THE EFFECT OF THE INTERACTIVE INFLUENCES OF STUDENT ENTERING CHARACTERISTICS AND ACADEMIC AND SOCIAL INTEGRATION ON VOLUNTARY PERSISTENCE/WITHDRAWAL DECISIONS AT OKLAHOMA STATE UNIVERSITY

By

CYNTHIA S. GIBSON ROSS

Bachelor of University Studies
Oklahoma State University
Stillwater, Oklahoma
1983

Master of Science
Oklahoma State University
Stillwater, Oklahoma
1986

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Thesis Approved:

Thesis Adviser

Dean of the Graduate College

DEDICATION:

to the loves of my life, Garrett and Jordan.....and to their dad who made them, and this, possible.

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To Garrett, Jordan, and Dale: "Mommy's Home!"

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CHAPTER I

INTRODUCTION

Student retention is not a new problem, but in an era of declining enrollments the problem becomes even more prominent. Between 1981 and 1985, for example, first-time freshman enrollment in all American institutions of higher education declined 11.6 percent, from approximately 2.6 million in 1981 to 2.3 million in 1985 (Center for Education Statistics, 1987). Oklahoma has not been immune to the enrollment attenuation trend. From fall 1983 to fall 1985, total student enrollment in higher education in the state fell from 174,171 to 169,173, a decline of about 3 percent (Center for Education Statistics, 1987).

A major issue associated with enrollment decline and the related need to retain those students who do enroll is economic in nature. For state-supported colleges and universities, such as Oklahoma State University, at stake is literally millions of dollars. As Astin (1975, p. 2) explained the dynamics of higher education finance are such that:

> ...a ten percent increase in enrollment may bring close to a 10 percent increase in revenue, the associated increase in costs will be generally far less. Thus, the net effect of increasing enrollments is to generate what amounts to discretionary funds. The problem here is

> that this process does not work in reverse. A 10 percent decline in enrollment, which is generally accompanied by close to a 10 percent decline in revenue, is <u>not</u> accompanied by a 10 percent reduction in costs.

In other words, despite the loss of students, "fixed costs" (e.g., labor, utilities, equipment, infrastructure maintenance) remain relatively inelastic.

One principle way to combat the general trend of declining student enrollments and the concomitant loss of state-appropriated dollars and tuition and fees is to retain as many as possible of the students who do enroll. Thus, it should come as no surprise that student retention has become a critical issue in higher education in the 1980s. While the causes of student dropout are multiple, complex, and interrelated, the fact remains that dropouts represent both fiscal and human capital. As such, every effort should be made to keep those students who belong at Oklahoma State University at Oklahoma State University. The remaining question is how. What policy initiatives can be pursued to reduce the number of students who dropout?

Statement of the Problem

Oklahoma State University has an attrition rate that is higher than the norm. The institution has generated volumes of data in recent years in an attempt to analyze the problem. As shown in the remaining sections of this chapter, some assumptions may be made about specific factors which may contribute to nonretention; specifically, past poor academic performance, race, and transfer status.

The problem for this study is to test the assumptions generated by past research and to expand the research in an attempt to ascertain other variables which may distinguish persisters from dropouts at Oklahoma State University. Specifically, this study will focus on the effect of the interactive influences of student entering characteristics and student academic and social integration on voluntary persistence/withdrawal decisions. The results of this research will facilitate the more accurate identification of students who are particularly vulnerable to withdrawal so that possible intervention strategies may be implemented.

Definitions and Limitations

For purposes of this study, a dropout will be defined as any student who entered OSU as a first-time entering full-time undergraduate student (enrolled in 12 or more hours) in the Fall of 1987 and who failed to complete either the fall or the subsequent spring semester at OSU.

This study has several limitations. First, stop-outs, students who temporarily leave OSU and then later return, are not identified. Secondly, students who withdrew from OSU during the 1987 academic year and transferred to other institutions are counted as attrition statistics for OSU even though they are not lost to higher education in general. Finally, students transferring into OSU have been determined by past research to be at high risk for

nonretention. However, transfer students are not included in this study.

Student Retention at Oklahoma State University: Scope of the Problem

For most observers, student retention at Oklahoma State University is perceived to be a critical issue of concern. The scope of the problem became clearer in 1987 when it was learned that OSU ranked last among Big 8 universities in year-one to year-two student persistence. As Table 1 shows, 29.6 percent of the 1985-86 beginning freshman class failed to return to OSU for the 1986-87 academic year. Variation among Big 8 institutions in student attrition was pronounced, from 15.7 percent for the University of Colorado to 29.6 percent for OSU--a difference of about 14 percent.

A recent telephone survey updated the Big 8 nonretention comparisons for the fall 1986 to the fall 1987. OSU, once again, had the dubious distinction of having the highest attrition rate, losing 33.3 percent of its freshmen in just one year. That is an increase of 3.7 percent or approximately 105 students in one year. OSU lagged far behind the University of Colorado which had a 1986-87 nonretention rate of less than half (14.9 percent) of OSU's. An attrition rate of 14.9 percent for OSU would mean keeping an additional 500+ new entering freshmen in just one year. If OSU could boast the University of Oklahoma's freshmen retention rate, it would result in a

boost in student numbers of over 200 in one year (the difference between 33.3 percent and 25.9 percent of new freshmen).

TABLE 1

NEW FRESHMAN NONRETENTION FOR BIG 8 UNIVERSITIES
(PERCENT FROM FALL WHO LEFT BY THE FOLLOWING FALL)

Institution	Fall 1985 To Fall 1986	Fall 1986 To Fall 1987
Colorado	15.7%	14.9%
Iowa State	19.0%	18.1%
Kansas	20.3%	20.4%
Oklahoma	23.7%	25.9%
Missouri	24.1%	22.4%
Nebraska	27.8%	NA
Kansas State	28.0%	25-30%
Oklahoma State	29.6%	33.3%

Source: Data for 1985-86 are from Ted Pfeifer, University of Nebraska, in letter to Robin Lacy, Oklahoma State University, February 16, 1987. Data for 1986-87 were obtained by telephone survey September 27, 1988, OSU Office of Institutional Research.

Although regional student persistence statistics are useful as benchmarks and show that OSU lags quite far behind most of its sister Big 8 universities in retention, another appropriate comparative base is a national average. Unfortunately, unlike secondary school dropout data, higher education student retention statistics are not routinely collected and published by the Department of Education, the major data source for education statistics. Survey research by Noel and Levitz (1985), however, does report a 26 percent

freshman-to-sophomore attrition rate for 144 Ph.D. granting public institutions of higher education. Data in Table 2 allow for a comparison of the 26 percent national attrition rate with OSU student persistence marks for the years 1980 through 1986.

TABLE 2

ATTRITION OF BEGINNING FRESHMAN CLASSES AFTER ONE YEAR AT OKLAHOMA STATE UNIVERSITY: FALL SEMESTER 1980 THROUGH 1986 (26 PERCENT NATIONAL ATTRITION RATE)

Beginning Freshman Class Of	Percent of Students Who Dropped Out After One Year
1980	26.4
1981	28.8
1982	31.5
1983	31.9
1984	30.0
1985	29.6
1986	33.3
	Mean = 30.2

As Table 2 reveals, for the seven year period of 1980 through 1986, an average of 30.2 percent of freshman class students dropped out of school after one year. Attrition rates varied from a low of 26.4 percent in 1980 to a high of 33.3 percent in 1986. Each of the seven years exceeded the 26 percent national attrition rate.

Although the dropout rate is most pronounced during the freshman to sophomore year, student attrition continues in subsequent years. For example, after three years an average

of 45.4 percent of academic year 1980 through 1984 freshman class students had dropped out of school, and after five years an average of 52.6 percent of the 1980 through 1982 entering freshman classes discontinued their enrollment at OSU (see Table 3).

TABLE 3

ATTRITION OF BEGINNING FRESHMAN CLASSES AFTER THREE AND FIVE YEARS AT OKLAHOMA STATE UNIVERSITY: FALL SEMESTERS 1980 THROUGH 1986

Beginning Freshman Class Of	Percent of Students Who Dropped Out After Three years	Percent of Students Who Dropped Out After Five Years
1980	44.7	50.9
1981	45.7	53.9
1982	44.9	52.9
1983	45.2	NA*
1984	46.4	NA*
1985	NA*	NA*
1986	NA*	NA*
	Mean = 45.4	Mean = 52.6

*NA means data were not available; not enough time had elapsed to calculate nonretention percentages.

The data in Tables 1 through 3 are revealing for at least three reasons. First, regardless of whether regional or national standards are used, student attrition at OSU is correctly viewed as a problem; the institutional record deviates too much from the norm. Second, despite increased attention to the problem of retention and efforts by the University at-large and individual colleges to address the problem, data in Table 2 suggest that no improvement in

student retention has been made. In fact, the statistics show that in four of the last five years in which data are available (1982, 1983, 1984, and 1986), the percentage of freshman class students who did not return to OSU after one year was higher than or equal to the overall seven year nonretention mean of 30.2 percent. Moreover, nonretention of a freshman class reached a seven year high in 1986; 33.3 percent (one-third) of the class was lost. Third, student retention should not be viewed exclusively as a "freshman-to-sophomore year" persistence problem. As Table 3 shows, dropout continues to occur through subsequent years, albeit at a lower rate. OSU is simply losing too many sophomores, juniors, and seniors. After five years, on the average, slightly more than 50 percent of beginning freshman class students had dropped out of school. Some of these students, of course, transferred to other institutions of higher education and continued the schooling process. Other students, however, simply dropped out. If educational attainment is a key predictor of who gets ahead in America and is highly correlated with future economic success (see Jencks, et al., 1979), it is imperative that administrative officials and faculty at OSU cooperatively formulate and implement policies that will keep those students who meet institutional standards and expectations in school at OSU, or help those students find, through assessment and advising processes, a more appropriate institution of higher education, e.g., junior colleges, vocational training.

In the remainder of this section, factors associated with attrition are isolated and those students most at risk are identified.

Predictors of Attrition

Not all students are at the same risk of becoming an attrition statistic. Analysis of data generated by OSU's Office of Institutional Research suggests that disparities in persistence are prevalent based on the academic and racial characteristics of students. Some variation in attrition is also present based on gender and among the University colleges. Finally, transfer students can be considered a high risk group for nonretention.

Nonretention and Academic Characteristics

Two key predictors of whether a student will stay in school at OSU are his/her composite ACT test score and high school grade point average. Tables 4 and 5 provide longitudinal data by number and percentage from 1980 through 1986 for freshman class students who returned to OSU after one year according to categories of ACT scores (Table 4) and grade point averages (Table 5).

As the tables show, a strong positive relationship exists between the two variables and student retention from the freshman-to-sophomore year; as a student's composite ACT score and/or high school grade point average increases, the probability of retention also increases. Without exception,

in every year and for both variables, the relationships are linear. Using seven year category means to help control for yearly fluctuations, for instance, the mean percentage of students who returned to OSU after their freshman year increased from 54.4 percent for the ACT score category of 0-14, to 64.4 percent for students in the 15-17 ACT score range, to 71.1 percent for the ACT score category of 18-24, to 81.7 percent for the 25-29 ACT score range, and up to 86.9 percent for the final 30+ ACT score category. In short, differences in retention percentages are significant as the ACT score category hierarchy descends. There is a 32 percent difference from the lowest (0-14) to highest (30+) category. In the 18-24 category which contains the overwhelming number of students, there is a more than 17 percent difference to the 30+ category.

Since one can safely assume that performance on the ACT test is highly correlated with high school grade point average, data shown in Table 5 are not surprising. The higher a student's grade point average the more likely he/she will return to OSU after the end of the freshman year. Again, using seven year means to control for year-to-year variability, student retention rates are 47.4 percent for the 0-2.0 grade point average categories, 51.9 percent for the 2.1-2.5 category, 62.8 percent for the 2.6-3.0 category, 74.6 percent for the 3.1-3.5 category, and 84.1 percent for the 3.6-4.0 category. A difference of over 35

percentage points in retention exists between the first (0-2.0) and last (3.6-4.0) grade point average categories.

TABLE 4

RETENTION OF BEGINNING FRESHMAN CLASSES AFTER ONE YEAR AT OKLAHOMA STATE UNIVERSITY BY CATEGORIES OF ACT SCORES: FALL SEMESTERS 1980 THROUGH 1986

ACT Score Category	Total Number (N) and Number (n) & Percentage (%) of Returning Students After One Year for Beginning Freshman Class of: 1980	1981	1982	1983	1984	1985	1986
0-14	N=588 n=361 %=61.4	N=516 n=277 %=53.7	N=465 n=216 %=46.5	N=450 n=249 %=55.3	N=422 n=228 %=54.0	N=415 n=244 %=58.8	N=390 n=212 %=54.4
						7 Year Category Mean=54.9	
15-17	N=670 n=466 %=69.6	N=618 n=412 %=66.7	N=517 n=326 %=63.1	N=520 n=315 %=60.6	N=475 n=305 %=64.2	N=411 n=262 %=63.7	N=436 n=273 %=62.6
						7 Year Category Mean=64.4	
18-24	N=1815 n=1359 %=74.4	N=1649 n=1211 %=73.4	N=1648 n=1195 %=71.0	N=1321 n=910 %=68.9	N=1348 n=959 %=71.1	N=1432 n=1001 %=69.9	N=1445 n=1001 %=69.3
						7 Year Category Mean=71.1	
25-29	N=701 n=590 %=84.2	N=621 n=511 %=82.3	N=652 n=527 %=80.8	N=542 n=444 %=81.9	N=519 n=433 %=83.4	N=570 n=467 %=81.9	N=580 n=452 %=77.9
						7 Year Category Mean=81.7	
30+	N=63 n=56 %=88.9	N=73 n=65 %=89.0	N=65 n=55 %=84.6	N=62 n=53 %=85.5	N=67 n=58 %=86.6	N=61 n=53 %=86.9	N=61 n=53 %=86.9
						7 Year Category Mean=86.9	
TOTALS	N=3837 n=2823 %=73.6	N=3477 n=2476 %=71.2	N=3383 n=2319 %=68.5	N=2895 n=1971 %=68.1	N=2831 n=1983 %=70.0	N=2889 n=2027 %=70.2	N=2912 n=1991 %=68.4
						7 Year Total Mean=70.0	

TABLE 5

RETENTION OF BEGINNING FRESHMAN CLASSES AFTER ONE YEAR AT OKLAHOMA STATE UNIVERSITY BY CATEGORIES OF OF HIGH SCHOOL GRADE POINT AVERAGES: FALL SEMESTERS 1980 THROUGH 1986

GPA Category	Total Number (N) and Number (n) & Percentage (%) of Returning Students After One Year for Beginning Freshman Class of: 1980	1981	1982	1983	1984	1985	1986
0-2.0	N=76 n=41 %=53.9	N=82 n=37 %=45.1	N=90 n=41 %=45.6	N=68 n=27 %=39.7	N=65 n=32 %=49.2	N=102 n=51 %=50.0	N=110 n=53 %=48.2
						7 Year Category Mean=47.4	
2.1-2.5	N=372 n=226 %=60.8	N=289 n=153 %=52.9	N=284 n=156 %=54.9	N=214 n=87 %=40.7	N=276 n=144 %=52.2	N=290 n=148 %=51.0	N=347 n=177 %=51.0
						7 Year Category Mean=51.9	
2.6-3.0	N=737 n=510 %=69.2	N=577 n=367 %=63.6	N=548 n=322 %=58.8	N=462 n=286 %=61.9	N=459 n=274 %=59.7	N=544 n=354 %=65.1	N=637 n=389 %=61.1
						7 Year Category Mean=62.8	
3.1-3.5	N=862 n=669 %=77.6	N=642 n=481 %=74.9	N=618 n=442 %=71.5	N=426 n=303 %=71.1	N=542 n=426 %=78.6	N=540 n=405 %=75.0	N=749 n=548 %=73.2
						7 Year Category Mean=74.6	
3.6-4.0	N=652 n=558 %=85.6	N=514 n=438 %=85.2	N=529 n=424 %=80.2	N=370 n=308 %=83.2	N=417 n=346 %=83.0	N=440 n=388 %=88.2	N=576 n=480 %=83.3
						7 Year Category Mean=84.1	
TOTALS	N=2699 n=2004 %=74.2	N=2104 n=1476 %=70.2	N=2069 n=1385 %=66.9	N=1540 n=1011 %=65.6	N=1759 n=1222 %=69.5	N=1916 n=1346 %=70.3	N=2419 n=1647 %=68.1
						7 Year Total Mean=69.3	

Another way to assess the impact of academic performance on student retention is to examine persistence over time for a typical beginning freshman class cohort. The freshman class of 1981 is used in this report since it is the most recent cohort for which student persistence data up to six years later is available.

Tables 6 and 7 present enrollment and graduation numbers with percentages for this 1981 freshman class through six years after initial enrollment. Also provided are categories of ACT scores and grade point averages. The data in the "After One Year" column are, of course, the same as presented for the year 1981 in Tables 4 and 5. Unlike the earlier analysis which was limited to the assessment of retention after one year at OSU, Tables 6 and 7 allow for the examination of persistence by the same entering group of freshmen through six years.

Disparities among retention/graduation rates by ACT performance and grade point average performance are revealing. Table 6, for instance, shows that less than 23 percent of students in the 0-14 ACT category graduated after six years at OSU. This percentage can be compared to the 58.9 percent mark for the 25-29 category and nearly three-fourths graduation record of students scoring 30 or above on the ACT examination. In fact, for the first three ACT score categories, less than 50 percent of entering 1981 freshmen completed degrees at OSU. The data in Table 7 for

cumulative grade point average categories tell the same story. If a student enters OSU with a 2.6 or higher high school GPA, the probability for persistence is greatly enhanced.

One trend which contradicts those previously described, and apparently unique to OSU, relates to the number of students by year in each of the ACT categories. Specifically, in 1980 there were 361 students (15.3 percent) in the 0-14 ACT category. That number declined by 149 students in 1986. In 1986, 13.4 percent of the students (212) fell in the 0-14 ACT category, a reduction of 1.9 percent. However, the expected increase in the University's overall retention, which should have resulted due to the fewer number of low ACT students, did not materialize. Total retention decreased from 73.6 percent in 1980 to 68.4 percent in 1986. The same disturbing phenomenon occurred in the 15-17 ACT category. While the number of students decreased in real numbers and percentages of the total student population as compared to higher ACT categories, OSU's retention rate declined. Even the increases in the percentages of those students in the higher ACT categories ACT 25-29 (18.3 percent in 1980 to 20.0 percent in 1986) and ACT 30+ (1.77 percent in 1980 to 2.0 percent in 1986) did not offset the increase in OSU's attrition rate. The bottom line is that OSU's average ACT was increasing in the six year period, but OSU's retention rate was decreasing.

In sum, however, the data in the preceding tables suggest that those students who enter OSU with low ACT scores and low grade point averages are, generally speaking, not likely to be with the institution one year later and are much more likely not to complete their education at OSU. Many of these students enter under the special waiver program, the so-called "five percent probation" rule. Table 8 provides persistence data for the "five percent probation" freshman class of 1981 and shows that after six years only about 12 percent of the students had graduated and another 4 percent were still enrolled. A full 84 percent of the students were attrition statistics. From a policy perspective, tough choices must be made about the "five percent" rule. These students (84 percent in 1981) are not likely to be with the University for long (52 percent dropped out after the first year, 68 percent after the second year, and 75 percent after the third year) and are much less likely to graduate (12 percent). On the other hand, they increase class sizes, consume University resources, and increase the need for remedial classes in a first-class research university. Questions to be addressed are do the few who make it through the institution justify the program? Or, should the "five percent" rule be changed to the "three percent" rule (using characteristics of those students who have graduated under the program to determine entrance guidelines)? Concomitantly, how will the planned

upgrading of academic admission standards impact the special waiver program?

TABLE 6

ACT SCORES BY CATEGORIES BY YEARS ENROLLED:
FRESHMAN CLASS OF 1981

	Beginning Freshman Class of 1981: N = 3477 Number and (Percent) Enrolled:						
ACT Score Category	Beginning Number & %	After One Year	After Two Years	After Three Years	After Four Years	After Five Years	After Six Years
0-14	n=516 (14.8)	n=277 (53.7)	n=208 (40.3)	n=170 (32.9)	n=111 (21.5)	n=39 (7.6)	n=14 (2.7)
					Graduated*		
					n=31 (6.0)	n=90 (17.4)	n=116 (22.5)
15-17	n=618 (17.8)	n=412 (66.7)	n=324 (52.4)	n=276 (44.7)	n=180 (29.1)	n=58 (9.4)	n=19 (3.1)
					Graduated*		
					n=53 (8.6)	n=171 (27.7)	n=214 (34.6)
18-24	n=1649 (47.4)	n=1211 (73.4)	n=1026 (62.2)	n=938 (56.9)	n=539 (32.7)	n=217 (13.2)	n=112 (6.8)
					Graduated*		
					n=284 (17.2)	n=657 (39.8)	n=754 (45.7)
25-29	n=621 (17.9)	n=511 (82.3)	n=445 (71.7)	n=417 (67.1)	n=246 (39.6)	n=98 (15.8)	n=57 (9.2)
					Graduated*		
					n=167 (26.9)	n=326 (52.5)	n=366 (58.9)
30+	n=73 (02.1)	n=65 (89.0)	n=59 (80.8)	n=60 (82.2)	n=30 (41.1)	n=11 (15.1)	n=5 (6.8)
					Graduated*		
					n=28 (38.4)	n=47 (64.4)	n=54 (74.0)
TOTALS	N=3477 (100.0)	N=2476 (71.2)	N=2062 (59.3)	N=1861 (53.5)	N=1106 (31.8)	N=423 (12.2)	N=207 (6.0)
					Graduated*		
					n=563 (16.2)	n=1291 (37.1)	n=1504 (43.3)

*Number and percentage graduating are cumulative.

