

Uncovering the Characteristics of Persistence Among Degree/Certificate
Seeking Community College Students

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Paper presented at the 2000 AIR Conference, Cincinnati, Ohio.

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Abstract

Student retention and persistence continue to be critical issues for educational researchers at both 4-year and 2-year institutions. The purpose of the current investigation is to explore the variables underlying persistence and degree attainment in community colleges. The 1994 fall entering student cohort will be examined to specify a complex of variables that predict whether students persist, and whether those that indicate they want a degree/certificate in fact earn one. In addition, information is presented concerning the reasons why those students who chose to leave the institution made their decision to do so.

Uncovering the Characteristics of Persistence Among Degree/Certificate Seeking Community College Students

The importance of student retention and persistence for institutional research is evidenced by the sheer abundance of literature that has been produced on the topic (e.g., Cabrera, Nora, & Castaneda, 1993; Napoli & Wortman, 1996; Tinto, 1993). The fact that the percentage of students in 4-year institutions who persist and complete a degree is climbing toward the 50% marker, keeps the issue of student retention firmly rooted in the forefront of higher education research (Hatcher, 1992; Tinto, 1996). The challenge to those in higher education is to unlock the mystery behind why some students stay and others continue until graduation. And while this challenge may be stated in very simplistic terms, it is in fact an awesome task. For there may be as many reasons for why students leave or remain at college, as there are students. "Indeed most research on retention has shown that the reasons for withdrawal may be very different depending upon which sub-population of students one is speaking of" (Noel & Levitz, 1999, p.7).

The variety of sub-populations at the community college is no less varied than that at the 4-year level, and may often be found to exhibit even greater diversity. Moreover, since the majority of research in the area of student retention centers around undergraduates at 4-years colleges and universities, it is imperative that the community college population be studied to discover the constellations of characteristics that are unique to its students. In addition to identifying the traits that distinguish community college 'completers' from 'non-completers', there must be an exploration of the reasons why certain individuals choose to leave.

Among the community college population, student retention continues to be an under-investigated problem, however a few scholars have attempted to understand the phenomenon among students who attend the two-year institutions (Bers & Smith, 1991; Nora, Attinasi, & Matonak, 1990; Romano, 1995). This dearth of research seems odd, given the weak retention figures of most community colleges. A 1998 Report from the National Center on Educational Statistics (NCES) reveals that 42% of students enrolled at a community college leave prior to the beginning of their 2nd year (Horn & Caroll, 1998). Research on community college persistence and degree attainment from the NCES reveals that in their sample, of first time students who started at a 2-year institution in 1989/90, 62% had not attained any degree by the spring of 1994 (BPS 90:94). In addition, findings illustrate that by 1994 the bachelor's degree attainment rate was nearly the same for 2-year students who indicated their goal as an associate's or a bachelor's degree.

While scholars have attempted to explain factors that affect persistence of two-year college students, little to no research has differentiated among those students whose initial intent was to obtain an associate's degree and/or a college certificate. Most researchers have used random samples (e.g., Bers & Smith, 1991; Bonham & Luckie, 1993) in their studies on persistence, or have studied retention as it applies to transfer students (e.g., Kraemer, 1997).

Nevertheless, there is an urgent need to discover more about students who initially indicate plans to obtain a degree or certificate, but choose to leave the college without realizing their goal. From an institutional perspective, colleges will want to know if they need to modify curriculum, administrative functions, course schedules, etc.,

in order to ensure that students are leaving the institution with an associate's degree or certificate. This study is also salient for researchers who are interested in understanding the complexities of the heterogeneous community college student population and any institutional effects on persistence.

Review of Literature

There is a plethora of literature on college student retention, much of which has been conducted on students who attend four-year residential institutions of higher education. Much of the extant research had been guided by Tinto's (1975, 1993) theoretical model of student persistence. The author posits that students' decisions to persist are based on their commitment to the institution and to their educational goals. These concepts in turn, are influenced by academic and social integration, that is, the extent to which the student has become socialized into the academic and non-academic facets of the institution.

Results of the retention research for students who attend a two-year institution is varied in terms of the significant findings regarding social and academic integration (cf. Kraemer, 1997; Nora, 1987). Two-year retention outcomes have also differed depending on how scholars have defined retention: term-to-term (Grosset, 1991; Haplin, 1990), or for longer periods (Napoli & Wortman, 1998; Pascerella, Smart, & Ethington, 1986).

Furthermore, most of the research has not differentiated among student intent¹, but has been studied by utilizing random samples of community college students and discerning whether they have returned the subsequent semester/term (Bers & Smith, 1991; Nelson, Dunn, & Griggs, 1993). In addition, researchers have also studied retention as it relates to students who have transferred (Kraemer, 1997), or regarding certain demographic variables: age (Grosset, 1991), ethnicity (Nora, 1987), and full-time and first-time students (Haplin, 1990).

