High Hopes, Low Odds: Factors Impacting the Higher Education Considerations of Disadvantaged Students

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Abstract

The primary purpose of this study was to explore the factors that influence disadvantaged secondary students' higher education considerations. A secondary purpose was to investigate if the reported importance of these factors differed significantly on the basis of race, gender, high school performance, socio-economic status, or first-generation status. This study attempts to increase the collective understanding of student choice by approaching the matter through a lens of access and equity, keeping in mind how disadvantaged students have historically been distributed across institutional sectors in the highly diverse and competitive American system.

Student participants were recruited from within Upward Bound programs associated with public universities throughout a single state located in the Western United States. Upward Bound, one of eight federally-funded TRIO programs, is a pre-collegiate bridge program that seeks to increase higher education attainment amongst students from disadvantaged backgrounds. As per program regulations, disadvantaged students are defined as those from low-income backgrounds and/or households where neither parent/guardian has earned a bachelor's degree.

Through a newly constructed electronic questionnaire, participants provided demographic information and rated the importance of 25 influential items. Exploratory factor analysis revealed five central factors that impact disadvantaged participants' considerations: Social Factors, Familial Factors, Flexibility Factors, Future Impact Factors, and Reputational Factors. These findings indicate that the sample conceptualizes higher education influences much differently than anticipated, deviating from both empirical and expert conceptualizations. Statistically significant differences in the importance of these factors existed between the demographic groups, indicating that the groups value these factors differently.

Acknowledgements

This dissertation is dedicated to every first-generation, low-income student who has ever felt like they did not belong within higher education, including my family, my friends, and, most importantly, my students. This world is every bit as much yours.

This study – much like my entire education thus far – would not have been possible without the love and support of my family and my very best friend, Neil, who has crossed oceans more times than I can count only to support me. I hope I have made all of you proud.

Finally, to my undergraduate institution, Weber State University: I will spend the rest of my life attempting to pay forward everything you have given me and the rest of my career trying to shape higher education in your image. From the very bottom of my heart – thank you.

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Chapter 1: Introduction

First coined by educational reformer Horace Mann in 1848, education has long been touted as "the great equalizer" in American society (as cited in Education and Social Inequity, n.d.) and, as such, higher education (HE) has been featured as a recurring priority from both state and national governments. Largely perceived as the most reliable vehicle for upward social mobility (Jones, 2016), HE promises increased lifetime earnings, wider career prospects, improved status opportunities, and other personal benefits (Sanyal and Johnstone, 2011). The associated public corollaries, however – including increased civic engagement, decreased dependence on public income support, and economic stimulation through increased tax revenue (Holmes and Mayhew, 2016; Baum, 2007; Finney and Kelly, 2004) – make higher education a matter of both personal and public concern.

Despite favorable public perception and the apparent benefits of higher education completion, overall US post-secondary enrollments have now decreased for the seventh consecutive year (National Student Clearinghouse Research Center 2019). As a result, educational stakeholders have pursued reinvigorated investigations into the student choice process – an area of research that emerged following the second World War, when HE experienced a rapid expansion on the global scale. However, operating under the notion of education as the utmost equalizer in the face of continued social and racial stratification, more research concerning student choice needs to widen its lens to include issues of access and equity. After all, while overall enrollments are suffering now, disadvantaged students (e.g. low-income and first-generation students) have long been amongst the most under-represented groups within HE (U.S. Department of Education, 2014b, 2018c).

Escalating tuition rates have widely been credited for enrollment declines. This seems obvious given the average US tuition has steadily increased every year since the turn of the century (U.S. Department of Education, 2018a) and multiple studies have revealed worsening American concerns over the ability to finance higher education

(Fridley & Sharpe, 2016; Schultz, 2013). However, while this financially-centered view remains pervasive – largely supported by early econometric models that framed students' HE choices as constrained chiefly by institutional and financial factors (Gambetta, 1996; Roberts,1984; Ryrie, 1981) – a growing body of research surrounding student choice has revealed many non-financial factors as important influences on student choice.