TABLE 7

GRADE POINT AVERAGES BY CATEGORIES BY YEARS ENROLLED: FRESHMAN CLASS OF 1981

	Beginning Freshman Class of 1981: N = 2104 Number and (Percent) Enrolled:						
GPA Category	Beginning Number & %	After One Year	After Two Years	After Three Years	After Four Years	After Five Years	After Six Years
0.0-2.0	n=82 (3.9)	n=37 (45.1)	n=20 (24.4)	n=18 (22.0)	n=12 (14.6)	n=11 (13.4)	n=5 (6.0)
					Graduated*		
					n=2 (2.4)	n=4 (4.9)	n=8 (9.8)
2.1-2.5	n=289 (13.7)	n=153 (52.9)	n=120 (41.5)	n=95 (32.9)	n=66 (22.8)	n=31 (10.7)	n=16 (5.5)
					Graduated*		
					n=11 (3.8)	n=43 (14.9)	n=54 (18.7)
2.6-3.0	n=577 (27.4)	n=367 (63.6)	n=293 (50.8)	n=259 (44.9)	n=175 (30.3)	n=69 (12.0)	n=29 (5.0)
					Graduated*		
					n=39 (6.8)	n=136 (23.6)	n=178 (30.8)
3.1-3.5	n=642 (30.5)	n=481 (74.9)	n=401 (62.5)	n=368 (57.3)	n=235 (36.6)	n=89 (13.9)	n=37 (5.8)
					Graduated*		
					n=91 (14.2)	n=250 (38.9)	n=303 (47.2)
3.6-4.0	n=514 (24.4)	n=438 (85.2)	n=379 (73.7)	n=352 (68.5)	n=164 (31.9)	n=66 (12.8)	n=29 (5.6)
					Graduated*		
					n=162 (31.5)	n=289 (56.2)	n=322 (62.6)
TOTALS	N=2104 (100.0)	N=1476 (70.2)	N=1213 (57.7)	N=1092 (51.9)	N=652 (31.0)	N=266 (12.6)	N=116 (5.5)
					Graduated*		
					n=305 (14.5)	n=722 (34.3)	n=864 (41.1)

*Number and percentage graduating are cumulative.

TABLE 8

RETENTION OF SPECIAL WAIVER STUDENTS BY YEARS ENROLLED:
FIVE PERCENT PROBATION FRESHMAN CLASS OF 1981

	Beginning Freshman 5 Percent Probation Class of 1981: N = 188 Number and (Percent) Enrolled:						
Student Program	Beginning Number	After One Year	After Two Years	After Three Years	After Four Years	After Five Years	After Six Years
5% Probation	N=188	n=90 (47.9)	n=60 (31.9)	n=47 (25.0)	n=33 (17.6)	n=12 (6.4)	n=8 (4.3)
					Graduated*		
					n=3 (1.6)	n=18 (9.6)	n=22 (11.7)

*Number and percentage graduating are cumulative.

Racial Characteristics

Disparities in student persistence by race exist at OSU. Table 9 shows that of various racial groups, Asians and nonresident aliens in beginning freshman classes for the years 1980 through 1986 have had the highest retention rates with seven year category means of 83.6 percent and 83.2 percent, respectively. Whites are next in line with a seven year mean of 70.6 percent. Finally, blacks (7 year mean=63.1 percent), Hispanics (7 year mean=60.5 percent), and Native Americans (7 year mean=59.1 percent) trail in persistence percentages after one year at OSU. Differences in student retention rates between whites and other minority groups, with the exception of Asians, is discouraging. Black student retention after one year lags behind that of whites by more than seven percent; white/Hispanic ratios show a 10 percent discrepancy; and on the average across the

seven year time period 11.5 percent fewer Native Americans returned after one year at OSU than did white students.

TABLE 9

RETENTION OF BEGINNING FRESHMAN CLASSES AFTER ONE YEAR AT OKLAHOMA STATE UNIVERSITY BY RACE OF STUDENTS: FALL SEMESTERS 1980 THROUGH 1986

Race Category	Total Number (N) and Number (n) & Percentage (%) of Returning Students After One Year for Beginning Freshman Class of: 1980	1981	1982	1983	1984	1985	1986
White	N=3585	N=3256	N=3172	N=2674	N=2662	N=2656	N=2730
	n=2659	n=2324	n=2203	n=1828	n=1861	n=1874	n=1898
	%=74.2	%=71.4	%=69.5	%=68.4	%=69.9	%=70.6	%=69.5
						7 Year Category Mean=70.6%	
Black	N=146	N=108	N=105	N=96	N=70	N=109	N=116
	n= 96	n= 70	n= 49	n=63	n=50	n= 72	n= 73
	%=65.8	%=64.8	%=46.7	%=65.6	%=71.4	%=66.1	%=62.9
						7 Year Category Mean=63.1%	
Hispanic	N=18	N=23	N=24	N=21	N=21	N=18	N=27
	n=10	n=14	n=14	n=13	n=16	n=11	n=14
	%=55.6	%=60.9	%=58.3	%=61.9	%=76.2	%=61.1	%=51.9
						7 Year Category Mean=60.5%	
Asian	N=14	N=19	N=24	N=33	N=15	N=35	N=25
	n=11	n=17	n=20	n=26	n=13	n=30	n=21
	%=78.6	%=89.5	%=83.3	%=78.8	%=86.7	%=85.7	%=84.0
						7 Year Category Mean=83.6%	
Native American	N=72	N=81	N=72	N=68	N=57	N=70	N=85
	n=45	n=53	n=40	n=38	n=38	n=38	n=46
	%=62.5	%=65.4	%=55.6	%=55.9	%=66.7	%=54.3	%=54.1
						7 Year Category Mean=59.1%	
Non-Resident Alien	N=82	N=120	N=143	N=113	N=115	N=73	N=66
	n=71	n=105	n=122	n= 92	n= 93	n=58	n=51
	%=86.6	%=87.5	%=85.3	%=81.4	%=80.9	%=79.5	%=77.3
						7 Year Category Mean=83.2%	
TOTALS	N=3917	N=3607	N=3540	N=3005	N=2940	N=2961	N=3049
	n=2892	n=2583	n=2448	n=2060	n=2071	n=2083	n=2103
	%=73.8	%=71.6	%=69.2	%=68.6	%=70.4	%=70.3	%=69.0
						7 Year Total Mean=70.6%	

TABLE 10

RACE BY CATEGORIES BY YEARS ENROLLED: FRESHMAN CLASS OF 1981

Race Category	Beginning Number & %	After One Year	After Two Years	After Three Years	After Four Years	After Five Years	After Six Years
	Beginning Freshman Class of 1981: N = 3607 Number and (Percent) Enrolled:						
White	n=3256 (90.3)	n=2324 (71.4)	n=1941 (59.6)	n=1757 (54.0)	n=1046 (32.1)	n=403 (12.4)	n=198 (6.1)
					Graduated*		
					n=541 (16.6)	n=1233 (37.9)	n=1433 (44.0)
Black	n=108 (3.0)	n=70 (64.8)	n=59 (54.6)	n=47 (43.5)	n=25 (23.1)	n=9 (8.3)	n=2 (1.9)
					Graduated*		
					n=8 (7.4)	n=23 (21.3)	n=29 (26.9)
Hispanic	n=23 (0.6)	n=14 (60.9)	n=11 (47.8)	n=11 (47.8)	n=8 (34.7)	n=1 (4.3)	n=1 (4.3)
					Graduated*		
					n=3 (13.0)	n=8 (34.7)	n=8 (34.7)
Asian	n=19 (0.5)	n=17 (89.5)	n=14 (73.7)	n=13 (68.4)	n=9 (47.4)	n=1 (5.3)	n=1 (5.3)
					Graduated*		
					n=2 (10.5)	n=9 (47.4)	n=10 (52.6)
Native American	n=81 (2.3)	n=53 (65.4)	n=41 (50.6)	n=37 (45.7)	n=23 (28.4)	n=7 (8.6)	n=5 (6.2)
					Graduated*		
					n=9 (11.1)	n=23 (28.4)	n=29 (35.8)

(continued next page)

TABLE 10 (continued)

Race Category	Beginning Number & %	After One Year	After Two Years	After Three Years	After Four Years	After Five Years	After Six Years
	Beginning Freshman Class of 1981: N = 3607 Number and (Percent) Enrolled:						
Non-Resident Alien	n=120 (3.3)	n=105 (87.5)	n=86 (71.7)	n=62 (51.7)	n=28 (23.3)	n=17 (14.2)	n=11 (9.2)
					Graduated*		
					n=57 (47.5)	n=72 (60.0)	n=75 (62.5)
TOTALS	N=3607 (100.0)	N=2583 (71.6)	N=2152 (59.7)	N=1927 (53.4)	N=1139 (31.6)	N=438 (12.1)	N=218 (6.0)
					Graduated*		
					N=620 (17.2)	N=1368 (37.9)	N=1584 (43.9)

*Number and percentage graduating are cumulative.

When persistence of the 1981 freshman class cohort is analyzed (see Table 10), white and black student retention differences become even more pronounced. For instance, after six years at OSU, 44 percent of the beginning freshman class of 1981 who were of the white race graduated. In contrast, only 26.9 percent of black students graduated after six years. Moreover, about 6 percent of the original white students were still enrolled, compared with 1.9 percent of black students. Hispanic and Native American graduation rates once again trailed behind that of their white counterparts, 34.7 percent and 35.8 percent, respectively. Asian and nonresident aliens demonstrated greater persistence than other racial categories.

Given the poor past record of Oklahoma for integrating institutions of higher education, policies that enhance minority student retention must be forthcoming.

Gender and Retention

Female students are slightly more likely than males to continue at OSU after one year of college. The seven year retention average for women in the freshman classes of 1980 through 1986, for example, was 71.9 percent. The comparable percentage for men was 69.3 percent (see Table 11). Although the female/male 2.6 percent retention differential is not large, if the percentage is multiplied by the mean number of males in the freshman classes of 1980 through 1986, the product equals about 42 people. In other words, on the average, 42 fewer males than females continued at OSU after one year of college.

TABLE 11

RETENTION OF BEGINNING FRESHMAN CLASSES AFTER ONE YEAR AT OKLAHOMA STATE UNIVERSITY BY GENDER: FALL SEMESTERS 1980 THROUGH 1986

Gender Category	Total Number (N) and Number (n) & Percentage (%) of Returning Students After One Year for Beginning Freshman Class of: 1980	1981	1982	1983	1984	1985	1986
Female	N=1922	N=1774	N=1671	N=1441	N=1402	N=1422	N=1539
	n=1441	n=1270	n=1179	n=1007	n=1030	n=1024	n=1082
	%=75.0	%=71.6	%=70.6	%=69.9	%=73.5	%=72.0	%=70.3
						7 Year Category Mean=71.9%	
Male	N=1995	N=1833	N=1869	N=1564	N=1538	N=1539	N=1510
	n=1451	n=1313	n=1269	n=1053	n=1041	n=1059	n=1021
	%=72.7	%=71.6	%=67.9	%=67.3	%=67.7	%=68.8	%=67.6
						7 Year Category Mean=69.3%	
TOTALS	N=3917	N=3607	N=3540	N=3005	N=2940	N=2961	N=3049
	n=2892	n=2583	n=2448	n=2060	n=2071	n=2083	n=2103
	%=73.8	%=71.6	%=69.2	%=68.6	%=70.4	%=70.3	%=69.0
						7 Year Total Mean=70.6%	

An examination of gender-related retention differences for the freshman class of 1981 over time reveals less discrepancy (see Table 12). After six years, 44.1 percent of female students as compared to 43.6 percent of male students had graduated. Compared to females (4.1 percent), however, about twice the percentage of male students (8.0 percent) were still enrolled after the sixth year.

TABLE 12

GENDER BY CATEGORIES BY YEARS ENROLLED:
FRESHMAN CLASS OF 1981

Gender Category	Beginning Number & %	After One Year	After Two Years	After Three Years	After Four Years	After Five Years	After Six Years
	Beginning Freshman Class of 1981: N = 3607 Number and (Percent) Enrolled:						
Female	n=1774 (49.2)	n=1270 (71.6)	n=1030 (58.0)	n=914 (51.5)	n=425 (24.0)	n=146 (8.2)	n=72 (4.1)
					Graduated*		
					n=371 (20.9)	n=702 (39.6)	n=783 (44.1)
Male	n=1833 (50.8)	n=1313 (71.6)	n=1122 (61.2)	n=1013 (55.2)	n=714 (39.0)	n=292 (15.9)	n=146 (8.0)
					Graduated*		
					n=249 (13.2)	n=666 (36.3)	n=801 (43.6)
TOTALS	N=3607 (100.0)	N=2583 (71.6)	N=2152 (59.7)	N=1927 (53.4)	N=1139 (31.6)	N=438 (12.2)	N=218 (6.1)
					Graduated*		
					N=620 (17.2)	N=1368 (38.0)	n=1584 (43.9)

*Number and percentage graduating are cumulative.

Retention by Colleges

Student persistence data in Table 13 show some variation across University colleges. The "other" category, which includes "five percent probation" and academic assessment programs, has the lowest mean retention for the 1980-1986 freshman class students who returned to OSU after one year, 59.3 percent. The College of Agriculture had the highest average percentage of students who were retained

(74.2 percent) over the seven year period. Three other colleges, Business Administration, Engineering, Technology and Architecture, and Home Economics, show one-year persistence rates of 72.7 percent. The Colleges of Arts and Sciences and Education had lower retention rates of 70.6 percent and 68.4 percent, respectively.

Analysis of the 1981 freshman class persistence over time (Table 14) shows even greater disparities among colleges than the one-year examination offered in Table 13. Of course, the "other" category lagged far behind in the percentage of students who were either still enrolled (5.7 percent) or who had graduated (26.8 percent) six years later, for a total retention percentage of 32.5. Once again the College of Agriculture was the leader in student retention; after six years 65.8 percent of agriculture majors had either graduated (55.5 percent) or were still enrolled (10.3 percent).

Of the remaining colleges, Engineering, Technology, and Architecture, Education, and Home Economics retention rates seem to cluster together. CETA graduated 49.7 percent of its majors after six years, and another 9.2 percent of the beginning class of 1981 was still enrolled six years later (cumulative retention of 58.9 percent). Education followed with a total 56.6 percent retention ratio; 52.8 percent graduated and 3.8 percent were still enrolled after six years. Next, 50.8 percent of beginning Home Economics

students graduated in six years with 4.2 percent remaining in school six years after the initial enrollment.

TABLE 13

RETENTION OF BEGINNING FRESHMAN CLASSES AFTER ONE YEAR AT OKLAHOMA STATE UNIVERSITY BY UNIVERSITY COLLEGE: FALL SEMESTERS 1980 THROUGH 1986

	Total Number (N) and Number (n) & Percentage (%) of Returning Students After One Year for Beginning Freshman Class of:						
College	1980	1981	1982	1983	1984	1985	1986
Agriculture	N=366 n=274 %=74.9	N=292 n=223 %=76.4	N=252 n=183 %=72.6	N=230 n=160 %=69.6	N=232 n=161 %=69.4	N=184 n=147 %=79.9	N=217 n=167 %=77.0
						7 Year Category Mean=74.2%	
Arts & Sciences	N=1525 n=1120 %=73.4	N=984 n=705 %=71.6	N=980 n=675 %=68.9	N=962 n=652 %=67.8	N=823 n=575 %=69.9	N=853 n=597 %=70.0	N=929 n=659 %=70.9
						7 Year Category Mean=70.6%	
Business Admin.	N=1034 n= 783 %=75.7	N=904 n=675 %=74.7	N=910 n=656 %=72.1	N=737 n=514 %=69.7	N=742 n=526 %=70.9	N=745 n=543 %=72.9	N=737 n=528 %=71.6
						7 Year Category Mean=72.7%	
Education	N=149 n= 97 %=65.1	N=159 n=120 %=75.5	N=145 n=102 %=70.3	N=152 n=101 %=66.4	N=108 n= 71 %=65.7	N=133 n= 92 %=69.2	N=155 n=102 %=65.8
						7 Year Category Mean=68.4%	
Engineering, Technology, & Arch.	N=678 n=495 %=73.0	N=692 n=505 %=73.0	N=675 n=484 %=71.7	N=467 n=347 %=74.3	N=473 n=359 %=75.9	N=467 n=341 %=73.0	N=406 n=274 %=67.5
						7 Year Category Mean=72.7%	
Home Economics	N=165 n=123 %=74.5	N=120 n=82 %=68.3	N=144 n=97 %=67.4	N=154 n=112 %=72.7	N=133 n=106 %=79.7	N=151 n=111 %=73.5	N=156 n=113 %=72.4
						7 Year Category Mean=72.7%	

TABLE 13 (continued)

College	Total Number (N) and Number (n) & Percentage (%) of Returning Students After One Year for Beginning Freshman Class of: 1980	1981	1982	1983	1984	1985	1986
OTHER	N=NA*	N=456	N=434	N=303	N=429	N=428	N=449
	n=NA*	n=273	n=251	n=174	n=273	n=252	n=260
	%=NA*	%=59.9	%=57.8	%=57.4	%=63.6	%=58.9	%=57.9
						6 Year Category Mean=59.3%	
TOTALS	N=3917	N=3607	N=3540	N=3005	N=2940	N=2961	N=3049
	n=2892	n=2583	n=2448	n=2060	n=2071	n=2083	n=2103
	%=73.8	%=71.6	%=69.2	%=68.6	%=70.4	%=70.3	%=69.0
						7 Year Total Mean=70.6%	

*NA means data not available.

TABLE 14

RETENTION BY COLLEGES BY YEARS ENROLLED: FRESHMAN CLASS OF 1981

College	Beginning Number & %	After One Year	After Two Years	After Three Years	After Four Years	After Five Years	After Six Years
	Beginning Freshman Class of 1981: N = 3607 Number and (Percent) Enrolled:						
Agriculture	n=292 (8.1)	n=223 (76.4)	n=195 (66.8)	n=184 (63.0)	n=125 (42.8)	n=52 (17.8)	n=30 (10.3)
					Graduated*		
					n=66 (22.6)	n=145 (49.7)	n=162 (55.5)
Arts & Sciences	n=984 (27.3)	n=705 (71.6)	n=575 (58.4)	n=503 (51.1)	n=290 (29.5)	n=120 (12.2)	n=63 (6.4)
					Graduated*		
					n=151 (15.3)	n=336 (34.1)	n=389 (39.5)
Business Admin.	n=904 (25.1)	n=675 (74.7)	n=557 (61.6)	n=495 (54.8)	n=224 (24.8)	n=71 (7.9)	n=24 (2.7)
					Graduated*		
					n=214 (23.7)	n=378 (41.8)	n=422 (46.7)
Education	n=159 (4.4)	n=120 (75.5)	n=102 (64.2)	n=99 (62.3)	n=43 (27.0)	n=11 (6.9)	n=6 (3.8)
					Graduated*		
					n=46 (28.9)	n=74 (46.5)	n=84 (52.8)
Engineering, Technology, & Arch.	n=692 (19.2)	n=505 (73.0)	n=438 (63.3)	n=405 (58.5)	n=310 (36.0)	n=130 (18.8)	n=64 (9.2)
					Graduated*		
					n=82 (11.8)	n=280 (40.4)	n=344 (49.7)
Home Economics	n=120 (3.3)	n=82 (68.3)	n=72 (60.0)	n=67 (55.8)	n=31 (25.8)	n=12 (10.0)	n=5 (4.2)
					Graduated*		
					n=30 (25.0)	n=59 (49.2)	n=61 (50.8)

TABLE 14 (continued)

College	Beginning Number & %	After One Year	After Two Years	After Three Years	After Four Years	After Five Years	After Six Years
	Beginning Freshman Class of 1981: N = 3,607 Number and (Percent) Enrolled:						
Other	n=456 (12.6)	n=273 (59.9)	n=213 (46.7)	n=174 (38.2)	n=116 (25.4)	n=42 (9.2)	n=26 (5.7)
					Graduated*		
					n=31 (6.8)	n=96 (21.0)	n=122 (26.8)
TOTALS	N=3607 (100.0)	N=2583 (71.6)	N=2152 (59.7)	N=1927 (53.4)	N=1139 (31.6)	N=438 (12.1)	N=218 (6.0)
					Graduated*		
					n=620 (17.2)	n=1368 (37.9)	n=1584 (43.9)

*Number and percentage graduating are cumulative.

Finally, students in the Colleges of Business Administration and Arts and Sciences were much less likely to have either graduated or still be attending classes after six years at OSU. In the College of Business Administration, for example, 46.7 percent of the beginning freshman majors in 1981 had graduated six years later, and 2.7 were still enrolled. In Arts and Sciences, only 39.5 percent of the students graduated six years later, and another 6.4 percent were still pursuing degrees.

Although the problem of keeping students who belong at OSU in school must be viewed as a University-wide issue, retention statistics in Tables 13 and 14 are quite important since they show that student persistence varies across University colleges. Given these disparities among

colleges, extra effort must be forthcoming from those colleges that lag behind in retaining students.

Transfer Students

A final group of students who are at risk of becoming attrition statistics after attending OSU for one year are those students who transfer from other institutions of higher education. Compare, for instance, the one-year nonretention percentages for new transfer classes of 1980 through 1986 (in Table 15) with the general attrition rates for the freshmen classes of 1980 through 1986 provided earlier in Table 2 (and summarized again in Table 15 for convenience). Based on seven year means, a difference of 5.9 percentage points in retention separates the two groups.

