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AN EXAMINATION OF LATINO COLLEGE COMPLETERS

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Abstract

Attendance and graduation rates of Latinos in institutions of higher education in the United States are improving. Educational attainment is critical to upward mobility in the labor market (Kao & Thompson, 2003; Erlach, 2000; Morales, 2000). College completion rates and earning a degree are significant predictors of earning potential and occupational choice (Morales, 2000). The Latino population is growing faster than any other group and has the highest (35.5%) proportion of people younger than age 18 (NCLR, 2001; U.S. Census Bureau, 2000; Schmidt, 2003). This paper reports the results of a descriptive and inferential study, which examined Latino college completers and the differences in completion rates of Latino subgroups when they were classified by their generation status. Specifically, this study focused on the completion of degrees at the associate level and below, research that is lacking in the literature. Findings show: (a) Hispanic achievement and generation status are independent of each other, (b) Hispanics, in general, do not complete postsecondary credentials in large numbers, (c) of those that do finish, some complete programs that lead to diplomas, certificates, and associate degrees (see Table 8), but do not complete programs considered to lead to high-skill, high wage work, (d) completion of programs that lead to diplomas, certificates, and associate degrees declines with length of time in the U.S., and (e) the various Hispanic subgroups differ in the types of programs they pursue and complete.

Introduction

Attendance and graduation rates of Latinos[1] in institutions of higher education in the United States are improving. This improvement however, is not commensurate to their growth in the population. According to Fox, Connolly, and Snyder of the National Center for Education Statistics (2005), only 9.2% of 25 to 29 year olds who completed a bachelor's degree in 2004 were Hispanic. By contrast, 14.1% of Black and 28% of White 25 to 29 year olds completed a bachelor's degree in the same year. Kao and Thompson (2003) state that "understanding race, ethnic, and immigrant variation in educational achievement and attainment is more important than ever as the U.S. population becomes increasingly diverse" (p. 418).

[1] Note: The term Hispanic and Latino are used interchangeably throughout this paper.

Educational attainment is critical to upward mobility in the labor market (Kao & Thompson, 2003; Erlach, 2000; Morales, 2000). College enrollment and earning a degree are significant predictors of earning potential and occupational choice (Morales, 2000). Nearly 60% of jobs today require college-level skills. These jobs are the fastest growing, and they replace those that previously required only high school diplomas [or less] (Carnevale, 1999). The Latino population is growing faster than any other group and has the highest (35.5%) proportion of people younger than age 18 (NCLR, 2001; U.S. Census Bureau, 2000; Schmidt, 2003). Arbona (1995) states "the career development of Hispanics has become a salient issue in the social sciences literature because it is believed that the quality of the future U.S. Labor market will depend, to a great extent, on this group's education and job skills" (p. 38).

This paper reports the results of a descriptive and inferential study, which examined Latino college completers and the differences in completion rates of Latino subgroups when they were classified by their generation status. Specifically, this study focused on the completion of degrees at the associate level and below; research that is lacking in the literature. This research is important because the largest projections of job openings will be in those technical fields in which credentials are awarded at the postsecondary associate degree level and below (Savrock citing Gray, 2006). Additionally, Gray points to the fact that:

> nearly half of recent four-year college graduates—47 percent—are overeducated for the jobs they hold. For those four-year college graduates who hold arts and science degrees, the number is an astounding 67 percent. Students are earning the wrong type of degree for the job market—there are more people with baccalaureate degrees than the market can absorb. At the same time, not nearly enough people possess the specialized technical skills that are needed to fill today's workforce demands (Savrock citing Gray, 2006).

The study used data from the National Education Longitudinal Study (NELS): 88/00 fourth follow-up data file; and a career development framework developed by Arbona (1995)

was used to classify this sample population by generation status. The following research questions were addressed in this study:

1. What percentage of Latino student subgroups identified as first, second, and third generation completed a high school diploma and a postsecondary credential?
2. What was the postsecondary completion rate of Latino student subgroups identified as first, second, and third generation, who were enrolled in programs that lead to a diploma, certificate, or associate degree? Which programs did they complete?
3. What is the difference in postsecondary completion rates for Latino students identified as first, second, and third generation?

Latino Educational Attainment

Educational attainment, as reported by the U.S. Census Bureau (2000), indicates that the Hispanic population age 25 and over is less educated than their non-Hispanic counterparts. Twenty-seven percent have less than a ninth grade education compared to non-Hispanic whites (4.2%); 15.7% have not completed high school versus 7.3% of non-Hispanic whites; 27.9% have diplomas compared to 34.1%; and only 29.1% have more than a high school education compared to 54.4% of non-Hispanic whites.

Understanding factors that determine educational achievement is important in helping this diverse group of people whose success in the labor market will, in the near future, be a significant factor in the success of this nation. In his article, *Hispanics and Higher Education: Multicultural Myopia,* Erlach (2000) emphasizes the complex nature of determining factors that affect educational achievement of Latinos. This is supported by research conducted by Fligstein & Fernandez (1985) who state:

> the amount of education an individual receives is a product of a complex process in which one's background, intelligence, academic performance, and school setting,

> combined with social-psychological factors such as peer, parental, and teacher encouragement and personal goals in occupation and education, are transformed into educational attainment. (p. 162)

Other research (Garcia & Bayer, 2005; Kao & Thompson, 2003; Padilla & Gonzalez, 2001; White & Glick, 2000; Wojtkiewicz & Donato, 1995) supports the complex nature in determining why some students are more successful than others.

Of the factors that influence educational attainment, family background is one of the most influential (Fligstein & Fernandez, 1985; Harrell & Forney, 2003; Kao & Thompson, 2003; Suárez-Orozco & Suárez-Orozco, 2001; Wojtkiewicz & Donato, 1995). Some of these family-related factors include socioeconomic status, occupation, nativity, number of siblings in the home, level of education, and language spoken in the home. Parent's socioeconomic status and educational levels are probably the best predictors of academic outcomes for their children (Kao & Thompson, 2003; Harrell & Forney, 2003). Wojtkiewicz and Donato (1995) found that family structure and parental education were more important in explaining differences in educational attainment than generation status. Families with higher socioeconomic status and educational levels are more apt to help their children make the right choices in high school as well as navigate the postsecondary educational system (Fligstein & Fernandez, 1985; Suárez-Orozco & Suárez-Orozco, 2001; Wojtkiewicz & Donato, 1995). Essentially, "parents with more education provide a home environment that supports and encourages the education of children, and they have more income available to finance education and related activities" (Wojtkiewicz & Donato, 1995, p. 560). Unfortunately, Hispanic families have fewer background characteristics that lead to higher educational attainment (Wojtkiewicz & Donato, 1995).