Research Questions

To date, little to no research has examined the retention rates of two-year college students whose intent is to obtain a degree or certificate from the institution. The purpose of this work will be to explore the characteristics of persistence in community college students who state that their initial intention is to gain an associate's degree or certificate. Furthermore, this study will be longitudinal in nature to account for students who "stop out" and then return in subsequent terms.

There are three main questions guiding the current research the effort. Separate studies are conducted to assess each of the questions.

RQ1: What background and scholastic variables predict persistence among degree-certificate seeking community college students?

RQ2: What background and scholastic variables predict degree/certificate attainment among community college

¹ Of those researchers who have studied intent and persistence, the majority of this literature has been conducted on those who plan to transfer.

students?

RQ3: What are some of the reasons students report as to why they do not persist among community college students?

Ultimately, the goal of this work is to delineate a group of factors salient in predicting the persistence of students originally enrolled at the institution to obtain an associate's degree or certificate.

Method

Procedures

Data for the current investigation is garnered from two primary sources of data. The first data set involves demographic and enrollment information for a six year period about the cohort of first time in any college (FTIAC) students who entered a large suburban multi-campus community college in the Fall Session 1994. The six-year period was selected because information from the institution's graduate follow-up survey indicated that the average amount of time for students to complete a degree is between six and seven years. In light of the fact that the current investigation is centered by degree attainment, the time period seemed the most appropriate. Variables included from this source are: Age, race, gender, enrollment intensity, latency, and cumulative GPA. Logistic regression will be used to examine the impact of the selected variables on student persistence and degree attainment.

In addition to the data from the 1994 cohort of FTIACs, information about the reasons why community college students opt to leave the institution prior to obtaining their degree or certificate is presented. These self-reported measures ask students who have chosen not to return to the institution the importance of a variety of reasons to their decision. These included academic, financial, occupational, and personal reasons a student may decide not to continue their education.

ANALYSIS

Sample Characteristics – Study One

The sample used for the first two studies presented in this paper consisted of 1146 students. The demographic make-up of the sample resembled that of the overall student population at the college, during the fall semester of 1994. With respect to gender, 38% of the sample was male, and 62% female. The large majority of students included in the study were non-minority members, 80%, while the remaining 20% were member of a visible minority group (12% African-American, 4% Asian or Pacific Islander, 3% Hispanic, 1% American Indian). When these students enrolled in the fall of 1994, they ranged in age from 22 to 75 with a mean age of 29 years. However, 58% of the sample was under the age of 26, 18% were between 26 and 30 years old, 20% were between the ages of 31 and 49 years, and 4% were age 50 or older. Most students (59%) enrolled the fall semester immediately following high school graduation. Only 12% of the students tended to be enrolled full-time throughout their tenure at the college. The average cumulative G.P.A. of students was 2.51, and median cumulative G.P.A.. (the value which

divides the group in half) was 2.71. Only those students who were First-Time-In-Any-College (FTIAC) students in the fall of 1994 and were Degree/Certificate seeking were included in the sample.

All students are asked to identify their primary educational goal each semester they enroll for courses. Students could select one of the following primary reasons: To obtain a degree or certificate; to complete courses for transfer to another institution; to gain skills to get a job; to upgrade existing job skills; to take courses for personal enrichment; or other. A majority (63%) of students, regardless of their length of time at the college, retained their originally stated goal of earning an Associate's Degree or Certificate. Of those who did alter their educational goal at some point during their time at the college, 83% indicated that they intended to transfer to a 4-year institution after their time at the college.

STUDY ONE

Research Question #1: What Characteristics Predict Persistence among Degree-seeking community college students? For the purposes of the present investigation, the following information characterizes the way that the study and the subsequent analysis was conducted.

- Persistence is defined as being enrolled at the college for more than 2 academic years.
- Their enrollment was investigated through subsequent fall semesters until fall 1999.
- Chi Square tests of significance were performed to identify potential predictors and Logistic Regression was used to construct a model for predicting the probability of persistence beyond 2 years.

Of the 1146 students in the sample 717 or 63% were at the college for 2 years or less (464 or 40% did not return after their 1st year). And of the 717 'non-persisters', 63% of them were enrolled for only that first fall, in 1994. Thus, students were most apt to within two years of initial enrollment, with the majority of students making their departure before the beginning of the second year. A chi square test of significance revealed no significant differences between male (35% persisted) and female (38% persisted) students and their likelihood of persisting beyond 2 years. Minority students (28%) were however, statistically less likely than non-minority students (39%) to re-enroll at the college for more than 2 years. Age was also significantly related to student persistence. Younger students, particularly those 25 years old and under (44%), enrolled in 3 or more fall terms with greater frequency than their older counter parts (25% of students 26-30 yrs. old; 29% of those 31-49 yrs.; 27% of those 50 yrs. or older).