Similar to other analyses, Table 16 shows retention/graduation rates for the new transfer class of 1981. After five years, 44.8 percent of the transfer students had graduated, and 3.3 percent were still attending classes, for a total of 48.1. The comparable figure for the beginning freshman class of 1981 (shown in Table 3) was 46.1 percent. Thus, while transfer students show a propensity to drop out in larger numbers than a general freshman class after one year, they are somewhat more likely to be retained in subsequent years.

TABLE 15

COMPARISON OF ATTRITION OF NEW TRANSFER CLASSES AFTER ONE YEAR AT OKLAHOMA STATE UNIVERSITY WITH RETENTION OF BEGINNING FRESHMAN CLASSES AFTER ONE YEAR: FALL SEMESTERS 1980 THROUGH 1986

New Transfer Class Of	% of Students Who Dropped Out After One Year	New Beginning Freshman Class Of	% of Students Who Dropped Out After One Year
1980	36.2	1980	26.4
1981	36.1	1981	28.8
1982	37.1	1982	31.5
1983	36.4	1983	31.9
1984	36.5	1984	30.0
1985	35.7	1985	29.6
1986	33.1	1986	33.3
	Mean = 35.9		Mean = 30.0

TABLE 16

RETENTION OF TRANSFER STUDENTS BY YEARS ENROLLED: TRANSFER CLASS OF 1981

	New Transfer Class of 1981: Number and (Percent) Enrolled:					
Beginning Number	After One Year	After Two Years	After Three Years	After Four Years	After Five Years	After Six Years
N=1990	n=1261 (63.4)	n=909 (45.7)	n=434 (21.8)	n=150 (7.5)	n=65 (3.3)	n=37 (1.9)
			Graduated*			
	n=11 (0.6)	n=132 (6.6)	n=502 (25.2)	n=781 (39.3)	n=891 (44.8)	n=923 (46.4)

*Number and percentage graduating are cumulative.

Summary

Student retention is a problem at OSU. Costs can be measured both in fiscal and human terms. Compared with other Big 8 universities and national norms, OSU's attrition rate is simply not acceptable. Data analyzed in this section suggest that the predictors of attrition include poor academic performance prior to college entry and minority and transfer status. Significant disparities in retention rates also were observed among University colleges. Finally, although small, a gender gap in persistence was documented.

As noted above, the issue of student retention is not new, neither nationally nor at OSU. In fact, a wealth of research literature has been generated in an effort to better understand the issue. Chapter II provides an overview of selected research studies relevant to the current inquiry.

CHAPTER II

LITERATURE REVIEW

Chapter I provided an empirical assessment of the retention problem at Oklahoma State University. As the analysis revealed, OSU does a poor job of retaining students. In fact, OSU is last among the Big 8 universities in retention of first-year students. Chapter I did not, however, ground these statistics in the scholarly literature.

The purpose of this chapter is to offer a comprehensive review of the retention literature. The chapter is organized into four sections. Section one provides an overview of the evolution of retention research and identifies problems in the study of student retention. In section two the questions of why student retention is perceived to be a major problem facing institutions of higher education and the extent of attrition are addressed. The third section is devoted to an analysis of factors previous studies suggest are related to student persistence. Finally, findings are summarized and implications are discussed.

Student Retention: Evolution of Research and Problems

Retention research is a relatively new field of study, dating back only to Iffert's work in 1957. The evolution of retention research parallels the study of student recruitment, with the initial focus on description, expanding to the identification of factors affecting student persistence and techniques to address the problem, and finally evolving to an examination of the institution itself (Marchese, 1985). Specifically, retention research in the 1960s resulted in studies with a descriptive emphasis centering on student persistence and attainment. In the 1970s, studies became more quantitative in nature owing, in part, to the research efforts of Hackman and Dysinger (1970), Spady (1970), and Tinto (1975). These retention scholars shifted the focus of inquiry to why students drop out and suggested techniques to improve retention. Research in the 1980s redirected the focus away from techniques designed to retain students to an analysis of the overall nature and character of higher education institutions--i.e., an evaluation of the quality of the educational experience offered to students (Marchese, 1985; Lewis, Leach, and Lutz, 1983).

Not surprisingly, as the retention literature developed, analysts began identifying a number of conceptual, methodological, and theoretical shortcomings. Tinto (1975), for example, identified two salient failures

of past retention research: (1) inadequate attention to the definition of a dropout; and (2) failure to develop theoretical models to explain the attrition phenomenon. This lack of attention to theory is the primary focus of Chapter III. The remainder of this section discusses conceptual and methodological limitations associated with the study of student retention.

Conceptual Problems

Retention has been frequently defined, but not well defined. Early retention studies at OSU defined retention by tabulating the total number of students entering the institution at a designated time period, most typically the freshman year, and then comparing the number with the total number of students one year later. Or, in the case of graduation rates, the entry number is contrasted with the total number of students graduating five or six years later. Most national research studies follow these same procedures in measuring retention rates (Angers, 1961; Bertrand, 1955; Carew, 1957; Heist, McConnell, Matsler, and Williams, 1961).

This "definition" of retention is limited since individual students are not tracked through the system. In other words, the research design used is cross-sectional in nature and is based on aggregate numbers. Thus, "stop-outs," students who temporarily leave higher education, are counted as permanent attrition statistics. Similarly, students who are "kicked-out," for either

academic or disciplinary reasons, are not differentiated from those an institution wants to keep. Finally, students who choose to leave one institution in favor of another, perhaps even one offering greater academic rigor, are, like the stop-out, assumed to be lost in terms of university retention statistics.

The accuracy of retention comparisons could be improved by simply comparing "apples with apples" in subsequent years. For example, as previously noted, most institutions determine their freshman year attrition rate by contrasting the total number of entering freshmen students with the total number of sophomore students the next year. This procedure is flawed since the sophomore student number includes readmissions and transfer students from other institutions and treats them as if they had been a member of the original freshman class cohort. The result is an inflated retention rate.

Experts concur with the premise outlined above that the definition of retention is indeed a problem that compromises the results of most research studies. Tinto (1975), for instance, asserts that "inadequate attention given to definition has often led researchers to lump together, under the rubric of dropout, forms of leaving behavior that are very different in character." He goes on to explain that most studies mix stopouts with permanent dropouts and fail to differentiate between academic failure and voluntary withdrawal (Tinto, 1975). Tinto (1975) argues against the

use of the word "dropout," but adds that if the term must be used, "...it should be limited to those situations in which there is failure on the part of both the individual and the institution, a failure of the student to achieve and of the institution to facilitate the achievement of reasonable and desired educational goals."

As early as 1957, Iffert recognized the value of differentiating among reasons for student withdrawal (Pantages and Creedon, 1978). Different typologies have been offered. One typology (see Pantages and Creedon, 1978) groups persisting and nonpersisting students into one of four classifications: (a) academically successful persisters (as defined by a GPA > 2.0), (b) unsuccessful persisters (GPA < 2.0), (c) successful dropouts (GPA > 2.0), and (d) unsuccessful dropouts (GPA < 2.0). Hackman and Dysinger (1970) further refined the four categories to (a) persisters, (b) transfers, (c) voluntary withdrawals, and (d) academic dismissals. None of the categories, however, take into account the "stop-out." In fact, the stop-out remains the apocryphal attrition statistic.

In recent years, completion of courses toward a specific degree has become a popular definition of retention. Gardiner and Robati (1983), for example, call for course completion to be the yardstick by which retention and attrition are measured. A very recent longitudinal retention study completed by Stoecker, Pascarella, and Wolfe (1988) used completion of a baccalaureate degree in nine

years as the criterion for retention. Brenden (1985) stopped short of requiring a degree to measure retention but used continuing registration for and completion of courses in the pursuit of a degree as her definition of retention.

Another conceptualization of retention is as the second half of the enrollment maintenance/management dichotomy, with recruitment constituting the first (Marchese, 1985, Brenden, 1985). A recent Carnegie Council report, for example, states that "increased attrition--not recruitment difficulties--is the cause of enrollment problems among institutions that actually experienced enrollment declines during the past decade" (as cited in Noel, 1985: 3). As shown in Chapter I and as discussed further below, one of the best predictors of retention is past academic performance as measured by an ACT score and/or high school grade point average. Targeted recruitment of students who have already demonstrated academic success will result in a better prepared entering class, which will in turn, most generally, guarantee improved retention statistics.

According to Astin, the definition of retention is simply involvement. The two words are synonymous. Astin (1977) discusses at length the impact of student involvement in campus life. Students participating in such academic activities as honors programs and undergraduate research exhibit high intellectual self-esteem. Similarly, students who are actively involved with faculty show high satisfaction with all aspects of college life. Finally, a

major finding of Astin's (1977) study is that living on campus substantially increases the likelihood that a student will graduate. Tinto (1988) agrees with Astin's emphasis on student involvement as it relates to retention. He states "that (the) effective retention and the involvement of individuals in the social and intellectual life of the college are one in the same" (Tinto, 1988).

In sum, retention has been defined (conceptualized) in a number of ways. A single, accepted definition has yet to emerge. On the other hand, there is increasing consensus on what retention is not. Retention is not the lowering of academic standards (Noel, 1985); in fact, it is the antithesis. Lowering standards has been shown to reduce retention (Noel, 1985). Also, retention is not "gimmicky programs," and it is not a game of outwitting students and manipulating them to stay (Marchese, 1985). Retention results from "qualities of the institution itself" (Marchese, 1985). The ability to keep students in school is the result of providing experiences, both academic and social, which engage students' minds and energies. Retention is the by-product of sound educational policy (Noel, 1985).

Definitions used in retention studies affect their usefulness to other researchers and educators (Pantages and Creedon, 1978). The validity of comparing and contrasting findings from past studies depends, in large part, on the

respective definition of retention used by each researcher (Pantages and Creedon, 1978).

Methodological Issues

In addition to the conceptual problem of defining retention, other limitations of past retention studies have been identified. Gekowski and Schwartz (as discussed in Pantages and Creedon, 1978) identify three major problems. First, they fault the heavy emphasis on academic aptitude and its perceived all-important tie to retaining students. Although they acknowledge that such a correlation does exist, they assert that there are a host of other variables that impact retention. In fact, attrition among academically elite students is disproportionally high. Second, most studies isolate the characteristics of either continuing students or those students who fell by the wayside. In most studies, researchers draw no comparisons between the two groups. Finally, previous studies are criticized for focusing on only one or two variables at a time when studying the causes of retention. The "causes" of retention are multiple, complex, and interrelated. Many studies fail to fully capture this complexity.

Another problem inherent in retention studies is the failure to capture year-to-year fluctuations in retention. Most studies focus on two populations of students: freshmen to sophomore attrition or persistence to graduation. Seldom are year by year breakdowns analyzed. Tinto (1988) argues

that this approach makes the erroneous assumption that student departure is uniform over time.

A related criticism levied against past retention studies is that researchers have relied too heavily on ex post facto methodology (Pantages and Creedon, 1978). Typically, a cross-sectional sample of students who are either already attrition statistics or persisters serve as units of analysis. Researchers then attempt to identify which variables contribute to their current status. Jex and Merrill (1962) as well as a number of other experts (see Eckland, 1964; Tinto, 1975, 1987, 1988) advocate longitudinal retention studies. Longitudinal studies allow one to assess what is happening at the time it is occurring. Stop-outs, readmissions, and transfers between institutions can be readily identified as students are individually tracked. Thus, such students are not included in nonretention counts. In brief, longitudinal studies permit a refined view of the intricate interaction of variables that influence an individual student to remain in or to leave college (Pantages and Creedon, 1978).

Student Retention: Why It Is a Problem and Scope of the Problem

The Problem

Why academic administrators and educators are so concerned with retention was alluded to in Chapter I and may be summed up very simply--money. Most higher education

budgets are enrollment driven; as student enrollment moves up or down, so too goes incoming revenue. Although this focus of concern may seem narrow and self-serving, that the battle for scarce resources is quintessential to public administration is well established (see Wildavsky, 1988).

Observing student retention from a humane, altruistic perspective, one finds a loss of human capital that is impossible to measure only in dollars. Specifically, education has long been heralded as the answer to poverty, discrimination, and other societal inequities. Within the past two decades research has shown a positive correlation between education in general and postsecondary education specifically with status attainment and social mobility (Stoecker, Pascarella, Wolfle, 1988). Blau and Duncan (1967) as well as Duncan, Featherman, and Duncan (1972) have established that educational attainment influences occupational prestige and social mobility. In short, student attrition may be viewed as a loss of human capital and a potential long-term cost to society at-large.

The shrinking of the student population pool is described by Noel (1985) as a "storm cloud on higher education's horizon." The number of high school graduates has declined in recent years, and the attenuation is projected to continue. As noted in Gardiner and Robati (1983), the high school age population is projected to drop from 4,211,000 to 3,426,000 in the decade of the 1980s. Noted demographer Harold Hodgkinson (1986) projects that the

U.S. will experience a series of declines in the number of high school students each year from 1986 to 2000, reaching the lowest level in 1998.

The state of Oklahoma is experiencing similar declines in the high school aged population. The number of students in Oklahoma public schools rose steadily from the late 1940s to about 1970, when there were 645,000 students in grades K-12 (Hobbs, 1986). The number has gradually declined, however, and by 1986 the student census was about 601,000. Looking at Oklahoma's public college student population from 1985-86 to the year 2000, the Oklahoma State Regents project a high enrollment of 164,777 in 2000 and an enrollment low of 149,500 in the year 1992-93 (Hobbs, 1986).

Concomitant with a declining pool of potential students, there are other factors contributing to falling enrollments. College costs have been spiraling. In the state of Oklahoma, for instance, student tuition has almost tripled in the last nine years. At the same time, support for education in many states as well as federal educational outlays have been decreasing. Finally, because many graduates have been found by employers to be inadequately prepared, there has been a decline in public confidence in higher education (Noel, Levitz, Saluri, 1985). The bottom line, so to speak, for many potential students as consumers is to answer the question--do the benefits outweigh the costs (Noel, 1985).

A final response to the question of why retention is a problem may be answered by reviewing the sheer numbers of students who are dropping out. The attrition numbers alone reveal that higher education must be doing something wrong to lose so many.

Scope of the Problem

The extent of the OSU retention problem is evident in the data presented in Chapter I. New freshman nonretention for fall 1986 to fall 1987 for the Big 8 institutions ranged from a low of 14.9 percent at the University of Colorado to a high of 33.3 percent at OSU. Table 17 shows the comparison of OSU's freshman-to-sophomore attrition rate (mean = 30.2%) to the national average for 144 Ph.D. public institutions (26%). Table 17 also shows the average dropout rate for all institutions was 32 percent, ranging from a low attrition rate of 15 percent for private Ph.D. granting institutions to a high of 46 percent for public community colleges.

TABLE 17

NATIONAL NONRETENTION RATES FOR FRESHMAN-TO-SOPHOMORE YEAR BY TYPE OF INSTITUTION

Degree Level/Control	Freshman-to-Sophomore Year Number of Institutions	Percentage
Two-Year Public	767	46
Two-Year Private	165	30
B.A. Public	77	30
B.A. Private	592	26
M.A. Public	207	31
M.A. Private	359	22
Ph.D. Public	144	26
Ph.D. Private	121	15
Total	2,432	32

Source: Adapted from Noel and Levitz, 1983.

Iffert (1957) was among the first scholars to study the issue of student retention. His findings, which have been validated by other researchers, illustrates the scope of the attrition problem. Specifically, he found that 50 percent of the entering freshman class will drop out of the average college in four years, only 40 percent of that same class will graduate from that college four years later, the remaining 10 percent will graduate from college after four years, and 20 percent of the original dropouts will eventually graduate from some institution.

Summerskill (1962) confirmed Iffert's analysis in his review of 35 attrition studies conducted between 1913 to 1953. Additionally, he found that the number of students

dropping out of college over a four-year period did not change substantially in the four decades.

Eckland (1964) conducted a ten-year longitudinal study of student persistence. He followed students who dropped out during a four-year sequence to graduation and found that only 36.5 percent of the students graduated within four years. However, another 13.2 percent eventually graduated. Of the students who dropped out of college and later returned, Eckland found that 70 percent re-enrolled at either the same institution or at another college at a later date. Of these readmissions, approximately 55 percent graduated.

While the dropout versus persister rate has remained relatively stable at about 50 percent of the entering freshman class for most of this century (Gardiner and Robati, 1983), the rate is simply too high. Almost 85 percent of those students dropping out do so voluntarily (Tinto, 1985). Their academic performance is not only adequate but is often well above the average persister. Most of these dropouts are students whose original goals and commitments were to the institution and to obtaining a bachelor's degree. Something went wrong. Such dropouts are, as defined by Tinto (1985), failures of both an individual and institutional nature.

Factors Affecting Student Retention

Despite the criticisms levied against the methodologies used in much of the past retention research, there have been solid quantitative studies coupled with thoughtful analysis, verified through subsequent investigations, which have led to a better understanding of who is leaving and who is staying and why. These studies also suggest possible institutional intervention strategies that will improve retention.

Factors impacting an individual student's decision to stay or to leave college as detailed in the research literature fall into three categories: (1) student characteristics (e.g., demographic characteristics, academic performance, motivational factors, personality traits, etc.); (2) institutional attributes (e.g., size, mission, private/public, etc.); and (3) the amalgamation of the first two categories--the synthesis of the student and the institution. A discussion of how these three categories of factors impact retention follows.

Student Characteristics

Students bring family and individual personality characteristics, past educational experiences, and their own ambitions when they arrive with their luggage at the ivory tower threshold. Through exhaustive research, predictions may be made with great accuracy as to who will persist until graduation.

Most researchers agree that there is a positive correlation between family socioeconomic status (SES) and retention. Children from higher status families persist at greater rates than do students from lower status families, even when level of intelligence is held constant (Tinto, 1975; Brenden, 1985). Summerskill (1962) and Eckland (1964), however, disagree with the contention that SES and dropout are inversely related. They argue that when grade point average (GPA) is held constant, so too is the retention rate among children with white and blue collar parents. To support their position they note that children from lower income families are more likely to attend public schools and that public schools have a greater dropout rate than private. Thus, children of parents with lower economic status are handicapped from the outset.

Research also reveals that college persisters are more likely to be offsprings of parents who are more educated (Tinto, 1975). The key seems to be not so much the level of the parent's education, individually or collectively, but rather that the student is reared in an environment where educational and intellectual achievement is valued and internalized (Pantages and Creedon, 1978).

Most retention studies find that ethnicity is a variable in academic persistence. At OSU, for example, there are great disparities in persistence and graduation rates by race, with blacks, Hispanics, and Native Americans leaving at disproportional rates (see Tables 9 and 10 in

Chapter I). Astin (1973) studied the effect of race on persistence while holding constant, statistically, the academic factors in the student's background. He found no significant differences in attrition for students who were Oriental, Native American, or black. He did find, however, that non-Jewish students were less likely to graduate in four years than Jewish students and that Chicano students have the lowest probability of obtaining a college education (Astin, 1973).

Researchers disagree on the impact of the size and location of the high school attended on college persistence. Initial findings indicated students from small, rural high schools were less likely to graduate. Other studies have failed to support this premise (Pantages and Creedon, 1978). Studies do show a positive correlation between attending a private high school and graduating from college (Astin, 1973; Freidman, 1956).

Past academic performance is one of the best predictors of retention. In fact, academic ability has been found to be almost twice as important in determining student persistence as family social status (Tinto, 1975, Brenden, 1985). Whether academic ability is measured by high school GPA, high school rank in class, or scores obtained on standardized tests (i.e., ACT and SAT), the higher the score, the greater the likelihood of graduation.

Iffert (1957) found that students in the upper fifth of their high school class were twice as likely to persist

until graduation as were students in the second fifth. Similarly, the top fifth students were eight times more likely to graduate than students in the lowest fifth. Astin's (1973) research confirmed Iffert's conclusion. He found that the probability of graduating in four years increased by 70 percent if the student had a high school GPA > 3.5.

Academic performance continues to be an accurate predictor of persistence in the college experience. Not surprisingly, there is a high correlation between first semester grades and attrition (Pantages and Creedon, 1978). Concomitantly, Summerskill (1962) found that poor grades are a better predictor of attrition than good grades are in determining retention because academically successful students drop out in larger numbers than would be expected.

Students with poor study habits drop out in greater numbers than students who study regularly (Pantages and Creedon, 1978). Motivational factors are tied to individual student persistence. Although internal drive is difficult to assess, researchers have successfully evaluated motivation and commitment by looking at students' reasons for attending college. Studies support the notion that students with well-defined vocational goals persist better than students without such goals (Pantages and Creedon, 1978). Just as parental level of education relates positively to student persistence, so does the quality of the parent/child relationship. The better the relationship

and the greater the parental influence, the more likely is graduation (Pantages and Creedon, 1978).

Peer-group influence also shapes student motivation. In fact, many educational and developmental psychologists cite peer-group influence as the most significant influence on the college student (Pantages and Creedon, 1978). Peer-group influence is second only to the personal characteristics of students in determining whether a student will persist to graduation or not (Pantages and Creedon, 1978).

Finally, a student's personality is a factor in retention. Researchers have found persisters rate higher on the personality scales of maturity, freedom from rebellion, seriousness of thought, dependability, and in the capacity to live with others without friction (Blanchfield, 1971; Grace, 1957; Rose, 1965). Personality attributes associated with dropouts are primarily negative. Dropouts are less likely to be adaptive. They are more likely to be impulsive, assertive, critical, and immature (Astin, 1965; Blanchfield, 1971; Maudal, Butcher, and Mauger, 1974).