This more complex understanding of student choice is paralleled by an increasingly complex American system – what Guri-Rosenblit (2007) calls "the most pluralistic and diverse" higher education system in the world (p. 378). While this diversity ensures wider institutional options (Maringe, 2006), there exists the challenge of navigating a rather complicated and potentially overwhelming system – one comprised of for-profit vs. not-for-profit, public vs. private, and vocational vs. two-year vs. four-year institutions – each of which has its own admission, completion, and financing requirements. Furthermore, the positional competition that typifies modern higher education means places at different institutions are accompanied by differing social value (Marginson, 2016). In this sense, the choice of *which institution* to enroll in becomes a decision every bit important as whether to enroll at all.

Increased efforts to research the HE choices of students underneath the lens of access and equity have contributed to a shared view of this process as calculated, complex, and multifactorial. However, studies often yield differing results, suggesting student choice could be a phenomenon both demographic and context-specific. In a society that so widely promotes education as the best social equalizer, it remains necessary to further investigate this matter as it relates to those who have historically had the least access to higher education and the resources to pursue it successfully.

1.1 Purpose of the Study

The purpose of this study is to contribute to the existing literature surrounding student choice, using access and equity as a lens to further investigate the factors that impact the considerations of disadvantaged students. The study accomplishes this by

outlining and exploring a wider set of impactful personal characteristics and potential external influences than included in many prevailing models, watching for variation that aligns with participant demographics. Factor analysis is then performed it identify impactful factors on students' HE considerations.

1.2 Research Questions

I. What factors emerge as impactful to disadvantaged students' higher education considerations?

II. Can differences in the importance of these factors be observed on the basis of race, gender, socio-economic status, or first-generation status?

1.3 Limitations of the Study

Originally, this study was designed to explore the considerations of students preparing to make higher education decisions. It was intended to assess public high school students in their penultimate and ultimate years of secondary education, when higher education decisions are a very salient concern. This design also permitted the study access to thousands of participants across the state, allowing for the potential of findings to be generalizable. However, after initial agreement at the school district level, irreconcilable scheduling issues and student commitments pushed the study dates back multiple times, eventually making the study impossible to pursue before students were released for the summer. By that point, however, the scale construction and expert review process were already well underway, leaving no time to change the design of the study, gain a new sample, or gain ethical approval with the given deadline.

Instead, the study retained its purpose, but the recruitment efforts were changed to only include disadvantaged high school students. This change in recruitment occurred very late but was made possible through established contacts within the Upward Bound program. Because Upward Bound participants comprise such a small and niche population (low-income and/or first-generation but already determined to enroll in higher education), the scope and findings of this study were limited from the beginning. That is, the study could in no way be structured to be representative. Additionally, due to the

small sample and homogeneous sample, factor analysis proved not to be the most appropriate procedure for this investigation, but time constraints did not allow for a new design, proposal, or sample. Despite these restrictions, the study passed basic sampling measures and continued; its main limitations are its lack of generalizability and the potential instability of its findings.

An additional qualitative component would have greatly increased the robustness of findings. Including disadvantaged students in the expert review process may have revealed additional or more relevant influences on student considerations. Similarly, focus groups following data analysis would have greatly assisted in understanding student responses and conceptualizations of how choices are influenced. However, given the timeline of the study and strict gatekeeping permissions, direct contact with minor students was not feasible.

It is important to note that this study measured students' higher education considerations, not their definitive choices. A follow-up study including only Upward Bound program graduates currently enrolled in higher education may uncover if these attitudes actually align with choices and if they change over time. While much research has been conducted with students already enrolled in higher education, few of these studies have been conducted through a lens of access and equity. A study of this nature would greatly improve collective understandings of disadvantaged students' higher education choices and the stability of factors that impact them.