In general, Latinos face more challenges to success in college than other groups. Brown, Santiago and Lopez (2003) describe most Latino students as, "first-generation college students

who are low-income, with less academic high school education than their peers, and enroll in community colleges" (p. 41). They add that "a large number of Latinos in higher education are also nontraditional students. They are older, work, attend college part-time, and often are also caring for family – all characteristics that influence the decisions Latino students make in participating in and completing higher education" (p. 42).

Although community colleges serve as the entry point for Latinos in their pursuit of postsecondary education, students who enroll in community colleges often attend on a part-time basis, prolong their college education into their mid-20s and beyond; often they have gaps in their attendance (Fry, 2002). These characteristics, as well as those described above, are all risk factors which contribute to non-completion of a postsecondary education. Attachment to family, community and economic need appear to be associated with high enrollments of Latinos in two-year institutions as well. The Community College Research Center (CCRC) (2004) which looked at demographic characteristics of students in occupational programs using the National Postsecondary Student Aid Study (NPSAS) 1996 and 2000 survey data indicated some of these trends: (a) There was a large increase in the proportion of computer and data processing majors among occupational community college students, (b) There was an increase in community college students with previously earned degrees, and, (c) There was a shift in the primary reason for enrolling among community college students. Interestingly, while many tout the benefits of the bachelors degree, the research reported by CCRC (2004) states that the number of people who are enrolled as occupational students held another degree (>30%) and "the gain was the highest among those who held a bachelors degree as their highest prior degree (increased from 2% to 9%)" (p. 5). In addition, "earning a degree or certificate is now the most commonly cited primary reason for enrolling among both occupational and academic students at two-year and

less than two-year institutions, perhaps due to the expectations of employers in a competitive job market" (p.5). Studies on Latinos and their participation in these types of programs are almost non-existent.

Generation Status

Generation status or length of time in the U. S. has been linked to low educational attainment (Garcia & Bayer, 2005; White & Glick, 2000; Wojtkiewicz & Donato, 1995) Latinos are more likely to have of immigrated to the United States than any other underrepresented group. Wojtkiewicz and Donato (1995) state that "…nativity is a characteristic that distinguishes Hispanics from other disadvantaged groups, such as blacks and Native Americans" (p. 561). They examined the degree to which family background and foreign birth explained the differences in academic achievement of Mexican and Puerto Rican students when compared to non-Hispanic students. The results of their study indicate that "the effects across Hispanic groups vary; U.S.-born Mexicans have higher educational attainment than foreign born Mexicans; U.S. born Puerto Ricans are no better off than foreign born Puerto Ricans" (p. 559); consequently "foreign birth is a partial explanation of group differences" (p. 559). On the other hand, Kao and Tienda (1995) concluded in their study that "generational status does not influence educational achievement uniformly among race and ethnic group" (p. 11). In general, it seems that for Hispanics, educational performance was not influenced by generation status. However, when considering aspirations for college graduation, there were significant generational differences (Kao & Tienda, 1995). "Relative to U.S.-born Hispanic youth of native parents, first and second generation Hispanics were more likely to express aspirations to graduate from college" (p. 12).

Kao and Thompson (1995) also found that immigrants of Mexican decent have lower educational attainment than U.S. born Mexicans. Zsembik and Llanes (1996) found that college

completion rates for Mexican Americans peaks in the second generation, and declines in the third. Research reported in the *Chronicle of Higher Education* indicates that U.S. born children of immigrants had higher levels of educational attainment than comparable children of U.S. born parents (Schmidt, 2003).

The research is conflicting. The probable reason for these conflicts results from lumping Latinos of various national origins into a single category (Garcia & Bayer, 2005; Zsembik & Llanes, 1996), which suggests that more research that differentiates between Latino subgroups is needed. In fact, Garcia and Bayer state that:

> educational research, which employs an aggregate Latino group may yield results which are statistically less significant in predicting outcomes because some subgroups with lower attainment are counterbalanced by some subgroups in the aggregate with average, or even possibly higher than average, educational attainment. (p. 529)

Theoretical Framework

The theoretical framework employed in this study was used solely for classification purposes. Respondents were placed into their respective cells based on their parent's socioeconomic level and place of birth and the respondent's place of birth. The matrix itself is comprised of three generation levels that represent migration history and three levels of socioeconomic status (low, medium, and high) representing "occupational standing and educational level" (Arbona, 1995, p. 41). Operational definitions for each generation level are as follows:

1. First generation immigrants are people (both parents and child) born in their country;
2. Second generation immigrants represent children born in the U.S. whose parents (one or both) were born in another country;
3. Third generation consists of both parents and children born in the U.S. (Arbona, 1995, p.42).

Table 1

Framework for Latino career development

Socioeconomic Status	Generation Level 1	2	3
Low	I	IV	VII
Medium	II	V	VIII
High	III	VI	IX

Note: Based on generation level and socioeconomic status (Arbona, 1995, p. 42).

Abona (1995) suggests that Latinos can be categorized within the framework based on socioeconomic background and length of time in the United States (see Table 1). Two factors expected to influence how well Latinos function within and between their culture and the dominant culture are the group's migration history and socioeconomic status. Cell I represents persons who are first generation immigrants (born in their country of origin) of low socioeconomic status (SES) compared to Cell IX, which represents third generation (or later) immigrants with high SES. How this framework relates to theories of career development depends on the individual's level of acculturation. Higher levels of acculturation better facilitate the process of career development. Arbona (1995) states "that it is expected, then, that Hispanics from second and later generations (Cells iv to IX) will be more acculturated than first generation Hispanics (Cells I to III), and that among first generation Hispanics, those of higher

socioeconomic classes and educational levels (Cells II and III) will be more acculturated than their more disadvantaged counterparts (Cell I)" (p. 43).