In sum, Astin (1975) identifies a number of reasons why students drop out of college. As Table 18 shows, many of the reasons are associated with student/family characteristics. Boredom with courses, the most frequently given reason for dropping out of school by all students, is most likely related to the lack of motivation or inability of the student to comprehend the subject matter. Of course,

the cause of student boredom could also be an institutional failure, such as poor teaching. Poor grades are probably the result of past inadequate academic performance, or motivation. Financial difficulties could be the effect of low family socioeconomic status, and change in career goals may be the outcome of poorly defined educational objectives or vocational plans.

The reasons for dropping out shown in Table 18 are instructive since they also suggest that institutional characteristics may lead to nonretention of students (e.g., dissatisfaction with requirements and regulations, inability to take desired courses or programs).

TABLE 18

PERCENT OF STUDENTS CHECKING REASON FOR DROPPING OUT

	All Students	Men	Women
Boredom with courses	32	36	25
Financial Difficulties	28	29	27
Some other reason	28	31	24
Marriage, pregnancy, or other family responsibilities	23	11	39
Poor grades	22	28	14
Dissatisfaction with requirements or regulations	22	24	20
Change in career goals	19	19	20
Inability to take desired courses or programs	11	12	9

Source: A.W. Astin (1975). Preventing Students from Dropping Out (San Francisco: Jossey-Bass): 14.

Institutional Characteristics

The higher education institution is the student's counterpart in determining retention and graduation. Just as individual student characteristics impact persistence, so too do such institutional attributes as size, type, and quality.

Research results have been mixed related to the size of the college and its impact on persistence. Smaller institutions often have lower student-faculty ratios, thus increasing the opportunities for interaction. Larger institutions, however, boast a more heterogeneous student body, so there is greater likelihood to fit in socially (Tinto, 1975).

Research by Feldman and Newcomb (1969) found retention favoring smaller institutions. Specifically, they found that larger institutions tended to reduce students' confidence in terms of both scholastic ability and social acceptability, to promote less contact between students and faculty, and to appear to students to be less friendly and open.

When tying student ability to institutional size, a different association appears. Kamens (1971) reports that medium to high-ability students fare better at large institutions. Overall, however, small institutions have the advantage in retaining students (Pantages and Creedon, 1978).

Type of institution may be categorized as (1) commuter versus residential, (2) public versus private, or (3) two year versus four year. Retention rates differ for each of the various categories of institutions. Residential campuses provide the opportunity for increased student integration in university life due to the close physical proximity and the opportunity to participate (Chapman and Pascarella, 1983). Thus, residential institutions boast a higher retention rate than commuter schools.

Similarly, four-year college students enjoy the opportunity for greater social assimilation compared with community college students. Two-year college students are less socially integrated and more likely to dropout (Chapman and Pascarella, 1983).

The perceived quality of the college also affects the dropout rate. Higher quality institutions, as measured by greater numbers of faculty with doctorates and with higher income per student, have lower attrition than do lower quality institutions (Tinto, 1975).

In summary, private institutions, high quality colleges, and four-year schools have higher retention rates than do public institutions, low-quality schools, and community colleges.

The Amalgamation of the Student and the Institution

Blending the student with the institution yields three prominent themes in retention research: (1) the importance

of informal faculty interaction; (2) campus involvement; and (3) the degree of "fit" between a student and the institution.

Student-Faculty Relationships: The importance of informal faculty-student interaction to retention has irrefutable support in retention research. Positive student-faculty relationships contribute to student satisfaction and positive attitudes toward learning and the institution and, thus, to retention (Pantages and Creedon, 1978).

In a study conducted by Lewis (1987), 71 percent of the students responded that informal contact with faculty members could influence their decision to continue at the institutions. Students stated that such faculty interaction made it "easier to adjust," made them "feel confident and willing to work," and helped them to realize that "people are concerned" (Lewis, 1987).

Pascarella and Terenzini (1977) performed a complex study of the patterns of student-faculty informal interaction beyond the classroom and its effect on attrition based on Tinto's model of academic and social integration. Controlling for student sex, aptitude, and personality, the investigators identified six different types of student-faculty interaction: (1) to get basic information and advice on academic programs; (2) to discuss matters related to career; (3) to help resolve a personal problem; (4) to discuss intellectual or course-related

matters; (5) to discuss a campus issue or problem; and (6) to socialize informally. Results of the study indicate that college persisters had a significantly higher number of faculty interactions, ten-fifteen minutes plus for each, than did those who dropped out. The two most frequently mentioned areas of interaction were to discuss intellectual or course related matters and to discuss matters related to career respectively (Pascarella and Terenzini, 1977).

Other research studies show that not only do student contacts with faculty play a critical role in retention but that such contacts also influence students' occupational decisions, increase student aspirations, impact intellectual/academic development and student educational outcomes, and improve student personal and social development (Endo and Harpel, 1982). The value of faculty interaction cannot be overstated, not only in its role in retaining students but more importantly in its role in educating students to their fullest potential.

Campus Involvement: As students become more involved in campus life, both academically and socially, the more likely they will be to persist to graduation. In 1984, the National Institute for the Humanities published a book directed toward enhancing excellence in higher education. The book entitled, Involvement in Learning: Realizing the Potential of American Higher Education cites student involvement as one of the foremost necessities of educational excellence (as cited in Turnball, 1986: 7).

Such campus participation is reflected, in part, by place of residence and involvement in college extracurricular activities.

A study conducted at the University of California, Berkeley, found that attrition was related to the housing environment selected by students. Specifically, students residing in sororities, men's dormitories, or cooperatives persisted best, while the highest dropout rate was from students living at home or in boarding houses (as cited in Turnball, 1986: 7).

Loneliness and friendship compared to place of residence were analyzed in freshman students at Memorial University, St. John's, Newfoundland. Researchers found that self-described loneliness was related to place of residence, with students living in dormitories the least lonely and those residing off-campus the most lonely. Similarly, students living in dormitories established more new friendships and relied less on old friendships back home than did their off-campus living student counterparts (Ross, 1979). Those students who were described as more lonely and who made fewer new friends were more vulnerable to dropping out.

Research has been conclusive that students living on-campus are more likely to persist than those residing off-campus. Concomitantly, research tends to support fraternities and sororities as the best on-campus place of residence for persistence purposes (Pantages and Creedon,

1978). Iffert's (1957) research concluded that simply the presence of a Greek residence system on campus will improve the overall student retention rate. On the other hand, one could advance the argument that it is not the Greek system per se that fosters retention but other factors central to college persistence that are associated with being in a sorority or fraternity. Specifically, as already noted, family SES impacts the likelihood of graduation as does past positive academic performance. Generally speaking these are two prerequisites for acceptance into a fraternity or sorority.

Several research studies support the notion that involvement in extracurricular activities contributes to campus social integration and thus retention (Panos and Astin, 1968; Hannah, 1969). Investigators also note, however, that attrition may be related to "too much" extracurricular activity (Pantages and Creedon, 1978).

Degree of "Fit" Between Student and Institution: Just as no two students are alike, neither are any two institutions. Institutions have unique personalities, different priorities, and varied strengths and weaknesses. The "college fit" theory is that the more congruence there is between the student's needs, ambitions, goals, and values and those of the institution's, then the more likely it is that the student will persist at that college. Conversely, the opposite is true (Pantages and Creedon, 1978). Cope and Hannah (as discussed in Brenden, 1985: 24), for

example, studied the retention pattern of traditional-age students and concluded that the primary factor in determining student persistence was the student's identification with the college.

Based on the "college fit" theory, Noel et al. (1987) state that retention begins with recruitment. For optimum academic and social integration to occur, there must be a "good match" between what the institution has to offer and what the student expects and needs. Noel calls on institutions to analyze their mission statements and to recruit only those students it can serve best (Noel et al., 1987).

Summary and Implications

Retention research is in the adolescence stage of life--growing and yet becoming refined and sophisticated. A workable, accepted definition of retention is evolving, why retention is a problem and the scope of the problem has been ascertained, and research results are providing clues for more accurate predictions of attrition as well as possible institutional intervention strategies.

At this point attention must be redirected back to Tinto's (1975) second salient criticism of retention research identified early in this chapter--the failure to develop theoretical models to explain the attrition phenomenon. Chapman and Pascarella (1983) echo Tinto's concerns about the descriptive or correlational nature of

past research. They too called for the development of a clear model or theory to guide retention research. Chapter III is devoted to the development of such a theory.

CHAPTER III

METHODOLOGY

The purpose of the present study is to assess the impact of student characteristics and academic and social integration on student voluntary persistence/withdrawal decisions at Oklahoma State University.[1] The research effort is based on Tinto's (1975, 1987a, 1987b, 1988; see also Pascarella and Terenzini, 1977; Stoecker, Pascarella, and Wolfle, 1988) model of the persistence/withdrawal process in postsecondary institutions, which in turn draws heavily on Van Gennep's (1960) "rites of passage" theory and Durkheim's (1963) theory of suicide. This chapter first provides an overview of the theoretical foundation of the study and second outlines the research design employed to analyze student persistence/withdrawal at OSU.

Theoretical Foundation

As noted above, the present study uses Tinto's model of institutional departure as a theoretical base. In order to understand this model, one must first examine the writings of Van Gennep (1960) and Durkheim (1963).

Van Gennep's Rites of Passage Theory

Arnold Van Gennep, a Dutch social anthropologist, was interested in the process by which communities and societies maintain their continuity and stability from one generation to the next. He attributed this process to the maturation of the individuals within the various communities. Specifically, Van Gennep observed tribal societies and concluded that life is a series of passages from birth to death. Individuals pass from membership in one group with related norms and behaviors to another group with different acceptable norms and behaviors. This system of moving from membership in one group to another constitutes Van Gennep's view of life and is responsible for the transferring of values and mores, and thus stability across generations.

Van Gennep asserts that the process of moving from one group to another is not necessarily a smooth one for an individual. In fact, it can be very disorienting and at times even overwhelming. According to Van Gennep, in order to complete the transition process successfully, an individual must move through three distinct stages: separation, transition, and incorporation.

The separation stage requires the detachment of the individual from past associations in the community from which s/he is leaving. The stage is characterized by a marked decline in interactions with the members of the group from which the individual has come. The individual,

however, does not yet have the solace of participation with the members of the group s/he is joining.

During the second stage of transition, the person begins to interact with members of the new group. These interactions will be different from those enjoyed with the old group since group norms and behaviors are different. This is the most vulnerable stage for the individual as s/he is floating between groups--not a member of either one. The individual is learning the knowledge and skills required for membership in the new group. To ensure separation from past associations and the adoption of the norms and behaviors of the new group, it may be necessary to isolate the person from the old group and provide training in the ways of the new group.

Incorporation is the final stage and involves the establishment of membership in the new group. The person takes on the new patterns of interaction with members of the new group and becomes a "participant" member. S/he follows the example of the members of the new group in relating to members of the old group.

Van Gennep states that each of the three stages should have their own unique ceremonies or rituals to recognize and facilitate an individual's progress. These "rites of passage" serve as a public announcement of the individual's movement from one community to another. They also serve in assisting him in coping with the transition difficulties (Van Gennep, 1960).

Tinto (1987) uses Van Gennep's "rites of passage" theory to explain the movement of a student from the community of high school to the community of college. To become successfully acclimated to college, every student must go through each of the three stages. During the separation stage, the college student must disassociate himself/herself from family, high school, and old place of residence. This process can be stressful and disorienting and may result in dropping out of college to return to past associations. The degree of difficulty is dependent on the personal attributes of the individual and the support rendered by the old community to the student.

The transition stage is also a time of high vulnerability with respect to dropping out of college. During the transition stage the student is in a state of imbalance. One primary factor in determining a student's successful movement through this stage is the amount of change it requires--i.e., the degree of difference between past group norms and behaviors and college group norms and behaviors. The greater the difference, the more difficult the transition. Given higher education's tendency to be dominated by white students directly out of high school who have middle-class parents, this explains, in part, the higher attrition rates for lower socioeconomic students, older adults, minorities, and students with rural backgrounds (Tinto, 1987).

During the incorporation stage, students adjust to college and adopt the patterns of their new group. Retention is likely once students are incorporated into the college environment.

Higher education, for the most part, provides no "rites of passage" to mark the progress of students from one stage to the next. Isolated observances are possible through orientation programs, fraternities, sororities, and residence halls. In general, however, college students are not provided the formal recognition of their plight through the stages which would, in turn, provide encouragement and valuable assistance in conquering the next level of adjustment (Tinto, 1988).

Durkheim's Theory of Suicide

Emile Durkheim is credited with being the founding father of sociology. He studied the various rates of suicide among countries over time in an attempt to understand the characteristics of diverse societies. Durkheim (1963) identified four types of suicide: altruistic, anomic, fatalistic, and egotistical.

Altruistic suicide, as described by Durkheim, is an intentional death that the culture believes to be morally acceptable in certain situations. Durkheim's examples of altruistic suicide are hari-kari and kamikaze warfare. Anomic suicide is the outcome of a crisis in a society that results in the temporary breakdown of normal social and

cultural bonds. Examples of such crises that might precipitate anomic suicides are wars or economic depressions.

While Durkheim's first two types of suicide, altruistic and anomic, involve the breaking down or absence of cultural and behavioral norms, fatalistic suicide is the result of excessive norms and societal controls. The individual perceives that there is no way out short of his/her own death.

Finally, egotistical suicide occurs when an individual is unable to become integrated and to establish membership in a community. Durkheim describes two forms of required integration: (1) social integration which involves personal affiliations and regular interactions with other members of the community; and (2) intellectual integration which is the sharing of common values by members of the community (Durkheim, 1963).

Tinto (1987) translates Durkheim's four types of suicide to higher education in an attempt to explain voluntary student departure. Tinto equates altruistic suicide with the higher education environment during the 1960s and 1970s. In part, students dropped out in response to a subculture that promoted departure. In sum, it was a time when young people were encouraged to be "anti-establishment."

Anomic student withdrawal occurred during the student riots of the 1970s. The riots and demonstrations were

disruptive forces on campus, which served to subvert the day-to-day operation of institutions.

According to Tinto, institutions that are highly structured and allow little flexibility may encourage fatalistic student withdrawal. Students may be unable to cope with the excessive rules and their rigorous enforcement.

Durkheim's egotistical suicide is the bases for Tinto's model of the higher education persistence/withdrawal process. Egotistical student departure results when students fail to become integrated into the social and intellectual communities of the institution (Tinto, 1987).

Tinto's Model of Institutional Departure

Drawing upon the seminal writings of Van Gennep (1960) and Durkheim (1951), Tinto (1975, 1987, 1988) formulated a comprehensive, complex model to explain the phenomenon of individual student withdrawal from higher education. The theoretical model is longitudinal in nature and emphasizes the process of interaction between the student and the institution, specifically the academic and social systems of the college. Figure 1 shows Tinto's Model (see page 75).

According to Tinto (1987), the student enters college with certain unique input characteristics, including family background, social status, level of parental education, expectations and ambitions (both individual and parental), race, sex, urban versus rural, etc. The student also brings

with him/her particular academic and social skills and abilities--i.e., past academic performance as reflected by high school grade point average, high school rank in class, and score on a standardized test. Unique personality attributes and attitudes also accompany the student to college. Finally, prior school experiences will affect the likelihood of a student's retention or departure, including the quality of the common school coursework both in terms of variety as well as substance. The individual's characteristics and family background, skills and abilities, and prior schooling directly impact the formulation of intentions and commitments to education.

Tinto's model also addresses subsequent college experiences that result from the interaction between the student and members of the academic community--faculty, staff, and other college students. The student wishing to persist through these interactions must become integrated at some acceptable level in both the academic and social systems of the institution. Both systems have formal and informal components as noted in the model. Formal experiences in the academic system would include student interactions with faculty in the classroom or laboratory as well as interactions with staff members during the registration process, etc. As noted in Chapter II, informal interactions with faculty are also critical to student persistence.

Similarly, the social system provides two levels for student involvement. Participation in organized extracurricular activities such as sports, band, student governance and honoraries contribute to the student's social integration. Chapter II also discussed the relationship between friendships, loneliness, and persistence which compose the informal social system.

Tinto claims that positive integration experiences in the academic and social realms result in the required college integration and reinforce a student's intentions, goals, and institutional commitment. Conversely, negative academic and social experiences lower the student's goals and weaken his/her commitment both to education generally and to the institution specifically. External commitments such as family and community influences may support the student's intentions and commitment or may exacerbate negative feelings.

Academic and social integration are mutually interdependent in Tinto's model. The actors in both realms are the same. Events in one system can and do impact the activities in the other. The two systems may even, at times, be in conflict with each other. The student has limited time and energies, yet s/he must meet the demands from both systems.

Another characteristic of Tinto's model is that full integration in both systems is not essential for persistence. Heavy integration in the academic realm may

offset limited involvement in the social system and visa versa. However, it is important to note that some degree of social and academic integration must exist if the student is going to persist.

In summary, the higher the levels of academic and social integration, the less likely it is that the student will voluntarily leave the institution (Tinto, 1987).

Research Design

In order to assess the impact of the variables identified in Tinto's (1987) model on student persistence at Oklahoma State University, a comprehensive university with an enrollment of 20,764 students, in the fall of 1988 a ten percent random sample of the 1987 first-time entering, full-time (enrolled in 12 or more hours) freshmen was drawn by the Office of Institutional Research. Each name on the list was checked to see if the student completed both the semester of initial enrollment plus the subsequent spring semester. For students completing both semesters, a 39 item questionnaire was designed by the researcher and distributed to obtain information related to their academic and social experiences at OSU (see Appendix A). For students who voluntarily withdrew[2] during either the fall or spring semester, a 43 item questionnaire similar to the one for persisting students was designed by the researcher and distributed for the purpose of obtaining the same

information asked of the persisting students, plus the reasons for withdrawal (see Appendix B).

The survey instrument was pretested using two means: (1) A select panel of four professionals in the area of student academic services reviewed, evaluated, and proposed modifications and additions to the original instrument; and, (2) five students, picked at random from the 1988 freshman class, completed the questionnaire and provided inputs as to its readability, ease of completion, and appropriateness for the designated purpose.

To increase the questionnaire return rate, a follow-up letter was mailed three weeks after the initial questionnaire mailing (see Appendix C). Phone calls were made to 120 members of the sample five weeks following the distribution of the questionnaire in an effort to increase the response rate.

In addition, a wide variety of information was acquired for each individual student from the OSU student data base. More specifically, from the student data the following demographic, high school academic, OSU academic, and OSU extracurricular information was secured.

Demographic Variables:

1. Student Number/Social Security Number
2. Name
3. Sex
4. Race/Ethnicity
5. Date of Birth
6. Local Address
7. Local Phone
8. High School Code (Rural/Urban)
9. High School Class Size
10. State Code (Resident/Non-Resident for Fee Payment Purposes)
11. County Code
12. Country Code
13. Marital Status
14. Religious Organization Code
15. Parents' Names
16. Handicapped

High School Academic Variables:

1. High School GPA
2. High School Rank
3. ACT/SAT (By Subject Category and Composite)

OSU Academic Variables:

1. College
2. Major (Initial/Subsequent Changes)
3. Admission Action
   A. How Admitted (Special Waiver vs. Regular)
4. Number of Transfer Hours (Will be < 5)
5. Concurrent Enrollment (in Extension, Correspondence, Talkback TV, etc.)
6. Semester Grades

OSU Extracurricular Variables:

1. Resident Hall/Commuter

Variables and Data Analysis

The dependent variable in the study is dichotomous in nature; is the student who participated in the survey a persister or did s/he voluntarily drop out of OSU. The

survey methodology allows for limited analysis of stop-outs, transfers, and other types of nonretention students.

The independent variables are items drawn from student surveys (see Appendix A and B) and the variables shown above that were secured from the student data base.

Methods used to analyze the data included chi-square, t tests, regression analysis, and discriminant analysis. Specifically, ordinal and nominal data were subjected to chi-square test analysis looking for a statistical significance of .10 in the contingency tables. The Likert scale questions were analyzed using the t test with a required value of .05 for establishing a statistically significant difference in the two means of the independent variables between persisters and dropouts. Regression analysis was used to analyze the interval level data of ACT scores, high school GPA, and high school class rank in an attempt to provide an improved estimate of attrition using a regression equation which contained these three independent variables. Discriminant analysis was used to investigate the relationship between the dichotomous dependent variable and sets of independent variables. Finally, to the extent the data characteristics and the cross-sectional nature of the research design allow, Tinto's institutional departure model was operationalized and tested.

Summary

This study assessed the influence of the independent variables of demographic factors, high school and OSU academic characteristics, and OSU extracurricular activities on the dichotomous dependent variable of persistence or withdrawal. The study's theoretical base is Tinto's (1987) model of institutional departure. The results of this study will allow university administrators to predict more accurately students who are at risk for withdrawal and to provide appropriate intervention to reduce the likelihood of dropout.

NOTES

1. Pascarella and Terenzini conducted a similar study at New York State University in 1976. Their study and the present one vary in significant ways. This study, for example, includes many more independent variables. Also, the nature of the two institutions under investigation differ; the nonretention rate at NYSU was 11.8 percent, at OSU the rate is 33.3 percent. Finally, their study was longitudinal in nature, the present study is not (but see note 3).

2. OSU does not academically suspend students until after the second consecutive semester of poor academic performance. Thus, academic dismissals are not inappropriately included with voluntary withdrawals.

3. As discussed in Chapter II, retention experts are critical of cross-sectional designs and call for the use of longitudinal research to study retention. The author is currently initiating longitudinal retention research at OSU by tracking a random sample of 1988 entering freshmen for the next six years. For obvious reasons, the results of this research are forthcoming (with reports each year).