1.4 Organization of the Study

The following Background Chapter provides context into which this study may be situated by the reader. The chapter begins with a brief historical overview of HE within the US, with particular focus given to the causes and trends of system diversification and its implications for students. Then, using the most recent national data, the current state of HE is briefly reviewed. Finally, system stratification is defined and explored within the context of modern HE for its impacts on student enrollments and considerations.

The Literature Review Chapter begins by synthesizing central conceptualizations and models of student choice – both historical and modern – and compares the limitations and advantages of those most prominent. The following sub-sections explore the personal characteristics that are included in these models and which are supported by educational, sociological, and psychological literature as impactful to students' development, attainment, and futures. Emphasis is given to the differences between historical models, which conceptualize choice as a linear process, and modern models, which conceptualize choice as a complex process that is sensitive to issues of access.

The Methodology Chapter first details the drafting and expert review processes used to construct the questionnaire. Expert reviewer suggestions and beliefs about student choice are then explored more deeply to substantiate the questionnaire and expose potential gaps in expert and student understandings of the HE choice process. Next, the statistical method of factor analysis is reviewed for its strengths and applicability to this study before outlining the steps taken and outputs measured through exploratory factor analysis of the questionnaire data. Lastly, the emergent factors are presented, as well as the statistical differences discovered between demographic groups.

In the Conclusion Chapter, the most important findings are explored, and the potential implications for the field of student choice research are presented. Suggestions for future access-oriented research are made to account for the gaps left by this study.

Chapter 2: Background

2.1 American Higher Education: A Brief History

The numerous HE systems that exist around the world today are a product of the global mass expansion of education that began in the 1960s, as the world moved through and beyond the difficult post-war era. This purposeful expansion was driven by increased democratization, scientization, focus on human rights, and development planning

(Schofer & Meyer, 2005, p. 900). Later on, the view of diversification as economically beneficial to individuals, systems, and regions followed (Teichler, 1988).

In the United States, these efforts compounded with a number of unique conditions and factors to produce the expansive and diversified HE system that exists today. Before investigating how students might choose from within this system, however, it is necessary to briefly review the factors chiefly recognized amongst the literature as contributing to this diversification, as they have had profound impacts on the current landscape of the American HE system and its student enrollments.

2.1.1 Legislation

In its beginning, the US mostly inherited the European model of higher education, but it did so in the "most flexible way" possible (Guri-Rosenblit, 2007, p. 383), adding new functions and measures without disregarding necessary commitments (Rothblatt, 1997). At the federal level, land-grant universities had been created in the 19th century to pursue government-directed research (Aldighrir, 2013), diversifying a system that, at that point, was comprised mostly of small yet elite colleges confined to the East Coast, many with religious affiliation. Acts of subsequent legislation impacted the funding and missions of these universities, entrenching state and federal governments even deeper in their workings (National Research Council, 1995). Facing the recurring possibilities of war, many institutions and programs emerged chiefly to support efforts of national defense and militarization but also opened the doors of HE to a wider audience.

Early in the 20th-century, state universities with increased networks and multiple campuses formed to serve entire states, spurred in part by the inability of the state to massively fund positions at research-intensive universities (Trow, 1974). By the age of expansion, individual states began creating educational "master plans" to pursue initiatives through purposeful creation and/or direction of higher education institutions (HEIs). The most famous, the California Master Plan, used a tripartite model and prescribed by law how many students could enter into certain institutions and which

could offer certain degrees. To this day, community colleges focus solely on vocational education up to 2-year degrees; the California State University system can only offer bachelors and masters degrees; and the University of California System can offer bachelors, masters, and doctoral degrees (California State Department of Education, 1960). Other states are far more lenient, but, through legislative amendment, master plans have been able to accomodate for population demands and labor market needs. Specifically, community colleges have been expanded and replicated to absorb the mass demand for higher education (Marginson, 2016), further diversifying the American system but eliciting profound enrollment effects between social groups.

