, both academic and socially; and 3. A "square filling" necessity for career advancement. This study presented a comprehensive model of those factors impacting the graduate enrollment decision.

The 99 transportation officer telephone interview respondents were grouped into three survey stratum:

1. Potential AFIT GTM students (company grade officers)
2. GTM candidates, current GTM students, and GTM alumni
3. Senior transportation officers, squadron commanders, and supervisors.

1. Potential GTM candidates are aware of the AFIT opportunity, but 43% of the successful AFIT GTM applicants stated that they believed potential students were unaware of the application procedures.

2. Potential GTM candidates acquire their information and perceptions about AFIT primarily through alumni and word of mouth: **91% stated that their commander or supervisor had not discussed AFIT with them.**
3. Senior transporters and squadron commanders indicated a positive perception of AFIT, and **88% stated that they brief their subordinates about the AFIT opportunity.**
4. Potential GTM candidates perceived the course work at AFIT to be more academically demanding and the course load to be heavier than at a civilian institution.

A combination of the significant findings was suggested as the cause of the GTM student shortage.

W. J. P. C. S. R. (A.O.)

THE DETERMINANTS OF TRANSPORTATION OFFICERS' PURSUIT OF THE AFIT LOGISTICS DEGREE

I. INTRODUCTION

General Issue

The Air Force Directorate of Transportation, HQ USAF/LET, sponsored thesis research about the Air Force Institute of Technology's (AFIT) Graduate Transportation Management (GTM) Option. AFIT established the GTM option in 1981, and has since been unable to fill all of the allocated student positions. If the GTM program does not attract the required number of students, LET's funded AFIT billets will be reduced.

Background

In June 1988, Lt. Col Jeff Link, HQ USAF/LETX, requested information about AFIT's GTM option managed by Lt. Col Robert Trempe. LET had been tasked by a congressional budget committee to justify the requirement for ten funded AFIT transportation student billets (19). Lt. Col Link questioned why sufficient numbers of transportation officers were not attending AFIT. Lt. Col Link also expressed his concern about LET surrendering the vacant GTM allocations to AFIT for dispersal to the other logistics school options. According to Lt. Col Link, "Not ensuring that as many transportation officers as possible acquire the

skills and knowledge provided at AFIT is detrimental to the future leadership of the transportation career field" (8).

This research effort was the first investigation of the GTM student procurement problem, and it identified those conditions which were causing the student shortfall. Lt. Col Robert Trempe, AFIT GTM option manager, revealed that the historical data on GTM class sizes did not indicate a trend of fewer transporters attending AFIT, but reflected a consistent pattern of two or three class slots vacant each year. Lt. Col Trempe suggested that the student procurement problem might be the result of a combination of phenomena at the three stages of the AFIT attendance process. Lt. Col Trempe stated,

The directors of the GTM option, LET, and the folks at the Air Force Manpower and Personnel Center (HQ/AFMPC) may not be getting the word about AFIT out to eligible transporters. Transportation officer assignments personnel must subordinate AFIT requirements to real world mission requirements and pull qualified GTM prospects for critical field assignments. Finally, those transporters available in the assignment rotation window are not actively enhancing their AFIT eligibility. Many officers who are otherwise available for AFIT attendance have not taken the Graduate Management Admissions Test (GMAT) or forwarded their transcripts to ensure that they are academically qualified for admittance. (32)

Lt. Col Trempe suggested questioning Lt. Col Thomas Maxson, Chief of Transportation Officer Assignments, about his perceptions of the problem. Lt. Col Maxson indicated that the AFIT student shortage issue could be resolved by the mandatory selection of qualified non-volunteers; however, he

had chosen not to advocate that policy during his tour at HQ/AFMPC. Lt. Col Maxson supported Lt. Col Trempe's reference to the priority of field assignments. He added that in his experience, the main contributor to the GTM student shortage was available officers not taking the necessary steps to insure their academic eligibility, i.e., taking the Graduate Management Admissions Test (GMAT), forwarding transcripts, taking additional courses indicated by the admissions officers, and applying for AFIT admission (23).

Specific Problem

The Air Force Institute of Technology has been unable to fill all of the allocated Graduate Transportation Management student billets.

Investigative Questions

Five investigative questions approved by USAF/LET were posed to answer the GTM student procurement problem.

1. What factors, i.e., reasons, values, conditions, and beliefs motivate individuals to pursue graduate education?
2. What factors, i.e., reasons, values, conditions, and beliefs motivate Air Force officers to pursue graduate education?
3. What factors motivate transportation officers to pursue graduate education?
4. To what degree are transportation officers motivated by factors different from civilians and other Air Force officers?
5. To what extent do the following variables impact the decision by potential GTM candidates to attend AFIT?

- a. Transportation officer motivation factors.
- b. Prospective GTM candidates' awareness of the AFIT opportunity.
- c. Senior transportation officers', squadron commanders', and supervisors' endorsement or denouncement of the GTM option.
- d. GTM candidates' perception of the AFIT course structure and the quantity of work required.
- e. GTM candidates' academic performance fears.

The answers to the Investigative Questions were provided in the following manner: Investigative Questions #1 and #2 were addressed in Chapter III. Investigative Questions #3, #4, #5 were discussed in Chapter IV.

Definitions

Terms used frequently in the thesis are defined as follows:

Matriculate: To enroll as a member of a body, especially a college or university (35:703).

Motivation: That energetic force which energizes, directs, and sustains human behavior (6:92).

Open Response: Respondent's reply to inquires in their own words (10:201).

Perception: Process by which a person screens, selects, organizes, and interprets stimuli (6:64).

Semistructured Interview: The process of directing a number of standardized questions to respondents while leaving latitude for the interviewer to explore the answers (34:288).

Value: An enduring belief that a specific mode of conduct is personally or socially preferable to an opposite mode of conduct (33:2).

Limitations

1. This research investigated those motivational factors which prompt Air Force officers to pursue graduate education. Motivational factors influencing enlisted military members were not included in this study. Furthermore, the USAF transportation officer corps was the primary focus of this thesis investigation. The findings of the research will be generalizable solely to the USAF transportation officer corps. Those officers attending transportation officer training are not classified as "AFSC 6054, Transportation Officer" by the Air Force Manpower and Personnel Center (HQ/AFMPC) until they have successfully completed the course. Therefore, those officers attending transportation school during the data gathering portion of this research were not included in the sample population universe. Due to the time constraints inherent in AFIT thesis research, the relevant transportation officer population consisted of only those individuals assigned to a continental United States (CONUS) duty station.

2. The second telephone survey of the thesis research attempted to determine the impact certain variables had on transportation officers' decisions to attend AFIT. It was assumed that relevant information about those variables could

not be gathered from officers ineligible for AFIT attendance. Therefore, field grade officers were excluded from the population universe questioned about AFIT attendance variables described in Investigative Question #5.

Assumptions

This thesis research identified factors influential in motivating individuals to pursue graduate education. It was assumed that such listings were available in the pertinent research literature.

Expected Benefits

The results of this thesis research project will have a profound impact on the transportation career field as well as the AFIT GTM program. This thesis is one component of a three-thesis research effort sponsored by HQ USAF/LET to assist in establishing a strategy for the direction of the GTM option in the 1990's. The findings of this thesis will provide data for evaluation of the establishment of a recruitment program for the GTM option. The identification of those factors which influence transporters to attend AFIT will assist LET, AFMPC, and the GTM option managers in designing an AFIT transportation option which reflects the desires of candidate students while meeting the needs of the Air Force. The results of this thesis research will assist in maximizing the number of transportation officers attending AFIT and provide for knowledgeable transportation leadership in the future. This thesis could also provide data for the

evaluation of an AFIT School of Systems and Logistics recruitment program encompassing all available program options.

Summary

Chapter I of the proposal served as an introduction to the research problem and provided background information about the issues related to transportation officers' attendance at AFIT. The specific research problem, investigative questions, definitions of frequently used terms, limitations of the research, and assumptions of the study were presented. Chapter II describes the specific methodology used to answer the investigative questions. Chapter III provides a review of the literature relevant to the factors which influence the pursuit of graduate education, in order to obtain the answers to Investigative Questions #1 and #2. Chapter IV contains a description of the transportation officer survey, and the results of the data analysis and findings for Investigative Questions #3, #4, and #5. Chapter V introduces the significant results of the survey and the practical applications of those results. Recommendations for further research and revised study are also offered in Chapter V.

II. Methodology

Introduction

This chapter describes the research methods used to examine the GTM student recruitment problem and answer the Investigative Questions posed in Chapter I. The research design, sample population structure, sample strategy, and the specific methods of inquiry are discussed in this chapter. An identification of the difficulties encountered conducting this research and a summary of the information presented in this chapter are also provided.

Justification of the Survey Method

Emory, and Wailizer and Wienir in their research methods texts define "research design" as the methods and procedures of collecting the information needed (9:77; 34:231). Emory further states that research data can be obtained through monitoring or by interrogation (9:198). Monitoring involves establishing observational studies and was an inappropriate method of answering the Investigative Questions posed in Chapter I. Interrogation entails gathering responses to designed questions and statements (9:198). The realm of concern in this study focused on those psychological and concrete factors that motivate individuals to pursue graduate education. "Questioning is the only practical way to secure information about an individual's beliefs, opinions, and intentions" (9:199,228). A survey is an interrogation method

method which gathers either verbal or written information from select respondents in an environment that has not been manipulated or controlled by the investigator (34:263). A telephone survey was used in this research to obtain the primary data pertinent to the resolution of Investigative Questions #3, #4, and #5.

Telephone surveying has developed rapidly in the past twenty years. Today, it is one of the most prevalent and most preferred surveying approaches used in the private and public sectors (34:10). The two primary advantages of the telephone questionnaire are the element of control and the speed of response. Telephone surveying allows for quality control over the entire data collection process, from sampling and respondent selection to posing the questions (34:9-11). Response quality is also enhanced in telephone surveying because the lack of face-to-face communication reduces the opportunity for interviewer bias. The telephone survey method is by far the fastest means of obtaining information. It is the only research design that can be organized and implemented over a large geographic area in a few days. "In a week or less one can gather data via telephone that might take a month or more using in-person interviews or even longer using mail surveys" (34:12).

Sample Structure

A sample is considered to be a subset or grouping of a population which contains representative attributes of that population. Emory cites Deming to suggest that the quality of a research study may be improved if sampling is used instead of a census.

Sampling possesses the possibility of better interviewing, more thorough investigation of missing, wrong, or suspicious information, better supervision, and better processing than is possible with complete coverage.
(9:135)

Most sample populations can be divided into separate sub-groupings or strata. A stratified sampling method allows for specific analysis of sub-populations (9:154). The transportation officer population in this thesis was divided into three strata:

1. Company grade officers eligible for GTM candidacy.
2. GTM candidates, current GTM students, and GTM graduates.
3. Field grade officers.

Stratification of the transportation officer population allowed precise analysis of the research responses specific to each group. In particular, the company grade stratum responded to Investigative Question #5: To what extent do the following variables impact the decision by potential GTM candidates to attend AFIT?

- a. Transportation officer motivation factors.
- b. Prospective GTM candidates' awareness of the AFIT opportunity.

- c. Senior transportation officers', squadron commanders', and supervisors' endorsement or denouncement of the GTM option.
- d. GTM candidates' perception of the AFIT course structure and the quantity of work required.
- e. GTM candidates' academic performance fears.

The GTM stratum answered questions pertinent to Investigative Question #3: What factors motivate transportation officers to pursue graduate education? The results of the GTM stratum's responses to the graduate education motivational factor telephone questionnaire were compared with the findings of Investigative Questions #1 and #2 to answer Investigative Question #4: To what degree are transportation officers motivated by factors different from civilians and other military members? The field grade stratum replied to questions targeted on item c of Investigative Question #5: Senior transportation officers', squadron commanders', and supervisors' endorsement or denouncement of the GTM option.

Sample Plan

As mentioned in the introductory chapter, the relevant population for the telephone surveys consisted of the 644 transportation officers stationed within the CONUS. A sampling frame is a complete list of the elements from which the sample is drawn (9:139). A sampling frame in the form of a computer listing containing the names and duty phone numbers of all Air Force officers coded with the Duty Air Force Specialty Code (DAFSC) "60XX Transportation Officer" was acquired from HQ/AFMPC. The three stratum of the

population, 1. GTM eligibles; 2. GTM candidates, current students, and graduates; and 3. field grade officers were identified and established. A sample is said to be random if each element of the population has an equal opportunity of being selected (26:104). A simple random sample was drawn from each of the stratum using a random number generator.

The Central Limit Theorem states that if a large enough random sample is drawn from the population, the sampling distribution will be approximately normal (26:109). If the population is not heavily skewed, a sample size greater than thirty is large enough for the Central Limit Theorem to hold true (26:113). Provided that the Central Limit Theorem applies, a sampling distribution is deemed to be representative of the population (26:109). Preliminary sample sizes of fifty were drawn from each strata of the population. A preliminary sample size of 65 provided an adequate buffer for non-response occurrences and ensured that between 30-35 officers in each stratum were surveyed. The time constraints inherent in AFIT thesis research combined with the need for adequate coverage of the population necessitated that the surveys be limited to 35 respondents in each stratum. Because so few transporters have enrolled in the GTM option since 1981 (114), the population in stratum #2 was much smaller than that in stratum #1 or #3. A disproportionate sampling design was used and the samples drawn from each stratum were not proportionate to the stratum's representation in the total population.

"Disproportionate sampling is often done to guarantee that enough subjects are selected to do statistical procedures on the obtained data" (34:436).

Particular Method

A combination of research methods was used to investigate the research questions.

1. An extensive review of the literature pertinent to the pursuit of graduate studies was conducted to identify the motivational factors which compel individuals towards graduate education. Systematic library research, a valid method accepted by scholars for gathering background data and information, was used to locate the literature (33:53).
2. A semistructured, open response, telephone interview was conducted with transportation officers in each of the three population stratum. Telephone interviewing most closely approaches the level of unbiased standardization that is the goal of good surveys (18:12). Additionally, telephone interviews allowed for the collection of specific primary data from the transportation officers geographically dispersed throughout the CONUS (33:176).
3. Answers to the investigative questions were obtained in the following manner:

A. Question #1: The Educational Research Index Catalog (ERIC) database was used to locate relevant periodical research literature. ERIC is an automated index retrieval system and was the fastest method available for identifying

applicable research materials. The Dayton, Ohio State, Northern Colorado, and Wright State University libraries were visited to locate and collect the literature. These libraries maintained significant holdings of educational and behavioral literature. The Wright State and Wright Patterson AFB medical libraries were used to acquire psychological and sociological data.