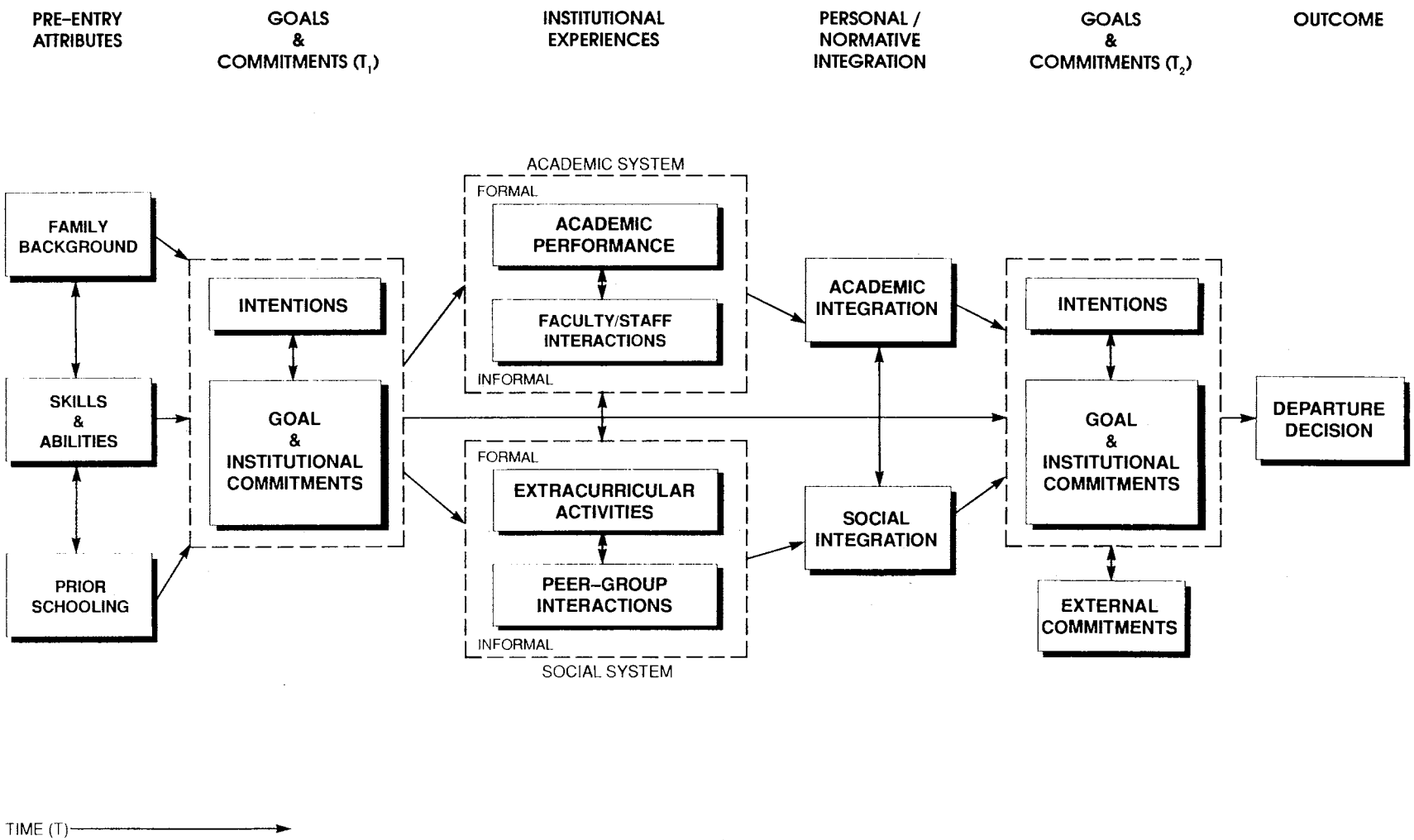

Figure 1: Tinto's Model of Institutional Departure

CHAPTER IV

REPORT OF RESEARCH FINDINGS

As detailed in the preceding chapter, this research study is based on Tinto's model of the persistence/ withdrawal process in postsecondary institutions by way of Van Gennep's "rites of passage" theory and Durkheim's theory of suicide (Tinto 1975, 1987, and 1988; Van Gennep, 1960; and Durkheim, 1963). Tinto's model emphasizes the amalgamation of individual factors, i.e. student academic and personal characteristics, with institutional traits such as public or private, resident or commuter. Specifically, Tinto asserts that if the student integrates into the academic and social spheres of the university, s/he will be more likely to persist to graduation (Tinto 1975, 1987, and 1988).

The purpose of this chapter is to report the research findings. To the extent possible, Tinto's model will be operationalized. This chapter also will take the research results one step further by noting those independent variables that were shown to be unique to OSU in terms of contributing to the individual student outcome.

Chi-square tables are used to test the ordinal and nominal level questionnaire data. The t test is applied to

the Likert scales of the questionnaires and to select data from the student data base to determine statistical significance. Regression analysis is used to analyze the interval level data of ACT, high school GPA, and high school rank in class. Finally, discriminate analysis is applied to examine the relationship between the student choice of persistence or withdrawal and the various independent variables identified in the questionnaires. This chapter begins with general background information about the gathering of research data.

General Information

As detailed in Chapter III, Section Research Design, pretested survey instruments were distributed to a ten percent random sample of 1987 first-time entering, full-time freshmen at OSU. The random sample totaled 271 students (n=271). Of the original sample, 99 students had withdrawn from OSU sometime during the academic year (fall 1987 and spring 1988). One hundred seventy-two students in the sample persisted to the Fall 1988 semester.

A follow-up letter was mailed three weeks after the distribution of the questionnaires. Telephone calls were also made in an effort to increase the rate of return. Completed questionnaires were returned by 105 persisting students (61.0%) and 42 withdrawn students (42.4%). Total return was 147 questionnaires (54.2%).

Tinto's Model Operationalized

The application of Tinto's model can best be depicted in the form of a chart (Appendix D). The items in the research study questionnaires as well as select data in the student data base have been systematically divided into the categories detailed by Tinto as being critical to student persistence. The statistical relationships between the dichotomous dependent variable and the respective independent variables are noted. The significance of a statistical relationship was determined by the appropriate statistical technique. To show statistical significance in the chi-square test, a level of .10 or less was deemed necessary. The .10 level of significance means that the decision will be correct 90% of the time. In the t test, statistical significance was established if the mean responses of the persisting and withdrawn students were unequal at the .05 level of significance or less. Those independent variables statistically established to be factors in retention are noted by an asterisk.

Chi-Square Analysis

Chi-square is a statistical test of significance used to analyze qualitative data, nominal or ordinal levels of measurement (Meier, 1987). The chi-square test assumes that there is no relationship between two variables--a null hypothesis--and determines whether any apparent relationship is attributable to chance (Meier, 1987).

The table (see Appendix D) distributed each questionnaire item and various student data base information among the various categories Tinto deemed important to college persistence. This section examines in greater depth items which were statistically significant at the .10 level.

Question 1-a: "What is the highest educational level completed by your father or guardian?" was not found to be statistically significant when each of the seven choices ranging from "did not complete high school" to "graduate or professional degree" was figured into the chi-square measurement. Specifically, the chi-square level of significance comparing persisters with dropouts was .426 or "no relationship" at the .10 level. However, when the chi-square test was applied to the question using two choices, as opposed to the original seven, a statistical significance was apparent at the .10 level.

There was a statistical difference between students whose fathers or guardians graduated from college with at least a bachelor's degree and those who did not. Comparing the two groups, a chi-square level of significance of .065 was measured. Thus, a positive relationship existed between persisting at OSU and having a father or guardian with a bachelor's degree or higher.

The chi-square measurement for question 1-a is illustrated in the following table:

TABLE 19

FATHER'S EDUCATIONAL DEGREE LEVEL

Frequency Row Pct	Father Less Than Bachelors	Father With Bachelors or Higher	Total
Dropouts	24 60.00	16 40.00	40
Persisters	45 42.86	60 57.14	105
TOTAL	69	76	145

Degrees of Freedom: 1
Chi-Square Value: 3.413
Level of Significant: 0.065*

Similar to question 1-a, **question 3-a "Estimate your family's adjusted gross income"** did not prove to be statistically significant at the .10 level. However, when two income levels were used, rather than the original six, a relationship was established between family's adjusted gross income and college persistence. Specifically, respondents in families with annual incomes of $50,000 or higher were more likely to continue in school than those whose families earned less.

The chi-square measurement for question 3-a is shown below:

TABLE 20

FAMILY'S ADJUSTED GROSS INCOME

Frequency Row Pct	< $50,000	> $50,000	TOTAL
Dropouts	29 72.50	11 27.50	40
Persisters	59 57.28	44 42.72	103
TOTAL	88	55	143

Degrees of Freedom: 1
Chi-Square Value: 2.819
Level of Significant: 0.093*

Other independent variables found by the chi-square test to contribute to student retention are illustrated in the following tables:

Question 6: "Do you have dependents for whom you are financially responsible (excluding yourself)?"

This tables shows that non-persisters in the sample were more likely to have dependents than those students who continued.

TABLE 21

DEPENDENT FINANCIAL RESPONSIBILITY

Frequency Row Pct	No	Yes	TOTAL
Dropouts	33 82.50	7 17.50	40
Persisters	101 96.19	4 3.81	105
TOTAL	134	11	145

Degrees of Freedom: 1
Chi-Square Value: 7.744
Level of Significant: 0.005*

Question 7a: "Are you married?"

None of the students returning to OSU were married. In this sample, there was an inverse correlation between being married and retention.

TABLE 22

MARITAL STATUS

Frequency Row Pct	No	Yes	TOTAL
Dropouts	34 85.00	6 15.00	40
Persisters	105 100.00	0 0.00	105
TOTAL	139	6	145

Degrees of Freedom: 1
Chi-Square Value: 16.43
Level of Significant: 0.000*

Question 8: "In how many high school extracurricular activities or organizations did you participate? (sports, cheerleading, band, class officer, clubs, etc.)"

Generally, persisters were involved in more high school extracurricular activities than were those who left OSU.

TABLE 23

NUMBER HIGH SCHOOL
EXTRACURRICULAR ACTIVITIES

Frequency Row Pct	0	1-3	3-4	> 5	TOTAL
Dropouts	0 0.00	22 55.00	8 20.00	10 25.00	40
Persisters	9 8.57	30 28.57	28 26.67	38 36.19	105
TOTAL	9	52	36	48	145

Degrees of Freedom: 3
Chi-Square Value: 10.684
Level of Significant: 0.014*

Question 9: "How many hours per week were required in these extracurricular activities or organizations?"

While a statistical difference had been established related to the number of hours per week required in high school extracurricular activities, the chi-square table showed that the amount of time as defined by intervals fluctuates, with dropouts devoting a greater percentage of their time at the 1-3 hour level and the greater than five hours level.

TABLE 24

NUMBER HOURS/WEEK SPENT IN
EXTRACURRICULAR ACTIVITIES

Frequency Row Pct	0	1-3	3-4	> 5	TOTAL
Dropouts	0 0.00	7 17.50	6 15.00	27 67.50	40
Persisters	11 10.48	11 10.48	24 22.86	59 56.19	105
TOTAL	11	18	30	86	145

Degrees of Freedom: 3
Chi-Square Value: 6.831
Level of Significant: 0.077*

Question 10: "On the average, how many hours did you study per week in high school?"

Over 41% of the returning students studied five hours or more per week in high school, compared with 20% of the non-persisters.

TABLE 25

NUMBER HOURS/WEEK STUDIED
IN HIGH SCHOOL

Frequency Row Pct	2 <hrs/wk	2-5 hrs/wk	5-10 hrs/wk	> 10 hrs/wk	TOTAL
Dropouts	10 25.00	22 55.00	8 20.00	0 0.00	40
Persisters	18 17.14	43 40.95	38 36.19	6 5.71	105
TOTAL	28	65	46	6	145

Degrees of Freedom: 3
Chi-Square Value: 6.880
Level of Significant: 0.076*

Question 11: "What is the highest academic degree you expect to obtain?"

This table indicates that students leaving OSU had greater aspirations as defined by the highest academic degree desired than did their persisting counterparts.

TABLE 26

HIGHEST ACADEMIC DEGREE EXPECTED

Frequency / Row Pct	High School	BA/BS	MA/MS	Ph.D./ Ed.D.	MD/DDS/ DVM	LLB/ JD	TOTAL
Dropouts	0	20	11	5	1	1	38
	0.00	52.63	28.95	13.16	2.63	2.63	
Persisters	41	44	9	4	7	0	105
	39.05	41.90	8.57	3.81	6.67	0.00	
TOTAL	41	63	20	9	8	1	143

Degrees of Freedom: 5
Chi-Square Value: 31.288
Level of Significant: 0.000*

Question 20-a: "Did you participate in a summer orientation session prior to your initial OSU enrollment?"

More persisters than dropouts participated in the summer orientation sessions.

TABLE 27

PARTICIPANT IN ORIENTATION

Frequency Row Pct	No	Yes	TOTAL
Dropouts	25 62.50	15 37.50	40
Persisters	38 36.19	67 63.81	105
TOTAL	63	82	145

Degrees of Freedom: 1
Chi-Square Value: 8.160
Level of Significant: 0.004*

Question 22a: "Do you know who your academic adviser is?"

Continuing students identified their academic adviser at a higher rate than did non-persisters.

TABLE 28

KNOW ACADEMIC ADVISER

Frequency Row Pct	No	Yes	TOTAL
Dropouts	9 23.08	30 76.92	39
Persisters	4 3.81	101 96.19	105
TOTAL	13	131	144

Degrees of Freedom: 1
Chi-Square Value: 12.854
Level of Significant: 0.000*

Question 22-b: "Last year, approximately how many times did you meet with your adviser?"

Dropouts were more likely than persisters to meet with their advisers only one time, while continuing students met with their advisers five or more times more frequently than did departing students.

TABLE 29

NUMBER OF TIMES MET WITH ADVISER

Frequency / Row Pct	0	1	2	3	4	5	6	7	8	TOTAL
Dropouts	0	9	4	11	10	4	0	1	0	39
	0.00	23.08	10.26	28.21	25.64	10.26	0.00	2.56	0.00	
Persisters	3	7	24	29	17	14	3	3	2	102
	2.94	6.86	23.53	28.43	16.67	13.73	2.94	2.94	1.96	
TOTAL	3	16	28	40	27	18	3	4	2	141

Degrees of Freedom: 8
Chi-Square Value: 13.565
Level of Significant: 0.094*

Question 24: "During your freshman year, how many times <u>did you</u> meet with a faculty member outside of class for <u>10 minutes or more</u>?"

Returning students had more contact with faculty outside of class than did their departing student counterparts.

TABLE 30

NUMBER OF TIMES MET WITH FACULTY MEMBER

Frequency Row Pct	0	1-3	3-5	> 5	TOTAL
Dropouts	5 12.82	23 58.97	5 12.82	6 15.38	39
Persisters	9 8.57	41 39.05	31 29.52	24 22.86	105
TOTAL	14	64	36	31	144

Degrees of Freedom: 3
Chi-Square Value: 7.005
Level of Significant: 0.072*

Question 31: "Are you a participant in varsity athletics?"

Students leaving OSU were more likely to be participants in varsity athletics than were those students who stayed.

TABLE 31

PARTICIPANT IN VARSITY ATHLETICS

Frequency Row Pct	No	Yes	TOTAL
Dropouts	35 89.74	4 10.26	39
Persisters	102 97.14	3 1.90	105
TOTAL	137	7	144

Degrees of Freedom: 1
Chi-Square Value: 5.296
Level of Significant: 0.071*

Question 32: "Which of the following student services are you aware of?"

In each of the nine chi-square tables listed under question 32, there is a greater awareness of the respective student services by returning students than their exiting student counterparts.

c) Health Center

TABLE 32

HEALTH CENTER

Frequency Row Pct	No	Yes	TOTAL
Dropouts	7 17.07	34 82.93	41
Persisters	7 6.67	98 93.33	105
TOTAL	14	132	146

Degrees of Freedom: 1
Chi-Square Value: 3.683
Level of Significant: 0.055*

d) Writing Center

TABLE 33

WRITING CENTER

Frequency Row Pct	No	Yes	TOTAL
Dropouts	21 51.22	20 48.78	41
Persisters	32 30.48	73 69.52	105
TOTAL	53	93	146

Degrees of Freedom: 1
Chi-Square Value: 5.487
Level of Significant: 0.019*

e) Career Counseling

TABLE 34

CAREER COUNSELING

Frequency Row Pct	No	Yes	TOTAL
Dropouts	26 63.41	15 36.59	41
Persisters	47 44.76	58 55.24	105
TOTAL	73	73	146

Degrees of Freedom: 1
Chi-Square Value: 4.104
Level of Significant: 0.043*

h) Math Learning Resource Center

TABLE 35

MATH LEARNING RESOURCE CENTER

Frequency Row Pct	No	Yes	TOTAL
Dropouts	6 14.63	35 85.37	41
Persisters	5 4.76	100 95.24	105
TOTAL	11	135	146

Degrees of Freedom: 1
Chi-Square Value: 4.125
Level of Significant: 0.042*

i) Study Skills Counseling

TABLE 36

STUDY SKILLS COUNSELING

Frequency Row Pct	No	Yes	TOTAL
Dropouts	35 85.37	6 14.63	41
Persisters	65 61.90	40 38.10	105
TOTAL	100	46	146

Degrees of Freedom: 1
Chi-Square Value: 7.521
Level of Significant: 0.006*

j) Mental Health Clinic

TABLE 37

MENTAL HEALTH CLINIC

Frequency Row Pct	No	Yes	TOTAL
Dropouts	38 92.68	3 7.32	41
Persisters	73 69.52	32 30.48	105
TOTAL	111	35	146

Degrees of Freedom: 1
Chi-Square Value: 8.677
Level of Significant: 0.003*

k) Alcohol and Substance Abuse Counseling

TABLE 38

DRUG ABUSE COUNSELING

Frequency Row Pct	No	Yes	TOTAL
Dropouts	38 92.68	3 7.32	41
Persisters	82 78.10	23 21.90	105
TOTAL	120	26	146

Degrees of Freedom: 1
Chi-Square Value: 4.287
Level of Significant: 0.038*

l) International Student Services

TABLE 39

INTERNATIONAL STUDENT SERVICES

Frequency Row Pct	No	Yes	TOTAL
Dropouts	31 75.61	10 24.39	41
Persisters	62 59.05	43 40.95	105
TOTAL	93	53	146

Degrees of Freedom: 1
Chi-Square Value: 3.498
Level of Significant: 0.061*

n) Off-Campus Student Services

TABLE 40

OFF-CAMPUS STUDENT SERVICES

Frequency Row Pct	No	Yes	TOTAL
Dropouts	34 82.93	7 17.07	41
Persisters	56 53.33	49 46.67	105
TOTAL	90	56	146

Degrees of Freedom: 1
Chi-Square Value: 10.922
Level of Significant: 0.001*

This difference in specific awareness of individual student services between persisters and dropouts is illustrated even more graphically in the table below when comparing the difference between persisters and dropouts in terms of

general awareness of student services. The persisters were aware of more of the services than were the dropouts.

TABLE 41

NUMBER OF STUDENT SERVICES AWARE OF

Frequency Row Pct	0	1	2	3	4	TOTAL
Dropouts	2 5.00	7 17.50	13 32.50	12 30.00	6 15.00	40
Persisters	3 2.86	6 5.71	28 26.67	37 35.24	31 29.52	105
TOTAL	5	13	41	49	37	145

Degrees of Freedom: 4
Chi-Square Value: 7.852
Level of Significant: 0.097*

Question 33: "Which of the following student services have you used?"

While the chi-square treatment showed that persisters used all student services, except personal counseling and the Veteran's Administration, at a higher rate than dropouts, there was a statistically significant difference between persisters and dropouts in terms of the use of Career Counseling Center and the Math Learning Resource Center. Returning students used both services at a higher rate than non-persisters.

e) Career Counseling

TABLE 42

CAREER COUNSELING

Frequency Row Pct	No	Yes	TOTAL
Dropouts	40 97.56	1 2.44	41
Persisters	88 83.81	17 16.19	105
TOTAL	128	18	146

Degrees of Freedom: 1
Chi-Square Value: 5.159
Level of Significant: 0.023*

g) Math Learning Resource Center

TABLE 43

MATH LEARNING RESOURCE CENTER

Frequency Row Pct	No	Yes	TOTAL
Dropouts	13 31.71	28 68.29	41
Persisters	14 13.33	91 86.67	105
TOTAL	27	119	146

Degrees of Freedom: 1
Chi-Square Value: 6.604
Level of Significant: 0.010*

Again, this phenomenon can be illustrated even more dramatically when the chi-square test is used to compare the general use of student services by persisters vs.

dropouts. Once again, returning students used more of the services than their nonreturning counterparts.

TABLE 44

NUMBER OF STUDENT SERVICES USED

Frequency Row Pct	0	1	2	3	4	TOTAL
Dropouts	10 25.00	19 47.50	10 25.00	1 2.50	0 0.00	40
Persisters	8 7.62	64 60.95	23 21.90	9 8.57	1 0.95	105
TOTAL	18	83	33	10	1	145

Degrees of Freedom: 4
Chi-Square Value: 10.016
Level of Significant: 0.040*

Question 34: "How often did you go home your first semester at OSU?"

Dropouts went home more often during their first semester at OSU than did returning students.