2.1.2 Quasi-Market Conditions

Supported by a capitalist orientation, the US has maintained a mostly open market that, by nature, encourages competition between entities with limited government interference. According to Neave (2000), newer HEIs have been "explicitly and purposefully linked" to the competitive labor market (p. 11). In turn, labor market demands have helped to shape accelerated vocational routes and even entire specialist institutions to provide efficient, job-centered education. As such, the vocational sector has grown significantly as institutions and individuals respond to economic pressures of supply and demand. In effect, those who are most sensitive to economic fluctuations (i.e. low-income individuals) are typically most attracted to these educational options, contributing to sectoral enrollment disparities.

The sense of competition that typifies this market has also supported the growth of the commercial for-profit sector (Fairweather, 2010). For-profit institutions, which are owned and operated by private, profit-seeking businesses, are widely held in negative light because the end qualification (e.g. a certificate or degree) often comes at the cost of high debt. However, in the US market, institutions are able to independently set variable tuition rates, as well as craft unique qualification pathways and regulate admission[1].

1 Institutions operating on public funds or receiving tax benefits are subject to governmental regulation as per the stipulations of Title IV and related legislation.

According to Marginson (2016), these are necessary actions HEIs must undertake in order to establish identities and differentiate themselves in the opaque American system (p. 72). These actions also allow these institutions to attract – perhaps in a predatory manner – students whose qualifications (e.g. high school performance) or circumstances (e.g. the need to work full-time) may inhibit them from enrolling elsewhere.

In most countries, the state, either directly or indirectly, regulates new entrants into the HE system (Marginson, 2013). In the US, however, fewer restrictions have been put in place to regulate institution formation; even regional and national accreditation – a form of quality assurance that upholds between-institution standards and better facilitates student transfer – is undertaken by private agencies rather than state or federal governments (US Department of Education, 2019e). These accrediting agencies, however, by transcending differences in state-specific education requirements, have facilitated the integration of new institutions through the assurance of credit transferability – what Trow (1974, 2000) calls "academic currency." In this market, new institutions can freely form and, through fairly simple measures, align themselves with established institutions to attract students and gain legitimacy. However, as not all institutions are accredited, students may find themselves indebted and unable to transfer to a new institution. This is a major drawback of this open market approach.

2.1.3 Technology

Advents in technology –especially the Internet – have hugely diversified the range of available "learning experiences" over the past several decades (Grant & Villabos, 2008, p. 13). Initially, the impacts of these advances on higher education were likely limited at the course level, but, around the turn of the century, institutions began developing entire online platforms and distance education programs so as to cater to a more diverse student base.

Since then, new and strictly online HEIs have emerged to confront a host of barriers to higher education access. In particular, students without geographic proximity

to an HEI, students who may experience issues with course pacing (e.g. working students), and students with unique situational factors (e.g. students with disabilities) are better served by a more inclusive and diverse system (Selwyn, 2011). However, as many for-profit institutions operate through online platforms and gain enrollments because of these benefits, the risk of predation remains. Similarly, the risk remains for employers to not take a qualification earned from an online institution as seriously as one from an established, brick-and-mortar institution. These risks are especially salient to disadvantaged students, who are often pushed to seek non-traditional educational routes.

2.1.4 Other Factors

While these factors are widely recognized across the literature as contributing to the HE diversification of the US, by no means do they comprise an exhaustive list. Trends in globalization and trans-national education, constraints in government funding, population growth and variation, and widened access initiatives have been pointed to as other major contributors (Guri-Rosenblit, 2007). More broadly, social and economic theories have attempted to explain diversification as a more purposeful process; functionalism, for example, emphasizes the desire to gain control over international relationships through diversification, and competition theories hold that systems diversify to parallel the increased importance of education (Schofer & Meyer, 2005). However, these factors do not demonstrate the same explicit impact on the educational considerations and choices of disadvantaged students as those listed.

Nevertheless, it is clear a wide and complex confluence of factors has helped to shape the American HE system, in spite of its young age, into one of the largest and most diverse in the world. Provided below is a summary of today's American HE system as a product of this diversification, followed by an overview of resulting enrollment trends.