B. Question #2: The procedures established to answer Investigative Question #1 were also used to answer Investigative Question #2. The AFIT library, the Defense Technical Information Center (DTIC), and the Defense Logistics Studies Information Exchange (DLSIE) were used to obtain military personnel data. The AFIT library contained numerous theses on military values and motivation. The DTIC and DLSIE surveys provided access to Department of Defense information in the form of bibliographies, microfiche, publications, and classified documents.

C. Question #3: HQ USAF/LET assisted in the development of an open response questionnaire administered to the GTM stratum to solicit answers for Investigative Question #3. Question #5 of the questionnaire asked respondents to rank, in order of significance, the five most influential factors in the AFIT matriculation decision. The responses to Question #3 entailed the collection of the only ordinal data gathered in this research. Ordinal data constitutes categories of data that can be ordered in some way to demonstrate a relationship such as "greater than," or

"less preferred." Ordinal data allows for comparisons to be made between categories which can be placed in a particular order across a continuum (9:114-116).

D. Question #4: The tabulated data obtained from the telephone survey of the GTM stratum was compared to the information obtained in the literature review for Investigative Questions #1 and #2 to determine if significant differences existed between transportation officers and their civilian and military counterparts.

E. Question #5: HQ USAF/LET assisted in the development of a second open response questionnaire designed to identify the extent each of the variables listed in Investigative Question #5 impacted a potential GTM student's AFIT application decision. The answers were tabulated by frequency of response and depicted in frequency tables displaying the relative significance of each variable. HQ USAF/LET assisted in the development of a third open response questionnaire directed at item c of Investigative Question #5. The transportation officer assignment manager at the Air Force Management Personnel Center (HQ/AFMPC) was also interviewed to identify the decision criteria used to determine the applicants selected as GTM students.

4. The telephone questionnaires were validated for understanding and wording of questions through a pilot study. A pilot study is a "trial run" of the interviews administered to people who are similar to those in the research population (34:267).

Data Analysis

Descriptive statistics were used in the analysis of the primary data obtained through the responses to the telephone questionnaires. "Descriptive statistics enable us to organize, summarize, and describe the data; that is, make sense of the data" (26:10). Descriptive statistical methods analyze data using the basic distributional characteristics of the data. Frequency counts for questions answered in discrete categories display the number of times a particular response was selected. The responses to the telephone interviews were tabulated, categorized, ranked by frequency of response to each question, and the significant results charted to graphically depict possible trends.

Problems

Two areas of the methodology procedures presented significant problems. There was an extremely small amount of research literature available which investigated the motivation of military members towards graduate educational pursuit. Of the 110 DLSIE abstracts, 49 DTIC summaries and reports, and 12 AFIT theses reviewed, only four contained data applicable to this research. The lack of substantial publications on the topic of motivational factors influencing military members towards graduate education rendered the substantiation of the findings presented in the articles impossible.

Secondly, field grade officers and squadron commanders who did not perceive an AFIT education as beneficial may have hedged their answers in response to questions about their opinion of AFIT and their inclusion of the AFIT opportunity in their junior officer career counseling sessions. Extra emphasis was placed on the anonymity of the respondents during the administration of the telephone survey to the field grade stratum.

Summary

This chapter described the methodology used to engage the Specific Problem and answer the Investigative Questions mentioned in Chapter I. Two research procedures were incorporated in this study, systematic literature review techniques, and verbal interrogation methods. Random sampling of transportation officers segregated into three stratum provided sources of primary research data. Chapter III presents a review of educational motivation literature focused on those factors influencing graduate pursuit.

III. Literature Review

Introduction

This chapter introduces a review of the literature germane to the identification of the factors that motivate individuals to pursue graduate education. The chapter is presented in two sections. The first section provides a discussion of publications focused on motivational factors influential in an individual's choices to obtain a graduate degree. The second section examines those writings that concentrated on the specific factors which motivate military officers to pursue graduate education. The literature review is concluded with the author's comments on the literature and inferences drawn from the review.

Postsecondary Educational Research

The numerous volumes of postsecondary educational motivation research literature can be categorized into two schools of thought; 1. Causal modeling, and 2. Economic theoretic applications to postsecondary educational pursuit. Each school cites the precedent explanatory model of the student persistence/withdrawal process in post secondary schools developed by Tinto in 1975. Tinto's study, the causal modeling literature, the economic determinants research, and the cornerstone research effort for this thesis conducted by Ethington and Smart will be reviewed in this section. Malaney notes that voluminous amounts of literature

investigating undergraduate student motivation to educational pursuit have surfaced over the past ten years. The problem with the literature is that very little research has been undertaken at the graduate level (21:248). Due to the scarcity of research on motivation for graduate study, several causal studies and the economic theory literature reviewed in this chapter investigate undergraduate motivational factors; however, the Ethington and Smart research presents a model which incorporates the undergraduate motivational factors into the criteria used in the graduate enrollment decision. The discussion of the Ethington and Smart study justifies the inclusion of the undergraduate research literature in this chapter and substantiates the relevance of the undergraduate data to the research undertaken in this thesis.

Tinto.

Based on the works of Spady, who in 1970 suggested that assimilation is critical in combating withdrawal, Tinto's efforts were directed at providing a conceptual model for the explanation of the student decision to persist and graduate or withdraw from a postsecondary institution (27:87). Spady asserted that two critical factors compose the assimilation process, satisfaction with the college experience and commitment to the social system (1:237). Tinto postulated that the student's decision to go to college and subsequently a particular institution was based on a wide range of

background traits (e.g., family background elements such as socioeconomic status, and parents' educational level); individual attributes such as sex, and personality orientations; and pre-college schooling such as curriculum track placement, and secondary school performance (27:87). Those background characteristics not only influence the decision to attend college, but also impact the degree of social and academic integration the individual maintains within the institution (10:288). The level of integration with the institution was central to Tinto's model. Tinto postulated that the greater a student's involvement with professors, participation in study groups, and familiarity or usage of the library coupled with the student's interaction with campus government, social clubs, and athletic activities, the greater his or her commitment would be to the goal of graduating from college (27:88). The culmination of successful student integration with an institution is the student's commitment to the educational process and attainment of a degree.

The findings of Daniel Abrahamowicz's research substantiates Tinto's proposition of the significance of institutional integration. Abrahamowicz surveyed 550 undergraduates at a large commuter university to investigate students' perceptions, satisfaction, and overall involvement with college. The sample population consisted of 240 members of recognized student organizations and 310 students who were not members of student organizations (1:234).

The Results of the study in almost all instances indicated differences. between students who participate in student organizations and students who do not. The findings also indicated that members of student organizations were involved in activities beyond the traditional domain of their organizations. The members of organizations indicated greater involvement than nonmembers in the library; with the faculty; with course learning; with art, music, and theater; with writing; with science and technology; and with conversations (1:236). Of the eight rating scales, significant differences between members and nonmembers were found in only three. The three rating scales for which members' perceptions were significantly more positive all pertained to relationships with faculty, administrators, and students (1:236). Abrahamowicz also notes that the largest differences between members and nonmember responses occurred in the estimate of gains section. The most positive responses from members were for items reflecting perceptions in interpersonal or nonintellectual areas. Further evidence of the organizational members' more positive feelings toward college were exemplified in the responses to the first survey question. When asked, "How well do you like college?" 65% of the members answered that they were enthusiastic about it as opposed to 17% of the nonmembers (1:237). Abrahamowicz capsulizes the outcomes of his research with a reference to Austin (1984). Austin notes that, "to maximize educational and developmental impact, students must connect with their

institutions in a special way, there must exist a cathectic interaction between student and university" (1:237). Members of student organizations seem to cathect with their institutions and thereby exercise greater involvement in the overall college experience. The implications of student organizational members' social and educational integration are that those students realize a higher quality educational experience, positive perceptions of college, and a greater commitment to the education process than non-member students (1:237). Corresponding with Tinto's axiom, Abrahmowicz's findings suggest that the more the student participates in the university's activities, the greater the likelihood of persistence to graduation. The inference from this study and Tinto's work is that the strong commitment to education generated from the students' integration with the university provides students with the fruition of labor, i.e., a bachelor's degree. The achievement of successfully completing undergraduate studies may be the enticing first step towards the quest for graduate level education.

Causal Models

Causal modeling allows for the specification and testing of hypothesized relationships among variables. This method of research facilitates the identification of motivational factors and investigates how their influences are exerted on decisions (9:287). Most of the studies of student college choice correspond with the initial premise of Tinto's work.

examining how student background characteristics, aspirations, and achievements interact to influence students' attitudes towards college attendance (14:207).

Hoosler and Gallagher.

Hoosler and Gallagher's research provides a model for the developmental process of the college choice decision as well as an extensive literature review of the studies investigating motivational factors influencing postsecondary educational pursuit. Hoosler and Gallagher build on the works of Jackson and Litten (1982) in establishing a three phase model of college choice. Students move through a three phase process from an initial step of establishing a predisposition toward higher education to the final step of selecting an institution to attend (13:208). Jackson establishes the concept of "preference" as the cornerstone element in the first phase of the decision process. Preference is defined as an attitude towards college enrollment, i.e., the student is interested in going to college (13:208). Hoosler and Gallagher incorporate the idea of preference in the predisposition (phase one) segment to their model. The Hoosler/Gallagher model is an interactive evaluation in which students progress to a firmer understanding of available educational options. At each phase of the process, individual and organizational factors interact and influence the outcomes of the student's college

choice. The Hoosler/Gallagher three phase model of college choice is presented in Figure 1.

Model Dimensions	<u>Influential Factors</u>		Student Outcomes
	Individual Factors	Organizational Factors	
Predisposition (Phase One)	Student Characteristics	School	a. College options
	Significant Others		Search for:
	Educational Activities		b. Other options
<u>Search</u> (Phase Two)	Student Preliminary College Values	College & University Search Activities (Search for Students)	a. Choice Set
	Student Search		b. Other Options
Choice (Phase Three)	Choice Set	College & University Courtship Activities	Choice

Figure 1. Three Phase Model Of College Choice

(From 13:208)

The predisposition phase represents a decision point in the model; it is a developmental stage in which students determine if they want to continue their education beyond high school (13:209). Several of the factors which impact

students' decisions to pursue college are attendance at high-quality high schools, positive attitudes towards education (preference), early information on financial aid availability, and institutional costs (13:209). Hoosler and Gallagher provide the findings of several research investigations of factors influencing student decisions that occur in the predisposition phase.

Predisposition Investigative Studies.

Dugan (1972) noted that socioeconomic status (SES) has a cumulative effect on college enrollment plans that begins in preschooling and continues throughout the formal years of education. Peters (1977) concluded in his research that high SES students are four times more likely to go to college than students with low SES. Hoosler and Gallagher did not provide the criteria/calculations for determining high or low SES. Manski and Wise (1983) examined SES and individual ability in student college choice. Using National Labor Statistics (NLS) for the Class of 1972, they concluded that student achievement had greater influence on students' college plans than did social status/background (13:210). Parental and peer involvement also affect students' enrollment decisions. Conklin and Dailey (1981) reported a positive linear relationship between the amount of parental encouragement students receive to attend college and their subsequent postsecondary plans (13:210). Tillery, and Hauser and Featherman (1976) found that students with friends who are

planning to continue their education are also more likely to be planning to go to college (13:210). Hoosler and Gallagher emphasized that although a causality relationship can not be inferred from the findings, there appears to be at least a reinforcing effect each has on the other in the decision process. Hearn's research of the range of students' pre-college school experiences further supports the Tinto postulate of institutional integration. Hearn found that involvement in student government, debating clubs, drama, and journalism were positively related to attending college (13:211). This study suggests that successful participation in high school activities, i.e., integration, positively influences a student's decision to pursue a college education. The Kolstad (1984), Peters (1970), and Alexander et al. (1978) studies investigated the impact high school curricular quality had on the college matriculation decision. Even though the relationship was weak, each study revealed a positive correlation between college attendance and graduating from a high school which has a curriculum that includes more math, science, and college prep courses than the standard high school course offerings. This relationship was persistent even when background characteristics such as SES and individual abilities were held constant or controlled (13:212). The inference garnered from this group of research is that the quality of high school curriculum has a more significant influence on students' college pursuit decision than other variables in the decision matrix. Students'

proximity to a college campus also affects their decisions to enroll at a university. Willingham and Anderson (1970), and Bowman's (1972) research found that students who live close to a campus are more likely to enroll in a college or university (but not necessarily the one they live closest to) (13:212). Additionally, students from urban settings are more likely to attend college than those from rural residences; this phenomena may be the result of urban students' environments which evidence the necessity of postsecondary educational attainment in securing a desirable socioeconomic standard of living, while rural students may not perceive a college degree as a necessary means of obtaining an acceptable lifestyle. Hoosler and Gallagher indicated that while many correlates of student college choice can be identified, the events which shape the predisposition phase are not well understood. What is known is that at some point in their pre-college years, students decide whether or not they plan to attend college (13:212). A diagram of the predisposition phase depicting those factors which influence a student's attitude towards college attendance is provided in Figure 2.

Chapman.

David Chapman's research into the influences affecting prospective students' choice of college produced a model similar in many ways to the Hoosler/Gallagher Three Phase Model. Chapman's model is longitudinal, and suggests that

students' choice of college attendance is based both on background and current student characteristics, as well as the characteristics of the student's family and those of the college (4:492).

Model Dimensions	<u>Influential Factors</u>		Student Outcomes
	Individual Factors	Organizational Factors	
Predisposition (Phase One)	Student Characteristics	School	a. College options
	PREFERENCE SES ACHIEVEMENT	FINANCIAL AID INFORMATION	
	INVOLVEMENT IN HIGH-SCHOOL ACTIVITIES	STUDENT EXPENSES	
	PROXIMITY TO COLLEGE/UNIV.		
	Significant Others PARENTAL ENCOURAGEMENT PEER INVOLVEMENT		Search For:
	Educational Activities QUALITY HIGH-SCHOOL CURRICULUM		b. Other options

Figure 2. Predisposition (Phase One)

(From 13:210)

The students' characteristics consist of SES, aptitude, level of educational aspiration, and high school performance. Three groups of external influences are the influence of significant persons, the fixed characteristics of the institution, and the institution's own efforts to communicate with the prospective students. Chapman notes that,

The student characteristics and the external influences contribute to, and in turn, are shaped by the student's generalized expectations of college life, something Stern referred to as the freshman myth (4:492-493).

The significant impact of students' SES is revealed in Chapman's description of the student characteristics portion of his model. SES is positively related to educational aspirations and expectations. Family income interacts with educational aspirations and expectations to limit what students perceive their realistic prospects for college attendance to be. Expectations are what a person perceives he or she will be doing or will have accomplished at some future date. Aspirations are desires expressing an individual's hopes about the future (4:494). Students from low income families aspire to obtain a college education, but the reality of their SES reduces the probability of college attendance as a genuine alternative.

