

 THE RESEARCH AGENDA

Higher Education Enrollment Theories: Setting Context for Enrollment Projections

By Kelly Perez-Vergara

Projecting higher education enrollments requires a thorough understanding of the phenomena that impact student enrollment. Popular theories that have been used to project enrollment include human capital theory and consumer choice theory; more than a dozen other theories have also been cited in the literature. This article situates selected theories within ecological systems theory and adds a review of generational theory to provide a broader context for selecting enrollment projection approaches.

Why do students enroll in higher education? The answer to this question begins to answer another important question for higher education institutions: What will your institution's student enrollment be next year? Increasingly, answers to questions of how students matriculate in college are based on research (Park and Hossler 2014). And research, of course, is based on theory: "To be effective, tools of analysis need a theoretical base. Without them, results fall in between lies, damn lies, and statistics" (Marks 2008, 49). Therefore, selecting a theory to examine why students enroll in higher education should be the first step in projecting enrollment. But how best to select a theory?

Grant and Osanloo (2014) write that "[t]he selection of a theoretical framework requires a deep and thoughtful understanding of your problem, purpose,

significance, and research questions" (17). Therefore, the introduction of this article focuses on questions of problem, purpose, significance, and research. The methods section details the approach used for reviewing the enrollment projections literature for existing theories and, finally, combines them into a theoretical framework of student enrollment.

The Problem of Enrollment

Higher education institutions are feeling the pressure of declining enrollments. This is a common focus of media articles from news outlets such as *NPR*, *Forbes*, *Inside Higher Education*, and many others in 2018. The reasons for the declines are at least partially obvious: In the United States, there are a large number of older adults and a diminishing pipeline of young people (*see*

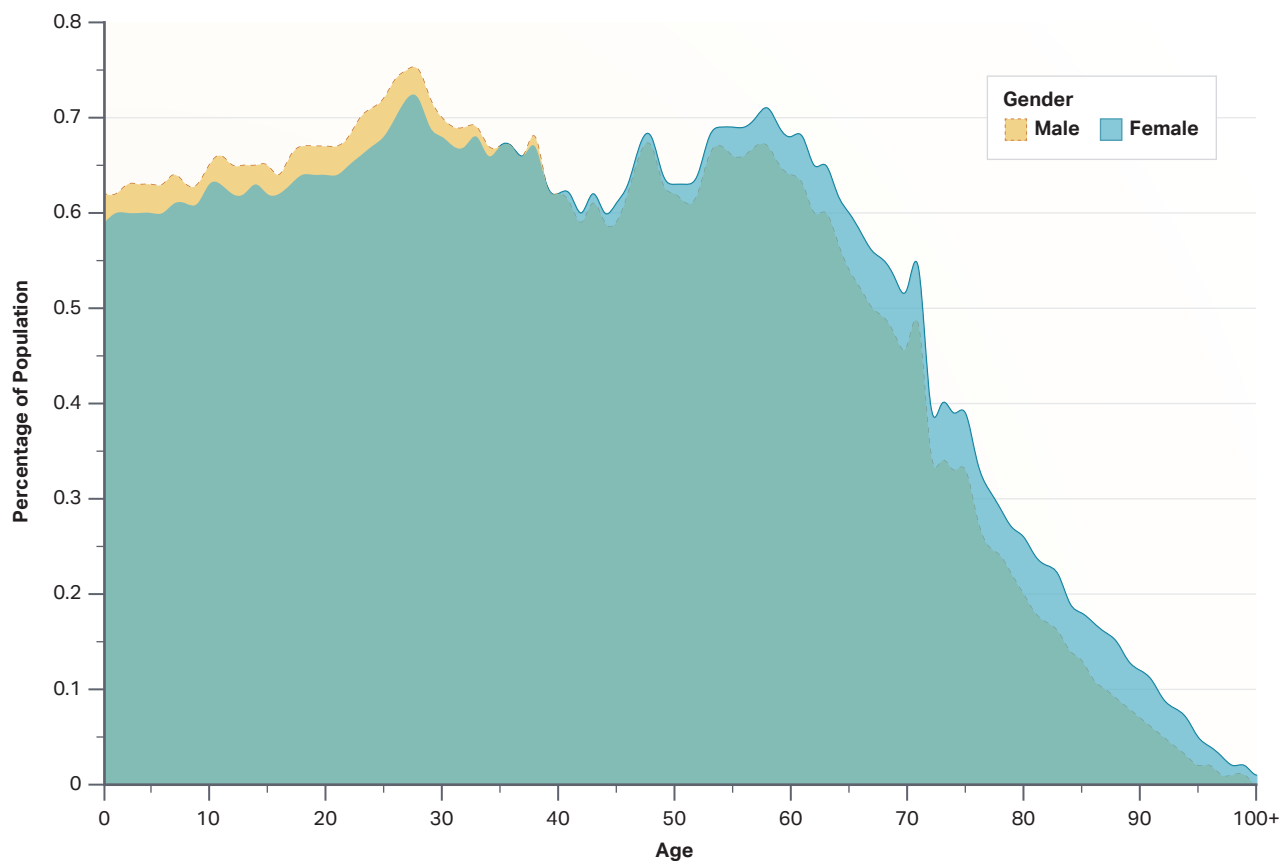


FIGURE 1 ► U.S. Population by Gender and Age

Source: U.S. Census Bureau 2017a

Figure 1). Because the majority of college enrollments are of young people (*see* Figure 5, on page 22), it may be unlikely for most institutions to significantly increase enrollments in the next ten years. Looking even further into the future, the U.S. Census Bureau (2017b) projects an increase in births through 2060 of less than 0.5 percent annually (*see* Figure 2, on page 15). The only way that enrollments over the next forty years may remain similar to current levels will be for the public to regard higher education similarly to (or better than) the way it did in the 1940s through 1980s such that college participation rates increase significantly.

The Purpose of Higher Education

Higher education institutions exist because of longstanding public support and market demand. Even

though they have shifted dramatically throughout their 400-year existence in the United States, institutional missions reflect their service to the public (Frank and Meyer 2007, Kezar 2004). More recently, the G.I. Bill of 1944 initially provided World War II veterans with funding for college and thereby fueled enrollments. Since then, students have been seen as “human capital who must acquire skills necessary to compete in the job market” (Kezar 2004, 437). In essence, human capital theory says that the cost/benefit trade-off of higher education is considered by students (Park and Hossler 2014). In the current climate, higher education as a human capital service is being pushed further than ever, resulting in reporting and tracking measures to prove to external agencies that higher education leads to increases in human capital (Hossler and Kalsbeek 2013).