Lower cumulative G.P.A.'s were also significantly associated with lack of persistence among students. For instance, a substantial 97% of those with cumulative G.P.A.'s less than 1.00 failed to persist beyond 2 years. Students with G.P.A.'s in the 1.00 to 1.49 range, 79% did not persist beyond 2 years and 73% of those with 1.50 to 1.99 cumulative G.P.A. failed to return to the college for a 3rd fall. However, only 62% of students with G.P.A.'s of between 2.00 and 2.49 did persist beyond 2 years. Students with 2.50 to 2.99 and 3.00 to 3.49 were the most likely to continue past the 2-year mark,

consequently only 46% and 56% respectively chose not to enroll in more than 2 fall semesters at the college. Interestingly, among students with the highest G.P.A.'s, those following within the range of 3.50 to 4.00, 62% persisted. This drop in persistence among students with higher cumulative G.P.A.'s, may suggest the possibility of a curvilinear relationship between cumulative G.P.A. and persistence.

While 39% of all those attending on a mainly a part-time basis persisted, only 22% of who tended to enroll full-time students did so. And finally, a statistically significant association was also found between latency in enrolling after high school and persistence past 2 years. Among those who did not enroll the first fall after high school, 73% were at the college for 2 years or less, but only 55% of students who entered the college right out of high school did not persist.

Test of the Model. A Logistic regression model was devised to predict persistence beyond 2 years contained the following variables:

1. **Age** (As of first year on enrollment in Fall 1994)
2. **Sex** (Male vs. Female)
3. **Minority** (Minority/Non-Minority)
4. **G.P.A.** (Cumulative G.P.A.)
5. **Intensity** (Part-time (under 12 credits/semester) vs. Full-time Enrollment)
6. **Latency** (Enrollment fall semester immediately out of High School vs. Not Enrolling directly after High School)

These variables were selected for 3 primary reasons: 1) these are the variables suggested by relevant literature on persistence among students at both 2-year and 4-year institutions; 2) Findings from preliminary analysis of the data identified these variables as potentially, the most useful predictors; and 3) This is the type of student data that tends to be most readily available at this and similar institutions.

For this analysis the variables were entered all on the same step in the equation. The overall model was significant at the .000 level, indicating that the proposed model is significantly different than a model with no effects, thereby improving prediction of persistence. A variety of other model statistics were run as part of this analysis.

1. The Nagelkerke Pseudo R Square = .219, indicating that the model has modest predictive utility in terms of students who are likely to persist and those who are not likely to persist.
2. The Cox & Snell Pseudo R Square (a more conservative estimate of effect = .161).
3. In terms of the classification table and the model's ability to predict persisters and non-persisters, the model was 70% correct overall (83.4% for non-persisters, and 48.1% for persisters).

In terms of predictive probabilities, the model tells us the increase/decrease in the odds of persisting beyond 2 years at the college, given the specified set of variables. It

should be noted however, that while the logistic regression model is linear in terms of its logits/ log odds values, the model's predicted odds or probabilities are a **nonlinear** (S-shaped) function of the models' independent variables (Hamilton, 1992: 221-222). Table One below specifies the results of the logistic regression analysis.

Table 1

	Variable	Exponentiated B/ Odds Ratio
a.	Age	0.964
b.	Cumulative G.P.A.	2.370
c.	Intensity	0.238
d.	Latency	0.344

The Impact of Age. The odds for persisting beyond 2 years are multiplied by a factor of 0.964 per unit increase in age. This factor represents a 3.6% decrease in the odds of one persisting beyond 2 years for each additional year of life, all else being equal. *Otherwise stated, the odds of completing more than 2 years at the college decline slightly with age.* Age's impact on students' likelihood to persist can perhaps be better understood by expressing the odds ratio in terms of predicted probabilities. Predicted probabilities fall within the bounds of 0 and 1, with 1 representing certainty that an event (persistence beyond 2 years) will occur, and 0 representing certainty that an event will not take place (Hamilton, 1992).