Stirred by the implications of their respective SES, students' educational aspirations and expectations in turn affect high school performance. Chapman refers to the works of Brookover, Erickson, and Joiner who reported a moderate correlation between expectations and eleventh grade GPA

of .30, and a correlation of aspiration and eleventh grade GPA of .23. Those authors point out that GPA operates to limit the range of institutions that will consider students for matriculation (4:494). Students tend to conduct self-analysis of their aptitude and ability. Students with poor high school records and low test scores may develop a lack of confidence in their academic abilities and eliminate the college choice option. In contrast, Tillery states that more high school students who report a definite confidence in their college ability go on to universities and aspire to graduate study than those students who lack confidence in their academic ability (4:494). Along with the academic self-concept students maintain, external factors contribute to the formulation of the college decision. Students with good academic records receive more encouragement to continue their education from teachers, family, and friends. Good students receive college advising from guidance counselors, and are more apt to receive college scholarships and materials about college campuses, facilities, and student populations (4:494).

Students are strongly influenced by the comments and advice of their friends and family (4:494). The influences function in three ways: (1) their comments shape the student's expectations of what college is like i.e., "freshman myth" building; (2) they may advise a student on which college to go to; and (3) congruent with Tillery, and Hauser and Featherman's findings, where and if the student's

friends go to college will influence the student's decision (4:495). Chapman notes that there are conflicting findings as to which group, friends or parents, exert the largest impact on students' college decisions. Chapman cites the 1966 SCOPE analysis of high school seniors poll which indicated that 43% of high school seniors felt their parents' influence had the greatest impact on their college decision and were also the most helpful people consulted about college (4:495). Tillery and Kildegaard are referenced by Chapman to reveal that parents' perception of the cost/affordability of college affects the parents who then reflect that factor in their influence of the student (4:495). Tillery and Kildegaard also suggest that cost is highly influential in the decision of whether or not a student goes to college. Mundie's research substantiates Tillery and Kildegaards' findings, but notes, "While students tend to sort themselves on the basis of family income, there is a surprising lack of relationship between family income and cost of college attended" (4:496). This may indicate, as Tillery and Kildegaard suggest, that a primary decision factor is based on the social background and income of the family, and if the family can afford to send the student to college. Once a family perceives they can afford the college expense, the significance of the cost factor and the means of financing the education are minimized across the spectrum of university options. The Chapman model of influences on student college choice is presented in Figure 3.

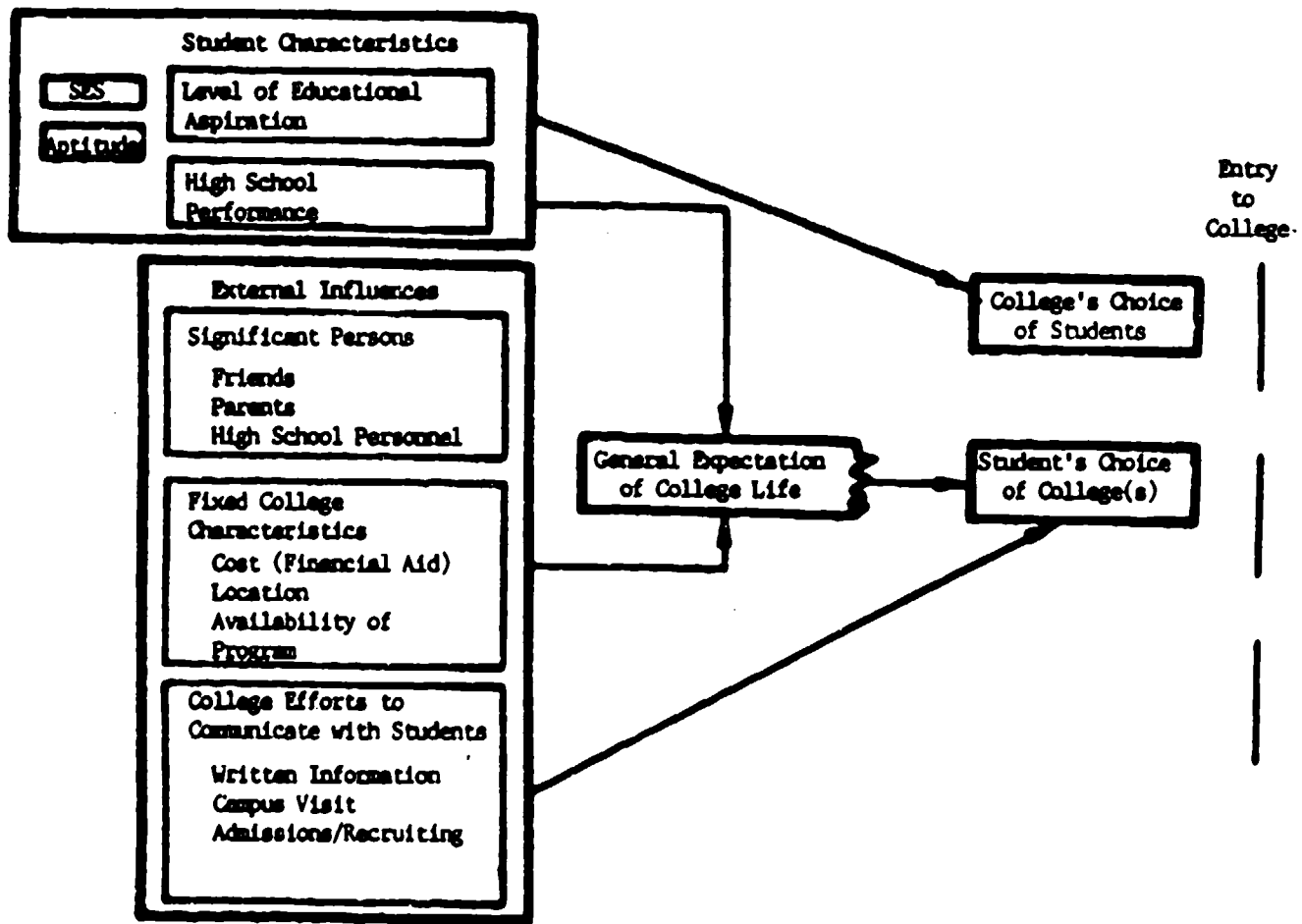


Figure 3. Chapman's Model of Student College Choice
(From 4:492)

Wolfe.

The discussion of the Hoosler/Gallagher and Chapman models accentuates the organizational and dynamic similarities shared by the two paradigms. Wolfe's research was concentrated on factors influencing postsecondary educational attainment among whites and blacks. Wolfe established a four-criteria function model of educational

attainment consisting of the following variables: SES, i.e., father's occupational status, father's education, and mother's education; respondent's ability; high school curriculum; and high school grades (37:504). Wolfle presents numerous works, e.g., Alexander and McDill, 1976; Heyns, 1974; Hauser et al., 1983; and Sewell and Hauser, 1975, to substantiate the proposition that curriculum placement and SES play a major role in the college decision. Students in college preparatory classes complete a greater number of courses than students enrolled in standard track courses, thereby developing the prerequisite skills and credentials necessary to postsecondary matriculation (37:504). "It is expected that students with parents of higher socioeconomic status are more likely to be members on the academic curriculum track than are students with parents of lower status" (37:505). Wolfle also drew his data from the National Longitudinal Study (NLS) of the high school class of 1972. The sample population of 22,652 students was selected from 1,318 schools chosen from across the United States. The major finding of the Wolfle study was that the process of educational attainment was not different for whites and blacks. Of greater relevance to this thesis is the suggestion that educational attainment depends modestly on social background. "Children of high status parents are more likely to enter an academic track in high school" (37:517). Wolfle also asserts that, "By far the most important determinant of placement in an academic program is the

ability of the student" (37:517). Wolfle's deduction that student ability is the prominent factor in the college choice decision supports the findings of Manski and Wise, and Dugan. However, this conclusion contrasts sharply with previous research which has indicated that social background variables are more important determinants of educational attainment among whites than among blacks. The control of estimated measurement error structures in the Wolfle study is suggested as the facilitator of the results that social background plays a similar role for blacks and whites in the college enrollment decision. Increments in background social status variables lead to similar increases in educational attainment for whites and blacks. Moreover, the effects of personal characteristic variables such as ability and grades influence educational attainment in whites and blacks in a similar manner. Wolfle's findings also contradict those of Kolstad, Peters, and Alexander et al. who found that high school curriculum was the paramount variable in the college decision process.

The analysis of the causal model literature indicates an overall consensus in capturing the dynamics of the college choice decision. All of the causal models examined outlined in one manner or another the volatile influence SES, individual abilities, and educational factors exert on students' matriculation decisions. The second step in the investigative process, the identification and establishment

of the priorities amongst the contributing variables, has produced conflicting findings in those studies reviewed. It appears that researchers studying the dynamics of students' postsecondary decisions disagree about how the influences of those factors are exerted and which of those factors has the most significant impact on the matriculation decision.

Economic Theory Research

Economic analysis of the college choice decision is grounded in the generally accepted assumptions of the sociological/behavioral Rational Man Theory, and the financial principles of the time value of money. The Rational Man Theory holds that human beings promote, not frustrate, the achievement of their goals, i.e., given a situation with two possible alternatives, the rational individual's choice would be the one most beneficial to him (22:55). The essence of the time value of money is that money, which is a scarce resource, has value over time (29:933). A mainstay of the time value principle is the present value concept. The present value of \$1 is the value today of \$1 to be received sometime in the future. Money received in the future can not earn interest now, so it is worth less than money in hand (29:352). Economic theorists apply the Rational Man Theory and the time value of money in the construction of predictive equations of college choice.

The econometric literature on the matriculation decision is divided into two branches. One branch estimates equations enrollments as a function of the characteristics of potential enrollees and of the set of existing schools (11:477). The second branch estimates an equation explaining an individual's enrollment decision as a revealed preference among available schools and the work alternatives. Literature from both schools of thought will be presented next in this review.

Corazzini et al.

Corazzini, Dugan, and Grabowski constructed a higher educational enrollment model to investigate the dynamics of the college enrollment decision. The present value concept forms the framework of their enrollment model.

If students follow rational investment decision criteria, they will decide to go to college if the present value of the benefits associated with college are at least equal to the present value of both the direct and opportunity costs of doing so. (5:40)

The present value of benefits is divided into two components, 1. the expected value of increased earnings from a college education, and 2. the value of direct compensation for going to college, i.e., scholarships and grants (5:40). The direct cost of going to college consists of tuition, living expenses, and special education fees, i.e., books, lab, and student fees. Opportunity costs are related to the income that could be earned at the best job alternative available during the time spent in college (5:40).

The enrollment model integrates the function of a number of determining factors. The demand for enrollment in college is dependant on the percentage of students finding college enrollment a prudent economical option minus those eligible students who desire enrollment but can not obtain admission (5:42). Corazzini et al. suggest that prices in higher education are largely supply side determined through a demand rationing process. Admissions acceptance policy is set at a fixed nominal price for all students who are above some target admissions standard. At this prevailing level of price, some demand will be constrained or rationed because of the admissions requirements which restrict some students' acceptance (5:42). The basic enrollment decision equation is:

$$E = D - R \quad (1)$$

Where

- E = enrollment
 - D = all students with a rational opportunity to enroll
 - R = those students in D unqualified for admittance
- (From 5:43)

Corazzini et al. introduce a few of the exogenous variables identified in the causal model literature while expanding their enrollment equation. The empirical explanatory variables included in the model are: average level of father's education, student ability, high school performance, and family income (5:42-43). The complete educational enrollment function notation is:

$$Es = (Ti, Wi, Is, Fs, As)$$

(2)

where

Es = enrollment of student
 Ti = tuition costs in state i
 Wi = average earnings of production worker in state i.
 i.e., opportunity cost
 Fs = level of father's education
 Is = student family's income
 As = student ability

(From 5:45)

Corazzini et al. applied their model to data from a survey of 4,000 Boston high school seniors to investigate the enrollment decision process. The findings of the investigation indicated that: 1. price and the opportunity cost of college had a negative impact on the college decision, 2. father's education level was positively correlated with the decision to attend college, and 3. student ability has a positive impact on the enrollment decision (5:45). Mother's educational level variable was not examined in the Corazzini et al. model.

Welki and Navratil, and Fuller et al.

Researchers adhering to the second branch of econometric theory incorporate the notion of utility maximization in the construction of their college choice models. Utility represents the level of satisfaction that a customer/investor derives from a particular market basket/transaction (22:53). A rational individual will attempt to maximize utility in a given situation to satisfy his own desires. The

consumer/investor endeavoring to maximize utility must account for factors other than his own taste (22:55).

Welki and Navratil list several factors noted in previous research as influences on the college decision. The examined influences include: distance from the college/university, pricing policy, financial aid, college printed materials, student's personal characteristics, and student's perception of college life (36:147). Welki and Navratil cite Becker's comparison of the present discounted value of costs and benefits from an investment in education. Similar to the assertions of Corazzini et al., Becker states. "If the present discounted value of the benefits exceeds the present discounted value of the costs, the rational person will choose to undertake the investment" (36:148). The utility associated with the college attendance decision depends upon three vectors, the student's attributes, college/university attributes, and a stochastic/random error term (36:149). The expected utility the student derives from the college choice is expressed as:

$$U(C) = U((A_1, A_2, \dots, A_m), (S_1, S_2, \dots, S_n), E_i) \quad (3)$$

where

U = utility
C = college attendance
A₁, A₂, ... = student's attributes
S₁, S₂, ... = college's attributes
E_i = error term

(From 36:149)

Welki and Navratil applied their model in an examination of data obtained from the Maquire and Law questionnaire administered to the 1984 and 1985 freshman class at John Carroll University. Welki and Navratil found that parental preference, cost and financial aid, campus location and size, the student-faculty relationship, and academic programs to be the most important influences on the college matriculation decision (36:160).

Fuller et al. present their research as a refinement of the study conducted by Kohn, Manski, and Mundel. The college choice equation developed by Kohn et al. is a multinomial model which expresses the probability that a student will select a given alternative (11:478). The Fuller predictive equation is a function of direct cost, opportunity cost, and utility maximization. The direct costs in the Fuller model are tuition (less scholarship income), and living expenses (11:478). The definitions of opportunity cost and utility maximization are consistent with those used in the previously mentioned models. A unique element of the Fuller model is the conceptualization of present and future utility maximization in the student's selection process. The current component is a linear function of the expected costs and expected foregone earnings plus a measure of the consumption aspects of the activity. The future component of utility is the expected contribution to future earnings (11:479). The Fuller et al. college choice equation is denoted:

$$U(ti) = T/I(ti) - S/I(ti) + L/I(ti) + Y(ti) + X(ti) \quad (4)$$

where

$U(ti)$ = utility for student t , of alternative i
 $T/I(ti)$ = function of tuition expense and family's income
 $L/I(ti)$ = function of college cost of living and family's income
 $Y(ti)$ = expected foregone earnings of alternative i
 $X(ti)$ = future utility component

(From 11:481)

Fuller et al. validated their model through the application of NLS 1977 high school senior survey data. The research results were comparable to those obtained in several of the causal model studies. The findings suggest that students seeking postsecondary education self-select college based on individual ability/aptitude; the probability of attending college increases as the percentage of classmates doing the same increases; and that financial aid information/opportunity and individual academic ability are important determinants of postsecondary attendance (11:478,488-489).