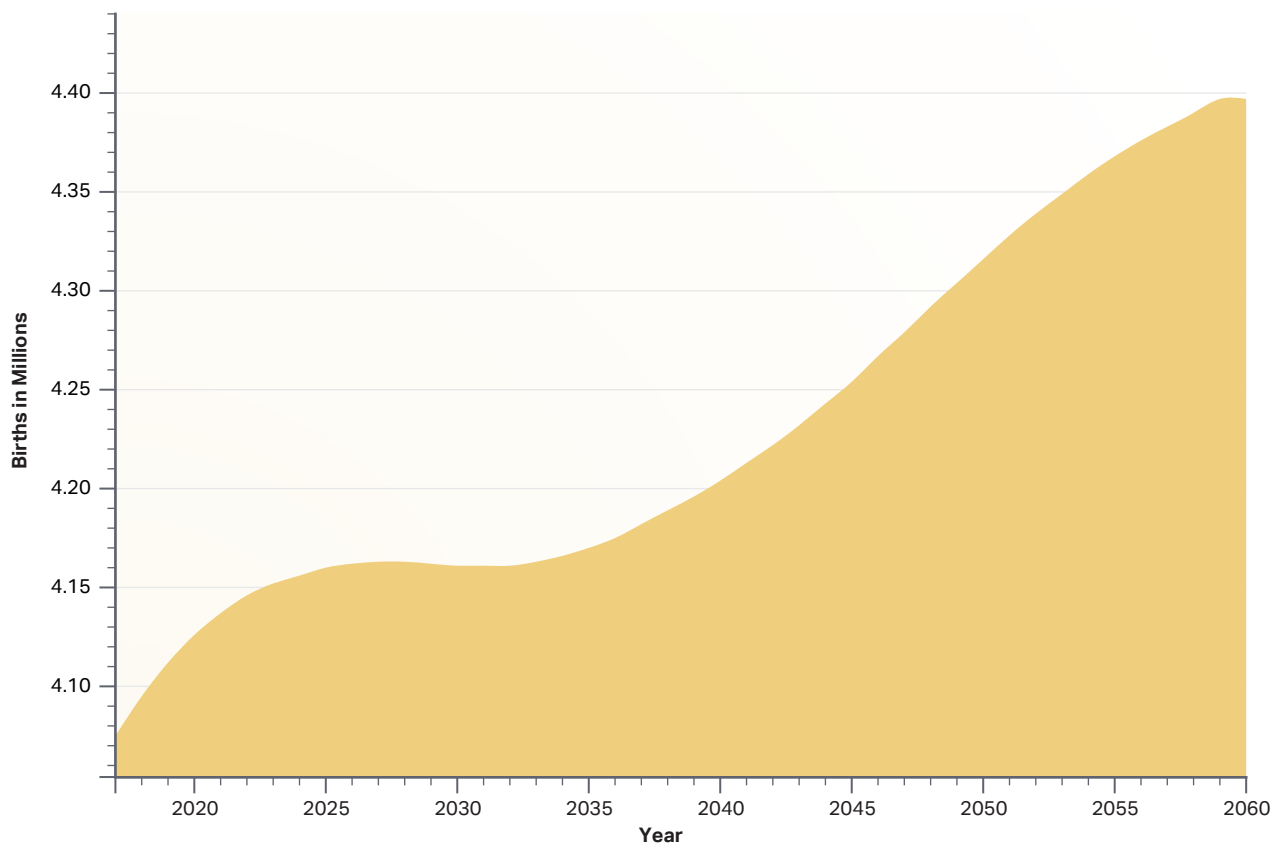


FIGURE 2 ► Projected Number of U.S. Births (in Millions) by Year 2017–2060

Source: U.S. Census Bureau 2017b

The Significance of Higher Education Enrollments

Unfortunately, data show that higher education is not a guaranteed pathway to a job, as it may have once been; current students and alumni know this. In a recent survey of more than 32,000 college students from 43 private not-for-profit and public universities nationwide, researchers found that students across majors were approximately 50 percent confident that their major would lead to a “good job” upon graduation (Auter 2018); 40 percent of liberal arts majors and 62 percent of STEM majors strongly agreed that their major would lead to a good job.

Altonji, Kahn, and Speer (2013) analyzed data from 1976 to 2011 on the career outcomes of graduates in skilled and unskilled majors in light of the economic

conditions at the time of graduation. The authors confirmed past research that also showed students from skilled majors fared better, even in recessions. Additionally, they examined whether the students who complete majors with broad applications (*e.g.*, statisticians who work in health, auto, or information technology industries) fare differently during recessions than students whose majors lead to concentrated occupations (*e.g.*, accounting majors who become accountants). They concluded that, “majors with a more concentrated set of occupations do have more difficulty finding employment initially, and are increasingly likely to be mismatched as they gain work experience, relative to less concentrated majors graduating into a large recession” (28).

Misalignment of majors and labor market opportunities aside, every young person should not necessarily

TABLE 1 ► Comparison of Employer Education Requirements and Labor Force Participation of Recent High School Graduates

Education Level	% Employers Requesting Education Level ^a	Recent High School Graduates ^b
High School or Less	64	31
Some College, Certificate, or Associate's Degree	11	69
Bachelor's	21	
Master's	2	
Doctorate	3	

^a Watson 2017

^b U.S. Bureau of Labor Statistics 2017

attend college: nationally, the majority of occupations to be filled do not require a college education, and college attendance is not free to all (as public K–12 education is). Higher education is not intended to serve every person in the population but rather a subset. As more people argue today (via the human capital lens), higher education is meant to prepare students for occupations that require a college degree.

In actuality, 64 percent of jobs in the U.S. labor market still do not require that students seek any higher education; nearly 28 percent of occupations accept workers with no formal degree, and another 36 percent accept entry-level workers who have completed a high school diploma (Watson 2017). In terms of jobs that do require a college education, 2.6 percent require some college for entry, 6 percent require that the employee have earned a certificate, and 2.4 percent require an associate's degree, for a total share of 11 percent (Watson 2017). Another 21 percent of jobs require a bachelor's degree upon entry while very few (1.7 percent) require a master's or doctoral (2.5 percent) degree (Watson 2017).

Unfortunately, too few students are in the higher education pipeline, with the result that occupations needing a college education may go understaffed. Setting aside the 64 percent of occupations that do not require higher education, 31 percent of recent high school graduates did not attend college the fall after they graduated, despite 64 percent of the job market being available to these graduates (see Table 1).

Reasons for under-enrollment may include future students' having widening access to college outcomes data, which were notably unavailable to students of prior generations. Consider this: If lower- and middle-class students could readily access "good jobs" (flexible, non-routine, with good hours and pay) without spending years of their time and tens of thousands of dollars, many might skip higher education altogether. Attending college represents a major risk to the long-term financial security of low- and middle-class students, especially given uncertain

payoff; more than other students, they must weigh the costs and benefits carefully before enrolling in higher education (Phinney, Dennis and Osorio 2006). Generation Z can verify just how many students who received an education, by particular major and institution, got a "good job."

Research Questions

In light of changes in generations and the higher education landscape, this article focuses on selecting a theoretical framework to holistically address the myriad factors that impact college enrollment. What theories of enrollment should be used to holistically understand how students matriculate in college?