Methodology

Research Design

The study employed a descriptive and inferential research design. The rationale for using this design was to describe systematically the differences in educational attainment of Latino subgroups when they were classified by their generational status and then to generalize these differences to the population. The National Education Longitudinal Study (NELS), 88/00 data was used to answer the questions salient to the issues surrounding the educational attainment of Latinos in greater depth.

Population and Sample

The National Education Longitudinal Study of 1988 was the first longitudinal study conducted by the National Center for Educational Statistics. Some 25,000 eighth graders and their parents, teachers, and school principals were surveyed in 1988. These same students were resurveyed in 1990, 1992, 1994 as part of the first, second, and third follow-ups of NELS:88.

The NELS Fourth Follow-up in 2000 included a total of 12,144 (unweighted) respondents who were also members of all of the base year, first, second, and third studies. It provides insight into a new set of educational and social issues about the NELS: 88 respondents who were at the time of the interview, 26 years old and 8 years out of high school. "The focus was on postsecondary education and employment, and especially the transitions experienced by young adults as they moved from educational systems (secondary and postsecondary) into the labor market" (NCES, 2002, p. 7). Details regarding sampling strategies and returns received are available in each of the follow-up manuals. The fourth follow-up surveyed the same sample of

students in the year 2000, when many of these individuals would have completed college and were eight years out of high school (Curtin, Ingels, Wu, & Heuer, 2002). This study examines fourth follow-up respondents (N=12,144) who were Hispanic (n=1,360) and who were members of the base year, first, second, and third studies.

Statistical Analysis

The Statistical Package for the Social Sciences (SPSS®) software version 11.5 was used to analyze all data collected. The crosstab function of SPSS® was used to generate descriptive and inferential statistics. Descriptive statistics were used to generate frequencies and percentages to describe the sample and chi-square was used to determine whether there was a statistically significant relationship between educational attainment and generational status. Hwang, Zhang, and Chen (2001) state that "the chi-square statistic is particularly appropriate for explorations intended to detect population differences resulting from nominal factors, such as ethnicity, career choice, and parenting styles" (p. 276).

Survey Flags and Weights

Selection of the proper participation flags and weights is a critical step in determining the appropriate sample. These flags should be used in selecting the subset of respondents the researcher intends to examine. For this study, the flag (F4PNLFL) from the fourth follow-up data set was used to select those students who were members of the base year, first, second, third and fourth follow-up.

The general purpose of using weights with survey data is to compensate for unequal probabilities of selection and to adjust for the effects of non-response (National Center for Educational Statistics: NELS: 88, Base-Year to Fourth Follow-up Data File User's Manual, July 2002, p. 65). In this study, the weight variable F4PNLWT was employed. This weight, the fourth

follow-up complete panel weight, represents respondents at all five NELS: 88 data collection points (i.e., 1988, 1990, 1992, 1994, & 2000). The weight is used to estimate longitudinal parameters that describe the population of spring 1988 8th graders (NCES, 2002, p. 84). This weight allows the researcher to generate national statistics for Hispanic students who completed a postsecondary credential in 2000. When used with the appropriate flag, it allows projections to the population (N=308,313) of Hispanic respondents who were 8th graders in 1988 and members of all follow-ups.

Major Recoding of Variables

Table 2 identifies the variables used in the study and summarizes data analysis techniques used to answer each of the research questions.

Table 2

Summary of Variables and Data Analysis Procedures Used in the Study

Research Question	**Variable**	**Type of Data**	**Analysis Technique**
1. What percentage of Latino students completed a high school diploma and a postsecondary credential?	**F4TYPEDG** Types of PSE degrees attained as of 2000 **HSSTAT** High School Status	Nominal Ordinal	Frequencies Percentages
2. What was the postsecondary completion rate of Latino student subgroups, identified as first, second, and third generation, who were enrolled in programs that lead to an associate's degree or occupational certificates/diplomas?	**GENERATION** Generation Status **MAJDEGR1** **MAJDEGR2** **MAJDEGR3** **MAJDEGR4** **MAJDEGR5** **MAJDEGR6** Recoded- Major/Field of Study	Ordinal Nominal	Frequencies Percentages

2a. In which programs did they enroll?	**F4EMJ1D** **F4EMJ2D** **F4EMJ3D** **F4EMJ4D** **F4EMJ5D** **F4EMJ6D** Major/Field of study code (1-6)	Nominal	Frequencies Percentages
3. What is the difference in postsecondary completion rates for Latino students identified as first, second, and third generation?	**GENERATION** Generation status **F4TYPEDG** Types of PSE degrees attained as of 2000	Ordinal Nominal	Chi-square

The variables F4EMJ1D through F4EMJ6D and MAJCODE from the Fourth Follow-up survey were recoded into new corresponding variables called MAJDEGR1 through MAJDEGR6 and MAJCODE1 respectively, to categorize the various majors into four program-type categories. These were created in order to conduct further data analysis and account for slight differences in the analysis. The four categories are Associate/Certificate/Diploma Programs; Other Higher Education Programs (includes four year programs); Combination Programs, including majors such as accounting, which range from diploma to bachelors degree programs; and Undeclared Major. The recoding of the programs listed in this variable followed the same coding used in a previous study on Latinos participation in postsecondary technical education using NELS: 88/94 (Maldonado, 2000). In addition, program inclusions listed in the Major/Field of Study Descriptors and Codes in Appendix G were used to verify proper categorizing of fields (NCES, 2002, pp. 239-245). As in any large-scale national study, there are missing cases for some variables. In this study, missing cases were collapsed with other options that included

respondent's not knowing an answer, legitimate skips, and at the completion of an abbreviated interview.

Creating a Generation Matrix

Based on the theoretical framework presented, a matrix was created using father's birthplace and child's birthplace. The researcher created a variable called GENERATION to classify the students as first, second, or third generation and identified respondents according to the definitions provided earlier. Based on the literature that says that Latino children are especially likely to grow up in a married couple family (NCLR, 1997), the researcher used only the father's birthplace to stratify the data into the generational categories. The variables BYP14 (father's birthplace) and BYP17 (sample member's birthplace) were used to classify the participants' generational status. Both variables were categorical and organized in the same manner: 1=Born in the U.S.; 2=Born in Puerto Rico; 3=Born in Another Country; 4=Don't Know. Although Puerto Rico is a commonwealth of the United States, persons born there (variable 2) were treated the same as those born in another country (variable 3). Ortiz (1986) states that "because of the commonwealth status of Puerto Rico, movement from Puerto Rico to the mainland is technically considered not immigration but migration. However, Puerto Rico is most similar to other Hispanic countries in terms of language and culture and people from there can therefore be considered immigrants" (p. 44).