While causal modeling attempts to identify those factors that impact the college choice decision, econometric models expand the simulation of the decision process through the prediction of the outcome of those variable interactions. The success or failure of models predicting outcomes of matriculation decisions is irrelevant to this research; the pertinent contributions of econometric modeling are the duplicate findings of matriculation decision variables discovered in causal modeling research.

Graduate Educational Research

Graduate program pursuit is multidimensional and involves a variety of different influences: it therefore encompasses a number of elements (17:503). Potential graduate students examine several factors when considering further academic endeavor. Ketefian and Hagerty in their study of graduate nursing students listed numerous reasons why individuals enroll in graduate programs. Some of the decision variables are institutional program goals, student attributes, faculty qualifications, curricular design, resources, facilities, and library holdings (17:503). The term "scholarly excellence" was presented by Ketefian and Hagerty as a composite of students' perceptions of the scholarly competence of the faculty and intellectual stimulation of the academic programs (17:505). A particularly noteworthy aspect of the Ketefian and Hagerty research is the non-prioritization of the decision variables. Each factor was perceived to carry equal weight; scholarly excellence was not the primary contributing factor influencing students to seek graduate degrees; the decision was reached based on the grand total of all the factors. The types of decision variables cited in the research are provided in Table 1.

The findings of the Malaney study generally support the conclusions reached by Ketefian and Hagerty. Malaney's investigation of 1075 newly enrolled graduate students at a

Table 1

Ketefian and Hagerty Graduate Decision Variables

1. **Environment for learning:** Extent to which members of the department work together to provide a supportive environment characterized by mutual respect between professors and students and acceptance of new ideas and different scholarly points of view.
 2. **Scholarly excellence:** Perceived scholarly and professional competency of the department faculty, and intellectual stimulation in the program. (Faculty, student, alumni).
 3. **Quality Teaching:** Assessment of faculty awareness of new developments in the field, teaching methods, preparation for class, and interest in assisting students.
 4. **Curriculum:** Ratings of the variety, depth, and availability of graduate program offerings, program flexibility, and opportunities for individual projects.
 5. **Available Resources:** Adequacy of available facilities, such as libraries and laboratories, and overall adequacy of physical, financial, and support staff resources.
 6. **Student Satisfaction with the Program:** Self-reported student and alumni satisfaction with the program as reflected in judgements about the amount that learned, and willingness to recommend program to a friend.
 7. **Resource Accessibility:** Self-reported graduate student satisfaction with opportunities for intellectual and social interaction among persons in the program, with the availability of graduate student housing, student services, and financial assistance.
 8. **Employment Assistance:** Alumni assessment of the employment assistance received through the department's formal and informal efforts, individual professors, and university placement office.
-

(Decision variables from 17)

large midwestern university indicated that different groups such as married or single students pursued advanced degrees for different reasons (21:256). The selection factors in the

study varied from "could not find a job," "had nothing better to do," and "a friend was going to the institution," to "wanted advanced degree for personal satisfaction" (21:252). The respondents in the Malaney research did prioritize their reasons for enrolling in a graduate program. The desire to learn more about a speciality and personal satisfaction were the most important reasons to pursue graduate education (21:252). The frequency of responses given for the top five motivators towards graduate pursuit is listed in Table 2.

Table 2
Why Students Decide to go to Graduate School

Reason	N	%
Want to learn more about speciality	791	73.9
Wanted degree for personal reasons	663	62.0
Thought job prospects would be better	522	48.8
Needed degree for promotions	491	45.9
Career field requires an advanced degree	481	45.0

(Reasons from 21:252)

Captain Marc Soutiere conducted thesis research on the factors influencing continuing education and adult learning. As in this thesis study, Soutiere's investigation concentrated on those motives prompting individuals to pursue additional education. The findings of Soutiere's literature review coincide with many of the principles noted in this thesis. Soutiere mentions a survey of adult learning conducted by the Educational Testing Service (ETS) (1972)

which identified reasons individuals whose occupation can be classified as professional, such as military service, acquire additional education. The study noted that "helped to advance in present job" and "meet the requirements of the employer and profession" were two of the top responses (31:10). Soutiere also references research conducted by Houle (1971) to provide further insight into the learning process. Houle proposed a list of seven "orientations" adults use for engaging in additional learning activities. The seven reasons do constitute a prioritized list of decision criteria and are presented as follows:

1. Desire to know
2. Desire to reach a personal goal
3. Desire to reach a social goal
4. Desire to reach a religious goal
5. Desire to take part in a social activity
6. Desire to escape
7. Desire to comply with formal requirements

(31:11)

An observation relevant to this thesis is the similarity in phraseology between items in the seven orientations by Houle and the factors suggested by Malaney's findings. Responses to Malaney's study such as "had nothing better to do" and "because a friend was going" appear to correlate closely with "desire to escape" and "desire to take part in social activity."

Jeffery Huston and George Burnet's investigation of 1,500 engineering students at Iowa State University between 1981 and 1983 supports Maleny's findings. Seniors were surveyed to identify motives for their graduate enrollment.

The response chosen most often by both U.S. and foreign students was a desire to learn more about their field of study. The reasons cited as #1, #3, and #4 in the hierarchy of motives correlated precisely with the results of the Malaney study. The information source cited most often as the primary influential factor in the enrollment decision was "counseling by faculty" (73%), with "family or relatives" second (50%) (15:223). The five primary reasons graduating seniors selected graduate school enrollment are listed in order of preference in Table 3.

Table 3
Decision Factors for Pursuit of Graduate Study

Response	1981	U.S.		Foreign (1981-83)	Total
		1982	1983		
A desire to learn more in major	86%	62%	74%	70%	73%
Interest in doing research	59	38	63	48	54
Improved job opportunities	55	45	47	41	48
Greater career advancement opportunities	41	31	34	44	35
A goal of teaching in engineering	27	17	16	26	15

(Decision factors from 30:233)

Research projects by Smart, and by Girves and Wemmerus incorporate student satisfaction in the examination of graduate degree pursuit. Students select graduate programs with environments similar to those experienced in undergraduate studies (30:218). Smart cites Lipset and Ladd's (1971), and Kelly and Hart's (1971) research to support the conclusion that "faculty members selectively recruit students with distinct personality types and further socialize them toward biased definitions of the "right way to think and act" (30:221). This socialization significantly influences a student's decision to pursue further education and the appropriate institution to attend (30:221). Students' background experiences and educational expectations are closely linked to the pursuit of graduate education (12:164). Building on Tinto's research, Girves and Wemmerus' study postulates a correlation between the commitment a student has toward earning a degree, subsequent academic performance, university commitment, social integration, and the pursuit of graduate education. Their conceptual model contains four variables: department characteristics, student characteristics, financial support, and students' perceptions of their relationships with the faculty (12:165). Of the four factors, students' perceptions of the department and faculty are paramount to the graduate decision. "The graduate's relationship with the faculty can determine success in the student's academic program as well as in the student's professional career" (12:165). A student's desire

to obtain a graduate degree is enhanced by the commitment and subsequent success of undergraduate studies (12:164).

Grives' and Wemmerus' research suggests that an academically successful undergraduate experience influences a student to strive for advanced education.

Olson and King's research further substantiates Smart's, Lipsett's, and Grives and Wemmerus' identification of the significant influence faculty exert on students' graduate decisions. Olson and King distinguished two areas of the graduate matriculation decision process. The first type of decision a potential graduate student makes is the initial consideration of which institution to attend (25:308). Results of the study listed geographic location, personal contact with faculty at the institution, reputation of the academic department, and educational costs as those factors most influential at this level of the decision (25:308). The second decision category is the ultimate decision of enrollment in an institution. Olson and King discovered that 53.8 percent of their survey respondents listed a positive interaction with faculty during the decision process as the primary decision factor associated with their enrollment (25:308). The data obtained in the Smart, Lipsett, and Olson/King findings appears to indicate that personal contact with faculty and future instructors is of critical importance in the graduate study decision process.

Ethington and Smart.

Ethington and Smart, in their graduate educational research, present a model which functions as framework supporting the findings of several of the studies discussed in this review, e.g., Tinto, Chapman, Wolfle, and Girves and Wemmerus. Ethington and Smart's persistence to graduate education model forms the nexus between undergraduate motivational investigation and the graduate matriculation decision by providing the critical underpinnings for the proposed postulates and inferences. Their study is rooted in the core constructs of Tinto's model and expands prior student decision research (10:289). Ethington and Smart place the graduate enrollment decision at the end of a continuum of educational opportunities and choices. Graduate enrollment is seen to be a further manifestation of a long series of prior judgements; a culmination of a series of decisions made by the student concerning the extent of commitment to the educational process (10:288-289).

The path model consists of five primary decision variables; undergraduate institution selectivity and size; academic and social integration with the undergraduate university; overall satisfaction with the undergraduate experience; attainment of an undergraduate degree; and graduate financial aid opportunities. Five secondary influential variables included in the model are family education; family income; high school grades; academic self-confidence; and social self-confidence (10:290). The five

secondary decision criteria are grouped as background characteristics and embody the majority of the findings reported in the reviewed undergraduate studies. Background characteristics, consistent with the data provided in this review, strongly influence the decision towards undergraduate pursuit (10:287). As a student progresses through the educational process, background variables influence the degree of academic and social integration the student achieves with the university, and subsequently the degree of satisfaction with the undergraduate experience. At this junction in the process, the student's background characteristics lose their primary decision influence, functioning instead as secondary or intervening variables. The primary motivation towards graduate matriculation now becomes a function of the experiences generated by the level of integration the student maintains with the university (10:291). The recognition of the transfer of influence from background characteristics to the more recent experiences associated with student integration and persistence towards graduation is the catalyst in the Ethington and Smith model which provides the continuity and relevance of the undergraduate research to graduate matriculation. The background variables and the factors in the undergraduate experience influenced by those variables are presented in Table 4.

Table 4

Background Variables Impacting Undergraduate Experiences

Background Variables

Family Education:	The combined level of parent's education.
Family Income:	Combined parental income ranging from less than \$4,000 to \$40,000.
High School Grades:	Student reported grades received in high school ranging from D to A.
Academic Self Confidence:	Student's self-rating of academic ability.
Social Self Confidence:	Student's self rating of social self-confidence.

Undergraduate Experiences

Selectivity:	Mean SAT or ACT score of the undergraduate student body divided by 10.
Size:	Total institutional enrollment ranging from 250 to 20,000.
Academic Integration:	Average undergraduate grades coded from D to A-.
Social Integration:	Extent of involvement with peers and faculty.
Overall Satisfaction:	Degree of overall satisfaction with the undergraduate institution.
Degree:	Receipt of a bachelor's degree.

(Variable definitions from 10:293)

The degree of satisfaction with undergraduate studies, according to Tinto's axiom, exerts the strongest direct influence on degree completion (9:291). Ethington and Smart present degree completion and receipt of financial aid as the strongest motivators impacting graduate matriculation. Substantiating a premise inferred previously in this review, Ethington and Smart state,

Students who become more involved in social and academic aspects of the undergraduate experience are expected not only to be more likely to persist to undergraduate degree completion, but to exhibit further commitment to the educational process by subsequently enrolling in graduate school. Students who are more satisfied with their educational experiences as an undergraduate should be more inclined to extend their education by attending graduate school (9:291-292).

The significance of the financial aid intervening variable in relation to graduate enrollment is established in Ethington and Smart's reference to Heiss's (1970) conclusion that there is a growing dependance of graduate students on stipends or other financial support for graduate studies (9:291).

Ethington and Smart applied their model to an analysis of data obtained from the Cooperative International Research Program (CRIP). The survey population consisted of 2,873 men and 3,369 women (9:292). Although the results of the investigation indicated some nominal differences between the sexes in motivational variables, the relevant findings support the postulated significance of undergraduate

experiences on the graduate enrollment decision. The direct influences on the ultimate decision to enroll in graduate school were found to come from variables associated with undergraduate experiences (10:301). Social background was found to influence the graduate attendance decision indirectly by providing students from higher socioeconomic backgrounds the opportunity to attend selective institutions. The characteristics of a chosen institution directly affected the graduate matriculation decision (10:299,301). Ethington and Smart postulate that the admission standards are more stringent at selective universities and therefore brighter students attend those schools. Consequentially, graduate schools may recruit more heavily at those colleges and universities noted as being selective, e.g., ivy league schools such as Yale and Harvard (10:298). The findings also extended the importance of Tinto's core concepts of academic and social integration within the undergraduate institution. Ethington and Smart note that integration both socially and academically with the institution exert strong influences directly and indirectly on students' further commitment to the educational process (10:301). Financial aid impacted the graduate decision as an intervening function. Although lower income students are socialized towards middle-class values during the undergraduate years and are more eligible for financial assistance, the monetary stipend does not compensate for the inherent initial disadvantage facing lower income students predicated by

undergraduate institution size and selectivity. The resulting outcome is that more middle to high SES students decide to pursue graduate education than do lower SES students (10:301).

Consistent with the causal model and econometric studies, the graduate motivational literature further substantiates the conclusion that the interaction of a multitude of influential variables motivates individuals to graduate matriculation. The graduate enrollment decision appears to emerge from the fusion of students' background characteristics, undergraduate experiences, personal desires and goals, and the availability of financial aid opportunities.

Military Educational Studies

Military institutions, by the very nature of their existence, are microcosms of the societies they are empowered to protect; consequently, the values and beliefs which permeate the society also manifest themselves in the traditions of the military organization. Captain Glen Marumoto in his AFIT thesis on the personal values of military officers cites Hunnington's work to demonstrate society's influence on military values. Hunnington notes "military institutions of any society are shaped by the social forces, ideologies, beliefs, and establishments dominant within that society" (23:9). Because the individuals who choose military service are also citizens of

the larger society, they maintain many of the socialized values characteristic of those perpetuated by that society. Given the similarities between military members and their civilian counterparts, are there instances where the two value systems differ? An examination of the literature relevant to military pursuit of graduate education should identify areas of discrepancy between civilian and military students.

Hudgins, et al.