Methods

In order to select a theory of enrollment projections that accounts for the myriad phenomena facing students as they matriculate in higher education, ERIC and Google Scholar databases were searched from June to August 2018 using the initial keywords *enrollment*, *projections*, *theory*, *human capital*, *college choice*, and *labor market*. These were selected based on Walsh College's narrowly focused mission: to educate students for available jobs. Words like *persistence*, *student retention*, and other terms were not included in the search. Forty-seven articles were predictive studies of enrollment; ten were theory papers; eleven were survey/descriptive studies; two were experimental; one was a meta-analysis; and one was a dissertation.

Next, using Google Scholar, the relevant articles were searched for subsequent citations to identify additions to the literature sample. In total, 103 articles were collected that discussed some aspect relevant to enrollment projections; 75 were considered in the review of enrollment projection theories (see the appendix). The articles were published between 1987 and 2018. Eight were published before 2000, 25 between 2000 and 2009, and 42 between 2010 and 2018. Each of the 75 articles was coded using Excel to address (a) the main focus of the article (undergraduate/graduate, new/returning), (b) the major theories used (if a theory was mentioned), and (c) the generation of the population(s) studied. No article specifically mentioned generations, so the study years and the age of participants were used to approximate the generations on the basis of the age definitions noted in the “generation” section of this article.

In addition to a basic coding of trends in the sample of enrollment projection literature that was reviewed, key theories (*i.e.*, human capital and consumer choice theory) are explored within the ecological systems theory lens. Ecological systems theory allows researchers to consider broad contexts that shape matriculation, including generational impacts.

Results

In terms of the main focus of the enrollment projection articles, 39 of the 75 focused on new undergraduate enrollments. Eleven of the articles were published in the last five years; the oldest dated to 1987. Undergraduate retention articles in this study were published in 2001 or later and accounted for only thirteen of the 75. Transfer enrollment was addressed in just two articles, both of which were published in 2016. New graduate student enrollment was the focus of nineteen of the 75 articles, with nine published in the last five years (the earliest in 1995). Graduate retention was addressed in two articles—one in 2004 and one in 2015.

Nineteen theories of enrollment were featured in the 75 articles on enrollment projections (some, perhaps, should be combined). The most popular was to use no theory at all: 28 of the 75 appeared to be exploratory studies that named no theory in particular, though

some used concepts that reflected existing theories. To justify their work, other researchers described their assumptions about the phenomenon of college enrollment within their introductions. Oddly, the majority of articles (20 of the 28) that lacked explicit theory were published in the past six years.

Because the search for literature for this study focused on human capital theory, it is not surprising that 21 of the 75 articles reviewed address human capital theory. Interestingly, because the articles span 20 years, approximately one human capital article was published each year. The 26 remaining articles featured a plethora of other models, but few publications were associated with each theory. Econometric ($n = 5$), demand ($n = 3$), college choice ($n = 2$), rational choice ($n = 2$), and self-determination ($n = 2$) theories were featured in more than one article. The remaining twelve articles were the only of their kind in the sample, focusing on consumer choice, dynamic major choice, ecological systems theory, expectancy value, family plans, Iloh model, nonlinear model, progressivist perspective, social reproduction theory, sociological attainment theory, student integration model, and theory of planned behavior.

In terms of generations, one study was focused predominantly on Baby Boomers. Twenty-eight focused on Generation X, and 21 focused on Millennials. Only four focused on the current college market: Generation Z. In 21 articles, the generational cohort could not be determined because the participant ages or the study years were not mentioned.

What theories of enrollment should be used to holistically understand how students matriculate to college? Data and information are presented within an ecological systems framework of enrollment. Additional literature (beyond the 75 sample articles) is referenced in the ensuing sections.

Ecological Systems Theory

Ecological systems theory, originally created to aid in understanding child development (see Bronfenbrenner 1976, 1986), has not been as widely used to study enrollment, even though the theory of planned behavior and other similar theories have been utilized. Ecological

systems theory attempts to account for how individuals' life contexts shape their decisions.

Figure three shows how the various systems in ecological systems theory relate. The microsystem relates to the immediate environment of the individual, including school, work, home, and social life contexts. The key players in the *microsystem* are immediate family, friends, peers, and teachers. In the *mesosystem* (a.k.a. the broader norms of the microsystem), connections from work, school, and family are considered. In the *exosystem*, the larger media, social systems, government policies, laws, and further removed social networks influence the individual. The last two layers address the broadest concepts: The *macrosystem* addresses phenomena such as cultural attitudes and norms. The final layer, added in 1987, addresses the *chronosystem*, or point in time, since cultural norms and attitudes change over time yet research is specific to a point in time. In terms of higher education enrollment projections, the chronosystem is helpful for addressing generational differences among college-aged adults throughout U.S. history and for considering how each generation views higher education.

Many exploratory studies that lacked mention of a specific theory seemed to employ the concept that context impacts enrollment. Within these studies, researchers focused on cultural phenomena such as gender, race/ethnicity, parent education status, socioeconomic status, and a host of other student, family, school, and other regional attributes. In a study explicitly using ecological system theory, Demi, Coleman-Jensen, and Snyder (2010) examined college enrollments of 1,500 rural students in Pennsylvania and found that using context to predict enrollment was effective.

No other studies appeared to explicitly reference ecological systems theory. However, human capital theory as well as consumer choice theory address concepts that are accounted for within the framework of ecological systems theory.

Human Capital Theory

Becker (1962) initially created human capital theory, which stated “that an individual’s ability to produce

economic value is directly related to the knowledge, skills, and abilities he or she possesses” (English and Umbach 2016, 176). Lowe (2017) explained that human capital theory is a sub-component of rational choice theory,

which characterizes humans as self-interested (though, not necessarily selfish) rational actors whose decisions are governed by ‘utility maximization’.... Individuals are assumed to have a set of interests/goals for which they evaluate appropriate courses of action to obtain. Agents then rank each course of action on the perceived ability to maximize their preferences (5).

In this way, human capital theory addresses the results of messaging delivered through all systems in the ecological systems model.

Consistently, researchers have reported strong links between the labor market and enrollment—national and local—for many colleges and individual institutions (Bedard and Herman 2008; Betts and McFarland 1995; Bozick 2009; Dellas and Sakellarist 2003; Hillman and Orians 2013; Lowe 2017; Perna 2000; Rivkin 1995; Stratton, O’Toole and Wetzel 2004). Typically, for labor market returns, the literature has examined unemployment rate or local wages in manufacturing, although more recent articles have begun to link local occupations to majors (see Lowe 2017).

Human capital factors can be organized within each individual system in the ecological systems model. Specifically, the microsystem (family), mesosystem (extended social network), and exosystem (mass media) play an immediate role in student knowledge about the labor market. The macrosystem addresses phenomena like cultural values related to postsecondary education and labor market goals. The chronosystem addresses possible generational differences in how young people view the costs and benefits of education. Consider the following example of how factors in each system can impact enrollment:

- **Microsystem:** Parents encourage child to attend college to “get a good job.”
- **Mesosystem:** School encourages children to attend college to “get a good job.”