2.2 American Higher Education: The Current Landscape at a Glance

After earning a 4-year high school diploma or an equivalent certificate, American secondary graduates wishing to enroll in HE choose from a highly diversified system – one comprised of vocational/technical schools, community colleges, colleges, and universities. This institutional variation is mirrored by an array of available qualifications, ranging from traditional academic degrees (i.e. associate's and bachelor's degrees) to a wide range of certifications and vocational licenses.

While individual qualifications are distinguished mostly by years for completion, the variation among HEIs – what is referred to across the literature as sectoral differentiation, between-institution diversity, or, most commonly, horizontal stratification – is explained by differing key institutional characteristics. These characteristics include size, mission (i.e. research vs. liberal arts), source of control (i.e. public vs. private), source of funding, student clientele (i.e. traditional undergraduates vs. graduates), and degree-awarding capabilities (Fairweather, 2000, p. 82). At the time of the latest report issued by the National Center for Education Statistics (U.S. Department of Education, 2017), 7,021 HEIs were currently operating in the US (See Table 1 for breakdown of

Table 1. Number of educational institutions by control and type: years 2005 through 2016.

	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Postsecondary Title IV institutions	**6,463**	**6,536**	**6,551**	**6,632**	**6,742**	**7,021**	**7,234**	**7,253**	**7,236**	**7,151**	**7,021**
Public	2,013	2,009	2,004	1,997	1,989	2,015	2,011	1,981	1,980	1,964	1,965
Private	4,450	4,527	4,547	4,635	4,753	5,006	5,223	5,272	5,256	5,187	5,056
Nonprofit	1,866	1,848	1,815	1,809	1,809	1,812	1,830	1,820	1,834	1,827	1,859
For-profit	2,584	2,679	2,732	2,826	2,944	3,194	3,393	3,452	3,422	3,360	3,197
Title IV non-degree-granting institutions	2,187	2,222	2,199	2,223	2,247	2,422	2,528	2,527	2,512	2,524	2,438
Public	320	321	319	321	317	359	362	358	355	343	345
Private	1,867	1,901	1,880	1,902	1,930	2,063	2,166	2,169	2,157	2,181	2,093
Nonprofit	219	208	191	180	185	182	177	168	159	155	158
For-profit	1,648	1,693	1,689	1,722	1,745	1,881	1,989	2,001	1,998	2,026	1,935
Title IV degree-granting institutions	4,276	4,314	4,352	4,409	4,495	4,599	4,706	4,726	4,724	4,627	4,583
2-year colleges	1,694	1,685	1,677	1,690	1,721	1,729	1,738	1,700	1,685	1,616	1,579
Public	1,053	1,045	1,032	1,024	1,000	978	967	934	934	920	910
Private	641	640	645	666	721	751	771	766	751	696	669
Nonprofit	113	107	92	92	85	87	100	97	88	88	107
For-profit	528	533	553	574	636	664	671	669	663	608	562
4-year colleges	2,582	2,629	2,675	2,719	2,774	2,870	2,968	3,026	3,039	3,011	3,004
Public	640	643	653	652	672	678	682	689	691	701	710
Private	1,942	1,986	2,022	2,067	2,102	2,192	2,286	2,337	2,348	2,310	2,294
Nonprofit	1,534	1,533	1,532	1,537	1,539	1,543	1,553	1,555	1,587	1,584	1,594
For-profit	408	453	490	530	563	649	733	782	761	726	700

institutions by type). However, considering 1) this data only includes Title IV[2] institutions and 2) the lapse since the last institutional census, students may currently choose from an even larger market.

This horizontal stratification has had a clear impact on students' tendencies to choose between types of HEIs. Much of the recent research surrounding HE access and equity has been guided two landmark studies conducted by the National Center for Education Statistics (NCES): the Educational Longitudinal Study of 2002 (ELS:2002) and the High School Longitudinal Study of 2009 (HSLS:2009). Improving upon longitudinal studies conducted in the 1970s, these two studies have followed thousands of students from high school into postsecondary education, with the unique mission of identifying patterns of access and persistence (U.S. Department of Education, 2014b).