Majors Lewis Hudgins, Jesse Jackson, and Anthony Kobussen investigated the motivation of officers towards attainment of a master's degree in an Air Command and Staff College (ACSC) research paper. Hudgins et al. identified two official motivating factors influencing Air Force officers to pursue graduate education in the introduction chapter of their study. "It is clear that there is a significant top-level emphasis placed on officers obtaining graduate education" (14:1). The authors support their assertion with references to sources of information influencing Air Force officers' perceptions of the "need" to obtain a master's degree. AF Regulations 36-XX are concerned with personnel aspects and officer career fields. Each career speciality has a specified career guide, and officers in that career field are encouraged to follow the official Air Force position on "when to do" and "what to do" to enhance career progression. Most of the AFR 36-XX guidance suggests that a master's degree is "desirable" (14:5). To further

substantiate their premise, Hudgins et al. quote AFR 36-23, Chapter 6, "General Information about Career Progression," which states, "Each officer who expects to perform in top senior grades must be aggressive in acquiring schooling and education as explained in this regulation" (7:9).

The second official indication that a "successful" officer will obtain a master's is found in AFP 36-32, Air Force Pamphlet on the officer promotion system. The pamphlet reads, "the promotion boards use academic education as one of only seven criteria for selection to higher rank" (8:16). Note that the most powerful method of communicating the importance of any factor for career progression is how it affects promotions. The authors depict unofficial promotion rates from the 1985 promotion boards to demonstrate the significant difference between success rates of officers with and without master's degrees. For example, 72% of the majors with master's degrees were promoted to Lieutenant Colonel compared to a 65% promotion rate for those majors lacking graduate degrees (14:6-7). An essential element of the Air Force's position on officer graduate education is noted by the authors' reference to the vague guidance given about the particular fields of study necessary/appropriate to enroll in. "Noteworthy is the fact that often no specific area of study is recommended; any graduate program will suffice" (14:6). The Hudgins et al. data was compiled in November 1985 while the Officer Evaluation Report was in use. In June of 1988, the Air Force instated the Officer Evaluation System

(OES) denoting an official policy change in the significant criteria used in officer appraisal. General Welch, the Air Force Chief of Staff, relayed the official position on the attainment of advanced degrees and officer performance ratings in a June 1989 message. He stated,

Advanced degrees that contribute to effectiveness as an officer will remain important for performance purposes--not for "square filling." Conversely, a square filling advanced degree that has little relevance will do little to enhance professional development (2).

Given the corporate culture indoctrination pervading the Air Force and prompting officers towards graduate pursuit, Hudgins et al. attempted to discern those individual factors motivating officers towards attainment of a master's degree. A random survey was conducted in 1985 of 286 students and faculty assigned to Squadron Officer School (SOS), Air Command and Staff College (ACSC), and Air War College (AWC). The findings of the survey correlated consistently across the three stratum of respondents. When asked about the importance of graduate education in comparison to PME, 39% of the SOS stratum, 53% of the ACSC stratum, and 66% of the AWC stratum stated that graduate education was at least as important as Professional Military Education (PME) (14:8). The authors inferred the significance of these findings by stating that "most officers know that PME is vitally important to career success; the figures are a clear indication that officers perceive they must complete a master's program or fail to meet the expectations of their

leaders" (14:8-9). The most material outcome of the Hudgins et al. study concerns the motivating factor officers reported as predominant in their enrollment decisions. One third of the respondents enrolled in master's programs did so primarily for improved promotion opportunities (14:15). In conjunction with their perceived benefits of graduate education, 36%, 44%, and 73% of the respective stratum reported the primary reason for getting a master's degree was to "fill a square necessary for promotion" (14:15). A follow up question investigating officers' perceptions of their counterparts indicated that 78%, 85%, and 92% of the respondents felt the main reason **most** officers get their master's is to "fill a square" (14:15).

Hudgins et al. candidly present the conclusions drawn from the findings of their research. Most officers perceive a master's degree as an extremely important prerequisite for successful performance ratings and promotion to field grade rank (14:17). Of equal importance is the overriding reality that officers perceive and undertake graduate education primarily as a square filling exercise necessary for promotion considerations (14:17). In their concluding comments, Hudgins et al. assert that the results of their research hint at the larger dilemma of an officer promotion and education system that may encourage careerism.

AFIT Attendance Research

Theses written by Major Reginald Lying and Captain Arthur Smith, and by Charles Pomeroy provide a literary base for the examination of those factors which motivate officers to attend AFIT. Lying and Smith investigated potential students' perceptions of the AFIT Graduate Logistics Management program. The objective of their study was to survey all of the 430 officers eligible for AFIT attendance in Fiscal Years 1972-73 (20:13). The sample population consisted of 243 officers between the rank of second lieutenant and lieutenant colonel who responded to a two-part questionnaire. The first portion of the survey focused on those personal/professional factors eligible officers perceived as motives impacting AFIT attendance. Respondents revealed that length of commissioned service and the intention to pursue an Air Force career increased the likelihood of AFIT application. "Officers with eight or more years of service, and those planning on a career in the Air Force view the program in a more positive light" (20:26.62).

Part 2 of the Lying and Smith survey attempted to identify the three factors officers considered most influential when considering AFIT enrollment. The three most frequent responses from the fourteen variables provided are listed in Table 5. Insight on the workings of prospective students' influential factors was presented in the depiction of the three negative aspects of AFIT enrollment.

Table 5
The Three Most Influential Aspects of AFIT Attendance

N = 243	#	%
Obtain a master's degree	196	80.6
Opportunity for self improvement as a full-time student	154	63.3
Impact on promotion opportunities	119	48.9

(From 20:34)

The additional significant findings of the Lying and Smith research indicate that the perceived image of AFIT falls well below the perceived image of graduate study at civilian institutions. Eligible students also perceived the AFIT program as providing a quality education, extensive workload, and a rather difficult curriculum (20:55,61). Table 6 lists those factors most frequently identified as dissuading students to attend AFIT.

Pomery's inquiry of the factors affecting AFIT attendance concentrated on the AFIT student and Alumni data base. A sample population of 304 officers representing the AFIT Logistics Management classes of 1966 through 1971A answered a series of questions about the influence a group of seven variables had on their decisions to attend AFIT. The

Table 6

The Three Major Drawbacks in the AFIT Attendance Decision

N = 243	#	%
Associated military obligation	128	52.6
AFIT residence rather than a civilian school	123	50.6
Social environment at AFIT	116	47.7

(From 20:37)

seven factors referenced were:

1. Perceptions about the experiences of a "school" assignment.
2. Personal growth opportunities.
3. Advancement opportunities.
4. Family needs.
5. Quality of the AFIT program.
6. Difficulty of the AFIT program.
7. Social environment.

(28:13)

The findings of Pomery's study suggest a distinct polarization of variable groups perceived as positively or negatively influencing the enrollment decision. Personal growth factors such as the program's contributions to self-improvement, enhancement of personal management skills, and attainment of a worthwhile Air Force degree were identified as significant positive motivation towards AFIT attendance.

Human factor considerations such as the amount of work required, family needs, social environment, and advancement opportunities were perceived as detractors from AFIT enrollment (28:45,48).

Summary

Although the literature published on the motivational factors impacting the graduate matriculation decision is diverse, a continual progressive educational paradigm can be constructed from the research discussed in this chapter. Tinto's landmark research which has been verified by the findings of Abrahmowicz, Hoosler and Gallagher, and Chapman establishes background characteristics as the predominant motivators in the educational undergraduate attendance decision. Causal models and econometric equations identify the combinations of factors impacting individual pursuit decisions and the predicted outcomes of those necessitated by the interaction of those variables. Ethington and Smart's path diagram model extends the continuum of the decision process into the graduate arena where primary influential power is transferred from background characteristics to those immediate experiences affected by the extent of the student's academic and social integration with the institution. The military officer is a product of the greater society he defends, and is predominantly motivated by those factors influencing civilians towards graduate pursuit. The profound distinction between military officers', Air Force in

particular, and civilians' decision criteria critical to graduate matriculation is the perceived coercion of the military officer to obtain a master's degree as insurance of "proper" career advancement. In the specific case of AFIT attendance, the military officer appears to be less motivated by "careerist" factors than by individual growth opportunities such as obtaining a graduate degree and self-improvement. External AFIT environmental factors such as the social atmosphere and career ramifications appear to exert a negative influence on the AFIT attendance opportunity.

The examination of the motivational literature germane to the attainment of graduate education resolved the issues presented in Investigative Questions #1 and #2. A summary of the answers to those questions and the analysis of the data relevant to Investigative Questions #3, #4, and #5 will be presented in Chapter IV.

IV. Findings

Introduction

This chapter provides an analysis and discussion of the significant data obtained using the methodology described in Chapter II. Emory notes that most research studies result in a large accumulation of raw data which must be reduced to facilitate an understanding of the meaningful relationships. The process of reducing data to manageable dimensions to reveal significant information is an accepted data presentation practice which was completed as part of the preparation of this chapter (9:353). Implementation of the literature review techniques facilitated the resolution of Investigative Questions #1 and #2. Application of the survey methods generated information necessary for answering Investigative Questions #3, #4, and #5.

Findings for Investigative Questions #1 and #2

Investigative Question #1. What factors, i.e., reasons, values, conditions, and beliefs motivate individuals to pursue graduate education?

Investigative Question #2. What factors, i.e., reasons, values, conditions, and beliefs, motivate Air Force officers to pursue graduate education?

The literature review facilitated the development of a sequential three stage path model incorporating the findings of the research studies investigated in Chapter III. The

student background characteristics established by Tinto and substantiated through causal and econometric studies influence Stage 1 (background characteristics) of the process; the decision to enroll in an undergraduate university. Ethington and Smart's establishment of the influential transfer from background characteristics to students' recent undergraduate encounters identifies the transition into Stage 2 (undergraduate experiences). Integration (academic/socially) with the institution, a component of the workings of Stage 2, shapes students' perceptions of their overall satisfaction with the undergraduate experience. Stage 3 of the path model is the ultimate decision of graduate matriculation. Table 7 illustrates the major influential factors in the three stages of the path model.

Table 7
The Three Stages of the Graduate Matriculation Process

<u>STAGE #1</u>	<u>STAGE #2</u>	<u>STAGE #3</u>
Student's Background Characteristics	Student's Undergraduate Experiences	Student's Receipt of Bachelor's Degree & Financial Aid Opportunities

(From 9:301)

The primary influential variables in this sequence which emerge are the attainment of an undergraduate degree, (the pinnacle of undergraduate educational persistence), and the

opportunities available for graduate study financial assistance. Air Force officers are also motivated in Stage 3 by the extra incentive of obtaining a master's degree to secure career advancement. A summation of the model, in the final analysis, is that the outcomes of student choices made in Stages 1 and 2 converge on the student's decision to pursue graduate education. The volatile interaction between those variables in the graduate decision matrix and the personal aspirations of the individual student motivate civilians and military officers to pursue graduate study. The proposed Three Stage Graduate Decision Model containing this author's organization of the primary influential variables in each stage is depicted in Figure 4.

Survey Validation

The telephone questionnaires constructed in conjunction with personnel at HQ USAF/LETX and Lt. Col Trempe were designed to elicit respondents' perceptions of graduate education and the AFIT GTM option. Three pilot survey groups maintaining characteristics congruent with those of the respective stratum were administered the trial questionnaires.

The company grade pilot group consisted of eight junior transportation officers selected randomly from the sample frame and interviewed via telephone. The GTM and field grade test groups were located in attendance at AFIT. Thirteen

Model Dimensions	<u>Primary Influential Factors</u>		Student Outcomes
	Individual Factors Student Characteristics	Organizational Factors School Characteristics	
STAGE 1 BACKGROUND INFLUENCES			
Preference SES Achievement Involvement in High School Activities Proximity to College or University Parental Encouragement Peer Involvement Quality of High School Curriculum High School Curricular Track Placement		Financial Aid Information Student Costs (Tuition/Fees)	Undergraduate Institution Size and Selectivity
STAGE 2 UNDERGRADUATE EXPERIENCES			
Academic Integration Social Integration Overall Satisfaction		Physical Facilities Organizations Extracurricular Activities	Bachelor's Degree Attainment
STAGE 3 THE RESULTS OF STAGE 1 & 2 DECISIONS			
Possession of Bachelor's Degree Desire to learn more about Specialty Job Opportunities Career Advancement		Financial Aid Offers Faculty Interaction with Students	Graduate School Matriculation

Figure 4. Three Stage Graduate Enrollment Path Model

current GTM students completed the #2 trial questionnaire. and five field grade officers. TDY at AFIT for the LOGM 092 Senior Transportation Officer course. responded to the third stratum draft questionnaire. The pilot respondents identified several confusing and ambiguous statements in Questionnaires #1 and #2 and two leading/biased questions in Survey #3. The pilot groups' suggestions on methods of clarifying wordings and revising statements assisted in the development of the questionnaires which were administered to the sample populations identified using the methodology discussed in Chapter II. The pilot study and final questionnaires appear in Appendix A.

Demographic Information

Ninety-nine transportation officers stationed within the CONUS were contacted during the course of the survey research. The aggregation of the respondents by rank, number of respondents per rank, and percentage of each rank in the total survey population is depicted in Table 8. The demographic structure of each of the three stratum's questionnaire respondents appears in Appendix B.

Findings for Investigative Question #3

Investigative Question #3. What factors motivate transportation officers to pursue graduate education?

The GTM stratum was the target group for collection of data to answer Investigative Question #3. Item #5 of the

Table 8
Survey Respondent Demographic Data

<u>Rank</u>	<u>Sample #</u>	<u>Actual %</u>
Second Lieutenant	7	6.999
First Lieutenant	13	12.999
Captain	37	36.999
Major	24	23.999
Lieutenant Colonel	14	13.999
Colonel	4	3.999

questionnaire which asked, "Which of the following factors influenced your decision to attend AFIT?" provided that data. A list of thirteen factors compiled from the literature reviewed in Chapter III was recited in a consistent order to the respondents. The members of the GTM stratum were asked to prioritize the five most influential factors in their decision to attend AFIT. Table 9 summarizes, by frequency of responses given, the primary reasons for AFIT attendance.

Findings for Investigative Question #4

Investigative Question #4. To what degree are transportation officers motivated by factors different from civilians and other Air Force officers?

The data extracted by reviewing the literature pertinent to Investigative Question #1 and #2 was compared to the data obtained through Investigative Question #3 to answer Investigative Question #4. The frequency responses of civilians in the Malaney and Huston surveys along with those of the Air Force officers in the Hudgins et al. research and

Table 9
Why Transportation Officers Attend AFIT

REASON	<u>N</u>	<u>%</u>
Desire to learn more about transportation	23	74
Perception AFIT degree enhances career progression	22	71
Fulfill the requirement of Air Force officers to obtain a master's degree	18	58
3-WAY TIE FOR THE THIRD PRIORITY MOTIVATIONAL FACTOR		
Academic reputation of the Institution	13	42
Academic reputation of the faculty	13	42
Curriculum offerings	13	42

the transportation officers questioned in this thesis research are displayed in Table 10.