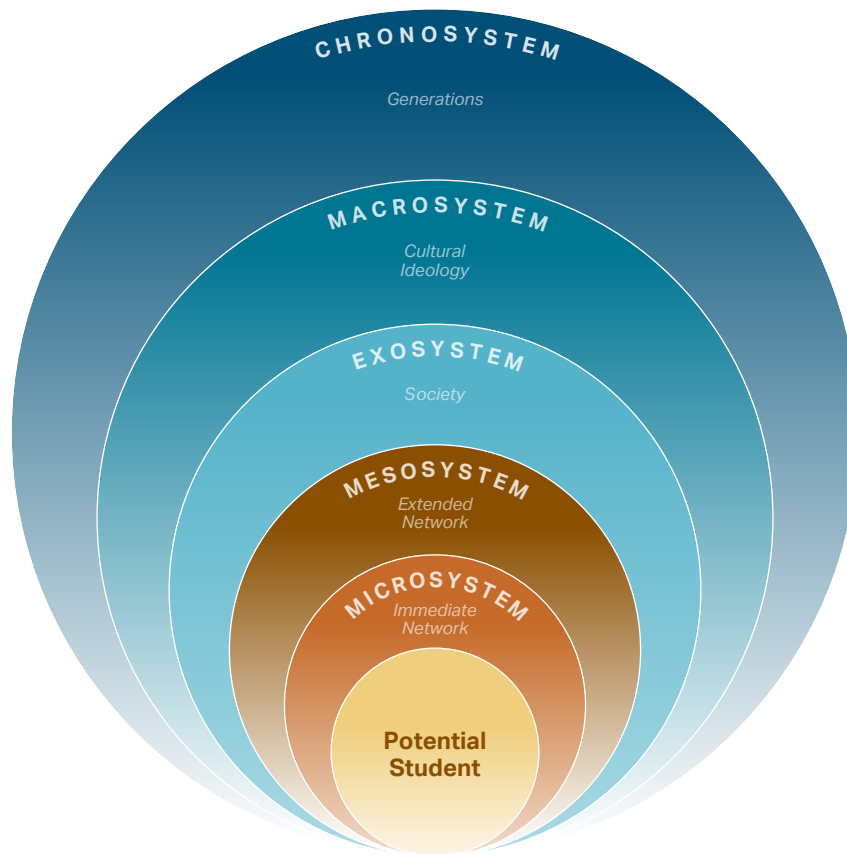


FIGURE 3 ➤ Bronfenbrenner's (1986) Ecological Systems Theory

Note: Chronosystem labeled as "generations" for the purposes of this article

- **Exosystem:** Government and mass media promote college attendance as the way to "get a good job."
- **Macrosystem:** Middle-class Americans view higher education as the way to "get a good job."
- **Chronosystem:** From 1940 to the early 2000s, college was the primary way to access information, but most information a professor presents is also available online via smart phone in 2018.

Consumer Choice Theory

Consumer choice theory addresses the reality that students are financially constrained and must make choices relative to available information and other choices (Serna and Birnbaum 2014). When the price of attendance increases without commensurate wage returns, students are expected to avoid additional educa-

tion (similar to human capital theory) but to nevertheless look beyond the acquisition of skills and access to jobs to specific return on investment (ROI) tradeoffs. Of the 75 enrollment projection studies selected for this review, just one specifically mentioned consumer choice theory. Many more research studies focus on the cost of college, student loan debt, and institutions' brand value.

If college were free, students might enroll at higher rates. In some countries, college education is free, and the outcomes at times decrease with increased financial support of students (see Murphy, Scott-Clayton and Wyness 2018). The inflated financial burden of college attendance in the United States in the 21st century is of serious concern. In a combination of human capital and consumer choice theories (although no specific theory was mentioned), Nutting (2008), in examining the impact of the cost of college on enrollment decisions,

focused on the differences between programs linked to jobs and those that lead to advanced study. In a study of 27 SUNY community colleges, Nutting (2008) found that academic program enrollment was more sensitive than was occupational enrollment to cost changes. On the other hand, occupational enrollment was more sensitive to changes in local labor market conditions.

Overall, the cost of college has increased so rapidly that it has outpaced inflation. Figure 4 (on page 21) shows that tuition and fees since the 1970s have increased by more than 200 percent across all types of institutions (*e.g.*, two-year public, four-year public, and four-year private). In 1971–72, tuition at public four-year institutions was \$2,570 (in 2017 dollars) while today it's up to \$9,970—a 288 percent increase. Average tuition at private four-year institutions increased 215 percent—from \$11,020 in 1971–72 to \$34,740 in 2017–18. Average tuition at two-year colleges increased 210 percent—from \$1,150 in 1971–72 to \$3,570 in 2017–18.

As a result of the average 200 percent tuition increase, student loan debt is now a major problem. More than 41 million of the 318 million people in the United States have student loan debt (Perna, Kvaal and Ruiz 2017). Two recommendations that Perna, Kvaal, and Ruiz make are for policy makers to “[e]ncourage students to enroll and complete a high-quality educational program by enabling them to obtain the financial resources they need to pay college costs, without producing too great a loan repayment burden” and to “protect both student borrowers and taxpayers against low-performing colleges, defined in part as having high amounts of unaffordable loans” (274).

Perry and Spencer (2018) summarized literature that focused on how a majority of student loan debt is held by people younger than 40 years of age and that life choices (such as career choice, marriage, home buying, and having children) are all impacted by student loan debt. In fact, student loan debt is worse for younger generations than for older generations. In 2004, for people younger than 30 years (most of whom are Millennials), the national student loan debt was \$147.8 billion whereas the current level for people younger than 30

(most of whom are Generation Z) is double, at \$383.8 billion dollars (Federal Reserve Bank of New York 2018).

Nonis, Hudson, Philhours, and Hu's (2015) study of debt tolerance included a sample of 228 junior- and senior-level college business majors in summer 2015—some of the first Generation Z enrollees (people born between 1995 and the present). The researchers found that 35 percent of students were “debt tolerant” in that they faced high financial constraints yet saw value in loan debt. Another 26 percent were “uninterested” in debt as they faced low financial constraints and did not need to borrow money. Almost a quarter (23%), however, were “debt adverse”; these students faced high financial constraints and were skeptical about loan debt and its value. The final group (16 percent) was called the “trade-off” group: they faced high financial constraints yet were willing to borrow even though the debt and its value were unclear.

Heckman and Montalto (2018) also explored how young adults understand the risks associated with higher education choices. These authors explained that college choice is risky because students cannot guarantee a good job after graduation. Research has shown that students “(1) tend to overestimate the cost of attending higher education... (2) are unable to estimate what they owe in student loans...and (3) are not matching their prospective careers with educational requirements” (167). The authors further explained that

risk premium is the amount of money that a consumer requires in order to be indifferent between the payoff of a risky choice and the same payoff of a certain choice...a positive risk premium indicates that the consumer is risk averse, a negative risk premium indicates that the consumer is risk-loving, and a risk premium equal to zero implies that the consumer is indifferent (167–168).