Still ongoing, the HSLS: 2009 continues to receive published updates and findings reports, the latest of which came in January 2019. On top of using school data and assessments to ascertain student benchmarks, this study has surveyed students, teachers, counselors, and administrators to learn more about student and familial expectations, decision-making patterns, and cost knowledge of HE. Broadly, the findings of these studies have identified differences based on gender, race, socioeconomic status, and first-generation status (U.S. Department of Education, 2018b). Throughout this piece, the findings of these updates and reports are contextualized and explored more thoroughly. However, it is important to first give due attention to the impacts of stratification to better understand student choice patterns.

2.3 Stratification and Its Impacts on Enrollment

The horizontal stratification that has occurred among American HEIs, in and of itself, is not so problematic; a wider range of institutions better aligns with the desires and

[2] Title IV of the US Higher Education Act of 1965 mandates institutions receiving any federal financial aid funds must transparently publish financial information and comply with set governmental regulations. Title IV institutions 1) process federal aid and 2) are subject to accreditation measures (US Department of Education, 2019e).

ambitions of a large, diverse population, whose demand for higher education has markedly increased over the past several decades. Institutional growth and competition is seen as a sign of healthy economic activity, especially as government funding becomes more sparse. In this sense, the system has done exactly what it was designed to do, and the emergence of sectors – groups of HEIs divided on the basis of similar institutional characteristics – has even been argued as beneficial (see Clark, 1983). Today, the notion of horizontal stratification has been embraced through systems such as the Carnegie Classification, a framework which recognizes, describes, and provides statistics concerning the diversity and differentiation of American HEIs (The Carnegie Classification of Institutions of Higher Education, 2019).

However, as the demand for higher education has increased, the positional competition surrounding qualifications has intensified. Hirsch (1976) defines positional competition as that which is "for a higher place within some explicit or implicit hierarchy and that thereby yields gains for some only by the dint of losses for others" (p. 52). Originally, this positional competition existed primarily between those who completed HE qualifications and those who did not; in the transition to mass and later to universal enrollment, positional competition manifested in a very explicit hierarchy amongst HEIs – what Cantwell, Marginson, and Smolentseva (2018) refer to as vertical stratification. In a vertically stratified system, positions at some institutions come with much more value than positions at others. This value comes in the form of career and income prospects, esteem, and resources – referred to simply as social capital.

A specialized body of literature has developed that explores positional competition within higher education, using its own vernacular to describe the process of vertical stratification. Cantwell et al. (2018) use the terms "artisanal" and "demand-absorbing" institutions; Marginson (2016) delineates between "status-seeking" and "student-seeking" institutions; and Moodie (2008) outlines four distinct HEI sectors: world research universities, selecting universities, recruiting universities, and vocational institutes. Despite the language used, the purpose is the same – to differentiate institutions with high positional value from those with low positional value. Researchers

recognize that, as the demand for HE grows, the proportion of low-value and high-value places advance relative to one another (Cantwell et. al, 2018; Marginson, 2016), meaning every high-value enrollment is accompanied by many, many more lower-value enrollments. This has obvious repercussions for visions of increased access and equity.

In the US, the places with the highest value are limited to the Ivy-League and flagship public universities; those with the lowest value are centralized within community colleges and vocational schools – the HEIs that have been most purposefully expanded to absorb the increased demand for HE. It is crucial, then, to recognize that broader inclusion does not inherently yield increased equity given the consequences of positional competition. As Marginson (2016) notes, the probability of obtaining elite qualification is actually reduced as access widens (p. 82), undermining claims of increased equity through broadened inclusion.