For instance, students in the 25 yrs and under age group (*who are female, non-minority members enrolled part-time, with G.P.A.'s around the mean and who did not enroll right out of high school*) on average, have a 0.339 probability of enrolling for more than 2 years. However, the probability of persistence beyond 2 years for similar students who are over the age of 50 yrs. is only 0.137. *Thus, the younger students have on average, more than twice the probability of persisting beyond 2 years than do similar students who are 50 yrs. of age or older, other thing being equal.*

The Impact of Grade Point Average. The likelihood that one will attend college for more than 2 years is greatest among students with the highest cumulative Grade Point Averages. *With each unit increase in G.P.A., the odds of persisting past the 2- year point increases by a factor of 2.37 (or 137%), all else being equal.* For example a student with a cumulative G.P.A. in the 3.50 to 4.00 range would be more than two times as likely as a student with a cumulative G.P.A. falling in the 2.00 to 2.49 range to attend the college for more than 2 years, all else being equal. a female, non-minority student 26 to 30 yrs. of age, attending part-time, who did not enroll right out of high school with a G.P.A. OF 2.00 to 2.49 has a probability of 0.209 of persisting, while a student with similar characteristics but with a 3.50 to 4.00 cumulative G.P.A. has 0.501 probability of persisting. Of all the variables in the model G.P.A. had the largest effect on predicting student persistence beyond 2 years.

The Impact of Intensity. All else being equal, a student who tends to enroll on a full-time basis will be less likely than a part-time student to be at the college for more than 2 years. *With all other model variables at their means, the odds of returning to college more for more than two years decline by a factor or .238 or 76.2% for students who tend to be enrolled full-time versus those who attend only part-time.* Again, it will

be helpful to use the example. For a female, non-minority student, under the age of 26 yrs., who enrolled directly out of high school, and has a cumulative G.P.A. of 2.50 to 2.99 the probability of persisting is 0.259 for the student enrolled full-time vs. 0.590 for the one enrolled part-time.

The Impact of Latency. Whether or not a student enters community college directly from high school or chooses to wait also affects his/her odds of persisting at community college. *For students who did not enroll in community college the first fall after completing high school their odds of attending college for more than 2 years decline 66% (by a factor of .344) compared to students who do enroll directly out of high school.* For a student who is female, a non-minority, 25 yrs. old or younger, attending part-time with cumulative G.P.A. of 2.50 to 2.99, who enrolled the fall semester immediately following her high school graduation, the probability of persistence is 0.589. However, the probability of this student persisting beyond 2 years drops to 0.339 if she did not enroll directly out of high school.

STUDY TWO

Research Question #2: What Characteristics predict degree and certificate attainment at community colleges? Please be aware of the following assumptions made for the purposes of analysis in this study.

- Attainment is defined as earning an OCC degree or certificate from fall 1994 to Fall 2000.
- Chi Square tests of significance were performed to identify potential predictors and Logistic Regression was used to construct a model for predicting the probability of degree/certificate attainment.

Sample Characteristics – Study Two. Of the 1146 students in the sample for Study One, 101 or 9% attained an OCC degree or certificate by the fall semester of 2000. Those students from the fall 1994 cohort who did not graduate comprise the great majority of the total sample (1045 or 91% did not graduate with a degree or certificate by fall 2000). This percentage of students who actually completed a degree or certificate is low, however it is important to recall the evidence from the results of Study One of this investigation and the high percentage of students who did not persist long enough at the college to earn a degree or certificate. If a student eventually departed from the college, then they were likely to do so within two years of initial enrollment, with the majority of students making their departure before the beginning of the second year. A chi square test of significance revealed a statistically significant difference between males and females with respect to the likelihood of graduating. Females were more likely to graduate than males. Of the 101 graduates, 72% or 73 of them were female (28% or 28 were males). Much of this difference has to do with the greater number of females enrolled at the institution. With regard to minority and non-minority students, there was no difference in terms of likelihood of graduating. Age was also significantly related to student degree attainment. The youngest students, those aged 25 years or under, were the most likely to earn an OCC degree or certificate. This group accounted for more than $\frac{3}{4}$ of the 101 graduates (78% or 79 of the degrees/certificates earned). By contrast, only 8%

of the degrees and certificates were earned by those with ages from 26 to 30 years, 10% were earned by those students with ages from 31 to 49 years, and those students 50 years and older earned 4% of all degrees awarded to students in this cohort.

Not a surprise, but still a statistically significant finding, was that lower cumulative G.P.A.'s were associated with not attaining a degree or certificate. To compare, two out of three students that did graduate had a cumulative G.P.A. 3.00 or higher. A full 90% of degrees and certificates were awarded to student with G.P.A.'s of above 2.00. While 32% of students who earned a degree or certificate attended the college full-time, over two-thirds (68%) of graduates were enrolled on a part-time basis. This difference was statistically significant. Finally, a statistically significant association was also found between latency in enrolling after high school and degree/certificate attainment. Among those who did not enroll the first fall after high school, they comprised 22% (22) of graduates, whereas those students who enrolled directly after high school earned 78% (76) of the degrees/certificates awarded.