The data included cases (2,416), which fit none of the generation definitions described above. These were excluded from any analyses. These cases consisted of the BYP14 (father's birthplace) reported as born in the U.S. and BYP 17 (sample member's birthplace) reported as born in another country.

The variable F2SESQ1 was used to further stratify the data into the appropriate cells. The matrix represented below (see Table 3) is a twelve-cell matrix instead of the original nine-cell matrix due to the four-level nominal variable F2SESQ1. The following illustrates the frequencies and percentages for the current sample.

Table 3

Modified Matrix Illustrating Frequencies for Generation Status and SES

Socioeconomic Status	**N=308,313**	**Generation Status (n) / %**		
		First Generation	**Second Generation**	**Third Generation**
	Quartile 1 Low	**I** 26,679 10.4	**V** 60,960 23.7	**IX** 39,222 15.2
	Quartile 2	**II** 3,814 1.5	**VI** 22,400 8.7	**X** 30,750 11.9
	Quartile 3	**III** 2,252 .9	**VII** 6,812 2.6	**XI** 31,131 12.1
	Quartile 4 High	**IV** 3,125 1.2	**VIII** 8,439 3.3	**XII** 19,731 7.7

Note: Based on Arbona's (1995) model. 50,583 (16.4%) missing cases are not illustrated. Percentages represent % of total.

Findings

The purpose of this study was to examine Latino college completers and the differences in completion rates of Latino subgroups when they were classified by their generation status. Specifically, this study focused on the completion of degrees at the associate level and below; research that is lacking in the literature. A profile of the group is provided and the answers to the research questions are discussed in the following pages.

Demographic Information

The background and educational characteristics of the weighted sample population (n=99,949) are described in Tables 4 and 5. This sample, now decreased by about 68% of the total Latino population (N=308,313) represents the number of Latino respondents with a postsecondary credential (32%). As indicated in Table 4, the distribution of males and females was consistent within each of the subgroups with the exception of two. The majority of the Mexican (49.4%) respondents fell in the lowest socioeconomic quartile compared to the majority of Cuban (44.6%) and Other Hispanic (45.8%) groups whose socioeconomic status fell in the highest quartile. Mexican (8.6%) respondents showed the greatest disparity in their socioeconomic status with the least number represented in the highest socioeconomic quartile.

When examining the generation status of each subgroup, the majority of Mexican (51.6%) respondents were classified as generation 3, while Cuban (62.8%) and Puerto Rican (68.6%) respondents were classified as generation 2; other Hispanics had an equal number represented in generation 2 (38.3%) and generation 3 (39.2%). When comparing respondents' high school status and parent's education, the majority of respondents in all subgroups had attained a high school diploma and their parents, for the most part, had also attained high school diplomas and some college education as well. Cuban parents had the highest number of college graduates (23.3%). Mexican respondents (1.9%) had the greatest number of respondents who did not complete their high school education and eight years after high school were not working toward completing a credential (see Table 4).

The greatest proportion of the respondents in most of the subgroups reported attaining a bachelor's degree only (Mexican, 33.0%; Cuban, 54.4%; and Other Hispanic, 40.8%) except for the Puerto Rican cohort which attained a certificate or license only, the greatest proportion of the time (44.8%).

Table 4

Weighted Demographic and Educational Variable Frequency Distribution of Hispanic Respondents with a Postsecondary Credential by Hispanic Subgroup

Student Characteristics (n=99,949)	**Hispanic Subgroups n (%)**				
	Mexican/ Chicano	**Cuban**	**Puerto Rican**	**Other Hispanic**	**Total**
Sex					
Male	23,046	2,978	5,266	13,069	44,359
	(41.0)	(41.2)	(50.2)	(53.1)	(45.0)
Female	33098	4,249	5,215	11,562	54,124
	(59.0)	(58.8)	(49.8)	(46.9)	(55.0)
Total	**56,144**	**7,227**	**10,481**	**24,631**	**98,483**
	(100)	**(100)**	**(100)**	**(100)**	**(100)**
SES Quartile					
Quartile 1	27,745	1,330	2,263	4,607	35,945
(Low)	(49.4)	(18.4)	(21.6)	(18.7)	(36.5)
Quartile 2	12,298	2,166	3,689	5,015	23,168
	(21.9)	(30.0)	(35.2)	(20.4)	(23.5)
Quartile 3	11,262	506	2,185	3,719	17,672
	(20.1)	(7.0)	(20.8)	(15.1)	(17.9)
Quartile 4	4,839	3,224	2,343	11,291	21,697
(High)	(8.6)	(44.6)	(22.4)	(45.8)	(22.0)
Total	**56,144**	**7,226**	**10,480**	**24,632**	**98,482**
	(100)	**(100)**	**(100)**	**(100)**	**(100)**
Generation Status					
First Generation	6,684	500	1,704	3,872	12,760
	(13.4)	(8.0)	(18.3)	(19.5)	(15.0)
Second Generation	17,291	3,949	6,377	7,590	35,207
	(34.7)	(62.8)	(68.6)	(38.3)	(41.3)
Third Generation	25,698	1,836	1,213	7,773	36,520
	(51.6)	(29.2)	(13.1)	(39.2)	(42.8)
Total	**49,673**	**6,285**	**9,294**	**19,235**	**84,487**
	(100)	**(100)**	**(100)**	**(100)**	**(100)**
High School Status					
HS Diploma	50,612	7,226	9,437	23,784	91,059
	(90.1)	(100.0)	(90.1)	(96.6)	(92.5)
GED	3,403	0	109	610	4,122
	(6.1)	(0)	(1.0)	(2.5)	(4.2)
Enrolled in HS	0	0	611	0	611
	(0)	(0)	(5.8)	(0)	(.6)
Work Equiv. HS	1,052	0	322	238	1,612