It becomes redundant, then, to only investigate the rates at which disadvantaged students enroll in HE without investigating the ways they distribute themselves across institutions. The ELS:2002 and HSLS:2009 revealed sectoral enrollments to vary widely on the basis of student demographics, and many researchers have independently corroborated these findings. All together, these findings suggest that not only are those who would benefit most from the increased social capital of HE earning qualifications at the lowest rates, but they are also earning the qualifications with the lowest social capital returns.

Sectoral enrollment differences are problematized through the positional competition that typifies the horizontally and vertically stratified American HE system. Though antithetical to missions of access and equity, these forms of stratification are often seen as too socially ingrained to overturn; in some instances, they are even seen as beneficial. As such, investigating the factors that influence the HE considerations of disadvantaged students becomes especially important if education is to continuously be touted as “the great equalizer.”

Chapter 3: Literature Review

3.1 Models of Student Choice: Historical and Modern Conceptualizations

Historically, student choice was conceptualized and researched through three perspectives: economic, psychological, and sociological. According to Paulsen (1990), the economic perspective widely held student choice as an investment decision, focusing almost exclusively on financial matters as choice determinants; the psychological perspective prescribed importance to the real and student-perceived climates of higher education, recognizing the importance of institutional factors; and the sociological perspective treated student choice as a status attainment decision, placing emphasis on influential personal characteristics and the social mechanisms behind educational attainment.

While econometric models of enrollment dominated thought throughout the 1960s, sociologically-centered student choice research gained momentum in the following decades, when the emphasis for many institutions shifted from selection to recruitment (Chapman, 1981, p. 491). By the 1980s, however, comprehensive choice models emerged and took center stage, integrating research and combining conceptualizations from the three prevailing perspectives.

Of these comprehensive student choice models, perhaps none has been more influential than that proposed by D.W. Chapman. Building upon the comprehensive model of student choice outlined by Tierney et al. (1979), Chapman (1981) explained student choice as a longitudinal process largely dependent on the characteristics of students, families, and institutions. However, these choices, Chapman argued, were sensitive to a number of "external factors" that could be grouped into three distinct categories: (1) the influence of significant persons; (2) the fixed characteristics of an institution; and (3) the institution's own efforts to communicate with prospective students (p. 492). Chapman hypothesized these forces worked together to shape the higher educational choices of students. *Figure 1* illustrates this purported relationship.

Soon after, Litten (1982) expanded on Chapman's model to include more focus on the aspiration for higher education and the timing of the choice process. However, the importance of external factors and social identity on student choice is preserved through this conceptualization, creating few noticeable differences between the two models.