Test of the Model. As a result of the significance tests and literature on the variables that may impact degree/certificate attainment, a logistic regression model was tested to predict likelihood of graduating from a community college contained the following variables:

1. **Age** (As of first year of enrollment in Fall 1994)
2. **Sex** (Male/Female)
3. **Minority** (Minority/Non-Minority)
4. **G.P.A.** (Cumulative G.P.A.)
5. **Intensity** (Part-time (under 12 credits/semester) vs. Full-time Enrollment)
6. **Latency** (Enrollment fall semester immediately out of High School vs. Not Enrolling directly after High School)

The reasons for the inclusion of these variables in this equation mirrored those for the first analysis presented in this investigation. The reasons represent a mixture of practicality and theory. Some of the variables were suggested by previous literature on degree/certificate attainment, by the results of the significance tests conducted as part of this investigation, and finally by others that are quite available to nearly every educational institution.

For this analysis the variables were entered all on the same step in the equation. The overall model was significant at the .00 level (chi square = 125.315 df, 6). These results indicate that the specified model is significantly different from one that has no impact on the dependent measure. This finding suggests that the variables included in the model have some predictive utility with regard to which students are more or less likely to earn a community college degree or certificate. A variety of other overall model statistics were run as part of this analysis.

1. Nagelkerke Pseudo R Square = .247, indicating that the model has modest predictive utility in terms of students who are likely to graduate and those who are not likely to graduate.
2. The Cox & Snell Pseudo R Square (a more conservative estimate of effect = .116.

This statistic can be interpreted similarly to the Nagelkerke).

3. In terms of the classification table and the model's ability to predict graduates and non-graduates, the model was 91% correct overall (99.5% for non-graduates, but only 12.1% for graduates). Therefore, while the model does improve our ability to predict who will and will not earn a degree or certificate – clearly the model does a far better job predicting those students who will not graduate. Inasmuch as the vast majority of the students in the sample did not graduate, the model's utility is attenuated.

Table Two below specifies the results of the logistic regression analysis. Statistically significant variables have an impact on predicting the likelihood of graduating.

Table 2

Variable	Exponentiated B/ Odds Ratio
a. Cumulative G.P.A.	4.411
b. Intensity	3.315
c. Latency	0.234

The Impact of Grade Point Average. The likelihood that one will graduate is greatest among students with the highest cumulative Grade Point Averages. *With each unit increase in G.P.A., the odds of graduating increases by a factor of 4.41 (or %), all else being equal.*

The Impact of Intensity.

The Impact of Latency.

STUDY THREE

Research Question #3: What are some of the reasons students report as to why they do not persist among community college students? The third portion of the present investigation focuses on the reasons why students decide to not persist. Methodologically, this study differs from the previous two in several important ways. The ultimate goal of this Study is to begin to explore the reasons why students themselves report that they did not persist at the community college.

Sample Characteristics – Study Three. The sample used for this part of the analysis differed from those individuals who were part of Studies One and Two in this paper. The students in this part of the analysis were part of the institution's student cohort outcomes project. For this study, we began tracking approximately 4400 first-time students in the fall of 1998. For the first term (fall 98), we administered a First-Time Student Survey to all of the students. In subsequent terms (winter 1999, fall 1999, and winter 2000), we administered a Continuing Student Survey and Non-Returning student Survey to those individuals who were still part of the cohort in later terms. Responses from the Non-Returning Student Survey are included in the analysis below.

The background characteristics of the degree/certificate seeking students (n=128) resemble the previous student sample with respect to certain demographic variables. Those items that did not approximate the values in the former two studies included: average age (29 vs. 24), average G.P.A. (2.51 vs. 2.04), and percentage of students who were enrolled full-time (12% vs. 36%). In order to more accurately reflect the student constellation in Study One and Study Two, we weighted the data by readjusting the GPA and full/part-time variables. The age variable was not used in the weighting equation because of the error that it may have added to the weighting formula.²

In addition, while the total number of students who were part of the dataset equaled 128, we only used the analysis from Time One or Winter 99, (n=89; weighted n=121) for two reasons. First, the results of the weighted data approximated the same percentage results in Time Two (fall 99) and Time Three (fall 2000)³. Furthermore, the "Ns" in time period two (n=38) and time period three (n=29) were too small to make any meaningful analysis.

From the data in Time One (winter 99), a principal components factor analysis on a 25-item question set in which students were asked about their reasons for leaving the institution was conducted. The scaling of the items on the questions ranged from 1 = not a reason to 3 = major a reason. The 25 variables factored together to form five variables (see Appendix 3 for factor loadings and alphas): Academic Issues, Financial Concerns, Work Experience, Work Responsibilities, and Other. Each of these factors were given a mean score to measure how salient each one of the five items were in students' decisions not to return to the college.