Diploma	(1.9)	(0)	(3.1)	(1.0)	(1.6)
Not Grad/Not work on	1,078	0	0	0	1,078
	(1.9)	(0)	(0)	(0)	(1.1)
Total	**56,145**	**7,226**	**10,479**	**24,632**	**98,482**
	(100)	**(100)**	**(100)**	**(100)**	**(100)**
Parent's Education					
Didn't Finish HS	14,978	559	1,134	2,271	18,942
	(33.9)	(8.8)	(14.3)	(10.1)	(23.4)
HS Grad or GED	8,669	0	1,611	2,930	13,210
	(19.6)	(0)	(20.4)	(13.1)	(16.3)
HS, Some College	15,068	2,633	2,518	7,236	27,455
	(34.1)	(41.4)	(31.8)	(32.3)	(34.0)
College Grad	3,770	1,483	486	4,070	9,809
	(8.5)	(23.3)	(6.1)	(18.2)	(12.1)
M.A. or Equal	969	1,202	2,165	4,353	8,689
	(2.2)	(18.9)	(27.4)	(19.4)	(10.7)
Ph.D., M.D, Other	715	481	0	1,537	2,733
	(1.6)	(7.6)	(0)	(6.9)	(3.4)
Total	**44,169**	**6,358**	**7,914**	**22,397**	**80,838**
	(100)	**(100)**	**(100)**	**(100)**	**(100)**
Types of PSE degrees attained as of 2000					
Attained Cert/License only	16,468	101	4,699	5,287	26,555
	(29.3)	(1.4)	(44.8)	(21.5)	(27.0)
Attained associate's degree only	14,407	908	1,114	3,482	19,911
	(25.7)	(12.6)	(10.6)	(14.1)	(20.2)
Attained bachelor's degree only	18,553	3,928	3,793	10,051	36,325
	(33.0)	(54.4)	(36.2)	(40.8)	(36.9)
Attained Cert. and AA but not higher	2,411	915	520	484	4,330
	(4.3)	(12.7)	(5.0)	(2.0)	(4.4)
Attained Cert. and BA but not higher	1,038	78	102	940	2,158
	(1.8)	(1.1)	(1.0)	(3.8)	(2.2)
Attained AA and BA but not higher	1,813	335	0	2,623	4,771
	(3.2)	(4.6)	(0)	(10.6)	(4.8)
Attained Cert., AA, & BA but not higher	170	0	107	126	403
	(.3)	(0)	(1.0)	(.5)	(.4)
Attained a MA degree but not higher	1,209	961	144	1,346	3,660
	(2.2)	(13.3)	(1.4)	(5.5)	(3.7)
Attained a Ph.D./Professional doc	76	0	0	292	368
	(.1)	(0)	(0)	(1.2)	(.4)
Total	**56,145**	**7,226**	**10,479**	**24,631**	**98,481**
	(100)	**(100)**	**(100)**	**(100)**	**(100)**

Note: Missing Cases are not included.

Answers to Research Question One

Research question one states: What percentage of Latino student subgroups identified as first, second, and third generation completed a high school diploma and a postsecondary credential? Table 5 describes the percentage of Latino groups who completed both a high school diploma and postsecondary credential by subgroup and generational status. Notice those in generation one: Mexican (60%) respondents obtained a certificate/license only the majority of the time while both Cuban (49%) and Puerto Rican (78%) respondents obtained a bachelors degree only the majority of the time. The same groups in generation two shift. Mexicans (31%) obtained bachelors degrees the majority of the time while Puerto Ricans (54%) obtained certificates/licenses only the majority of the time. By the second generation, twenty-four percent of Cuban respondents obtained up to a Masters degree compared to the other groups (less than 6%). By the third generation, Mexican (21%) and Other Hispanic (13%) respondents were the only groups to obtain either a certificate/license or associate's degree. In short, most groups had the highest percentage of students who had attained a bachelor's degree only (Mexican 45%; Puerto Rican 86%; Other 46%). Cuban respondents had the highest number of respondents who attained a certificate and associate's degree (50%) followed by bachelor degree attainment (42%).

Table 5

Weighted Percentage of Hispanic Student Subgroups with a High School Diploma by Type of Postsecondary Credential and Generational Status

Hispanic Subgroups by Generation	Cert/Lic. Only n/%	Assoc. only n/%	Bach. Only n/%	Cert. & AA n/%	Cert.& BA n/%	AA & BA n/%	Cert., AA, & BA n/%	MA n/%	Ph.D./ Prof. n/%
Generation 1 n=11,692									
Mexican	3,389 60.3	642 11.4	1,276 22.7	0	211 3.8	99 1.8	--	0	--

Cuban	0	149	243	0	0	108	--	0	--
		29.8	48.6			21.6			
Puerto	107	276	1,320	0	0	0	--	0	--
Rican	6.3	16.2	77.5						
Other	744	753	823	131	67	1,067	--	286	--
Hispanic	19.2	19.5	21.3	3.4	1.7	27.6		7..4	
Total	4,240	1,820	3,662	131	278	1,274	--	286	--
	36.3	15.6	31.3	1.1	2.4	10.9		2.4	
Generation 2 n=33,090									
Mexican	3,405	4,318	4,980	1,539	274	461	--	792	76
	21.5	27.3	31.4	9.7	1.7	2.9		5.0	.5
Cuban	101	431	2,307	0	0	149	--	961	0
	2.6	10.9	38.4			3.8		24.3	
Puerto	3,223	657	1,400	520	0	0	--	144	0
Rican	54.2	4.1	23.6	8.7				2.4	
Other	547	451	4,302	0	232	1,070	--	458	292
Hispanic	7.4	6.1	58.5		3.2	14.6		6.2	4.0
Total	7,276	5,857	12,989	2,059	506	1,680	--	2,355	368
	22.0	17.7	39.3	6.2	1.5	5.1		7.1	1.1
Generation 3 n=34,511									
Mexican	4,811	5,791	10,458	579	353	856	0	321	--
	20.8	25.0	45.1	2.3	1.5	3.7		1.4	
Cuban	0	0	764	915	78	78	0	0	--
			41.6	49.9	4.3	4.3			
Puerto	0	0	666	0	0	0	107	0	--
Rican			86.2				13.8		
Other	962	1,391	3,517	223	561	277	126	538	--
Hispanic	12.7	18.3	46.3	2.9	7.8	3.6	1.7	7.1	
Total	5,773	7,182	15,405	1,717	992	1,211	233	859	--
	17.3	21.5	46.2	5.1	3.0	3.6	.7	2.6	

Answers to Research Question Two

Research question two states: What was the postsecondary completion rate of Latino student subgroups identified as first, second, and third generation, who were enrolled in programs that lead to a diploma, certificate or associate degree? Which programs did they complete?