For an expensive investment like higher education, students will generally attempt to “minimize uncertainty and maximize returns” (Heckman and Montalto 2018, 169). And perhaps counter to the beliefs of higher education professionals, Heckman and Montalto (2018) explained how risks may increase with education because, for many students, the expenses and lost income

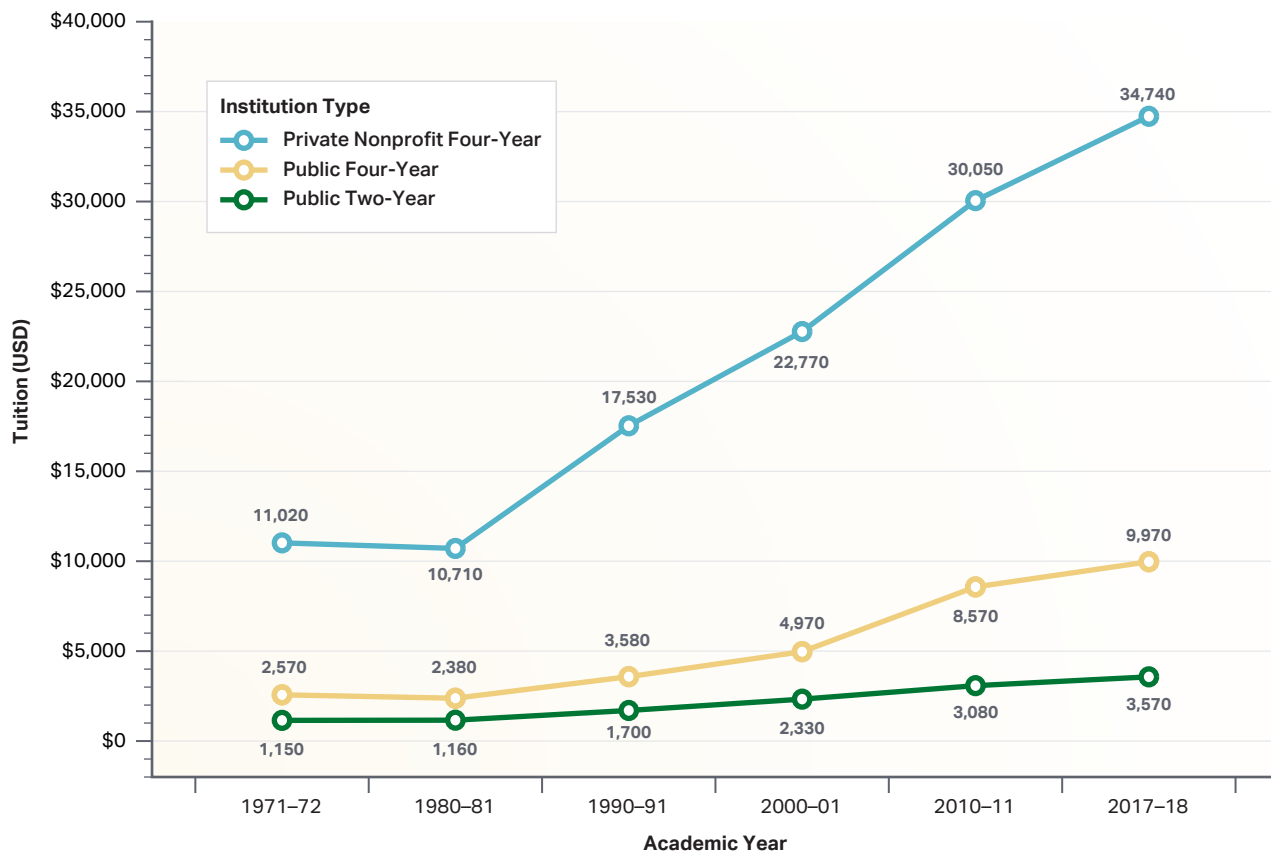


FIGURE 4 ➤ Annual Average Tuition and Fees by Year, 1971-72 to 2017-18, in 2017 Dollars

Source: College Board n.d.

may not pay off, even in the long run. These authors discussed an “optimal amount” of education equal to individual controls, regional controls, and personal risk tolerance. In their study of approximately 9,000 youths using the 1997 National Longitudinal Survey of Youth, Heckman and Montalto (2018) found that risk tolerance as a consumer was associated with “greater likelihoods of enrollment” (190). The authors remarked that “to consumers, attending higher education may seem riskier than entering the labor market directly” (190). At least for some segment of the higher education market, the promise of a labor market return (coupled with individual constraints) is important.

Compounding student risk aversion is the fact that prior to the 1990s, higher education enrollment was separate from family and work responsibilities. This is no longer the case (Fitzpatrick and Turner 2008).

At least for the approximately 40 percent of college students age 25 and older (Figure 5), financial barriers associated with family and life circumstances (particularly the need to earn money) may be a deterrent to enrolling full time. This may be one reason for the high part-time enrollment rates in higher education today—and for the older student population given that it takes longer for part-time students to complete their degrees. In other words, students take longer to graduate because “they cannot borrow against future earnings to finance full-time collegiate enrollment (what economists call ‘credit constrained’)” (Fitzpatrick and Turner 2008, 112).

Other researchers have focused on consumer choice as it relates to institutional prestige. Perhaps for graduate students more than for most undergraduate students, the reputation of the college matters. Arbesman-Gold (2016) interviewed sixteen M.B.A. students as part of