Findings on Why Students Do not Persist. First, a frequency table was generated to determine which of the 25 items were selected by non-returning students to indicate their reasons for not persisting. The analysis indicated that none of the variables had over a 50% selection as to why these students did not return. The three variables that approached the 50% level were: work responsibilities were too great (44%), conflict between job demands and coursework/school (46%), and family responsibilities too great (45%).

While these three variables come closest to providing reasons why students did not return, they are also limited in their ability to fully explain why these students did not persist. Therefore, we utilized factor analysis to reduce the 25-item set into manageable and more reliable constructs. Five factors emerged from the rotation that could more accurately indicate why students who had originally stated that they wanted to obtain a degree or certificate did not persist.

The scaled averages in Table Three suggests that Work Responsibilities (1.53), Financial Issues (1.51), and Work Experience Issues (1.43) seem to affect whether or not a degree/certificate seeking student, ultimately obtains their educational goal. The construct of Academic Issues did not seem to be as an important reason why these students did not return to the institution the subsequent term.

² Weighted Variable = [(GPA985*.251) + GPA98.5] + [Full/Part-time985*.12]

³ Results of the ANOVA statistic indicated no differences in the means among the Winter 1999 and Fall 1999 variables. There were a few significant differences between Time One and Time Three, but these may have been affected by the difference in the Ns.

Table 3

Factor Constructs	N	Mean	S.D.
Academic Issues	119	1.19	.41
<i>Financial Issues</i>	121	1.51	.57
<i>Work Experience</i>	121	1.43	.62
<i>Work Responsibilities</i>	121	1.53	.60
<i>Other</i>	121	1.36	.61

Scale: 1= Not important, 2=Minor Importance, 3=Major Importance

DISCUSSION

Study One

The results of this study indicated that four of the six variables were significant in predicting student retention. The analysis concurred with the findings of Gossett (1991) and Napoli & Wortman (1996) that indicated that a student's GPA was a significant factor in retention.⁴ Age also had a significant impact on the ability to predict who would continue enrolling at the community college. This finding is not consistent with the results of a previous study (Bers & Smith, 1991).

Two additional variables that have not been investigated with respect to retention of community college student were included in this analysis. Both intensity and latency were significant in the model. Thus, the analysis indicates that part-time students and those who enter into the college right after graduating from high school are more likely to persist and eventually obtain their aspired educational goal.

Persistence among students in this study was similar to the national trend reported in the 1998 NCES study, with approximately 40% of students failing to enroll for a second year. Graduation rates however, were far below what would be expected, given national data. After six years, only 9% of the sample had obtained an Associate's Degree or Certificate. Unfortunately, the present investigation did not uncover the background characteristics that differentiated the 'persisters' from the 'non-persisters'. While the proposed model was valid and did offer a modest level of prediction, much more needs to be learned about the constellation factors influencing a student's decision to remain enrolled at community college.

As one might expect, the present student confirms that how well students perform academically, has the greatest influence over whether or not they persist. As the findings on cumulative g.p.a indicate, students who do not perform well tend not to re-enroll. These students may be unable to continue their studies for lack of resources – financial, mental and/or emotional necessary to persist until they attain their academic goals.

Persistence may vary by age because older students may not be able to commit the same level of time and other resources to their studies that their younger counterparts may. The responsibilities of family and job are often more consequential for older students thereby reducing their ability to make a concentrated effort to realize their

⁴ The authors' results showed a significant relationship with GPA with younger students (those under 25 years of age).

educational objectives. Similarly, students who enroll in community college directly out of high school may have an increased likelihood of persisting because they are able to maintain that momentum they achieved in their previous years of study. Whereas, an individual who has taken time away from her/his studies, perhaps to work, travel and/or start a family, may have lost some of the motivation or acquired new responsibilities that reduce her/his ability to commit to study. In addition, if an individual delays enrollment after high schools, his/her academic skills may dull, which may in turn affect performance and ultimately his/her persistence.

Some full-time students may be at greater risk of leaving than part-timers, because of financial difficulties they might encounter. Financial aid may require a student to be enrolled full-time. However, outside responsibilities might prohibit a student from remaining enrolled on a full-time basis. Alternately, some full-time students may have a lower likelihood of persisting at community college than part-time students simply because they discover that they have completed enough courses or credit hours to fulfill their personal, vocational or academic needs. Moreover, full-time students had an average cumulative G.P.A. of 2.55 while full-time students' the mean cumulative G.P.A for part-time students was significantly lower at 2.40. With a tendency to earn a greater number of credits and higher G.P.A.'s, full-time students may be better poised to transfer to 4-year institutions and consequently do so.

The majority of significant predictor variables, enrollment intensity (full-time/part-time enrollment), latency and particularly cumulative G.P.A., are more institutional in nature. And while these variables only provide part of the picture, they do offer some avenues for action, such as enhance student support services to help boost student performance, and outreach programs that bring high school students into the college and encourage early enrollment. The only socio-demographic variable with any explanatory value was age, with younger students more apt to persist than older students.