TABLE 45

NUMBER OF TIMES WENT HOME FIRST SEMESTER

Frequency Row Pct	Every Week	Every 2-3 Weeks	Every 3-4 Weeks	Live at Home	Every 7-9 Weeks	Every 10-15 Weeks	Did Not Go Home	TOTAL
Dropouts	12 30.00	16 40.00	3 7.50	5 12.50	3 7.50	1 2.50	0 0.00	40
Persisters	21 20.00	36 34.29	26 24.76	3 2.86	9 8.57	7 6.67	3 2.86	105
TOTAL	33	52	29	8	12	8	3	145

Degrees of Freedom: 6
Chi-Square Value: 12.828
Level of Significant: 0.046*

Admission Status (Special Waiver vs. Regular)

Students provisionally admitted to OSU were more likely to dropout than those students meeting academic standards.

TABLE 46

ADMISSION STATUS

Frequency Row Pct	Special Waiver	Regular	TOTAL
Dropouts	10 13.51	64 86.49	74
Persisters	10 5.05	187 94.95	197
TOTAL	20	251	271

Degrees of Freedom: 1
Chi-Square Value: 5.663
Level of Significant: .017*

The chi-square test found differences at the .10 level in 25 of the survey items. The only significant variance identified from student data base variables related to admission status (special waiver vs. regular). A discussion of these differences, including comparisons to past research and their implications for OSU, will follow in Chapter V.

Before discussion of the results of the t test treatment, one additional chi-square table is presented. This table divides race into two categories: (1) Asian and whites, and (2) blacks, Hispanics, and Native Americans. As the table shows, there was no statistically significant difference between the two groups. The absence of a

correlation between race and retention is discussed further in Chapter V.

TABLE 47

RACE

Frequency Row Pct	1	2	TOTAL
Dropouts	70 94.59	4 5.41	74
Persisters	177 89.90	20 10.10	197
TOTAL	247	24	271

Degrees of Freedom: 1
Chi-Square Value: 1.476
Level of Significant: .224

t test Analysis

The t test was used to determine if the difference between the dichotomous dependent variable's (persisters/dropouts) sample means qualified as a probable or an improbable outcome, given that the two samples were independent. The Likert scale questions from the survey instrument and the interval level data in the student data base (i.e., ACT scores, high school GPA, and high school rank) were examined using the t test. A level of .05 was required to establish a statistically significant difference between persisters and dropouts.

Although Appendix D lists each t test score, this section will examine only those items which were found to be statistically significant.

TABLE 48

COMPOSITE ACT

Students persisting at OSU had a higher composite ACT mean than those students who dropped out.

Group	N	Mean	Std Dev	Std Error	Minimum	Maximum
Dropouts	89	18.45	5.23	0.555	6.0	30.0
Persisters	168	21.35	4.54	0.350	10.0	32.0

Level of Significance: 0.0001*

TABLE 49

HIGH SCHOOL GPA

Returning students had a higher high school GPA mean than did their departing student counterparts.

Group	N	Mean	Std Dev	Std Error	Minimum	Maximum
Dropouts	73	2.80	0.56	0.066	1.40	4.00
Persisters	121	3.30	0.46	0.042	2.00	4.00

Level of Significance: 0.0001*

TABLE 50

HIGH SCHOOL RANK IN CLASS

Persisters' mean rank was the top 23% of the graduating class compared to the top 44% for dropouts.

Group	N	Mean	Std Dev	Std Error	Minimum	Maximum
Dropouts	78	0.438	0.25	0.028	0.0035	0.9328
Persisters	125	0.226	0.18	0.016	0.0073	0.7497

Level of Significance: 0.0001*

Question 16: "During my freshman year at OSU, my OSU courses were (circle a number):

1	2	3	4	5
Mostly a repetition from high school		**A little more advanced than my high school courses**		**Much more advanced than my high school courses**

TABLE 51

PERCEIVED DIFFICULTY OF OSU COURSES

The means of the scores for non-persisters was larger, indicating that dropouts perceived college courses to be more advanced than did those students who continued at OSU.

Group	N	Mean	Std Dev	Std Error	Minimum	Maximum
Dropouts	39	3.795	0.89	0.143	2.00	5.00
Persisters	105	3.410	0.97	0.094	1.00	5.00

Level of Significance: 0.0319*

The t test found differences at the .05 level in one of the survey instrument's nine Likert scales. Additionally, three statistically significant differences were noted in the interval level data in the data base. Specifically, ACT scores, high school GPA, and high school class rank correlated positively with persistence. A discussion of these variances, including comparisons to past research and their ramifications for Oklahoma State University, will follow in Chapter V.

Regression Analysis

The t test established a statistical difference between the independent variables of composite ACT score, high

school GPA, and high school class rank and the dichotomous dependent variable of student retention/withdrawal. Thus, regression analysis may be used to examine the "expected" retention rate of entering freshmen based upon these characteristics. Development of a regression equation containing the three independent variables will improve the ability to estimate the likelihood of attrition.

The formula used to compute the expected probability of retention ($\hat{y}$) is:

$$\hat{y} = \hat{B}_0 + \hat{B}_1 x_1 + \hat{B}_2 x_2 + \hat{B}_3 x_3$$

Where $\hat{y}$ is the expected probability of retention;
$\hat{y}$ represents the mean of Y;
x_1 is the composite ACT score;
x_2 is the high school rank in class; and,
x_3 is the high school GPA.

The results are as follows:

TABLE 52

PARAMETER ESTIMATES

Variable	Degrees Of Freedom	Parameter Estimate	Standard Error	Level Of Significance
Intercep	1	0.376	0.522	0.4720
ACT	1	0.006	0.007	0.3787
RKCLAS	1	-0.620	0.327	0.0591
HSGPA	1	0.103	0.140	0.4620

TABLE 53

ANALYSIS OF VARIANCE

Variable	Degrees Of Freedom	Sum Of Squares	Mean Square	F Value	Level Of Significance
Model	3	7.874	2.623	13.70	0.0001*
Error	175	33.522	0.192		
C Total	178	41.397			

$r^2 = 0.1902$
$r = .4361$

Thus, in the research sample the ACT composite score, high school GPA, and high school rank in class accounted for 0.1902 (r^2) or 19% of the variance between persisters and dropouts.

The "r" figure .4361 compares to .2739 (r) in Astin's equation for estimating probability of completing a bachelor's degree for public universities (Astin, 1989). While at first glance it appears that the entering academic characteristics of students in the research sample account for more of the variance between persisters and dropouts than those same characteristics do in Astin's study, it should be noted that the research study looked at only freshman to sophomore retention whereas Astin's work was directed toward predicting the probability of completing a bachelor's degree in four years. Nonetheless, Astin's r of .2739 is useful as a benchmark.

Discriminate Analysis

Discriminate analysis was used on a limited basis to investigate the relationship between the dichotomous dependent variable and sets of independent variables. This statistical treatment was selected to augment the techniques previously described and to confront the problem of classifying an observation into one of the two distinct groups (i.e., persistence or non-persistence) when the number of independent variables is very large (Krishnaiah, 1982).

Specifically, discriminate analysis was used to examine those factors contributing to student retention. Each of the independent variables listed in the survey instrument was entered into the discriminate analysis procedure. A prior probability of .5 was used, which means that each of the subjects was treated as being equally likely to continue his/her education at OSU. A centroid (the mean of all variables of each group) was calculated for both persisters and dropouts. Dropouts had a centroid of 28.48 compared to a centroid of 31.7 for continuing students. Thus, the persisters had a higher average result from the equation which grouped the observations into the two different groups.

The results of the discriminate analysis are as follows:

TABLE 54

NUMBER OF OBSERVATIONS
AND PERCENTS CLASSIFIED INTO GROUP

From Group	Dropouts	Persisters	TOTAL
Dropouts	23	16	39
	58.97	41.03	100.00
Persisters	20	82	102
	19.61	80.39	100.00
TOTAL	43	98	141
PERCENT	30.50	69.50	100.00
PRIORS	0.5000	0.5000	

This treatment shows that 23 of the 39 students (59%) who withdrew from OSU would have been correctly identified as non-persisters based on their responses to the survey instrument's questions. Eighty percent of the persisters (82 out of 102) would have been correctly identified given their respective answers. Thus, discriminant analysis is an effective technique for identifying potential dropouts. Given that much of the information uncovered by the questionnaires could be obtained at enrollment time, discriminant analysis is one way of identifying potential dropouts. Early identification will enable the institution to intervene appropriately and could yield a higher retention rate.

Current Information on Non-Persisters

The survey instrument asked four additional questions of the dropouts to learn their current status. Their responses are tabulated below:

WITHDRAWN STUDENTS
Summary of Questions 38-41

38. Currently, what are you doing?

Attending a Vo-Tech School	1
Attending a community college	10
Attending another university	12
Employed full-time	14
Unemployed and not attending school	4
Employed part-time	5

(Note: Some respondents marked more than one answer to this question.)

39. Have your career or educational goals changed since attending OSU?

Yes	15--(changed majors)
No	25

40. Why did you leave OSU?

A)	Personal reasons	16
B)	Financial reasons	9
C)	Major not offered	2
D)	Poor academic performance	12
E)	Problems with Faculty	5

41. Do you plan to return to OSU.

Yes	14
No	20
Maybe	6

(Note: Because several students were uncertain, a "maybe" column was added for tabulation purposes.)

Questionnaire "Comments" Section Summary

Each respondent had the opportunity to add comments, which are categorized and summarized as follows:

A) OSU Atmosphere: 16

(Most thought that OSU was great: nice people, friendly, atmosphere, etc.)

B) Advising/Counseling: 7

(great help from FPS; can't enroll until the last day and then all the classes are closed; wants information on personal and career counseling; don't know who my adviser is)

C) Instruction: 7

(all instructors seem to care; need fewer non-English speaking professors; wish faculty would show more interest; level of knowledge of subject varies from instructor to instructor)

D) Teaching Assistants: 3

(TA's should teach upper classmen; many lack English skills)

E) Problems with Financial Aid: 8

(applied for but denied aid; need more on-campus jobs; disturbed by who does and does not get aid; misinformation)

F) Problems with Residence Hall Life: 3

(need less than a 10 meal plan; need more visitation rights; don't like residence hall requirement for freshmen)

G) Parking Shortage: 2

H) Miscellaneous:

*shouldn't raise academic standards
*liked survey and wanted more
*grades not so good so transferring to a community college for one semester to raise grades and then will return to OSU
*on-campus clubs are not available--can't get in
*library is poor
*OSU Police are egotistical

Summary

This chapter used a variety of statistical treatments to analyze the effect of independent variables identified through the survey instrument and gleaned from the student data base on the dichotomous dependent variable of student retention or withdrawal. The initial focus was to report on the effect of the interactive influences of student entering characteristics and student academic and social integration as operationalized through the use of Tinto's model. Such effects were determined by the use of the chi-square and t tests at the .10 and .05 levels of significance, respectively. Utilizing these statistical techniques, 28 independent variables were deemed to be statistically significant. What may be as important to this study are those variables which did not prove to be factors in student retention. Some of these will be discussed in Chapter V.

Regression analysis and discriminate analysis were used to explore and refine the data further. Regression analysis established that 19% of the variance between persisters and dropouts can be explained by virtue of their respective

differences on the ACT test, high school GPA, and high school class rank. Finally, discriminant analysis made it possible to combine the numerous independent variables and investigate their collective effect on the dichotomous dependent variable.

While Chapter IV of this study simply reports the research results, Chapter V will summarize and discuss the results. The final chapter also will relate the findings to past research as detailed in Chapter II and will test past assumptions generated by prior research at OSU as described in Chapter I. Finally, the implications of the research findings will be considered and recommendations will be advanced.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Oklahoma State University (OSU) is not exempt from the national higher education problem of student attrition. In fact, data presented in Chapter I show that OSU leads the Big 8 institutions in attrition and ranks above the national dropout average.

Table I on page 5 shows that 29.6 percent of the 1985-86 entering freshman class failed to return to OSU in the fall of 1986. Attrition was even higher the next year. Fully one-third of those students starting OSU in the fall of 1986 failed to return in the 1987 fall semester.

OSU's nonretention rates fare no better when compared to national statistics. Table 2 on page 6 reveals, for the seven year period of 1980 through 1986, an average of 30.2 percent of OSU freshmen dropped out after one year. Attrition rates varied from a low of 26.4 percent in 1980 to a high of 33.3 percent in 1986. Each of the seven years exceeded the 26 percent national attrition rate for Ph.D. granting public institutions. OSU's attrition rate is both alarming and unacceptable.

Not all students at OSU are at the same risk of becoming a attrition statistics. Analysis of data generated by OSU's Office of Institutional Research suggests that disparities in persistence are related to the academic and racial characteristics of entering students. Specific predictors of nonretention at OSU identified in Chapter I include poor academic performance prior to college entry and minority and transfer status.

Given Oklahoma State University's higher-than-normal attrition rate, the problem for this study was to test the assumptions generated by past research and to expand the research to identify other variables which distinguish persisters from dropouts at OSU. Specifically, this study focused on the effect of the interactive influences of student entering characteristics and student academic and social integration on voluntary persistence/withdrawal decisions. It is hoped that the research results will help to identify more accurately students who are particularly vulnerable to withdrawal so that intervention strategies may be implemented.

A comprehensive review of research and detailed discussions of its conceptual, methodological, and theoretical shortcomings are provided in Chapter II. Tinto (1975), for example, identified two salient failures of past retention research: (1) inadequate attention to the definition of a dropout; and (2) failure to develop theoretical models to explain the attrition phenomenon.

Retention research is relatively new, dating back to 1957 (Iffert, 1957). The initial focus was on description, noting who left and who stayed. A short time later, the research evolved to the level of identifying the factors affecting student withdrawal and developing techniques to address the problem. Finally, retention research matured to its current stage, an examination of the institution itself (Marchese, 1985).

Student attrition has been identified as a problem not only for colleges and universities but also for the individual student, who is lost to higher education and its intrinsic rewards and economic advantages. The attrition conundrum for postsecondary institutions is a result of enrollment driven budgets; as student enrollment moves up and down, so too goes revenue. Attrition for the individual student translates to a probable loss in occupational prestige and social mobility. Student attrition may be viewed as a loss of human capital and a potential long-term cost to society at-large.

Data from past research provide a better understanding of who is leaving and who is staying and why. The literature review presented in Chapter II notes numerous factors which influence a student's decision to leave or to stay in college. These persisting factors are divided into three categories: 1) student personal and academic characteristics; 2) institutional attributes; and 3) the coalescing of the first two categories as reflected by

student-faculty relationships, campus involvement, and the degree of "fit" between the student and the institution. This may be called the total educational experience.

Provided in Chapter III is a theoretical framework for the research study. Tinto advanced the premise that students enter college with certain unique input characteristics which, when merged with their academic and social experiences at the institution, result in a decision either to persist or withdraw. Specifically, Tinto's model asserts that the higher the levels of academic and social integration, the less likely the student is to leave the university voluntarily (Tinto, 1987).

To assess the impact of the variables identified in Tinto's (1987) model on student persistence at OSU, a ten percent random sample of the 1987 first-time entering, full-time (enrolled in 12 or more hours) freshmen was drawn by the Office of Institutional Research. The random sample totaled 271 students. Of the original sample, 99 students withdrew from OSU during their first year. Thus, 36.5 percent of those students beginning their higher education careers at OSU failed to continue at OSU. The 271 selected subjects received pretested questionnaires designed by the researcher. The return rate was 54.2%.

In addition to the information received from the completed surveys, data were acquired for each student from the OSU student data base regarding demographics, high

school academic information, and OSU extracurricular activities.

The findings of this research study were analyzed in Chapter IV using a variety of statistical treatments in an attempt to understand better OSU's attrition problem. Chi-square tables were used to test the ordinal and nominal level questionnaire data. The t test was applied to the Likert scales and to select data from the student data base to determine statistical significance. The levels of significance required were .10 for the chi-square test and .05 for the t test. Regression analysis was used to analyze the interval level data of ACT scores, high school GPA, and high school class rank. Discriminate analysis was applied to examine the relationship between the student choice of persistence or withdrawal and the various independent variables identified in the questionnaires.

In addition to offering the preceding summary, the purpose of this chapter is to discuss those factors identified in the research as significant to the individual student's persistence/withdrawal decisions. This chapter also will present limitations of the research study, as well as its strengths. Lastly, listed throughout the remainder of this chapter are proposed policy initiatives which are recommended to help curb OSU's Brobdingnagian attrition.

Conclusions and Recommendations

Data analyzed in Chapter IV found 28 independent variables which were statistically significant to the dichotomous dependent variable, persistence/withdrawal. This section will isolate and elaborate on those variables which the researcher deemed to be of particular importance to retention at OSU. As such, this section includes a discussion of several assumptions from previous research found to impact retention which this study showed to be irrelevant. Factors are categorized using Tinto's model of institutional departure.

Pre-Entry Attributes:

According to Tinto's model, figure III-1, the student enters college with certain unique input characteristics, including family background, social status, level of parental education, expectations and ambitions (both individual and parental), race, sex, urban versus rural, etc. The student also brings with him/her particular academic and social skills and abilities--i.e., past academic performance as reflected by high school grade point average, high school rank in class, and scores on standardized tests. Unique personality attributes and attitudes also accompany the student to college. Finally, prior school experiences will affect the likelihood of a student's retention or departure, including the quality of the common school coursework in terms of both variety and

substance. The individual's characteristics and family background, skills and abilities, and prior schooling directly impact the formulation of intentions and commitments to education. Tinto's model divides the pre-entry attributes into three subheadings: family background, skills and abilities, and prior schooling.

I. Family Background:

A. Socioeconomic Status: As noted in Chapter II, most researchers agree that there is a positive correlation between family socioeconomic status (SES) and retention. Children from higher status families persist at greater rates than do students from lower status families. In research supporting the model of institutional departure, Tinto stated that this positive relationship existed even when the level of intelligence was held constant (Tinto, 1975 and Brenden, 1985).

This research study supported past research which linked SES and persistence. However, the study did not compute those measures which would reflect level of intelligence, e.g., ACT scores, high school GPA, etc., into the SES/retention prediction equation. Thus, it would be premature to assume that low SES contributes directly to the likelihood of attrition at OSU.

It may be argued, using Summerskill (1962) and Eckland's (1964) research, that public school

attendance leads to higher dropout rates and that children from lower income families are more likely to attend public schools. Thus, OSU students with parents of lower economic status may be handicapped because they attended public schools as opposed to private.

B. Educational Level of Father: Previous research also revealed that college persisters had parents with higher formal education levels (Tinto, 1975). Tinto stated through his model that the level of the parent's education, individually or collectively, was one variable that contributed to persistence or withdrawal (Tinto, 1975).

This research effort yielded qualified support for Tinto's hypothesis. Specifically, the highest educational levels completed by father, mother, or guardian were not found to be statistically significant when each of the seven choices of educational attainment was computed. However, if the father or guardian graduated from college with at least a bachelor's degree, students were more likely to persist.

C. Marital Status and Dependent Financial Responsibility: Tinto did not address the marital status or the dependent financial responsibility in his model of institutional departure. According

to this research, this variable might be an appropriate addition to the model.

This study found that a married student, particularly one with dependents, was vulnerable to attrition. There was a strong inverse relationship between being married and persisting. The chances of continuing at OSU were further decreased if the student had dependents for whom s/he was financially responsible.

The reasons for the increased probability of withdrawal are speculative on the part of this researcher. Inadequate financial resources may be to blame. Appropriate child care may be lacking. Inexpensive social opportunities may be few. Support services for couples may be wanting. Or, perhaps it is a combination. This variable should be studied in greater depth.

D. Race: Table 9 on page 20 illustrates the racial disparity related to persistence at OSU. Specifically, Asian and nonresident aliens had the highest retention rates, followed by whites. Blacks, Hispanics, and Native Americans trailed significantly in persistence after one year.

Similarly, most retention studies found that ethnicity was an important variable in retention. However, Astin demonstrated that when academic

factors were held constant, there were no significant differences in attrition for students who were Oriental, Native American, or black (Astin, 1973).

This study found no correlation between race and retention. Given the data analysis referred to above, a two-way chi-square test was used combining Asians and whites (the higher persisters) into category one, and blacks, Hispanics, and Native Americans (the lower persisters) into category two. The level of significance was .224. Thus, there was no statistically significant difference.

It might be argued that race was not found to be a significant variable because the sample contained so few minorities. However, 7.7% of the sample were black, Hispanic, or Native American. Thus, the sample was reflective of the general OSU minority population, which is 7%.

II. Skills and Abilities and Prior Schooling:

A. Past Academic Performance: National research and that conducted at OSU agree that past academic performance is one of the best predictors of retention. The higher the score, be it on standardized tests or high school performance, the greater the probability of graduation. In

developing the model for institutional departure, Tinto's research found that academic ability was almost twice as important in determining student persistence as family social status (Tinto, 1975).

Clearly, the data from this study related to ACT scores, high school GPA, and high school class rank variables lent further support for this theory and Tinto's model. The t test results yielded significance at the .0001 level for each of these three variables.

This study suggests that many of those students academically admissible to OSU are not academically capable of persisting at the institution. This notion raises the question of the appropriateness of the current academic admission standards. Are such academic performance requirements rigorous enough to enhance the individual student's probability of success at OSU?

B. High School Extracurricular Activities: Several research studies supported the idea that involvement in extracurricular activities contributed to retention (Panos and Astin, 1968; Hannah, 1979). Also noted was that attrition may be related to "too much" extracurricular activity (Pantages and Creedon, 1978). Tinto's model

advocated student formal involvement in college extracurricular activities as one means of becoming socially integrated into the institution's social system.

The level of student involvement in high school extracurricular activities may be predictive of future university involvement. This study found a positive relationship between the number of high school extracurricular activities and student retention: the greater the number of high school extracurricular activities, the more likely the student was to stay at OSU.