Table 6 describes the number and types of degrees received by the Latino cohort by their generation status. Roughly 36% of first and second generation and 30% of third generation

respondents completed a postsecondary credential. This percentage was calculated by dividing total number of respondents with degrees (by generation) by the total number of respondents in each generation (as listed in Table 3). Surprisingly, there were a higher percentage of completers in the first generation; a finding not consistent with previous research. Table 6 also shows tendency by all groups to obtain multiple credentials with the length of residence in the U.S. Differences between the subgroups are detailed. Cubans in all generations consistently complete the bachelor's degree and rarely complete a certificate, diploma, or associate degree while other subgroups have relatively high numbers in that category.

Table 6

Weighted Frequency Distribution of Types of Postsecondary Credential Earned by the 2000 Hispanic Respondents by Generation and Hispanic Subgroup

Student Characteristics (n=99,949)	**Hispanic Subgroups n (%)**				
	Mexican/ Chicano	**Cuban**	**Puerto Rican**	**Other Hispanic**	**Total**
Types Degrees/Certificates Completed					
First Generation (n=12,760)					
Major Program 1					
Cert/Diploma/ Associate Prog.	4,447 (66.5)	0 (0)	206 (12.1)	1,685 (43.5)	6,338 (49.7)
Other Higher Ed Programs	1,799 (26.9)	500 (100)	1,498 (87.9)	1,504 (38.9)	5,301 (41.5)
Combination Program	439 (6.6)	0 (0)	0 (0)	569 (14.7)	1,008 (7.9)
Undeclared Major	0 (0)	0 (0)	0 (0)	0 (2.9)	0 (.9)
Total	**6,685 (100)**	**500 (100)**	**1,704 (100)**	**3,871 (100)**	**12,760 (100)**
Major Program 2					
Cert/Diploma/ Associate Prog.	339 (50.4)	0 (0)	---	1,062 (59.7)	1,401 (47.5)
Other Higher Ed Programs	218 (32.4)	351 (70.2)	---	717 (40.3)	1,286 (43.6)

Combination Program	115 (17.1)	149 (29.8)	---	0 (0)	264 (8.9)
Total	**672 (100)**	**500 (100)**	**---**	**1,779 (100)**	**2,951 (100)**
Second Generation (n=35,207)					
Major Program 1					
Cert/Diploma/ Associate Prog.	4,840 (32.2)	501 (12.7)	2,036 (48.1)	1,911 (28.5)	9,288 (31.0)
Other Higher Ed Programs	8,531 (56.7)	2,691 (68.1)	873 (20.6)	4,543 (67.7)	16,638 (55.6)
Combination Program	1,669 (11.1)	757 (19.2)	1,328 (31.3)	260 (3.9)	4,014 (13.4)
Total	**15,040 (100)**	**3,949 (100)**	**4,237 (100)**	**6,714 (100)**	**29,940 (100)**
Major Program 2					
Cert/Diploma/ Associate Prog.	1,895 (49.8)	0 (0)	1,013 (100)	133 (6.1)	3,041 (37.5)
Other Higher Ed Programs	1,373 (36.1)	858 (77.3)	0 (0)	1,951 (89.3)	4,182 (51.5)
Combination Program	537 (14.1)	252 (22.7)	0 (0)	101 (4.6)	890 (11.1)
Total	**3,805 (100)**	**1,110 (100)**	**1013 (100)**	**2,185 (100)**	**8,113 (100)**
Major Program 3					
Cert/Diploma/ Associate Prog.	160 (18.5)	---	---	---	160 (100)
Other Higher Ed Programs	499 (57.8)	---	---	---	499 (100)
Combination Program	205 (23.7)	---	---	---	205 (100)
Total	**864 (100)**	---	---	---	**864 (100)**
Major Program 4					
Cert/Diploma/ Associate Prog.	160 (100)	---	---	---	160 (100)
Total	**160 (100)**	**---**	**---**	**---**	**160 (100)**
Third Generation (n=36,520)					
Major Program 1					
Cert/Diploma/ Associate Prog.	8,325 (33.6)	0 (0)	0 (0)	2,199 (28.3)	10,524 (30)
Other Higher Ed Programs	13,498 (54.5)	842 (47.9)	574 (74.3)	4,923 (63.3)	19,837 (56.6)
Combination Program	2,701 (10.9)	915 (52.1)	199 (25.7)	650 (8.4)	4,465 (12.7)

Total	**24,763**	**1,757**	**773**	**7,772**	**35,065**
	(100)	**(100)**	**(100)**	**(100)**	**(100)**
Major Program 2					
Cert/Diploma/	1,797	0	107	448	2,352
Associate Prog.	(53.6)	(0)	(100)	(25.2)	(37.3)
Other Higher Ed	1,333	78	0	1,051	2,462
Programs.	(39.8)	(7.3)	(0)	(59.2)	(39)
Combination	222	994	0	276	1,492
Program	(6.6)	(92.7)	(0)	(15.5)	(23.7)
Total	**3,352**	**1,072**	**107**	**1,775**	**6,306**
	(100)	**(100)**	**(100)**	**(100)**	**(100)**
Major Program 3					
Cert/Diploma/	270	---	107	99	476
Associate Prog.	(100)		(100)	(44)	(79.1)
Other Higher Ed	0	---	0	126	126
Programs.	(0)		(0)	(56.0)	(20.9)
Total	**270**	---	**107**	**225**	**602**
	(100)		**(100)**	**(100)**	**(100)**
Major Program 4					
Cert/Diploma/	---	---	107	99	206
Associate Prog.			(100)	(100)	(100)
Total	---	---	**107**	**99**	**206**
			(100)	**(100)**	**(100)**
Major Program 5					
Other Higher Ed	---	---	107	---	107
Programs.			(100)		(100)
Total	---	---	**107**	---	**107**
			(100)		**(100)**
Major Program 6					
Cert/Diploma/	---	---	107	---	107
Associate Prog.			(100)		(100)
Total	---	---	**107**	---	**107**
			(100)		**(100)**

Note: Missing Cases are not included.