Findings for Investigate Question #5

Investigative Question #5. To what extent do the following variables impact the decision by potential GTM candidates to attend AFIT?

- a. Transportation officer motivation factors?
- b. Prospective GTM candidates' awareness of the AFIT opportunity?
- c. Senior transportation officers', squadron commanders', and supervisors' endorsement or denouncement of the GTM option?

Table 10

**The Primary Reasons Civilians, Air Force, and Transportation
Officers Enroll in Graduate Study**

<u>REASON</u>	<u>% Civilian</u>	<u>% Air Force Officers</u>	<u>% Transporters</u>
Learn more about Specialty	(M) 75% (H) 73%	(A) NA	74%
Greater Career Advancement	(M) NA (H) 35%	(A) 63%	71%
Needed Degree for Promotion	(M) 45.9% (H) NA	(A) 85%	58%
(M) = Malaney data (H) = Huston data (A) = Hudgins, et al. data NA = No Response, Question not asked in researcher's survey			

d. GTM candidates' perception of the AFIT course structure and the quantity of work required?

e. GTM candidates' academic performance fears?

The findings of each component element of Investigative Question #5 will be addressed separately.

a. Transportation officer motivation factors.

Question #5 of the GTM survey was the data resource for the answers to this question. The five most influential factors in AFIT attendance were displayed in Table 9. The motivational factors transportation officers mentioned least frequently by response are listed in Table 11.

Table 11

**Non-influential Factors in Transportation Officers' AFIT
Attendance Decision**

REASON	<u>N</u>	<u>%</u>
Location and Size of Campus	0	0
Quality of Physical Facilities and Materials	1	3.2
Quality and Size of the Student Body	4	10.9
Social Climate	5	15.1
Financial Considerations	7	22.5

b. Prospective GTM candidates awareness of the
AFIT opportunity?

Questions #1, #2, and #3 of the company grade survey elicited information required for the solutions to this question. The answers to these questions by frequency of response appear in Table 12.

Question #10 of GTM questionnaire provided information pertinent to the responses to Question #3. Questions #7 and #10 of the company grade questionnaire asked about the methods by which prospective GTM students obtained their information about AFIT.

Table 12

**Transportation Officers' Awareness of the AFIT GTM
Opportunity**

QUESTION	N	#Yes	%Yes	#No	%No
1. Are you aware of AFIT?	35	35	100	0	0
2. Did you know that AFIT offers a graduate logistics degree with an emphasis in Transportation Management?	35	34	97	1	3
3. Are you aware of the actions you must take to apply for enrollment in AFIT?	35	29	82.8*	6	19.3*

* Percentages may total over 100 because of rounding.

The significant responses to those questions appear in Table 13.

c. Senior transportation officers', squadron commanders', and supervisors' endorsement or denouncement of the GTM option?

Questions #1, #2, and #3 of the field grade questionnaire focused on data generation for the resolution of this issue. A frequency response chart to Questions #1, #2, and #3 is provided in Table 14.

Table 13

Transportation Officer Information Sources on the GTM Opportunity

QUESTION #10 Why do you think the career field has a problem filling all the allocated GTM slots?

GTM
Questionnaire

	<u>N</u>	<u>#</u>	<u>%</u>
Prospective students are unaware of the application procedures	30	13	43

QUESTION #7
Company Grade
Questionnaire

	<u>N</u>	<u># Yes</u>	<u>% Yes</u>	<u># No</u>	<u>% No</u>
Has your commander or supervisor expressed an opinion about AFIT to you?	34	3	8.8	31	91

QUESTION #10 Has anyone influenced your opinion of AFIT?
Company Grade
Questionnaire

	<u>N</u>	<u>#</u>	<u>%</u>
Alumni, word of mouth	33	20	60

Table 14

Senior Transportation Officers' Perceptions of the AFIT GTM Option

QUESTION	<u>N</u>	<u>Positive</u>	<u>%</u>	<u>Negative</u>	<u>%</u>
1. What is your opinion of the AFIT GTM option?	33	29	88	4	12
	<u>N</u>	<u>Yes</u>	<u>%</u>	<u>No</u>	<u>%</u>
2. Do you discuss the AFIT opportunity in your career guidance sessions?	33	29	88	4	12
	<u>N</u>	<u>Yes</u>	<u>%</u>	<u>Yes, If Right Time</u>	<u>%</u>
3. *Do you perceive an AFIT Education to be a valuable pursuit for a junior transportation officer?	29	22	75	7	24
* No negative responses ("no" answers) to this question were obtained. See author's comments under "Problems" in Chapter 1.					

d. GTM candidates' perception of the AFIT course structure and the quantity of work required?

Inquiries #6, #13, #14, and #15 of the company grade questionnaire focused on this question. The frequency of responses to those questions appears in Table 15.

Table 15

**Company Grade Transportation Officers' Perceptions of the GTM
Academic Requirements**

	<u>N</u>	<u># Yes</u>	<u>%</u>	<u># No</u>	<u>%</u>
6. Would you apply to AFIT?	35	13	41.9	18	58

* Five of the respondents, 27.7% who answered "No" to Question #6, stated that they already had a master's degree.

QUESTION	<u>N</u>	<u># Difficult</u>	<u>%</u>	<u># Easy</u>	<u>%</u>
13. What is your perception of the AFIT course work?	31	30	96.7	1	3.2

	<u>N</u>	<u>Yes</u>	<u>%</u>	<u>No</u>	<u>%</u>
14. Would your perception of the AFIT course work prevent you from applying to AFIT?	34	6	17.6	28	82.3

	<u>N</u>	<u># More</u>	<u>%</u>	<u># Less</u>	<u>%</u>
15. Do you perceive the course load at AFIT to be more extensive than the course load required at a civilian?	29	18	62	11	37.9

e. GTM candidates' academic performance fears?

Questions #18 and #19 of the company grade questionnaire elicited responses compiled to answer this question. The

answers to those questions are listed by frequency of response in Table 16.

Table 16

Company Grade Transportation Officers' Perceptions of Their Probable AFIT Performance

QUESTION	<u>N</u>	<u># Yes</u>	<u>%</u>	<u># No</u>	<u>%</u>
18. Is there a higher probability of poor academic performance at AFIT than at a civilian university?	31	11	35.4	20	64.5
19. Would your perception of your probable academic performance prevent you from applying to AFIT?	35	6	29*	29	82.5*

* Percentages may total over 100 because of rounding.

Additional Findings

Question #10 of the GTM questionnaire and #12 of the field grade survey provided information pertinent to the solution of the Specific Problem stated in Chapter I. The top two replies by frequency are listed in Table 17.

Table 17

**GTM and Field Grade Transportation Officers' Reasons Why
Junior Transportation Officers Do Not Attend AFIT**

GTM 10.

Field Grade 12.

QUESTION: Why do you think AFIT and AFMPC are unable to fill
all the allocated GTM slots?

	<u>N</u>	<u>#</u>	<u>%</u>
GTM Responses			
1. Heavy Workload. Academic Performance Fears/Difficulty	31	16	51.6
2. Difficulty Getting Good Assignment Out of AFIT	31	12	38.7
Field Grade Responses			
1. Squadron Commanders not talking about the program to their sub- ordinates.	30	13	44
2. Ineffective use of the advanced degree position requirements (1ATY) and AFIT graduate assignments.	30	12	40

Summary

Chapter IV. exhibited a compendium of the relevant
outcomes of the literature review as well as a description of
the sample population and survey instruments. An analysis of
the data gathered from the implementation of the methodology

findings of the stratum surveys were also provided in this chapter. Comments on the results of this research based on the Specific Problem and Investigative Questions recorded in Chapter I, conclusions and implications drawn from those findings, and recommendations for revised study are submitted next in Chapter V.

V. Conclusions and Recommendations

Introduction

Chapter V builds on the information obtained through the extensive review of pertinent literature and the data analysis presented in Chapter IV, and introduces the inferences formulated to answer the Investigative Questions and address the Specific Problem mentioned in Chapter I. Practical applications for the findings, and recommendations for future research, also appear in this chapter.

Investigative Questions

Investigative Question #1. What factors, i.e., reasons, values, conditions, and beliefs, motivate individuals to pursue graduate education?

Conclusion. The findings obtained in this thesis, substantiated by the numerous research efforts cited, suggest that the factors influencing civilians towards graduate study matriculation are numerous and multidimensional. The sequential three stage model depicted in Chapter IV is an aggregate representation of the voluminous research applicable to motivational variables inducing graduate educational pursuit. The graduate school enrollment decision is essentially the final outcome of a series of interrelated choices, each predisposing the other. Three Pandora's boxes, 1. background characteristics, 2. undergraduate experiences, and 3. bachelor's degree completion and financial resources,

each containing various aspects of the student's conditions, beliefs, values, and motives, dictate the likelihood of graduate matriculation. Ethington and Smart synopsise the process by stating,

The path by which a person arrives in graduate school is not a particularly complicated one. The student enrolls in an undergraduate institution based on certain background characteristics, undergoes various experiences there, receives a baccalaureate, and subsequently makes a decision concerning graduate school influenced by a culmination of those prior experiences (10:299,301).

Investigative Question #2. What factors, i.e., reasons, values, conditions, and beliefs, motivate Air Force officers to pursue graduate education?

Conclusion. The limited literature published investigating Air Force officers' pursuit of graduate education identifies "square filling" to enhance career progression as the predominant motivating factor. The data which was obtained from the respondents attending PME in residence at Maxwell AFB Alabama could be biased. Hudgins et al. note that the results of their study are generalizable only to the population attending service schools surveyed; however, they also contend that for the overall Air Force population, the negative perception of a master's degree is probably much stronger (14:18). The authors support their contention with the rationale that officers selected to attend PME in residence are the Air Force's most competitive and energetic officers, those who have demonstrated a

willingness for extra work. "Those left behind should clearly be less positive about the potential benefits of a master's degree" (14:18).

In response to Hudgins et al.'s premise, it could be argued that those officers in attendance at PME schools are not necessarily the hardest working or most energetic officers, but are instead those officers focused primarily on advancing their careers. If the majority of officers in resident PME is composed of those officers who are following "corporate guidance" along the "fast track" to promotion, their "careerist" perception of Air Force service might well include a jaded view of a master's requirement as just another square filling exercise necessary for promotion.

The argument presented in the previous paragraph casts doubt over the relevance and usefulness of the Hudgins et al. data in this thesis. The necessity of the study's inclusion (one of only four located) in this research was justified by this author's acceptance of Hudgins et al.'s hypothesis that the greater Air Force officer population maintained perceptions of graduate education consistent with those of the surveyed population.

The examination of officer motivation towards AFIT attendance indicated that the primary variables prompting officers to attend AFIT were not those which influenced Air Force officers towards graduate education. AFIT attendance is primarily influenced by personal growth factors such as learning more about an expert area and self-improvement

benefits such as increased management skills. Promotion enhancement which was found to be the predominant reason Air Force officers acquire graduate education was listed as the third priority motive for AFIT attendance.

Investigative Question #3. What factors motivate transportation officers to pursue graduate education?

Conclusion. Congruent with their civilian contemporaries, transportation officers' main motivation towards AFIT enrollment is a desire to learn more about transportation. Additionally, the variables tied for the number three priority, "academic reputation of the institution," and "faculty," correlate precisely with the research findings of Griever and Wemmerus, and Olson and King. The data in Table 9 of Chapter IV indicates that transportation officers maintain influential priorities dissimilar to the Air Force officer population. Secondary influences on AFIT attendance in order of significance include: a perception that an AFIT degree will enhance career progression (prestige factor), the "square filling" requirement of Air Force officers to obtain a master's degree, and the academic reputation AFIT maintains as an institution offering a quality education.

Investigative Question #4. To what degree are transportation officers motivated by factors different from civilians and other Air Force officers?

Conclusion. The answer to Investigative Question #3 supported the strong correlation between civilian and transportation officer factors which influence graduate matriculation. However, one area of dissimilarity was the significance of financial assistance in the pursuit of graduate education. Ethington and Smart reported that financial aid opportunities were one of the two primary influences in the final decision for graduate matriculation. Although the AFIT assignment is comparable to a full scholarship, only a small number of respondents, 22.5%, indicated that receiving a funded graduate education was influential in their decision to attend AFIT.

There is an apparent divergence between transportation officers and the larger population of Air Force officers in motivation towards graduate work. As shown in Table 10, 85% of Air Force officers reflected "needed a degree for promotion" as their major influence in acquiring a master's degree, while only 58% of the transportation officers contacted replied that obtaining a degree as a "square filling" exercise was influential in their decision to attend AFIT. The "needed a degree for promotion" response was the third priority influence of the transportation officer respondents to this research. One explanation for the discrepancy between Air Force officers and transportation officers could be the timing of this research. The effects of General Welch's advanced degree policy (2) and the newly

implemented OES may have been the reason survey respondents reprioritized their motivational factors.

There is also a disparity between the findings of previous studies on AFIT attendance and the results of this research. The Lying and Smitn. and Pomery studies correspond in their identification of the opportunity of acquiring a master's degree as a significant motivation towards AFIT attendance. The inference drawn by this author is that there is some level of similarity between the influence of obtaining a quality master's and a desire to learn more about a specialty; however, the degree or significance of that correlation is unknown. Both of the previous studies identified the opportunity for self-improvement as the second priority motivational variable. Lying and Smith tied "as a full-time student" to their self-improvement response. The notion of "full-time" study touches on the financial assistance aspects of AFIT attendance. If the Lying and Smith respondents did associate the "opportunity for self-improvement as a full-time student" with not having to simultaneously work at a second occupation for financial need, then those respondents' motivational matrices match the postulated findings of Ethington and Smart. As was previously mentioned, transportation officers gave little significance to the financial aid aspects of the AFIT opportunity.

Another confounding difference between the previous AFIT attendance studies and this research is the impact the social environment at AFIT has on officers' decisions to attend AFIT. Both of the previous studies revealed a significant negative relationship between the social environment at AFIT and the likelihood of AFIT enrollment. But, 16.1% of the transportation officers in this study responded that the social atmosphere of AFIT was an insignificant consideration in their enrollment decision.

Investigative Question #5. To what extent do the following variables impact the decision by potential GTM candidates to attend AFIT?

- a. Transportation officer motivation factors?
- b. Prospective GTM candidates' awareness of the AFIT opportunity?
- c. Senior transportation officers', squadron commanders', and supervisor's endorsement or denouncement of the GTM option?
- d. GTM candidates' perception of the AFIT course structure and the quantity of work required?
- e. GTM candidates' academic performance fears?