The second premise advanced above was also supported. Of those dropouts who participated in high school extracurricular activities, hours devoted to the activities were at the lowest end or the highest end of the continuum. Thus, the argument can be made that dropouts are not involved enough or are too involved. No doubt, size of high school has the potential to encourage or impede extracurricular involvement and thus should be considered when analyzing this variable.

C. Size of High School: Researchers disagreed on the impact of the size of the student's high school. Initial findings indicated that students from small high schools were less likely to graduate.

Other studies have failed to support this premise (Pantages and Creedon, 1978). Tinto's model was silent on this variable.

For purposes of this study, high school size was divided into three categories: less than 50 students in the graduating class; 50 to 100 students in the graduating class; and more than 100 students in the senior class. No significant correlation was established between the size of the high school and the prospect of persisting at OSU.

D. High School Study Habits: Pantages and Creedon (1978) established that students with poor study habits drop out in greater numbers than students who study regularly. This study supported their research, showing a statistical difference between continuing students and dropouts in the number of hours devoted each week to studying in high school. The OSU persisters studied more in high school than did the dropouts. However, this relationship was not extended into college. Specifically, there was no correlation shown between the number of hours spent studying each week in college and the likelihood of persistence.

It is interesting to note that while many of the dropouts were heavily involved in high school

extracurricular activities, their study habits were poorer than were those of the persisters. Thus, it may be hypothesized that for many of the dropouts time was inappropriately devoted to high school extracurricular activites at the expense of subsequent academic performance.

Summary Pre-Entry Attributes:

Appendix D lists 20 independent variables measuring Tinto's model's pre-entry attributes in this research sample. Eight of the variables were found to be statistically significant. Thus, this research study lends qualified support to Tinto's premise that family background, skills and abilities, and prior schooling are factors in student retention.

Goals and Commitments:

Past research has established that motivational factors are tied to individual student persistence. Motivation and commitment can be evaluated by looking at the individual student's reasons for attending college, the highest academic degree aspired to, how important it is to graduate from college, what the probable career choice was, and what choice OSU was in terms of the student's desired college of attendance.

None of the variables listed above proved to be a significant factor in predicting persistence in this study. Specifically, there was no statistical correlation between any of the above variables (save the highest academic degree expected) and retention.

Interestingly, this research study indicates that students leaving OSU had greater aspirations as defined by the highest academic degree desired than did their persisting counterparts. Thus, it appears that dropping out of OSU was unrelated to the students' plans to pursue higher education. All still aspired to postsecondary degrees. These variables in the research study offer no support for Tinto's concept of student goals and commitments contributing to persistence or withdrawal. Consequently, we must look elsewhere for the factors that caused these students to leave OSU including the possibility that the dropouts hold unrealistic educational and professional aspirations.

Institutional Experiences (Academic and Social):

I. Difficulty of OSU Courses: As noted in Chapter II, academic performance continues to be an accurate predictor of persistence in the college experience. There is a high correlation between first semester grades and attrition (Pantages and Creedon, 1978).

In what may be one of the more telling of the findings of this study, a high statistical correlation

was as established between the reported difficulty of the OSU courses and retention. Dropouts indicated that the OSU courses were more advanced in comparison to their high school courses than did their persisting counterparts.

This information augments the previously established difference between past academic performance and retention. It cannot be overstated that academic preparation is the most important variable in the retention equation.

II. Participation in Orientation: In an attempt to help new students adjust academically to OSU, the Admission's Office sponsors a one-day orientation session. This research study indicates that such sessions may indeed accomplish the intended purpose, as more persisters than dropouts participated in orientation.

Of course, it is also possible that the orientation session itself may not increase retention. Perhaps past successful academic performance is the operational factor once again. These same academic achievers may also be more likely to participate in an orientation session which affords the opportunity for early enrollment.

III. Academic Adviser: The role of the academic adviser has long been touted as important to student collegiate

success. This study verifies past findings. Persisting students identified their advisers at a higher rate than did dropouts. Concomitantly, returning students were more likely than noncontinuing students to meet with their advisers five or more times during their freshman years.

IV. Student-Faculty Relationships: As noted in Chapter II, the importance of informal faculty-student interaction to persistence has irrefutable support in retention research. Positive student-faculty relationships contribute to student satisfaction and positive attitudes toward learning and thus to retention (Pantages and Creedon, 1978).

One way of measuring student-faculty relationships is the number of times a student meets with a faculty member outside of class. Pascarella and Terenzini (1977) showed that college persisters had a significantly higher number of faculty interactions than did those who dropped out.

This study reached the same conclusion. There was a positive statistical relationship between faculty contact and student retention.

V. Awareness and Use of Student Services: One of the most pronounced findings in this study was the degree of difference between persisters and dropouts in terms of awareness of and use of various student services.

These services range from, on the academic side, the math and writing centers to, in the social/personal support area, career counseling and alcohol and substance abuse counseling.

Significant differences existed between returning and departing students in both the awareness of and use of support student services. The greater the awareness and use of such services, the higher the probability of retention. This finding has the potential for immediate improvement in OSU's retention numbers.

VI. Number of Times Returning Home: OSU has the reputation of being a "suitcase campus;" the thought is that students frequently go home on weekends. This study verifies that notion and takes it one step further. The students who frequently go home are likely to be those who eventually will stay home. Dropouts were much more likely to go home on weekends than were continuing students. Given this fact, is there something OSU can do to make weekends on campus more attractive? Or, is this phenomenon more reflective of the characteristics of the potential dropout than the university?

Summary of Institutional Experiences

By way of the model, Tinto stated that for a student to persist at a university, s/he must become integrated at some

acceptable level in both the academic and social systems of the institution. Tinto claimed that positive integration experiences in the academic and social realms resulted in the required college integration and reinforced a student's intentions, goals, and institutional commitment. Conversely, negative academic and social experiences lowered the student's goals and weakened his/her commitment both to education generally and to the institution specifically (Tinto, 1975).

This research study supports Tinto's notion of institutional academic and social integration leading to student persistence. Student responses indicated that persisters had higher levels of integration in both the academic and social realms at OSU than did dropouts.

It is interesting to note that Tinto's assertion that full integration in both systems is not essential for persistence. Heavy integration in the academic system may offset limited involvement in the social system and vice versa. From this study it appears OSU must enhance student integration in both realms if increased student retention is to be achieved.

Summary of Key Variables and Recommendations

Persisting/Withdrawal Factors

What profile does this research study give OSU administrators of the entering student who is vulnerable to attrition? This study identified four key factors which

impact student retention (each of which was discussed in the preceding section): marital status, past academic performance, awareness of and use of student services, and weekend location. OSU has the opportunity to directly alter only two of them.

Beyond the institution's control is whether or not an entering student is married with dependents. However, the university should look critically at possible services to assist such students.

Also, the student's past academic performance cannot be affected by OSU. Admission standards are set by the Oklahoma State Regents for Higher Education. Higher academic requirements are slated to be phased in over the next five years. As higher standards become reality, OSU's attrition problem should decline.

OSU has a greater opportunity to change the other two predominant variables identified in this study as critical to student retention. Clearly, the institution has a wide variety of academic and personal services available to students. Student awareness of such services may be increased by more extensive promotion. Concomitantly, any student-perceived barrier to their subsequent use must be identified and removed.

Finally, OSU administrators must identify and implement activities, courses, programs, etc. both on-campus and in the community which will encourage students to remain on campus during the weekends. Such programming efforts would

have the additional benefit of increased student involvement in university life.

A Critique of the Research Study

Chapter V provides the author the opportunity for reflection on the study's strengths and weaknesses. While the limitations are more numerous than the strengths, this study does explore some previously uncharted research territory for OSU. Specifically, most research to date, including research at OSU, isolates the characteristics of either persisting students or those students who left. Researchers fail to draw comparisons between the two very different groups. This study used the dichotomous dependent variable of persistence and withdrawal. Both groups were evaluated and compared on the same independent variable(s).

Similarly, as previously noted, another problem inherent in research studies is the tendency simply to compare the aggregate number of entering freshmen with the total number of sophomore students one year later. This study successfully tracked individual freshman students for one year, assessing variables unique to them as they decided to remain at or leave the university.

This research effort was designed to test the assumptions of past research and to expand the research in order to ascertain other variables which might distinguish persisters from dropouts at OSU. This study achieved both goals.

The assumptions of past research, both nationally as described in Chapter II and at OSU as enumerated in Chapter I, were tested. As previously discussed, some propositions were verified; many were not.

The study also succeeded in expanding past OSU research and in identifying new variables which were shown to impact student decisions to stay or to leave OSU. These newly verified factors should be the subject of more targeted research in the future.

Finally, as presented in Chapter II, previous studies are criticized for focusing on only one or two variables at a time when studying the causes of attrition when, in fact, the causes of attrition are multiple, complex, and interrelated. This study addressed numerous independent variables found by past research to be significant to retention and analyzed them using a variety of statistical treatments. Through these efforts, this study attempted to capture the complexity of the retention issue.

While the examination of the effect of numerous independent variables on persistence/withdrawal is cited as a strength of this study, it is also a defect. Such an effort resulted in a large volume of data which at times seemed unwieldy and overwhelming to the researcher. Hopefully, out of this effort, there are specific areas which are now identified for more targeted research.

The first half of Tinto's model was adequately tested in this study. Questionnaire responses coupled with

information from the student data base tested those independent variables associated with the model's first three categories: pre-entry attributes, goals and commitments $_{(T_1)}$, and institutional experiences. As previously discussed, the study supported Tinto's theory of pre-entry attributes and institutional experiences impacting student retention. The study did not uphold Tinto's hypothesis related to student goals and commitments and their role in affecting retention.

The study did not effectively evaluate the second half of Tinto's model: personal/normative integration, goals and commitments $_{(T_2)}$, and outcome. Some of the research data provided glimpses into these categories and, of course, the final outcome as it related to OSU was known, but, in total, the study was weak in ascertaining the required data. Student interviews might be the most effective way of completing the examination of Tinto's model. However, future researchers must weigh the costs in time and effort vs. the benefit of the additional information.

This study, by necessity, relied on ex post facto methodology utilizing a cross-sectional sample of students who were already attrition statistics or who were persisters. Use of such methodology fails to identify stopouts, readmissions, and transfers between institutions. While dropouts may be lost to OSU, they may not be lost to higher education. As a matter of fact, 22 of

the 42 withdrawn students (53%) indicated that they were currently attending other colleges.

Finally, as research into this question continues at OSU, it should be expanded beyond the freshman level. Future research should analyze the attrition problem year by year. Tinto's past research shows that student departure is not uniform over time (Tinto, 1988).

Additional Recommendations

Most of the recommendations emanating from the study are noted under the applicable sections throughout Chapter V. However, several additional suggestions are appropriate.

1) Establish a university-wide Action Commission on Retention with a faculty base: To date, OSU faculty members have not been involved in addressing the attrition problem. Research is conclusive: the key people on campus in a retention effort are those within the academic areas of the institution (Noel and Levitz, 1985). The charge of the commission, stated simply, should be to lead the fight for campus-wide awareness and ownership of improved retention, as well as to make recommendations which will improve the quality of OSU's educational effort, and thus increase retention.

2) Target high-risk students for special attention: Those students most vulnerable to attrition have been previously identified in this chapter.

Immediate and specific proposals for these groups of students should be jointly developed by both academic and student services professionals on campus.

3) Reinstitute the Early Alert System: This program was recommended by the 1981 Ad Hoc Committee on Student Retention at OSU and was approved for implementation, but for a plethora of reasons was never fully enacted. Research data have repeatedly demonstrated that the critical time period for establishing relationships key to student satisfaction and success is during the first few weeks of the freshman year (Noel and Levitz, 1985). Examples of components of an early alert system could include a method to assist faculty teaching large classes to record attendance for the first six weeks in all freshman courses; class rolls that contain names of students' advisers so that faculty can contact them should the need arise; mandatory follow-up by advisers of those freshman students identified through mid-semester progress reports as experiencing academic difficulties; use of referral slips to enable faculty to direct students to the mathematics and writing labs for tutoring as appropriate.

4) Establish a Peer/Student Support Network: This support system could be modeled after the Big Brother/Big Sister programs. Trained upperclassmen would be assigned ten to twenty new freshmen to contact and meet with on a regular basis throughout the first semester. The upper-division students would not provide personal counseling or official academic advising. Rather they would offer insight and information based on their own experiences. Possible potential upperclassmen for the support network could be Lew Wentz scholars and/or alumni of the President's Leadership Council. Such students should be paid for their services.

Oklahoma State University has an attrition problem and a retention opportunity. Our reasons for addressing this issue may, in part, be practical ones. We want, for example, to preserve the scarce financial resources that students represent. However, our reasons transcend the purely practical. Our goal as academicians is and must continue to be to develop human resources. What is at stake is of critical importance to our state and nation. Educational attainment has the potential to eliminate poverty, eradicate prejudice, and enhance quality of life. Full intellectual achievement is only possible through advanced education. Each attrition statistic represents a very real and very significant loss--the lost opportunity to

be a better person in a better society. Now is the time for all persons concerned with our future as a society to work collectively to improve student retention, and thus student development.

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APPENDIX A

OKLAHOMA STATE UNIVERSITY

STUDENT RETENTION STUDY

OKLAHOMA STATE UNIVERSITY
STUDENT RETENTION STUDY

Spring 1989

Demographic Data

1. What is the highest educational level completed by each of your parents or guardians?

a) Father or Guardian (circle one)

___ Did not complete high school
___ Graduated from high school
___ Attended Vocational Technical School
___ Some college but no bachelor's degree
___ Graduated with bachelor's degree
___ Graduate study
___ Graduate or professional degree (Architect, Physician, Attorney, etc.)

b) Mother or Guardian (circle one)

___ Did not complete high school
___ Graduate from high school
___ Attended Vocational Technical School
___ Some college but no bachelor's degree
___ Graduate with bachelor's degree
___ Graduate study
___ Graduate or professional degree (Architect, Physician, Attorney, etc.)

2. What is the current occupation of each of your parents or guardians?

a) Father or Guardian

___ Professional (Architect, Physician, Attorney, etc.)
___ Vocational/Trades (Mechanic, Food (Services, Equipment Operator, etc.)
___ Own Business
___ Clerical
___ Management
___ Sales
___ Homemaker
___ Unemployed
___ Other (please describe)
_____

b) Mother or Guardian

___ Professional (Architect, Physician, Attorney, etc.)
___ Vocational/Trades (Mechanic, Food (Services, Equipment Operator, etc.)
___ Own Business
___ Clerical
___ Management
___ Sales
___ Homemaker
___ Unemployed
___ Other (please describe)
_____

3. Please estimate the following:

a) Your family's adjusted gross income.

___ Less than $20,000/year
___ $20,000 - $35,000/year
___ $35,000 - $50,000/year
___ $50,000 - $99,990/year
___ $100,000 - $249,999/year
___ Greater than $250,000/year

b) The value of your family assets (savings, real estate, stocks, cash, etc.).

___ Less than $25,000
___ $25,000 - $74,999
___ $75,000 - $149,999
___ $150,000 - $199,999
___ $200,000 - $499,999
___ Greater than $500,000/year

c) The value of your personal assets (savings, certificate of deposits, cash, etc.).

___ Less than $5,000
___ $5,000 - $9,999
___ $10,000 - $24,999
___ Greater than $25,000

4. How many people are in your immediate family, including yourself? ___

5. Are other members of your immediate family currently enrolled in college?
___ Yes ___ No ___ How Many?

6. Do you have dependents for whom you are financially responsible (excluding yourself)?
___ Yes ___ No

7. a) Are you married? ___ Yes ___ No

b) If so, is your spouse (check as many as apply): ___ employed full-time
___ a homemaker ___ employed part-time ___ a student

Previous Academic/High School Information

8. In how many high school extracurricular activities or organizations did you participate? (sports, cheerleading, band, class officer, clubs, etc.)

___ 0 ___ 1-3 ___ 3-4 ___ 5 or more

9. How many hours per week were required in these extracurricular activities or organizations?

___ 0 ___ 1-3 ___ 3-4 ___ 5 or more

10. On the average, how many hours did you study per week in high school?

___ Less than 2 hours/week
___ 2 - 5 hours/week
___ 5 - 10 hours/week
___ Over 10 hours/week

11. What is the highest academic degree you expect to obtain?

___ Bachelor's Degree (B.A., B.S., etc.)
___ Master's Degree (M.A., M.S., etc.)
___ Ph.D. or Ed.D.
___ M.D., D.D.S., D.V.M., etc.
___ L.L.B. or J.D. (Law)
___ Other

12. How important is it to you to graduate from college? (Circle a number)

1	2	3	4	5
Unimportant		Important		Essential

13. What is your probable career choice?

___ Professional (Architect, Engineer, Physician, Attorney, Professor, etc.)
___ Vocational/Trades (Mechanic, Food Service, Equipment Operator, etc.)
___ Own Business
___ Clerical
___ Management
___ Sales
___ Homemaker
___ Other (explain) _____

14. Please prioritize those who influenced you to attend college. (List greatest influence as 1, etc.)

___ Self (for personal/professional development and growth)
___ Mother
___ Father
___ Guardian
___ Siblings
___ Peer influence
___ Teacher(s) influence
___ Counselor(s) influence

15. Please check your most important reason for attending college:

___ To gain a broad, liberal arts education
___ To gain skills directly applicable to a career
___ To learn more about myself and my values
___ To enhance my interpersonal skills and/or to meet new people
___ Other (please list) _____
_____
_____

16. During my freshman year at OSU, my OSU courses were (circle a number):

1	2	3	4	5
Mostly a repetition from high school		A little more advanced than my high school courses		Much more advanced than my high school courses

17. In applying to colleges, OSU was my:

___ 1st choice
___ 2nd choice
___ 3rd choice
___ 4th or lower choice

18. What exposure had you had to OSU prior to making application for admission? (check all that apply)

___ Had visited the campus
___ Had received brochures and/or other correspondence about OSU
___ Had visited with an OSU representative
___ Had attended a banquet or reception sponsored by OSU
___ Had attended an OSU sporting event
___ Had attended an academic or extracurricular event or camp

19. Prior to enrollment, how familiar with OSU did you consider yourself? (circle a number)

1	2	3	4	5
Not Very Familiar		Informed		Very Familiar

OSU Academic Information

20. a) Did you participate in a summer orientation session prior to your initial OSU enrollment?
___ Yes ___ No

b) If yes, was it a ___ one-day session or ___ a two-day session?

c) Did your parents/guardians participate in the orientation session?
___ Yes ___ No

21. Did you participate in the "Alpha" program immediately preceeding the start of your first semester? ___ Yes ___ No

22. a) Do you know who your academic adviser is? ___ Yes ___ No

b) Last year, approximately how many times did you meet with your adviser? _____

c) How would you rate the assistance received from your adviser? (circle a number)

1	2	3	4	5
Poor		Good		Great

d) How much interest has your adviser shown in you? (circle a number)

1	2	3	4	5
Little Interest		Interested		Very Interested

23. Prior to beginning college, approximately how many times per semester did you expect to meet with a faculty member outside of class for 10 minutes or more?

___ 0
___ 1 - 3 times
___ 4 - 7 times
___ 8 - 10 times
___ 10 - 15 times
___ Over 15 times

24. During your freshman year, how many times did you meet with a faculty member outside of class for 10 minutes or more?

___ 0
___ 1 - 3 times
___ 3 - 5 times
___ Over 5 times

25. How many hours, on the average, have you studied per week?

___ Less than 10 hours
___ 11 - 15 hours
___ 16 - 20 hours
___ 21 - 30 hours
___ Greater than 30 hours

26. Generally, how do you view OSU faculty to date:

a) Knowledge of subject matter: (circle a number)

1	2	3	4	5
Not Knowledgeable		Knowledgeable		Very Knowledgeable

b) Interest in you as a student and/or individual? (circle a number)

1	2	3	4	5
Not Interested		Interested		Very Interested

27. Generally, how do you view OSU? (circle a number)

1	2	3	4	5
Very Negative	Negative	Neutral	Positive	Very Positive

OSU Extracurricular Information

28. a) Are you employed? ___ Yes ___ No

b) If yes, is your place of work: ___ On-Campus ___ Off-Campus

c) If yes, how many hours per week do you work?

___ 1 - 5 hours
___ 6 - 10 hours
___ 11 - 20 hours
___ 21 - 30 hours
___ 31 - 40 hours
___ Over 40 hours

29. Did you pledge a fraternity or sorority? ___ Yes ___ No

30. a) Are you involved in any organized campus based activities or clubs? (These include scholastic or social organizations as well as student governance groups.)

___ Yes ___ No

b) If yes, how many hours, on the average, do you devote each week to these organizations?

___ 0
___ 1 - 3 hours
___ 4 - 7 hours
___ 8 - 10 hours
___ Over 10 hours

31. Are you a participant in varsity athletics? ___ Yes ___ No

Are you a participant in intramural athletics? ___ Yes ___ No

32. Which of the following student services are you aware of?

___ Personal Counseling
___ Tutoring
___ Health Center
___ Writing Center
___ Career Counseling
___ Minority Student Programs
___ Disabled Student Services
___ Math Learning Resource Center
___ Study Skills Counseling
___ Mental Health Clinic
___ Alcohol & Substance Abuse Counseling
___ International Student Services
___ Financial Aid
___ Off-Campus Student Services
___ Veteran's Administration

33. Which of the following student services have you used?

___ Personal Counseling
___ Tutoring
___ Health Center
___ Writing Center
___ Career Counseling
___ Minority Student Programs
___ Math Learning Resource Center
___ Disabled Student Services
___ Study Skills Counseling
___ International Student Services
___ Financial Aid
___ Off-Campus Student Services
___ Veteran's Administration

34. How often did you go home your first semester at OSU?

___ Every week
___ Every 2-3 weeks
___ Every 4-6 weeks
___ I live at home while attending school
___ Every 7-9 weeks
___ Every 10-15 weeks
___ Did not go home the first semester

35. How many friends do you have at OSU? (circle a number)

1	2	3	4	5
Far fewer than other students		About the same as most other students		More than most other students

36. Do you have a close personal friend at OSU? _____ Yes _____ No

37. What do you like best about OSU?

What do you like least about OSU?