Table 7 shows the types of programs in which Latinos complete. Notice that most of the programs have a code of (2) next to its name, which indicates that the majority of Latinos generally complete programs that lead to a four-year degree. Only first generation Puerto Ricans (Paralegal, 32.3%); second generation Mexicans (Allied Health, 8.5%), and Other Hispanics (Design, 7.6%); and third generation Mexicans (Nursing Assistant, 4.6%) have higher

completion rates in programs that lead to a certificate, diploma, or associate degree. High skill-high wage programs, such as precision production and electronics, have very low completion rates (Gen1, 0%, 0%; Gen 2, .7% completion rates by Mexican and 0% by the other three groups and 1.1% Mexican, 2.5% Other Hispanic; Gen 3, 1.0% Mexican and 0% by the other three groups and 0% by all groups respectively).

The data also shows that participation rates in programs that lead to a diploma, certificate, and associate degree declines with the length of time in the U.S. by some groups (Puerto Rican and Other Hispanic). Mexican completion rates decline from first to second generation but they remain consistent in the third generation. Cuban respondents' completion of such programs is almost non-existent. Overall, second generation respondents completed programs that lead to diploma, certificate, and associate degree, but completion of technical programs that are considered high-skill, high-wage are low. Completion rates by types of programs, which lead to a certificate, diploma, and associate degree by generation, are listed below:

First Generation (total % by all subgroups):

- Paralegal (4.4%)
- Cosmetology (2.4%)
- Design (1.6%)
- Computer programming (.9%); Allied Health: Therapy & Mental Health (.9%); Mechanics (.9%)

Second Generation:

- Allied Health (4.3%)
- Protective Services (3.1%)
- Design (2.1%)

- Allied Health: Therapy & Mental Health (1.9%)
- Electronics (1.1%)

Third Generation:

- Nursing Assistant (3.4%)
- Cosmetology (1.9%)
- Protective Services (1.7%)
- Dental/Medical Technician (1.6%)

Table 7

Weighted Frequency Distribution of Highest Program Completion Rates of Hispanic Subgroups by Generation Status

Program Name (Program Code) % Enrolled			
Mexican/Chicano	**Cuban**	**Puerto Rican**	**Other Hispanic**
	First Generation (n=12,516)		
Health Sciences (2) 18.5	No Major 58.0	Secondary Ed. (2) 45.1	Chemistry (2) 23.1
Secondary Ed. (2) 18.2	Comp/Info Sci (2) 42.0	Paralegal (1) 32.3	Psychology (2) 10.3
Liberal Studies (2) 14.8		Civil Engineering (2) 10.4	Anthropology (2) 7.3
No Major (4) 7.8		Bus. Mgmt/Adm (2) 6.3	Elem. Ed. (2) 6.7
Bus Mgmt/Adm. (2) 6.7		Military Sci (2) 5.8	Bus/Mgmt Sys (3) 5.7
			Bus Mgmt/Adm (2) 5.5
	Second Generation (n=33,690)		
Eng/Amer Lit (2) 15.9	Bus.Mgmt/Adm (2) 22.7	Biology (2) 33.4	Accounting (3) 14.4
Allied Health (1) 8.5	Nursing (3) 22.1	Film Arts (2) 15.8	No Major 12.5
Health Sci: Prof (2) 7.5	Comp/Info Sci (2) 9.9	No Major 13.6	Bus Mgmt/Adm (2) 9.3
No Major	No Major	Military Sci (2)	Protect Serv (1)

6.5	9.3	8.2	8.7
Psychology (2)	Poli Sci (2)	Bus Mgmt/Adm (2)	Design (1)
5.3	9.0	6.9	7.6
	Third Generation (n=35,298)		
Biology (2)	Communications (2)	Film Arts (2)	Liberal Studies (2)
13.7	95.6	38.1	18.1
No Major	No Major	Psychology (2)	Nursing (2)
10.1	4.4	19.9	7.6
Bus Mgmt/Adm (2)		Bus Mgmt/Adm (2)	Bus Mgmt/Adm (2)
7.4		16.5	6.6
Accounting (3)		Communications (2)	Psychology (2)
5.7		9.3	5.7
Nursing (2)		Biopsychology (2)	No Major
4.7		8.3	5.2
Nursing Asst. (1)		Liberal Studies (2)	
4.6		8.0	

Answers to Research Question Three

Research question three states: What is the difference in postsecondary completion rates for Latino students identified as first, second, and third generation?

To run the chi square analysis, the dependent variable F4TYPEDG, a categorical variable with eight levels, was recoded and condensed into a three-level variable called HISP_ACH where 1 indicated, achievement less than an associate degree, 2 indicated achievement of four-year degree and 3 indicated achievement of more than four-year degree. The variable HISP_ACH was then cross-tabulated with the variable GENERATION to produce the following results. Unweighted frequencies were used for this analysis. At $\alpha = .05$, Table 8 indicates that Hispanic achievement and generation status are independent of each other ($\chi^{2=}8.957$, df=4, N=441, p=.062). Cramer's V (.101), a measure of association, are also small and do not approach significance.