The conclusions drawn for each component of Investigation Question #5 will be presented separately.

a. Transportation officer motivation factors.

Conclusion. This set of variables exhibits an insignificant influence on transportation officers' decisions to attend AFIT. The noted similarities and differences

between transporters, other AFIT students, and the greater Air Force officer population sheds little light on the causes of the GTM student shortages. One inference that can be drawn from this research is that transportation officers were found to be less "careerist" motivated than other Air Force officers. Therefore, the reduced significance to transporters of the prestige factor associated with AFIT attendance may cause them to be less motivated to pursue AFIT enrollment.

b. Prospective GTM candidates' awareness of the AFIT opportunity?

Conclusion. Of the company grade stratum, 100% of those officers were aware of AFIT and its mission. A significant number of GTM candidates, 97%, knew of the GTM option while 82.8% indicated that they were aware of the required procedures for application and enrollment. These findings appear to contradict Lt. Col Maxson's (Chief of Transportation Officer Assignments) suggestion that GTM candidates are not aware of the application requirements. However, a closer examination of the means by which GTM candidates obtain their information about AFIT reveals that Lt. Col Maxson's perception may well be correct. The majority of respondents, 60%, indicated that their opinion of AFIT was influenced by alumni or general word of mouth; additionally, 91% stated that their commander or supervisor had not discussed AFIT with them. The conclusion drawn from

these indicators is that information about AFIT is not being disseminated through official Air Force channels. The majority of potential GTM candidates are receiving bits and pieces of biased information about AFIT from hearsay and alumnus' perceptions of AFIT experiences. Because the company grade officers are not getting objective step by step instruction on AFIT application, they are accepting the information they do receive as accurate and complete. Hearing the numerous individual chronicles and methods of arriving at AFIT forces company grade officers to piece together their perceptions of the proper actions necessary for AFIT application. The inference that potential GTM candidates maintain a naive confidence in their knowledge of AFIT enrollment procedures is supported by the fact that 43% of the transportation officers who successfully completed the application process and enrolled in AFIT indicated that prospective students are unaware of the necessary application procedures.

- c. Senior transportation officers', squadron commanders', and supervisor's endorsement or denouncement of the GTM option?

Conclusion. The findings of this question contradict those obtained in Investigative Question #5b. While 91% of the company grade stratum responded that their commanders or supervisors had not expressed an opinion about AFIT, 88% of the field grade officers contacted stated that

they do discuss the AFIT opportunity with their subordinates. This inverse relationship with the company grade officers' responses may be a result of the problem mentioned in Chapter II in the "Problem" section. The personal and confidential nature of questioning field grade officers' discussions with their subordinates may have offended many of the respondents and caused them to answer the survey inaccurately (33:278). Additionally, because of the direct personal communication associated with telephone interviews and the respondents' perceived compromise of anonymity, the understanding that this research was sponsored by HQ USAF/LET may have induced the "party line" support of Air Force programs expected from field grade officers. The random selection of respondents supports the application of these findings to the greater field grade transportation officer population. As was suggested in the conclusion to Investigative Question #5b, commanders and supervisors not promoting AFIT in their career counseling sessions is a strong contributor to the GTM student shortage. Based on the findings of this research, one of the factors dissuading 58% of the company grade officers from AFIT application is the lack of squadron commanders' and supervisors' verbal endorsement of the AFIT program. If the AFIT opportunity is not presented as a viable/beneficial option in a supervisor or commander's career guidance discussions, then the underlying message communicated to company grade officers is that AFIT is not an option to pursue.

d. GTM candidates' perception of the AFIT course structure and the quantity of work required?

Conclusion. The responses to this question also elicited confounding data. Almost unanimously (96.7%), potential GTM candidates perceive the AFIT course work as difficult. The majority, 62% of company grade officers surveyed, also believe the course load carried at AFIT to be more extensive than that required at a civilian university. The puzzling finding concerns potential students' perceptions of the AFIT academic requirements as displayed in Table 15 of Chapter IV, where 82.3% of respondents stated that their perceptions of AFIT requirements as being difficult and extensive would not prevent them from applying for enrollment. Additional confusion is added to this analysis with the discovery that 58% of the potential GTM students would not apply for AFIT. If 82.3% of the company grade officers would apply for AFIT despite their strong perceptions of the difficulty and quantity of work required, than a relatively equal percent of respondents should indicate that they would indeed apply to AFIT. An explanation for the discrepancies in the findings is associated with the interaction of an intervening variable not directly targeted in the questions addressing AFIT attendance.

The issue of pursuing AFIT as a second degree may have impacted the company grade officers' statements about AFIT

application. As previously shown in Table 15, 27.7% of those officers who stated that they would not apply to AFIT mentioned that they currently held a master's degree. An additional dynamic factor impacting this question may have been associated with the phenomena of telephone interviewing. Lavarakas notes that one of the criticisms of telephone interviews is that respondents often lie. Lavarakas cites his own research and that of Elkman & Friesen (1976), Maier (1966), and Maier & Thurber (1968) to suggest that "interviewers have a general ability to sense accurately the veracity of another person when listening to his or her voice" which insures reasonably accurate information is obtained in telephone surveys (18:18). While this author is not an experienced interviewer, the findings of this question suggest that some type of denial process was observed in the company grade stratum's responses. The respondents to the question "Would your perception of the AFIT course work prevent you from applying to AFIT?" may have attached a prestige bias to the question. Given the predominance of the "can do" maxim within the Air Force's corporate culture, company grade officers may have been embarrassed to indicate that their perceptions of the difficulty of an endeavor would prevent them from pursuing that endeavor.

e. GTM candidates' academic performance fears?

Conclusion. The findings of this question are confusing. When questioned about their perceptions of the

AFIT course work. Table 15 question #13, the company grade respondents almost without exception (96.7%) stated that AFIT was difficult. Question #15 in Table 15 also targeted company grade officers' perceptions of AFIT academic requirements. Similar to their perception of the AFIT course work being difficult, a significant percentage, 62%, perceived the course load (number of classes and credit hours required for degree completion) to be more extensive than at a civilian institution. Company grade officers' (64%) responses to Question #18 in Table 16 exposed their perceptions of a higher probability of poor academic performance at AFIT than at a civilian university. The discussion of Question #5d highlighted the disconnect between company grade officers' strong perceptions about AFIT's difficult academic requirements and their overwhelming (82.3%) inclination to ignore the effects these factors exert on their decisions to enroll by stating that their perceptions would not prevent them from applying to AFIT.

The causes of the company grade denial phenomena postulated in the discussion of Question #5d also seems to impact this inquiry into GTM candidates' academic performance fears. A secondary mediating variable mentioned by Fuller et al. in their study of the undergraduate matriculation process may also impact the graduate enrollment decision. Fuller et al. note that on one hand a high academic standard brings high credentials and hence good job opportunities after graduation. On the other hand, a high standard means a

smaller probability of successful completion of the program. How a student views the trade-off of those forces depends on their own ability (11:478). The findings support the conclusion that company grade officers perceive AFIT as maintaining high academic standards. The perceived performance standards for successful AFIT completion coupled with officers' motivation to excel in their careers may increase the perceived likelihood of failure. The data extracted from the company grade transportation officers interviewed in this research indicated that they are not as influenced by the "square filling" pressure to obtain a master's as their fellow officers or by the credentials associated with an AFIT degree. The implication drawn from these findings is that company grade officers' academic performance fears impact the benefit/costs trade-off evaluation undertaken as part of the AFIT attendance decision. Junior transportation officers may perceive the potential damage caused to their careers by unsuccessfully attending AFIT as too costly in relation to their perceptions of the benefits of AFIT attendance.

Summary of Investigative Questions and Conclusions

The answers to the Investigative Questions do not provide a definitive solution to the Specific Problem of AFIT being unable to fill all of the allocated GTM billets. Based on the findings of this thesis, the author postulates that a conglomeration of the factors identified in the

transportation officer responses to the survey questions presented and discussed in Chapters IV and V is the cause of the GTM student shortage. The synergistic combination of three significant post-secondary matriculation motivational factors, information availability, significant group contributions, and individual aptitude drives company grade transportation officers away from the perceived risks of AFIT application. The discussion of the Hoosler and Gallagher study in Chapter III suggested the significance the availability of information about an institution has on a students' decision to enroll. Phase Two of Hoosler and Gallagher's Three Phase Model depicts the primary activities of the matriculation process as the students search for a school and the schools search for students. The lack of official information company grade transportation officers receive about AFIT along with the influx of subjective alumni descriptions of the AFIT experience causes potential GTM candidates to have to aggressively search for the data required for AFIT enrollment. The literature review also discussed Conklin and Dailey's findings of the impact parental encouragement and peer support have on students' college decisions. Although junior Air Force officers are adults, Air Force guidance on the cultivation of young officers supports the parental/advisory requirements of commanding officers' and supervisors' duties. The indication that few field grade officers advise their subordinates about AFIT and the fact that company grade transportation officers

peers who have attended AFIT leave the impression that the school is difficult suggests that potential GTM students' primary influential group in the AFIT attendance decision does not impact that process positively. The third factor identified in Chapter III relevant to this discussion is Chapman's work on student perceptions. Chapman used the term "freshman myth" to describe students' perceptions of what college life is going to be like. He further states that students self-select colleges based on their perceptions and ability, and may eliminate the college choice option. Potential GTM students' perceptions of the academic difficulty of AFIT magnify individual fears about their academic abilities and lead them to eliminate AFIT as a master's degree option. The implications of the Additional Findings of this thesis indicate a possible cause of the GTM student shortage at a macro organizational level.

Additional Conclusions

The GTM students and alumni, and field grade transportation officers' replies to Questions #10 and #12 in Table 17 suggest that the student shortage problem may be an outcome of a larger structural problem. Both stratum, 38.7% for the GTM group and 40% of the field grade group, cited the assignment and usage of AFIT graduates as the second significant reason junior transportation officers do not attend AFIT. The correlation of the GTM and field grade responses is somewhat unusual given each group's location in

the levels of the transportation career field bureaucratic hierarchy. One of the flaws of a vertical departmental organizational structure is the inherent existence of conflicting objectives. The goals and policies established and implemented at the upper levels of the organization trickle down through each echelon of the organization. In many instances, the objectives established at the top levels contradict the tactics required by the subordinate functions to accomplish those objectives (16). HQ USAF/LET, the Air Force Major Command (MAJCOM) Transportation Directorates, and AFMPC function at varying levels of the Air Force bureaucracy and are trapped in a circular cause and effect relationship which perpetuates the AFIT GTM student shortage.

At the macro level, the AFIT GTM student shortage can be shown to be similar to a circular reasoning phenomena beginning and ending at the same point. The process causing transportation officer student billets to remain vacant proceeds in the following steps:

1. HQ USAF/LET is tasked to justify the requirement for a number of allocated AFIT student slots which are historically not filled 100% or risk possible forfeiture of those billets.
2. HQ USAF/LET in turn tasks the MAJCOMs to justify their advanced degree position requirements (IATY) or risk possible forfeiture of their IATY slots.
3. The MAJCOMs, driven by the need to justify all manpower requirements because of the correlation between manpower and funding, the transportation officer shortage, and the desire not to be the "stuckee" (losing more positions than their sister commands), justify their IATY requirements.

4. The summation of the MAJCOM 1ATY requirements in turn determines the number of graduate student slots allocated each year to fulfill the advanced degree duty requirements.
5. AFMPC is tasked to fill all the allocated AFIT GTM slots determined in Step #4, but can not because the career field is 90% manned (23) and too many slots were allocated. AFMPC surrenders the unused billets to AFIT for dispersal.
6. HQ USAF/LET is tasked to justify the requirement for a number of allocated AFIT student slots which are historically not filled 100% or risk possible forfeiture of those billets.

The effects of the student procurement cycle are AFIT students' perceptions that they will not get a good job out of AFIT, and squadron commanders' career field experience which indicates that AFIT graduates do not necessarily receive assignments which use their AFIT education. An anonymous GTM alumni respondent summed up the situation with the response of

Why should someone be motivated to attend AFIT and go through 15 months of hell to then get an assignment to Beale AFB as a Plans and Programs Officer? Everyone knows that there is no greater need for a master's degree in that job than there is for a Plans and Programs Officer to have an advanced degree at Kelly AFB.

Practical Applications

The findings of this thesis and the conclusions drawn from those findings constitute an initial data base facilitating the development of solutions pertinent to the dynamics of the AFIT GTM student procurement problem at each level in the process. HQ USAF/LET may use this thesis information to begin a reevaluation of the advanced degree justification policy and procedures. A suggestion at this

corporate level is the possible elimination of a number of the 1ATY duty positions in the field which would reduce the number of funded slots allocated each year. While the reduction of allocated students slots is the outcome this research was sponsored to prevent, it would increase the efficient use of all slots allocated and, in turn, enable AFMPC to better use the abilities and knowledge of AFIT graduates by assigning them to positions requiring those skills, thereby maximizing contribution to the Air Force mission. The GTM option managers and AFIT Admissions could benefit from the findings of this thesis by developing a pamphlet which addresses the perceptions identified in this thesis and provides objective information about the AFIT experience for prospective GTM students. The GTM option managers in conjunction with the MAJCOM transportation directorates should distribute newsletters to the officers in the field which emphasize the policies on officer advanced education stated by General Welch and the resulting value of pursuing an AFIT transportation degree and its usefulness in job performance.

Future Research

The preliminary research presented in this thesis can be expanded with additional studies in the following areas:

1. Interviews could be conducted with field grade officers who have supervised or commanded GTM

graduates as an investigation of the utility of the AFIT degree in enhancing alumni's job performance.

2. An examination of the advanced degree position justification process could be conducted to evaluate the criteria used to establish the 1ATY positions and to determine if those criteria correspond with those academic subjects taught at AFIT.
3. An investigation of the factors that motivate Air Force officers to pursue graduation education. The research would supplement the limited published data available on this topic and could investigate the possible shift in the priority of motivating factors discovered by this thesis.
4. An investigation could be conducted to more closely examine the impact holding a prior master's degree and the timing of the AFIT opportunity have on officers' desire to attend AFIT.

These four areas of research could further AFIT's understanding of the process which motivates officers to select AFIT as their first graduate school choice.