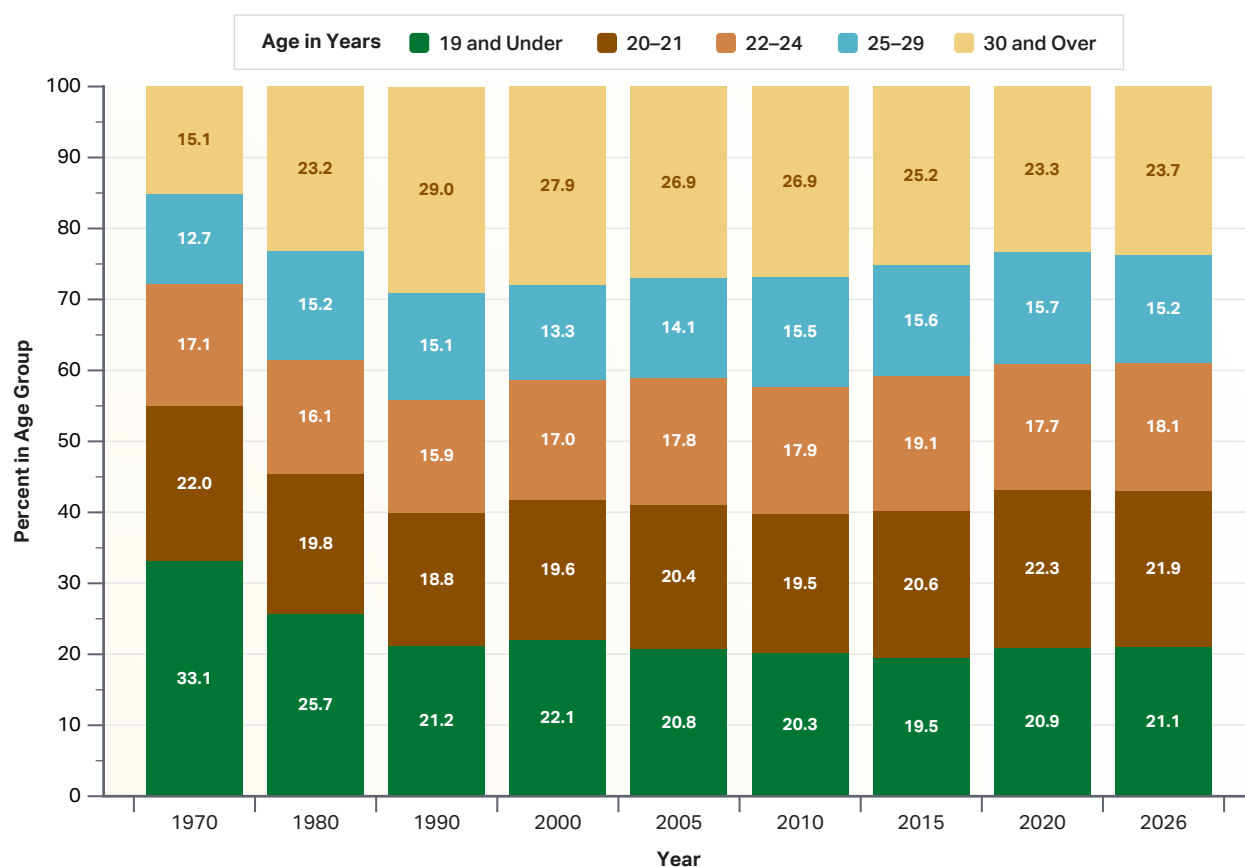


FIGURE 5 ➤ Age of Students Attending Postsecondary Institutions in the United States

Source: Snyder, de Brey, and Dillow 2018, 429.

doctoral research and found that the primary reason they had enrolled in the program was the perceived occupational advantages. The students also reported that they had examined the online rankings and had wanted to attend top-tier schools with other smart students (notably, the sample was of students attending an M.B.A. program at a top-tier school).

Casidy and Wymer (2015) created a theoretical model that explained prestige among higher education institutions: Those that can place graduates in attractive careers may experience increases in prestige, which leads to increases in applications, which leads to increases in admissions selectivity, “which leads to more rigorous education, which leads to more successful graduates, which leads to better outcomes” (130). The authors found a relationship between brand strength (*i.e.*, brand familiarity, brand remarkability, and brand attitude),

loyalty, satisfaction, and word of mouth behaviors in a sample of university undergraduates. Their results suggest that increasing student (and public) familiarity with an institution, increasing perceived remarkability of the institution, and increasing attitude (or satisfaction and sense of inclusion) can increase positive word of mouth behaviors and increase the institution’s brand strength.

Aligning these factors within ecological systems theory, the ways in which cost and debt factors impact students at various levels within a holistic system can be tracked. The following list provides a sample of how consumer choice theory may be spread across ecological systems theory to better understand the ways in which finances and consumerism influence college enrollment decisions.

- **Microsystem:** Students believe college is or is not a worthy risk.

- **Mesosystem:** The school gives students scholarships; the school has high prestige.
- **Exosystem:** Parents can afford to pay for college; government funding is available.
- **Macrosystem:** American views of debt and consumer culture are positive.
- **Chronosystem:** From 1940 to 1980, college was affordable in relation to wages; after 1980, tuition outpaced inflation, and the affordability of college changed.

Exploratory Studies

An overwhelming number of studies examine enrollment, persistence, and graduation. This section focuses on a few exploratory studies of student motivation to attend college. First is the widely cited work by Cote and Levine (1997), which identified types of motivations to attend college, including career (money, good job, status), personal (growth and learning), humanitarian (help people), expectation driven (family pressure), and “default” (lack of alternatives) reasons. Phinney, Dennis, and Osorio (2006) expanded on Cote and Levine’s (1997) work, utilizing focus groups derived from a sample of 713 ethnically diverse students to create a broader conceptualization of motivations to attend college. The authors identified three additional motivations: helping family financially, encouragement from family, and proving oneself. With few exceptions, motivations to attend college were similar across race/ethnicity. Overall, students were motivated most by helping their families, next by their career/personal (combined) goals, then by humanitarian goals, family encouragement, proving their worth, family expectations, and, last, by default.

Baloo, Pauli, and Worrell (2017) utilized a sample of 258 undergraduate students and found that “improving career prospects was seen as the most important reason [to attend college], followed by enhancing quality of life and personal development” (1380).

Lakkaraju, Tech, and Deng (2018) reviewed decision-making factors identified in the literature and reported that they could be categorized by price, program, future employment, institutional image, and environment.

Price included factors like cost of attendance, funding awards, and relative cost of living. Program included factors like delivery modes (online versus face to face) and distance, part-time availability, and flexibility of class schedules. Future employment included factors like career goals, course content, future jobs, future earnings, and on-campus employment options. Institutional image consisted of factors like reputation, teaching quality, faculty expertise, research quality, and program quality. Finally, environment included factors like technology, facilities, and student life.

Within ecological systems theory, the findings of this literature can also be organized. As noted, studies that address student enrollment from a human capital perspective tend to address factors in all systems within ecological systems theory. Studies that address student enrollment as a desire to help family (because of family expectations) or because of family encouragement reflect *microsystem* factors. Studies that address student enrollment as a function of institutional price or prestige (which reflects consumer choice theory, among other theories) reflect *exosystem* factors. Finally, studies that address student enrollment relating to goals that are irrespective of price or labor market outcomes reflect *macrosystems*. However, in many cases, the specific functioning of each of the factors transcends the systems as information is filtered from broader society into individual households.

The only system that appears to be largely unaddressed by the existing literature is the *chronosystem*, which accounts for environment and time. By considering generational differences as one main aspect of the chronosystem, researchers may be able to better predict new and continuing enrollments of undergraduate and graduate students.

Chronosystem: Generational Differences

Consider the various generations of students that have moved through higher education rather than the fact that students of a similar age typically attend college. Most studies cover a period of time, such as the 1960s to the 1980s or the 1990s through the early 2000s. The

problem with such timeframes is that they represent points in time when the “college-age” populations were facing different challenges and new opportunities. For this reason, it is difficult to believe that the factors that predicted historical college enrollments will also predict future college enrollments.

The idea of generations stems from generational cohort theory, which suggests that people who grew up at similar times in history are similar in their core beliefs and values given the specific set of social, cultural, political, and economic factors during their coming-of-age years (*i.e.*, 17 to 23 years of age). For example, the Millennial generation was likely in its middle or high school classrooms during the 9/11 attacks; this experience (and others) shaped its views of the world and of higher education. Generations are segmented at the individual level based on personal identities; for this reason, intra-generational consistency needs to be considered.