Table 8

Crosstabulation and Chi-square Analyses

His_Ach N = 441		Generation Status 1	2	3	Total
1	Count	39	81	102	222
	Exp. Count	33.2	83.6	105.2	222.0
	Residual	5.8	-2.6	-3.2	---
2	Count	25	71	101	197
	Exp. Count	29.5	74.2	93.4	197.0
	Residual	-4.5	-3.2	7.6	---
3	Count	2	14	6	22
	Exp. Count	3.3	8.3	10.4	22.0
	Residual	-1.3	5.7	-4.4	---
	Total	66	166	209	441
	Exp. Count	66.0	166.0	209.0	441.0

	Value	D of Freedom	Significance (two-tailed)
Pearson Chi-square	8.957a	4	.062
Likelihood Ratio	8.670	4	.070
Linear-by-Linear Assoc.	.430	1	.512
Cramer's V	.101		.062

α = .05; a. 1 cells (11.1%) have expected count less than 5. The minimum expected count is 3.29

Summary

This study examined the differences in Latino college completion rates when considering the generation status of respondents and the completion rates of those in programs that lead to diplomas, certificates, and associate degrees. There were several key findings in this study: (a) Hispanic achievement and generation status are independent of each other, (b) Hispanics, in general, do not complete postsecondary credentials in large numbers, (c) Of those that do finish, some complete programs that lead to diplomas, certificates, and associate degrees (see Table 8), but do not complete programs considered to lead to high-skill, high wage work, (d) Completion of programs that lead to diplomas, certificates, and associate degrees declines with length of time in the U.S., and (e) the various Hispanic subgroups differ in the types of programs they pursue and complete.

Conclusion

This study supports other research which states that generation status does not impact educational achievement of Hispanics. Other factors, which were not considered in this study, impact achievement. The data in this database showed that a higher percentage (35.5%) of first generation completed a postsecondary credential when compared to their third generation counterparts (30%), a finding contradictory to previous research. Consistent with other research however, is the finding that second generation respondents complete degrees at higher rates (35.7%) than first and third generation respondents and the level of degrees they complete are more advanced. Specifically, the data in Table 5 clearly indicates that second generation respondents fare better than both generations one and three by the number of graduate degrees (Master's, Ph.D., and professional) obtained.

One key observation from the data and somewhat contradictory to the other findings of this study were the large number of Latinos who were excluded from the analysis simply because most had not completed a postsecondary credential (68%). The other findings of this study were based on the 32% of Latinos who reported completing a postsecondary credential – a very disturbing statistic. The research on Latinos consistently shows that they complete postsecondary credentials at much lower rates than other ethnic groups.

Latinos who reported completing a postsecondary credential regardless of the length of time in the U.S., obtained degrees that lead to diplomas, certificates, or associate degrees. However, completion rates in programs which lead to high-skill, high-wage work was almost non-existent for all Latinos. Completion rates of such degrees are highest for first generation respondents and generally decline for most Hispanic subgroups in later generations.

Latino subgroups differ in the types programs they pursue and complete and therefore, should not be lumped together as one group for research purposes. Each of the subgroups have different histories, values, and reasons for migrating (Puerto Ricans) or immigrating to the United States. These factors, along with other familial factors (socio-economic status, parent's educational level, language spoken, number of siblings, etc.) must be considered when researching the educational achievement of Latinos. In this study, there were clear differences in some of the background and familial characteristics that have been identified in other research as influential in determining educational attainment for Latinos. Cuban parents, for example, had the highest educational attainment and socioeconomic status among the four groups, two very strong indicators of how children might achieve academically.

Recommendations

Based on the results of this study, the challenge for educators and other advocates will be getting them enrolled in college and helping them choose careers that will have projected job openings and salaries that place them in higher socio-economic brackets. Research shows that many Latinos begin their postsecondary experience in community colleges. In fact Latinos, more than other groups, tend to enroll in community colleges. In 2000, Latino students accounted for 14% of the students enrolled in 2-year colleges and 7% of those in 4-year institutions (Llagas & Snyder, 2003). The results also showed that many Latinos pursue programs that lead to bachelor's degrees and few pursue technical education, specifically in programs identified as high-skill, high-wage fields. Some of those fields identified by CCRC include: agricultural business and production, agricultural sciences, business, communication technologies, computer and information sciences, construction, engineering, engineering technologies, health professions, home economics, mechanics and repair, personal services, precision production,

protective services, science technologies, or transportation (Community College Research Center, 2004). While the attainment of bachelor's degrees is not discouraged by the researcher, the decision to pursuing such a degree should not be made haphazardly or without taking into account considerations such as future openings in the field and salary. Research reported by CCRC (2004) states that the number of people who are enrolled as occupational students held another degree (>30%) and "the gain was the highest among those who held a bachelor's degree as their highest prior degree (increased from 2% to 9%)" (p. 5). In short the role of advisors at the community college and in high schools is critical in steering not just Latino students but all students in careers that the labor market will support.

Additionally, more research on the attainment of postsecondary technical credentials is needed including data that is does not aggregate degrees at the associate's level and below. One of the limitations of this study was how the data on degrees received were reported. There was no differentiation in the types of associate degrees reported when clearly there should have been; as there are outcome differences in the kinds of associate degrees. According to the Wikepedia (2006) online the general categories or types of associate degrees are listed as:

> An **Associate of Arts** degree is often awarded for programs that are terminal or intended for transfer to a four year college, usually with a major in the social sciences or humanities. It is also awarded to General Studies' students, those who decline to select an area of concentration.
>
> The **Associate of Science** degree is similarly awarded to terminal students or to potential transferees to a four years college, but the areas of concentration are usually in mathematics, natural sciences, or technology.
>
> The **Associate of Applied Science** degree is awarded to students who are permitted to relax some of the general education requirements in order to study more course work in their program area. Typically, this kind of degree is for students who intend to enter the work force upon graduation.

> The **Associate of Business Administration** degree is often awarded for programs that are terminal or intended for transfer to a four year college, usually with a major in one of the business majors.

Finally, when reporting on the educational achievement of Latinos (especially looking at baccalaureate attainment), researchers should be careful how they include data on associate degree attainment for the same reasons. For example, it can be assumed that the student pursuing an A.A. degree has a goal of transferring into a four year degree program. But this may not be the case for a student pursuing an A.A.S. degree. Aggregating the data often reflects negatively on research on baccalaureate attainment.

Colleges and universities should also consider reporting data on Hispanic populations by subgroup. This study showed that each group is different and to truly understand the success of Latinos in education is to look at each distinct group separately.

In the near future, Latinos will be the largest minority segment of our workforce. As our society becomes older and as baby boomers begin to retire, it will be apparent that society will become more dependent than ever on the economic contributions of Latinos. If their contributions are to be significant, they must acquire more skills and education, as this paper demonstrates. Much more research should be done, especially among the various sub-groups of Latinos to help understand why they are not enrolling in college or completing degrees at the same rate as other ethnic groups.

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