Appendix A: Pilot and Final Questionnaires

PILOT STUDY QUESTIONNAIRE
COMPANY GRADE TRANSPORTATION OFFICERS'
PERCEPTIONS OF THE AFIT GRADUATE PROGRAM

* Questions with items changed highlighted in **boldface**

1. Are you aware of the Air Force Institute of Technology (AFIT) and its mission?
2. Did you know that AFIT offers a graduate logistics degree with an emphasis in transportation management?
3. Are you aware of the actions you must take to apply for enrollment in AFIT?
- *4. Have you ever applied for admittance to **attend AFIT**?
If so what were the results of your attempt?
- *5. What is your perception of the AFIT opportunity, i.e., **do you believe** it is a option worthy of your pursuit?
6. Would you apply to AFIT? If so, why? If not, why not?
7. Has your current commander or supervisor expressed an opinion about AFIT, positive or negative to you?
If so, what was the nature of the comment?
8. Is your current commander or supervisor an AFIT graduate?
9. Have any of your previous commanders or supervisors been AFIT graduates?
- *10. Has anyone influenced your **opinion** of the AFIT program? If so, who, i.e., Senior Officer, associate, or AFIT alumni, **etc.**?
11. Does your MAJCOM transportation directorate provide information about AFIT in newsletters or messages?

- *12. Have you heard any information/opinions on the quantity or difficulty of the AFIT course work?
- *13. What is your perception of the difficulty of the AFIT course work, i.e., easy, extremely difficult, math oriented, etc.?
- 14. Would your perception of the AFIT course work prevent you from applying for admission to AFIT?
- *15. Do you perceive the course load at AFIT to be more extensive **then** the course load required at a civilian university?
- *16. Would it be academically easier or more difficult to obtain your graduate degree at a civilian institution?
- *17. Would it be more or less convenient to acquire your graduate degree at a civilian institution?
- 18. Is there a higher probability of poor academic performance at AFIT or a civilian university?
- *19. Would your perception of your probable academic performance prevent you from applying for AFIT **enrollment**?
- 20. Is the AFIT degree more beneficial to a transportation officer's career progression than a graduate degree from a civilian institution? If so, in what way?
- 21. Given the new Officer Evaluation System's emphasis on job knowledge and job performance, do you perceive the time invested in an AFIT degree as a plus or minus in your career progression?
- 22. Additional Comments _____

Thank you for your assistance in this research.
All responses will remain anonymous.

FINAL QUESTIONNAIRE
COMPANY GRADE TRANSPORTATION OFFICERS'
PERCEPTIONS OF THE AFIT GRADUATE PROGRAM

* Questions with corrected items highlighted in **boldface**

1. Are you aware of the Air Force Institute of Technology (AFIT) and its mission?
2. Did you know that AFIT offers a graduate logistics degree with an emphasis in transportation management?
3. Are you aware of the actions you must take to apply for enrollment in AFIT?
- *4. Have you ever applied for admittance to AFIT?
If so, what were the results of your attempt?
- *5. What is your perception of the AFIT opportunity. i.e., **is it an** option worthy of your pursuit?
6. Would you apply to AFIT? If so, why? If not, why not?
7. Has your current commander or supervisor expressed an opinion about AFIT, positive or negative to you?
If so, what was the nature of the comment?
8. Is your current commander or supervisor an AFIT graduate?
9. Have any of your previous commanders or supervisors been AFIT graduates?
- *10. Has anyone influenced your **perception** of the AFIT program? If so, who, i.e., Senior Officer, associate, or AFIT alumni?
11. Does your MAJCOM transportation directorate provide information about AFIT in newsletters or messages?

- *12. Have you heard any information or opinions on the quantity or difficulty of the AFIT course work?
- *13. What is your perception of the difficulty of the AFIT course work. i.e., do you perceive it to be easy, extremely difficult, math intensive?
- 14. Would your perception of the AFIT course work prevent you from applying for admission to AFIT?
- *15. Do you perceive the course load at AFIT to be more or less extensive than the course load required at a civilian university?
- *16. Would it be academically easier or more difficult to obtain your graduate degree at AFIT or at a civilian institution?
- *17. Would it be more or less convenient to acquire your graduate degree at AFIT or at a civilian institution?
- 18. Is there a higher probability of poor academic performance at AFIT or a civilian university?
- *19. Would your perception of your probable AFIT academic performance prevent you from applying to AFIT?
- 20. Is the AFIT degree more beneficial to a transportation officer's career progression than a graduate degree from a civilian institution? If so, in what way?
- 21. Given the new Officer Evaluation System's emphasis on job knowledge and job performance, do you perceive the time invested in an AFIT degree as a plus or minus in your career progression?
- 22. Additional Comments _____

Thank you for your assistance in this research.
All responses will remain anonymous.

PILOT STUDY QUESTIONNAIRE
FACTORS MOTIVATING TRANSPORTATION
OFFICERS TO PURSUE AN AFIT DEGREE

* Questions with items changed highlighted in **boldface**

1. How did you find out about AFIT?
2. Did your commander, assignment personnel, AFIT alumni, or anyone else influence your decision to attend AFIT?

If so who?
- *3. Was your decision **about AFIT attendance** influenced by factors other than personal contacts, i.e., newsletters or conference attendances?

If so, what were the influences?
4. What were some of the personal factors/considerations which influenced your decision to attend AFIT?
- *5. Which of the following factors influenced your decision to attend AFIT?
 - a. Location of the campus and size of the institution.
 - b. Quality of the physical facilities and materials (labs, libraries, etc.).
 - c. Academic reputation of the institution.
 - d. Academic reputation and quality of the faculty.
 - e. Quality and size of the student body.
 - f. Curriculum offerings.
 - g. Reputation of the alumni.
 - h. Financial considerations (cost of PCS move, cost of books and materials, cost of living in the Dayton area).
 - i. Social climate (extracurricular activities, student comradery, faculty support/participation).

- j. Your desire to learn more about transportation.
 - k. You wanted an AFIT degree for personal reasons.
 - l. You wanted to fulfill the requirement of Air Force officers to obtain a Masters degree.
 - m. The perception that an AFIT degree enhances an officer's career progression (promotion, job offers etc.).
 - n. Other Factors_____
- *6. Was your decision to attend AFIT influenced by factors which would not have impacted your decision to attend a civilian institution?
7. Were there difficulties you encountered while applying for AFIT that made you reconsider your attendance decision?
- If so, what were they?
8. Is there sufficient information about AFIT available to prospective GTM students?
9. What is your perception of the AFIT application process (in your opinion is the process straight forward, easy, cumbersome, or confusing etc.)?
10. Why do you think AFIT and the Transportation career field has a problem filling all of the allocated GTM slots?
11. What actions would you suggest for correcting the problem?
12. Additional comments_____

All responses will remain anonymous.
Thank you for your contributions to this research.

FINAL QUESTIONNAIRE
FACTORS MOTIVATING TRANSPORTATION
OFFICERS TO PURSUE AN AFIT DEGREE

* Questions with items changed highlighted in **boldface**

1. How did you find out about AFIT?

2. Did your commander, assignment personnel, AFIT alumni, or anyone else influence your decision to attend AFIT?

If so who?

*3. Was your decision to attend AFIT influenced by factors other than personal contacts, i.e., newsletters, **messages**, or conference attendances?

If so, what were the influences?

4. What were some of the personal factors/considerations which influenced your decision to attend AFIT?

*5. From the following list of factors, indicate the five most influential by priority (1-5) in your decision to attend AFIT?

- a. Location of the campus and size of the institution.
- b. Quality of the physical facilities and materials (labs, libraries, etc.).
- c. Academic reputation of the institution.
- d. Academic reputation and quality of the faculty.
- e. Quality and size of the student body.
- f. Curriculum offerings.
- g. Reputation of the alumni.
- h. Financial considerations (cost of PCS move, cost of books and materials, cost of living in the Dayton area).
- i. Social climate (extracurricular activities, student comradery, faculty support/participation).

- j. Your desire to learn more about transportation.
 - k. You wanted an AFIT degree for personal reasons.
 - l. You wanted to fulfill the requirement of Air Force officers to obtain a Masters degree.
 - m. The perception that an AFIT degree enhances an officer's career progression (promotion, job offers etc.).
 - n. Other Factors_____
- *6. Was your decision to enroll at AFIT affected or influenced by factors or circumstances which would not have affected your decision to attend a civilian institution?
7. Were there difficulties you encountered while applying for AFIT that made you reconsider your attendance decision?
- If so, what were they? -
8. Is there sufficient information about AFIT available to prospective GTM students?
9. What is your perception of the AFIT application process (in your opinion is the process straight forward, easy, cumbersome, or confusing etc.)?
10. Why do you think AFIT and the Transportation career field has a problem filling all of the allocated GTM slots?
11. What actions would you suggest for correcting the problem?
12. Additional comments_____

All responses will remain anonymous.
Thank you for your contributions to this research.

PILOT STUDY QUESTIONNAIRE
SENIOR TRANSPORTATION OFFICERS' AND SUPERVISORS
PERCEPTIONS OF THE AFIT GTM PROGRAM

* Question with items changed highlighted in **boldface**.

1. What is your opinion of the AFIT Graduate Transportation Management (GTM) option?

*2. Do you discuss the AFIT opportunity in your career guidance counseling sessions?

If so, do you endorse or denounce AFIT attendance?

3. Do you perceive an AFIT education to be a valuable pursuit for a junior transportation officer?

*4. Do you perceive an AFIT degree to be applicable in the types of duties transportation officers will perform in in **their careers**?

5. Does obtaining an AFIT degree improve the leadership and management ability of graduating officers?

*6. **Does** the Air Force and the career field receive a maximum return on investment from AFIT graduates' duty performance in relation to the dollars invested in their education?

7. Does obtaining an AFIT degree enhance a transportation officer's promotability and career progression?

8. Has the introduction of the new OES changed your perception of the value/usefulness of the AFIT degree?

9. Has the new OES impacted your decision to discuss AFIT in your career counseling sessions?

If so, in what way?

- *10. Does the fifteen months spent at AFIT isolated from the "hands on" education learned in the field offset or outweigh the benefits of AFIT attendance?
- 11. Did you know that AFIT and AFMPC have difficulty filling all of the allocated AFIT Graduate Transportation Management slots?
- 12. What do you perceive the cause of the problem mentioned in question #11 to be?
- 13. Do you have suggestions or thoughts that could provide possible solutions to the problem?
- 14. Additional comments _____

All responses will remain anonymous.
Thank you for assisting in this research.

FINAL QUESTIONNAIRE
SENIOR TRANSPORTATION OFFICERS' AND SUPERVISORS'
PERCEPTIONS OF THE AFIT GTM PROGRAM

* Corrected question with changes highlighted in **boldface**.

1. What is your opinion of the AFIT Graduate Transportation Management (GTM) option?

*2. Do you discuss the AFIT opportunity in your career guidance counseling sessions?

If so, in what way?

3. Do you perceive an AFIT education to be a valuable pursuit for a junior transportation officer?

*4. Do you perceive an AFIT degree to be applicable to the types of duties transportation officers will perform in **the course of their careers**?

5. Does obtaining an AFIT degree improve the leadership and management ability of graduating officers?

*6. Do the Air Force and the career field receive a maximum return on investment from AFIT graduates' duty performance in relation to the dollars invested in their education?

7. Does obtaining an AFIT degree enhance a transportation officer's promotability and career progression?

8. Has the introduction of the new OES changed your perception of the value/usefulness of the AFIT degree?

9. Has the new OES impacted your decision to discuss AFIT in your career counseling sessions?

If so, in what way?

- *10. Do the fifteen months spent at AFIT away from the field offset or outweigh the benefits of AFIT attendance?
- 11. Did you know that AFIT and AFMPC have difficulty filling all of the allocated AFIT Graduate Transportation Management slots?
- 12. What do you perceive the cause of the problem mentioned in question #11 to be?
- 13. Do you have suggestions or thoughts that could provide possible solutions to the problem?
- 14. Additional comments _____

All responses will remain anonymous.
Thank you for assisting in this research.

Appendix B: Demographic Data

Table 18

Stratum #1 Respondents' Demographic Data

<u>Rank</u>	<u>Sample #</u>	<u>Actual %</u>
Second Lieutenant	7	20.0
First Lieutenant	6	17.142
Captain	<u>22</u>	62.857
N = 35		

Table 19

Stratum #2 Respondents' Demographic Data

<u>Rank</u>	<u>Sample #</u>	<u>Actual %</u>
First Lieutenant	7	22.580
Captain	15	48.387
Major	5	16.129
Lieutenant Colonel	<u>4</u>	12.903
N = 31		

Table 20

Stratum #3 Respondents' Demographic Data

<u>Rank</u>	<u>Sample #</u>	<u>Actual %</u>
*Captain	3	9.090
Major	17	51.151
Lieutenant Colonel	8	24.242
Colonel	<u>5</u>	15.151
N = 33		

* Major-select Squadron Commanders

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Vita

Captain James R. Hall was born on 18 May 1963 in Munich, West Germany. An Army dependant, he graduated from The Nurenberg American High-school in Furth, West Germany in 1981 and attended the University of Maryland, European Division, from which he received an Associates Degree in Business Administration. He attended the University of Northern Colorado and received a Bachelor of General Business Degree in 1985. Upon graduation, he received a commission in the United States Air Force through the Reserve Officer Training Corp (ROTC) program and was called to active duty in September 1985. After completion of Transportation Officer training, he was assigned to the 22nd Transportation Squadron, 22nd Air Refueling Wing at March AFB, California. While there, he served as Vehicle Operations Officer, and Plans and Programs Officer until entering the School of Systems and Logistics, Air Force Institute of Technology, in May 1988.

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Abstract

This study identified those factors that motivate civilians, Air Force Officers, and transportation officers to pursue graduate education. The research investigated the correlation between the causal motivators towards graduate pursuit and the problem of not filling all of the Air Force Institute of Technology (AFIT) Graduate Transportation Management (GTM) student billets.

Three primary causal factors each comprised of numerous secondary variables, were identified as influencing graduate attendance: 1. A student's background characteristics, e.g., social economic status, aptitude, high-school curriculum and educational track placement; 2. A student's undergraduate experiences, e.g., integration with the institution, both academic and socially; and 3. A "square filling" necessity for career advancement. This study presented a comprehensive model of those factors impacting the graduate enrollment decision.

The 99 transportation officer telephone interview respondents were grouped into three survey stratum: 1. Potential AFIT GTM students (company grade officers); 2. GTM candidates, current GTM students, and GTM alumni; and 3. Senior transportation officers, squadron commanders, and supervisors.

The significant findings of the survey indicated that:

1. Potential GTM candidates are aware of the AFIT opportunity, but 43% of the successful AFIT GTM applicants stated that they believed potential students were unaware of the application procedures.
2. Potential GTM candidates acquire their information and perceptions about AFIT primarily through alumni and word of mouth; 91% stated that their commander or supervisor had not discussed AFIT with them.
3. Senior transporters and squadron commanders indicated a positive perception of AFIT, and 88% stated that they brief their subordinates about the AFIT opportunity.
4. Potential GTM candidates perceived the course work at AFIT as more academically demanding and the course load to be heavier than at a civilian institution.

A combination of the significant findings was suggested as the cause of the GTM student shortage.

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