That students' background characteristics did not make much in the way of significant contributions to predicting persistence can be interpreted from both a positive and negative perspective. Institutions often encounter difficulty in trying to respond to the effects of background characteristics on retention. Therefore, that these variables are not very useful in predicting persistence, may implicate factors that institutions are better able to address. Nevertheless, given that the literature suggests that these variables might be of consequence and that this type of data is readily available to most institutions, it is disappointing that these background characteristics could not be of greater assistance in helping explain why students did not remain at the college.

Study Two

The central purpose the second study was to uncover the characteristics that could help predict whether a degree/certificate- seeking student will graduate in a community college. The model that emerged was statistically significant, and did improve the overall prediction of who would and would not graduate modestly. Cumulative G.P.A., latency, and intensity were all significant predictors of who will graduate. The results have little utility in terms of practicality. Essentially, the model does little to help us improve the predictability of who will and will not graduate with a degree or certificate. As the classification table indicates, prediction of who will graduate only improves by 12%. As a result, the model that emerged from this study suggests that there are a number of other factors involved in predicting who will graduate from a

community college. Further investigations may focus on additional variables such as number of hours worked per week, educational commitment, and additional socio-demographic variables.

The study does have a number of important implications with regard to graduation trends in the community college. First, with the growing trend toward inspection of graduation rate data by local, state, national governments and accreditation agencies, low numbers in terms of students from the sample who did graduate may be cause for great concern. In fact, as many states move toward greater performance based funding – the ability to better predict who is likely to graduate may become even more critical in the future.

It is of little surprise that students with higher GPAS have a better chance of graduating. It is a bit more surprising the impact that intensity and latency have on graduation. Part-time students are more likely than full-time ones to earn a degree. Although this finding may appear at first note to be counterintuitive, it does make sense if one takes into account the nature of the goals of a community college. Often, those students who have the ability to pursue their education full-time are younger, and non-working. These are the more traditional student that is seen as 4-year institutions more often. This type of student is likely to have the ability to be enrolled full-time – and these are also the students most likely to have their primary educational goal be transfer to a 4-year institution. As a result – full-time students are less likely than their part-time counterparts to graduate. In addition, there are substantially more people pursuing their college education on a part-time basis at the community college level. We have more part-time students, so it makes some sense that we would have greater numbers of part-time graduates.

The impact of latency is also surprising. Especially given the fact that it was quite a long time before most of the students who graduated earned their degree. The average student takes about 6-7 times that they are first enrolled to the semester they are granted a degree or certificate. The students who entered college the first fall semester following their graduation from high school were slightly more likely than those who delayed post-secondary entry to a later time. Perhaps this variable indicates a heightened zeal and commitment to completion.

Limitations – Study One and Two

There were a number of limitations with respect to these studies. First, there was a limited ability to include variables in the studies due to the dearth of available information from the college where the study was conducted. Only information that was collected as part of the student information system could be included in the logistic regression. This is not a unique problem. Perhaps future investigations will begin to include more and different variables in analyses focusing on graduation from community colleges.

Last, although it may appear odd given the number of investigations and theoretical papers focusing on retention, there have been few studies of this type conducted with a community college focus. Using previous studies focusing on four-year institutions as a guidepost for which variables to include may have been an unfortunate, but unavoidable decision.

Study Three

In terms of understanding the reasons students provided for not returning to campus, three factors (Work Responsibilities, Financial Issues, & Work Experience) seem to suggest that these might be salient in students' decisions whether to persist. Nonetheless, they do not appear to be very strong indicators of the dependent variable because of their lower than expected average index score. However, they do provide researchers an exploratory understanding and beginning point concerning those issues that may affect certificate and degree-seeking students' decisions not to re-enroll. Future research on the persistence patterns of students might incorporate the above factors into a regression equation to determine whether any of the aforementioned factors are significant and can predict students' continued enrollment.

Prior analyses on the retention of community college students suggests persistence is highly related to external forces (Napoli & Wortman, 1996), especially demands placed on the students by work or career responsibilities (Axelson & Torres, 1995; Bers & Smith, 1991). Our findings from the data suggest that work/career tasks are the foremost reasons cited why these students do not return. This may be especially salient for this sub-population of students whose intent was to obtain a degree or certificate. Thus, it seems germane that work responsibilities, hours worked, and other external influences, will need to be explored in any further attempts to better understand why these students elect not to return. Napoli and Wortman argue that community college students not only have to adjust to the rigors of college, but they must also balance competing demands (e.g., family and work) which may add pressure to their lives and ultimately affect their continued persistence at the two-year institution (1996).