Nevertheless, it is useful to consider the broad characteristics that comprise each generation and its interest in enrolling in higher education. As Williams, Page, Petrosky, and Hernandez (2010) explained, “Multi-generational marketing is based on two founding principles: (1) the product needs to change with life stages and (2) promotional messages and products targeting these generational groups or cohorts can reflect their generational values which in turn can drive their consumption behavior” (21).

Intra-Group Characteristics of Generations

The eldest of contemporary U.S. college students are primarily Baby Boomers (individuals born between 1945 and 1965):

[the] children of WWII veterans...infused with postwar optimism....Their parents wanted them to have the best as they grew up during the prosperous '50s and '60s. They were heavily influenced by the Kennedy assassination, civil rights movement, Vietnam War, Nixon, protests, hippies, recreational drugs, Woodstock, sexual revolution, birth control, women's lib, TV, space exploration, energy crisis, rapid growth of divorce, Cold War, rock 'n' roll, the Beatles,

and the first computers. As young adults, they appointed themselves as arbiters of the nation's values....The Boomers valued individualization [and] self-expression... They have defined themselves by their careers and many are workaholics. Their work is seen as a form of self-fulfillment, status, and proving themselves, i.e. job titles matter... They are anticipated to work longer than previous generations. While some have retired, many plan to continue working and expand into “active retirement.” They want to learn new skills and set new goals, i.e. re-engineer life. They want to work for pay and volunteer... one in four people over 50 does not believe they will be financially secure when they get older (Williams, et al. 2010, 26–27).

Considering the description of this generation, institutions might recruit Baby Boomers to return to higher education by appealing to their desire for financial management in retirement/investing, legacy planning, and political change. As Table 1 (on page 16) shows, approximately 66 million baby boomers are in the United States; many are at or fast approaching retirement age.

Next is Generation X, which includes individuals born between 1966 and the early to mid 1970s. This group is called “the ‘fear generation,’ as their coming-of-age period was marked by the threat of nuclear war, the economic crisis, and the specter of unemployment” (Chaney, Touzani and Sliman 2017, 183). According to Williams *et al.* (2010),

Generation X reached adulthood during difficult economic times. They were raised in dual-career households. They experienced the high divorce rate of their parents...These latch-key children grew up quickly...[and] took greater responsibility for raising themselves and tended to be less traditional than any other generation. They entered the job market in the wake of the Boomers and were hit hard by downsizing as the economy plunged into recession. Many watched their parents suffer devastating job losses and became wary about their own future. They were the first generation to seriously confront the possibility of reduced expectations. Many wage and job opportunities for young workers were limited until the economic boom of mid-1990s... They are more entrepreneurial and less prone to

devote their lives to large public corporations. They will not rely on institutions for long-term security. They want leadership roles if possible and do not like to feel they are being controlled. In fact, they are more likely to be self-employed professionals, e.g., they start about 70 percent of the new businesses... (28–29).

For Generation X, there is ample time remaining for retraining and promotion in the labor market, but in general, this group is skeptical and unlikely to enroll in higher education if it does not seem like a guaranteed path to a higher paying or more prestigious position.

Millennials, born between 1980 and 1995, are most characterized by early exposure to technology: “[t]his feature also helped to forge their vision of the world, a vision where they feel comfortable about questioning established authority and...traditional hierarchical structure.... They...share and spread their opinions about brands and companies and expect to have personal, equal-to-equal exchanges with them” (Chaney, Touzani and Sliman 2017, 182). According to Williams *et al.* (2010),

They grew up in a time of immense and fast-paced change including virtually full-employment opportunities for women, dual-income households as the standard, wide array of family types seen as normal, significant respect for ethnic and cultural diversity, and computers in the home and schools. They grew up in a time when the fabric of society seemed to be unraveling. That is, they grew up with divorce as the norm, AIDS, visible homelessness, drug abuse, gang violence, economic uncertainty, and genetic engineering.... Clinton-Lewinsky scandal, Columbine shootings...Islamic radicalism, Iraq, Gulf War on TV, and corporate greed. They were born into a technological, electronic, and wireless society, e.g., the Internet, Google, eBay, cell phones, PDAs, GPS, etc. As a result, global boundaries are becoming more transparent via travel, migration, and the Internet (29–30).

Appealing to this group by incorporating technology into the learning process may be key. Offering clear-cut and fast pathways through the system may also appeal.

The youngest generation currently enrolled in higher education is of traditional college age; Genera-

tion Z’s members were born between 1995 and the present day. Generation Z are the “most educated, mobile, and connected consumers to date (Babin and Harris 2016)” (Chaney, Touzani and Sliman 2017, 182). Generation Z members are also “socially conscious, tech-savvy, particularly innovative, and permanently looking for change” (Chaney, Touzani and Sliman 2017, 182). According to Williams *et al.* (2010), this group was influenced by issues such as

...global terrorism, the aftermath of 9/11, school violence, economic uncertainty, recession, and the mortgage crisis. Parents marry later and are less likely to get divorced... They continue to experience the spread of “tweendom” including commercial exploitation of young girls...initiation into shop-until-you-drop mini-citizens, and premature sexualization.... They have returned to old-school values such as respect, trust, and restraint. They are planned, structured, and self-controlled children. They save the cash they receive for Christmas and birthdays. These individuals are more conforming, less likely to take risks and engage in violence. They are a little more aware of consequences. They are more responsible and increasingly internalize their behavior rather than expecting someone else to look out for them. Many Gen Zs embrace traditional beliefs and value the family unit... Peer acceptance is very important to Generation Z. The key trait is the need to belong. Their self-concept is partially determined by the group to which the tween belongs. They value fitting in... (31–32).

Considering the characteristics of Generation Z, future students will likely continue to desire the college experience but will have increased expectations for practicality (other reports have revealed Generation Z’s hesitancy to take on debt). Generation Z may be the most sensitive of all prior generations to the risk/return on investment offered by higher education.

Table 2 (on page 26), based on Williams *et al.* (2010), has been updated with current Census counts and age values to show the relative size of each generational cohort. Note the difference in size between the Baby Boom generation (66 million) and the Depression-era generation (just 19 million). The smaller

TABLE 2 ► Generational Cohorts in the United States

Generation	Date of Birth	Years of "College Age"	Current Age (In Years)	Number of U.S. Persons (2016) ^a
Depression	1930–1945	1948–1963	74–89	19 million
Baby Boom	1946–1964	1964–1982	55–73	66 million
Generation X	1965–1976	1983–1994	43–54	43 million
Generation Y	1977–1994	1995–2012	25–42	83 million
Generation Z	After 1994	2013–present	< 25	104 million

^a U.S. Census Bureau 2016**TABLE 3 ► Educational Attainment in the United States, by Generation**

Generation	Age (in 2020)	High School or Less (%)	Some College (%)	Bachelor's (%)	Master's or Higher (%)
Depression	74–89	54	22	15	10
Baby Boomer	55–73	41	27	19	13
Generation X	43–54	38	26	22	14
Generation Y	25–42	34	28	25	13
Generation Z	Younger than 25	45	43	11	1

Source: U.S. Census Bureau 2017c

Generation X group (43 million) is expected, but the Millennial generation spans seventeen years, resulting in the appearance of a larger group (83 million). As the children of the Baby Boomers, Millennials are a large group. Generation Z follows the same pattern of appearing large (104 million persons), but it currently covers a 25-year span; where the next generation “cut” will occur will be unclear for some time. Whatever the cut point of Generation Z, population size, as noted earlier (see Figure 2, on page 15), is projected to increase for younger persons, including Generation Z and persons born post 2020.