38. Optional Information:

Name _____ Local Address _____ Local Phone # _____

39. Comments, if any:

APPENDIX B

OKLAHOMA STATE UNIVERSITY

STUDENT RETENTION STUDY

OKLAHOMA STATE UNIVERSITY
STUDENT RETENTION STUDY

Spring 1989

Demographic Data

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___ Graduated from high school
___ Attended Vocational Technical School
___ Some college but no bachelor's degree
___ Graduated with bachelor's degree
___ Graduate study
___ Graduate or professional degree (Architect, Physician, Attorney, etc.)

b) Mother or Guardian (circle one)

___ Did not complete high school
___ Graduate from high school
___ Attended Vocational Technical School
___ Some college but no bachelor's degree
___ Graduate with bachelor's degree
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___ Graduate or professional degree (Architect, Physician, Attorney, etc.)

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a) Father or Guardian

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___ Vocational/Trades (Mechanic, Food (Services, Equipment Operator, etc.)
___ Own Business
___ Clerical
___ Management
___ Sales
___ Homemaker
___ Unemployed
___ Other (please describe)

_____

b) Mother or Guardian

___ Professional (Architect, Physician, Attorney, etc.)
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___ Own Business
___ Clerical
___ Management
___ Sales
___ Homemaker
___ Unemployed
___ Other (please describe)

_____

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___ a homemaker ___ employed part-time ___ a student

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(sports, cheerleading, band, class officer, clubs, etc.)

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11. What is the highest academic degree you expect to obtain?

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___ Master's Degree (M.A., M.S., etc.)
___ Ph.D. or Ed.D.
___ M.D., D.D.S., D.V.M., etc.
___ L.L.B. or J.D. (Law)
___ Other

12. How important is it to you to graduate from college? (Circle a number)

1	2	3	4	5
Unimportant		Important		Essential

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___Management
___Sales
___Homemaker
___Other (explain) _____

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___ Siblings
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___ Counselor(s) influence

15. Please check your most important reason for attending college:

___ To gain a broad, liberal arts education
___ To gain skills directly applicable to a career
___ To learn more about myself and my values
___ To enhance my interpersonal skills and/or to meet new people
___ Other (please list) _____
_____
_____

16. During my freshman year at OSU, my OSU courses were (circle a number):

1	2	3	4	5
Mostly a repetition from high school		A little more advanced than my high school courses		Much more advanced than my high school courses

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___ 1st choice
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___ 4th or lower choice

18. What exposure had you had to OSU prior to making application for admission? (check all that apply)

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___ Had visited with an OSU representative
___ Had attended a banquet or reception sponsored by OSU
___ Had attended an OSU sporting event
___ Had attended an academic or extracurricular event or camp

19. Prior to enrollment, how familiar with OSU did you consider yourself? (circle a number)

1	2	3	4	5
Not Very Familiar		Informed		Very Familiar

OSU Academic Information

20. a) Did you participate in a summer orientation session prior to your initial OSU enrollment?
___ Yes ___ No

b) If yes, was it a ___ one-day session or ___ a two-day session?

c) Did your parents/guardians participate in the orientation session?
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21. Did you participate in the "Alpha" program immediately preceeding the start of your first semester? ___ Yes ___ No

22. a) Do you know who your academic adviser was? ___ Yes ___ No

b) Last year, approximately how many times did you meet with your adviser? ___

c) How would you rate the assistance received from your adviser? (circle a number)

1	2	3	4	5
Poor		Good		Great

d) How much interest did your adviser show in you? (circle a number)

1	2	3	4	5
Little Interest		Interested		Very Interested

23. Prior to beginning college, approximately how many times per semester did you expect to meet with a faculty member outside of class for 10 minutes or more?

___ 0
___ 1 - 3 times
___ 4 - 7 times
___ 8 - 10 times
___ 10 - 15 times
___ Over 15 times

24. During your freshman year, how many times did you meet with a faculty member outside of class for 10 minutes or more?

___ 0
___ 1 - 3 times
___ 3 - 5 times
___ Over 5 times

25. How many hours, on the average, did you study per week?

___ Less than 10 hours
___ 11 - 15 hours
___ 16 - 20 hours
___ 21 - 30 hours
___ Greater than 30 hours

26. Generally, how did you view OSU faculty:

a) Knowledge of subject matter: (circle a number)

1	2	3	4	5
Not Knowledgeable		Knowledgeable		Very Knowledgeable

b) Interest in you as a student and/or individual? (circle a number)

1	2	3	4	5
Not Interested		Interested		Very Interested

27. Generally, how do you currently view OSU? (circle a number)

1	2	3	4	5
Very Negative	Negative	Neutral	Positive	Very Positive

OSU Extracurricular Information

28. a) When attending OSU, were you employed? ___ Yes ___ No

b) If yes, was your place of work: ___ On-Campus ___ Off-Campus

c) If yes, how many hours per week did you work?

___ 1 - 5 hours
___ 6 - 10 hours
___ 11 - 20 hours
___ 21 - 30 hours
___ 31 - 40 hours
___ Over 40 hours

29. Did you pledge a fraternity or sorority? ___ Yes ___ No

30. a) Were you involved in any organized campus based activities or clubs? (These include scholastic or social organizations as well as student governance groups.)

___ Yes ___ No

b) If yes, how many hours, on the average, did you devote each week to these organizations?

___ 0
___ 1 - 3 hours
___ 4 - 7 hours
___ 8 - 10 hours
___ Over 10 hours

31. Were you a participant in varsity athletics? ___ Yes ___ No

Were you a participant in intramural athletics? ___ Yes ___ No

32. Which of the following student services were you aware of?

___ Personal Counseling
___ Tutoring
___ Health Center
___ Writing Center
___ Career Counseling
___ Minority Student Programs
___ Disabled Student Services
___ Math Learning Resource Center
___ Study Skills Counseling
___ Mental Health Clinic
___ Alcohol & Substance Abuse Counseling
___ International Student Services
___ Financial Aid
___ Off-Campus Student Services
___ Veteran's Administration

33. Which of the following student services did you use?

___ Personal Counseling
___ Tutoring
___ Health Center
___ Writing Center
___ Career Counseling
___ Minority Student Programs
___ Math Learning Resource Center
___ Disabled Student Services
___ Study Skills Counseling
___ International Student Services
___ Financial Aid
___ Off-Campus Student Services
___ Veteran's Administration

34. How often did you go home your first semester at OSU?

___ Every week
___ Every 2-3 weeks
___ Every 4-6 weeks
___ I live at home while attending school
___ Every 7-9 weeks
___ Every 10-15 weeks
___ Did not go home the first semester

35. How many friends did you have at OSU? (circle a number)

1	2	3	4	5
Far fewer than other students		About the same as most other students		More than most other students

36. Did you have a close personal friend at OSU? ___ Yes ___ No

37. What did you like best about OSU?

What did you like least about OSU?

Current Information:

38. Currently, what are you doing?

___ Attending a Vo-Tech School
___ Attending a community college
___ Attending another university
___ Employed full-time
___ Unemployed and not attending school
___ Other, (please describe) _____
_____

39. Have your career or educational goals changed since attending OSU?
___ Yes ___ No

If yes, how: _____

40. Why did you leave OSU?

41. Do you plan to return to OSU? __ Yes __ No

42. **Optional Information:**

Name _____ Local Address _____ Local Phone # _____

43. Comments, if any:

APPENDIX C

FOLLOW-UP LETTER MAILED TO MEMBERS OF THE SAMPLE

(date)

title,firstname,lastname
address

Dear (first name):

You were one of the new freshman class who received a questionnaire last semester. The questionnaire was intended to give you a chance as a student "to tell it like it is."

We have not received your completed questionnaire; therefore, attached is another copy which can be completed and returned in the enclosed envelope.

Your response will be confidential, but it can provide us with knowledge which is vital to quality education at OSU. Please take a little time to complete and return this questionnaire. Thank you.

Sincerely,

Cindy Ross
Director of
Academic Affairs Administration

CR:llh

Attachment

APPENDIX D

TINTO'S MODEL OF INSTITUTION

DEPARTURE OPERATIONALIZED

TINTO'S MODEL OF INSTITUTION DEPARTURE OPERATIONALIZED

Variable	Number (n)	Level of Measurement	Mean, Range, and Standard Deviation (Internal level only)	Statistical Relationship Chi-Square/t test
I. **FAMILY BACKGROUND**				
Q1a. Father's education	144	Ordinal	NA	.426
Q1b. Mother's education	146	Ordinal	NA	.405
Q2a. Father's occupation	143	Ordinal	NA	.222
Q2b. Mother's occupation	146	Ordinal	NA	.307
Q3a. Family income	141	Ordinal	NA	.594
Q3b. Family assets	136	Ordinal	NA	.308
Q3c. Personal assets	135	Ordinal	NA	.916
Q4. Family size	145	Ordinal	NA	.451
Q5a. Other family in college	145	Nominal	NA	.500
Q5b. Number of Other Family in College	43	Ordinal	NA	.967
Q6. Dependents responsible for	145	Nominal	NA	.005*
Q7a. Married	145	Nominal	NA	.000*
Q7b. If married, spouse employment	5 [1]	Nominal	NA	
Race	271	Nominal	NA	.224

[1] No correlation, as none of the persisters were married.

TINTO'S MODEL OF INSTITUTION DEPARTURE OPERATIONALIZED (continued)

	Variable	Number (n)	Level of Measurement	Mean, Range, and Standard Deviation (Internal level only)				Statistical Relationship Chi-Square/t test	
II.	**SKILLS AND ABILITIES AND PRIOR SCHOOLING**								
Q8.	Number of high school extracurricular activities	145	Ordinal			NA		.014*	
Q9.	Hours/week in high school extracurricular activities	145	Ordinal			NA		.077*	
Q10.	Hours of study in high school	145	Ordinal			NA		.076*	
	Composite ACT	257	Interval		$\bar{X}$	Range	S		
				persisters	21	10-32	4.5		
				dropouts	18	6-30	5.2		.0001*
	High School GPA	194	Interval		$\bar{X}$	Range	S		
				persisters	3.3	2.0-4.0	.46		
				dropouts	2.8	1.4-4.0	.56		.0001*
	High School Rank in Class	203	Interval		$\bar{X}$	Range	S		
				persisters	23%	.07%-75%	18%		
				dropouts	44%	.35%-93%	25%		.0001*
	High School Size	271	Ordinal			NA		.267	

TINTO'S MODEL OF INSTITUTION DEPARTURE OPERATIONALIZED (continued)

Variable	Number (n)	Level of Measurement	Mean, Range, and Standard Deviation (Internal level only)			Statistical Relationship Chi-Square/t test	
III. GOALS AND COMMITMENTS (INTENTIONS)							
Q11. Highest academic degree expect	143	Ordinal		NA		.000*	
				$\bar{X}$	S		
Q12. How important graduate	144	Ordinal	persisters	4.7	.73		
			dropouts	4.4	.95		.1197
Q13. Probable career choice	144	Nominal		NA		.684	
Q14. Who influenced you to attend college							
Self	138	Nominal		NA		.356	
Mother	133	Nominal		NA		.221	
Father	130	Nominal		NA		.182	
Guardian	30	Nominal		NA		.635	
Sibling	85	Nominal		NA		.398	
Peers	101	Nominal		NA		.643	
Teachers	78	Nominal		NA		.252	

TINTO'S MODEL OF INSTITUTION DEPARTURE OPERATIONALIZED (continued)

Variable	Number (n)	Level of Measurement	Mean, Range, and Standard Deviation (Internal level only)			Statistical Relationship Chi-Square/t test	
III. GOALS AND COMMITMENTS (continued)							
Q15. Most important reason for attending college	146	Nominal		NA		.624	
Q17. What choice OSU	145	Nominal		NA		.600	
Q18. What exposure OSU prior to admission							
Visited campus	119	Nominal		NA			
Received brochures	122	Nominal		NA			
Visited representative	48	Nominal		NA		.632	
Attended banquet/reception	44	Nominal		NA			
Attended sporting event (personal contact vs. no personal contact	92	Nominal		NA			
				$\bar{X}$	S		
Q19. Prior to enrollment how familiar with OSU	146	Ordinal	persisters	2.8	1.3		
			dropouts	2.9	1.3		.6032

TINTO'S MODEL OF INSTITUTION DEPARTURE OPERATIONALIZED (continued)

Variable	Number (n)	Level of Measurement	Mean, Range, and Standard Deviation (Internal level only)			Statistical Relationship Chi-Square/t test	
III. GOALS AND COMMITMENTS (continued)							
Q23. Prior to beginning college, number of times expected to meet with faculty outside class	143	Ordinal		NA		.488	
IV. INSTITUTIONAL EXPERIENCES							
A) Academic System				$\bar{X}$	S		
Q16 Difficulty of OSU courses	144	Ordinal	persisters	3.4	.97		
			dropouts	3.8	.89		.0319*
Q20a Participate in orientation	145	Nominal		NA		.004*	
Q20c Did parents participate in orientation	82	Nominal		NA		.107	
Q22a Know academic adviser	144	Nominal		NA		.000*	

TINTO'S MODEL OF INSTITUTION DEPARTURE OPERATIONALIZED 19 (continued)

Variable	Number (n)	Level of Measurement		Mean, Range, and Standard Deviation (Internal level only)		Statistical Relationship Chi-Square/t test	
IV. INSTITUTIONAL EXPERIENCES							
A) Academic System							
Q22b Number times met with adviser							
1	16	Ordinal		NA			
2	28	Ordinal		NA			
3	40	Ordinal		NA			
4	27	Ordinal		NA		.094*	
5	18	Ordinal		NA			
6	3	Ordinal		NA			
7	4	Ordinal		NA			
8	2	Ordinal		NA			
				$\bar{X}$	S		
Q22c How rate adviser's assistance	144	Ordinal	persisters	3.3	1.1		
			dropouts	3.1	1.1		.4206
				$\bar{X}$	S		
Q22d How much interest adviser showed	144	Ordinal	persisters	3.1	1.3		
			dropouts	3.1	1.2		.8478
Q24 How many times meet faculty outside of class	144	Ordinal		NA		.072*	

TINTO'S MODEL OF INSTITUTION DEPARTURE OPERATIONALIZED (continued)

	Variable	Number (n)	Level of Measurement		Mean, Range, and Standard Deviation (Internal level only)		Statistical Relationship Chi-Square/t test	
IV.	**INSTITUTIONAL EXPERIENCES (continued)**							
A)	**Academic System (condinued)**							
Q25	Number hours study/week	144	Ordinal		NA		.958	
Q26	How view faculty							
					$\bar{X}$	S		
	a) Knowledge subject	143	Ordinal	persisters	3.7	.76		
				dropouts	3.7	.68		.6105
					$\bar{X}$	S		
	b) Interest in you	144	Ordinal	persisters	2.7	.87		
				dropouts	2.4	.99		.1140
					$\bar{X}$	S		
Q27	How view OSU	145	Ordinal	persisters	3.9	.73		
				dropouts	3.8	1.2		.6359
Q32	Which of these services aware of							
	Tutoring	146 (yes-116)	Nominal		NA		.793	
	Writing Center	146 (yes-93)	Nominal		NA		.019*	
	Math Center	146 (yes-135)	Nominal		NA		.042*	

TINTO'S MODEL OF INSTITUTION DEPARTURE OPERATIONALIZED (continued)

	Variable	Number (n)	Level of Measurement	Mean, Range, and Standard Deviation (Internal level only)	Statistical Relationship Chi-Square/t test
IV.	**INSTUTITIONAL EXPERIENCES (continued)**				
A)	**Academic System (continued)**				
	Study skills counseling	146 (yes-46)	Nominal	NA	.006*
Q33	Which of these services used				
	Tutoring	146 (yes-33)	Nominal	NA	.150
	Writing Center	146 (yes-22)	Nominal	NA	.927
	Math Center	146 (yes-119)	Nominal	NA	.010*
	Study skills counseling	146 (yes-9)	Nominal	NA	.686
	College Enrolled	271	Nominal	NA	.826
	Admission Status (special waiver vs. regular)	271	Nominal	NA	.017*

TINTO'S MODEL OF INSTITUTION DEPARTURE OPERATIONALIZED (continued)

	Variable	Number (n)	Level of Measurement	Mean, Range, and Standard Deviation (Internal level only)	Statistical Relationship Chi-Square/t test
B)	**Social System (extracurricular)**				
Q21	Participate in Alpha	144	Nominal	NA	.575
Q28	a) Employed	145	Nominal	NA	.833
	b) If yes, where	55	Nominal	NA	.269
	c) If yes, number of hours	54	Ordinal	NA	.832
Q29	Pledge fraternity/sorority	144	Nominal	NA	.742
Q30	a) Involved in campus activities/clubs	144	Nominal	NA	.403
	b) If yes, number hours/week	71	Ordinal	NA	.522
Q31	a) Participant in varsity athletics	144	Nominal	NA	.071*
	b) Participant in intramural athletics	44	Nominal	NA	.225
Q32	Which of these services aware of				
	Personal counseling	146 (yes-93)	Nominal	NA	.233
	Health Center	146 (yes-132)	Nominal	NA	.055*
	Career counseling	146 (yes-73)	Nominal	NA	.043*

TINTO'S MODEL OF INSTITUTION DEPARTURE OPERATIONALIZED (continued)

Variable	Number (n)	Level of Measurement	Mean, Range, and Standard Deviation (Internal level only)	Statistical Relationship Chi-Square/t test
IV. INSTITUTIONAL EXPERIENCES (continued)				
B) Social System (extracurricular) (continued)				
Q32 Which of these services aware of (continued)				
Minority Student Programs	146 (yes-59)	Nominal	NA	.181
Disabled Student Services	146 (yes-46)	Nominal	NA	.247
Mental Health Clinic	146 (yes-35)	Nominal	NA	.003*
Drug Abuse Counseling	146 (yes-26)	Nominal	NA	.038*
International Student Services	146 (yes-53)	Nominal	NA	.061*
Financial Aid	146 (yes-128)	Nominal	NA	.976
On-Campus Student Services	146 (yes-56)	Nominal	NA	.001*
Veterans Administration	0	Nominal	NA	NA

TINTO'S MODEL OF INSTITUTION DEPARTURE OPERATIONALIZED (continued)

Variable	Number (n)	Level of Measurement	Mean, Range, and Standard Deviation (Internal level only)	Statistical Relationship Chi-Square/t test
IV. INSTITUTIONAL EXPERIENCES (continued)				
B) Social System (extracurricular) (continued)				
Q33 Which of these services used				
Personal counseling	146 (yes-15)	Nominal	NA	.633
Health Center	146 (yes-90)	Nominal	NA	.389
Career counseling	146 (yes-18)	Nominal	NA	.023*
Minority Student Programs	146 (yes-9)	Nominal	NA	.686
Disabled Student Services	146 (yes-2)	Nominal	NA	.374
International Student Services	146 (yes-3)	Nominal	NA	.274
Financial Aid	146 (yes-76)	Nominal	NA	.388
Off-Campus Student Services	0	Nominal	NA	NA
Veteran's Administration	146 (yes-3)	Nominal	NA	.133

TINTO'S MODEL OF INSTITUTION DEPARTURE OPERATIONALIZED (continued)

	Variable	Number (n)	Level of Measurement	Mean, Range, and Standard Deviation (Internal level only)			Statistical Relationship Chi-Square/t test	
IV.	**INSTITUTIONAL EXPERIENCES (continued)**							
B)	**Social System (extracurricular) (continued)**							
Q34	How often go home 1st semester	145	Ordinal		NA		.046*	
					$\bar{X}$	S		
Q35	How many friends at OSU	143	Ordinal	persisters	3.9	1.2		
				dropouts	3.8	.73		.4667
Q36	Close friend at OSU	143	Nominal		NA		.577	
	Commuter	271	Nominal		NA		.965	

VITA

Cynthia S. Gibson Ross

Candidate for the Degree of

Doctor of Education

Dissertation: THE EFFECT OF THE INTERACTIVE INFLUENCES OF STUDENT ENTERING CHARACTERISTICS AND ACADEMIC AND SOCIAL INTEGRATION ON VOLUNTARY PERSISTENCE/WITHDRAWAL DECISIONS AT OKLAHOMA STATE UNIVERSTIY

Major Field: Higher Education Administration

Biographical:

Personal Data: Born at Enid, Oklahoma, December 7, 1950, the daughter of Leonard and Beverly Gibson

Education: Graduated from Medford High School in 1969; received Bachelor of University Studies degree from Oklahoma State University in May, 1983; received Master of Science degree from Oklahoma State University in July, 1986; and completed requirements for the Doctor of Education degree at Oklahoma State University in July, 1989.

Professional Experience: Recreation Supervisor, City of Del City, 1974-1977; Administrative Associate, Office of Vice President for Academic Affairs and Research, Oklahoma State University, 1978-1981; Assistant to the Vice President for Academic Affairs and Research, Oklahoma State University, 1981-1984; and Director of Academic Affairs Administration, Oklahoma State University, 1984-present.

Professional Organizations: Association for the Study of Higher Education, American Association for Higher Education, American Council of Education National Identification Program for the Advancement of Women in Higher Education (ACE/NIP), Higher Education Alumni Council of Oklahoma (HEACO), National Association of Women Deans and Administrators, National Coalition for Campus Child Care, and Phi Kappa Phi Honorary Society.