Future studies of community college students' persistence, especially those whose intent or educational goals are degree seeking or skill knowledge gain/advancement, might apply an econometric framework to the concept of retention for these students. Perna (2000) posits that this type of framework permits students to compare all the benefits (mostly financial and work related issues) of attending college, and then select the most appropriate choice given their "personal taste and preferences" (p.118). Therefore, this model may be more appropriate for researchers who are attempting to understand the reasons why students may or may not persist at the community college, especially given the salience of career related issues.

Discovering the underlying reasons for community college student departure may offer much needed insight into these individuals' motivations for not persisting-- an area where there is a paucity of information and empirical research. Furthermore, we need to segment the student population by area of intent (i.e., transfer, degree-seeking, etc.) to better comprehend students' decisions not to re-enroll and not consider them as one large homogenous body. Higher education researchers, administrators, faculty and policy-makers need to be able to understand who is likely stay or leave, and why they decide to do so, to ensure that students are provided the means for achieving the goals they have established for themselves.

As with any research, this study has its limitations. Any interpretation of this analysis must be made within the context that the students in this sample were, on average, five years younger than that of the previous sample of first-time students. We have referred to this as the "cohort effect." It is possible that students in the first two studies more accurately reflected the national average age for community college

students. Students who were analyzed in for this part of the study may have been noticeably younger based on the fact that the economy is near full-employment. Therefore, students who in the past may have enrolled later in life in an attempt to further their educational and/or career aspirations, are now possibly staying on the job longer and delaying their educational plans.

Furthermore, they also may not have the same motivation as previous students who may have needed a certificate or degree to further their career goals. Another reason for the difference in age might be do to the fact that some organizations may have the resources to do training, or offer education, on site or contract those services out to other educational providers; thus having no immediate need of the two-year institution for advanced study/training.

In addition, stop out behavior, that is students who leave the institution but return at a later date, was not assessed. Thus, responses to why students departed the college may be skewed in terms of short and long-term reasons students decided not to re-enroll.

Overall Discussion

The objective with the current study was to understand the reasons why students did not return the institution. By utilizing logistic regression to predict enrollment, and factor analysis to conceptualize reasons why students do not return, we have elucidated areas which researchers and practitioners should be cognizant of in attempting to understand why community college students do not persist.

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APPENDICES

Appendix One: Logistic Regression Model for Persistence Beyond 2 Years

Variable	Log Odds/B	Ratio of Odds/ Exp(B)	Significance Level
Age*	-.037	.964	.004*
Sex	-.015	.986	.923
Minority	-.203	.816	.286
Cum. G.P.A.*	.863	2.370	.000*
Intensity*	-1.437	.238	.000*
Latency*	-1.068	.344	.000*
Constant	-1.074	.342	.003

Overall model chi square 177.885, with 6 df, $p \leq .000$

Appendix Two: Logistic Regression Model for Graduation

Variable	Log Odds/B	Ratio of Odds/ Exp(B)	Significance Level
Age	-.010	.990	.633
Sex	.264	1.302	.311
Minority	-.267	.766	.445
Cum. G.P.A.*	1.484	4.411	.000*
Intensity*	1.198	3.315	.000*
Latency*	-1.450	.234	.000*
Constant	-6.147	.002	.000

Overall model chi square 125.315, with 6 df, $p \leq .000$

Appendix Three: Constructs and Factor Loadings for Academic, Financial, Work and Other Issues.

Construct/Item	Factor Loadings	Alpha
ACADEMIC ISSUES		.95
Disappointed with quality of instruction	.91	
Courses were not challenging	.94	
Courses were too difficult	.80	
Impersonal attitudes of the faculty & staff	.81	
Inadequate lab facilities	.86	
Dissatisfied with my grades	.83	
Inadequate course selection	.77	
Academic advising was inadequate	.83	
Classes not offered at convenient times	.72	
Courses were not required for my job	.68	

Construct/Item	Factor Loadings	Alpha
FINANCIAL ISSUES		.79
Applied for financial aid but did not receive it	.85	
Encountered unexpected expenses	.75	
Tuition and fees more than I could afford	.77	
Financial aid was inadequate to cover college expenses	.52	

Construct/Item	Factor Loadings	Alpha
WORK EXPERIENCES		.80
Learned all I wanted at this time	.74	
Job did not require further education	.92	
Wanted to obtain work experience	.82	

Construct/Item	Factor Loadings	Alpha
WORK RESPONSIBILITY		.64
Conflict between work & job	.87	
Work responsibilities were too great	.71	
Accepted full-time job	.59	

Construct/Item	Factor Loadings	Alpha
OTHER ISSUES		.76
Moving from the area	.85	
Health related	.72	
Transferring to another institution	.63	
Family responsibilities were too great	.65	
Major was not offered by the college	.67	