Rather than limiting itself to a traditional focus on the needs of the 18- to 24-year old market segment, the “product” of higher education needs to be tailored to the current and upcoming states of each generation in order to maximize the supply of students. For example, even if the current employment of an individual is ignored, current educational attainment could be con-

sidered given the expectation that further education leads to ever-better job opportunities. Consider Table 3: Depending on the particular institution’s academic offerings, each generation may become a target demographic. Of course, current higher education institutions are designed primarily for “traditional” students (between eighteen and 24 years of age). But because institutional missions are based largely on public demand and market, there is potential for some institutions to increase their enrollments by serving Generation X or Baby Boomers.

Note: The total populations in Tables 2 and 3 differ due to sources used and division of age groups into generations. The Generation Z estimate is distorted because the N in Table 1 (on page 16) includes ages 25 and younger whereas the N in Table 2 (on page 26) includes ages eighteen to 25. The tables are meant to provide a sense of the distributions among the various generations rather than precise metrics.

Notably, more students are available to higher education in the 21st century than ever were before, especially considering the opportunity to enroll older market segments such as Baby Boomers. However, students in all generations are weary of higher education, as are the government agencies that increase performance-based funding and accountability for graduation and employment rates for individual degree programs, including liberal arts programs. Almost 20 years ago, Alexander (2000) wrote, “During the last decade dramatic changes have emerged in the way governments interact with colleges and universities. Government authorities are no longer as receptive to the traditional self-regulatory processes that have dominated university development for centuries” (411). In fact, numerous studies of states’ heightened accountability efforts are being conducted; the Alexander article has more than 600 citations (see, for example, Ellis 2016; Hillman, Tandberg and Fryar 2015; Jones 2016). Another study predicted complete elimination of all state funding for higher education by 2059 (Mortensen 2012).

High college costs, high national student loan debt, and a lack of certainty about employment opportunities upon graduation may result in fewer enrollments by Generation Z than by Millennials or Generation X students, who perhaps were more willing to trust higher education as a path to a good job (or were less informed about its cost and benefits). Despite a shortage of college-educated workers nationally, higher education is still seen by some students as a risk not worth taking, especially in light of the other ways they can acquire knowledge in the 21st century (not to mention the entrepreneurial options that technology enables). Higher education still corners the market on granting credentials that certain professions require.

Conclusions

Researchers have focused on the ways in which human capital, cost, and other key factors impact enrollment. Ecological systems theory can help researchers holistically describe enrollment and identify appropriate approaches (*e.g.*, statistics, data mining, or qualitative) for mapping hundreds of predictive factors. In the current study, examining enrollment via the ecological systems

theory lens allowed for consideration of generational impacts on enrollment, such as widespread access to information on college outcomes via social media.

Of the 75 studies reviewed for this article, only four examined Generation Z whereas 21 examined Millennials and 28 Millennials or Generation X populations. The factors found to be predictive of enrollment in the 49 studies of Generation X and Millennial students reflect research that may not be generalizable to student populations of today and the future because these are not digital natives, and they attended college before social media were widespread. Moreover, these studies reflect different price points of college tuition in relation to inflation (or family income) during the years studied. The ways in which students are influenced by labor markets, college price, and other factors should be considered. Future enrollment projections research should account for generational differences.

Practitioners could organize the factors they use to predict enrollments within ecological systems theory to consider how comprehensive their models are in accounting holistically for predictive factors.

- **Microsystem:** student’s immediate social network
- **Mesosystem:** student’s extended social network
- **Exosystem:** societal support for attending higher education
- **Macrosystem:** cultural views of attending higher education
- **Chronosystem:** generational differences

Limitations and Future Research

In this article, data are presented by generational cohort even though they often were grouped by age categories that did not always align across sources with the generational definitions. The generational references and labels are meant to reflect an estimation and are not always perfectly aligned by age value.

Another limitation is that this article does not cover all enrollment projection theories but focuses primarily on theories involving human capital and labor market returns given an emphasis on institutions with employment-driven missions. Other investigations of

enrollment projection theories for institutions with civic missions may have high value as they utilize other phenomena not addressed here. Nonetheless, ecological systems theory should allow researchers to include virtually any variable and explain its relation to other variables in the model.

Future research also should address the impact of social media on prospective student knowledge of higher education and, thus, what it now means to attend college in the eyes of the college-age population. The literature on enrollment projections is extensive; while generational concepts appear to be lacking in the literature reviewed, it is possible that other literature on retention and other enrollment outcomes has addressed some aspects of generational characteristics.

Finally, it is important to note that many authors consider race/ethnicity in their studies of enrollment (Park and Hossler 2014). This article does not recommend using race for strategic enrollment projections because it lacks a consistent definition, is based on single point in time, lacks context, and cannot be used as a predictor variable because “[u]sing race as a causal variable is to ask ‘what would your life have been like had your race been different.’ Since race cannot be manipulated, it cannot be a causal variable” (Holland 2008). James (2008) recommends that:

- * “[T]he use of race as a ‘demographic, control’ variable must be contested.”
- * “The a theoretical use of race as a demographic ‘background’ variable is misleading and promotes an essentialized understanding of race by hiding the social underpinnings of presumed racial differences.”

- * “When racial differences are found in a model of social behaviors, or attitudes...it is incumbent upon the researcher to interrogate possible sources for this difference. Instead of merely ‘controlling’ for the difference of the aberrant ‘others,’ racial differences should be assessed and grounded in the set of historical and social circumstances that give meaning to the race concept. To do otherwise is to suggest that differences are rooted in the characteristics or ‘nature’ of the groups themselves.”
- * “[T]he most important step toward incorporating a more grounded conceptualization of race in social research is to adequately theorize race as a social and a historical fact in our thinking about racial effects” (44–45).

While considering the projected racial attributes of the U.S. population over the next 50 years is not the focus of this article, it is past time to change the focus to factors with strong underlying theories, such as generation and socioeconomic status. Race categories were created in the 17th century as a means of explaining the superiority of whites, and it is a stretch to presume that using the same categories today will help improve systematic racism. (See Zuberi and Bonilla-Silva (2008) for more information about the appropriate use of race categories in social science research.)

In their theories and models for predicting enrollments, researchers should consider factors such as institutional legacies of racism and the climate of inclusion for persons of non-dominant cultural groups (dominant groups being white, male, straight, middle class, and Christian).

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Appendix

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