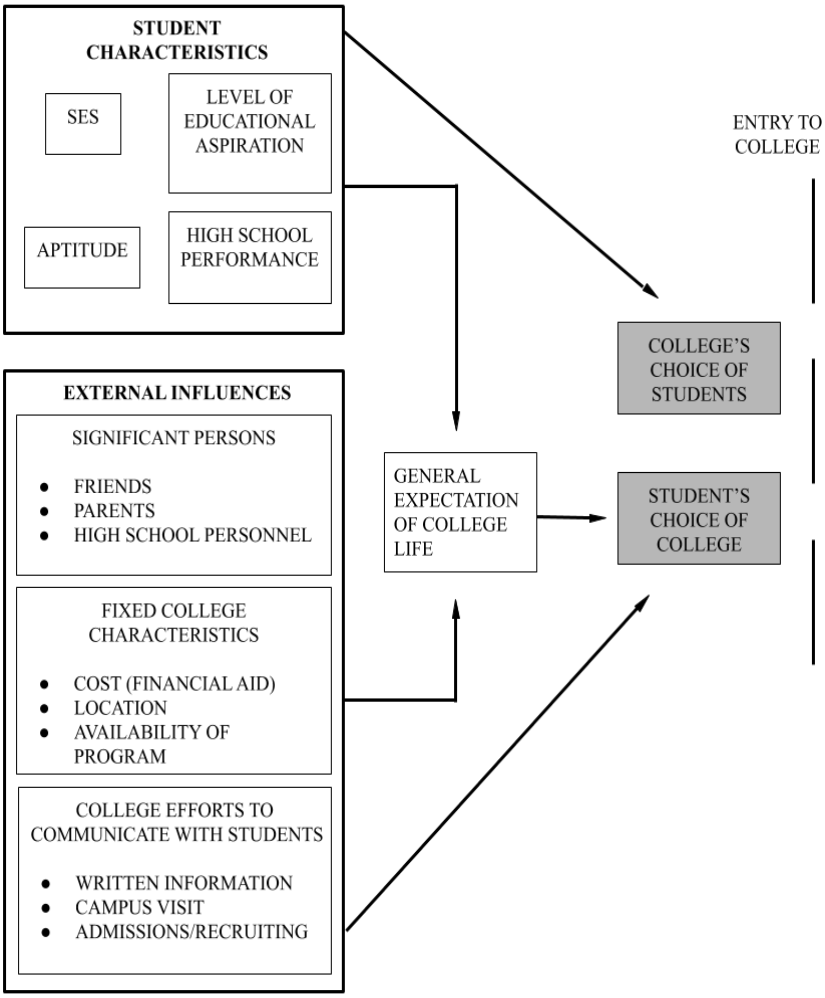


Figure 1. Chapman's model of influences on student college choice (Chapman, 1981, p. 492)

Hossler and Gallagher (1987) followed in developing their own three-stage model of student choice – one that remains widely popular amongst student choice researchers to this day. This model attempts to trace the student decision-making process through three distinct stages: predisposition, search, and choice. In the first stage, students form opinions and expectations of higher education and HEIs, which act to shape their eventual decisions. In this phase, students' views and aspirations are impacted by the opinions of significant persons and other external influences. Only in the second phase do students begin to more seriously seek out institutional information, using personally-identified sets of necessary characteristics in the third phase to make a definitive choice. This model, more so than any other, attempts to identify a clear

timeline that maps onto the choice process. As such, it is perhaps the most salient to the study, which aims to understand the considerations of students rather than their definitive choices.

From 1990 onward, there has existed a trend of researchers to be more critical of comprehensive approaches (Bergerson, 2009, p. 20). This follows patterns of system diversification and widened access initiatives that have resulted in much more heterogeneous student populations than existed previously. Research including traditionally underrepresented populations has revealed that previous models of student choice are often unable to accurately capture and predict these students' attitudes and behaviors. Thus, new conceptualizations have emerged that focus on students' unique identities and backgrounds as important influences on the choice process. In the face of continued social stratification, modern models are typically less recruitment-oriented than their predecessors, focusing on issues of access and equity.

For example, Cabrera and LaNasa (2000) expressly developed a model to describe the choice process and timeline for more students, building on Hossler and Gallagher's (1987) timeline model. This newer model outlines both the direct and indirect influences on student choice and attempts to uncover how these might influence one another (e.g. how parental involvement indirectly shapes aspiration, which then directly impacts attitude and choice). Bergerson (2009) praises Cabrera and LaNasa for exploring the "domino effect" that might occur between factors and which disrupts prior linear conceptualizations of student choice (p. 37). In sociological terms, this study gives more attention to the *intersectionality* of personal characteristics, taking into account students' overlapping identities and conditions, which, in turn, impact their HE considerations and choices. This model was developed through an extensive review of literature to more carefully speculate on these relationships, giving it an increased robustness when compared to older models.

Following Cabrera and Lanasa, (2000), Perna's (2006) model also aims to capture the complexity of the choice process, incorporating concepts from Bourdieu's (1977)

renowned sociological research. This model outlines four layers of influence, each of which is comprised of numerous factors that work in tandem to shape choices. The first level, individual habitus, is constructed by race/ethnicity, social class, parental education level, and aspects of social and cultural capital. The next level, school and community context, relies on school size, demographics, and community beliefs about education – all of which have particular impact on student aspirations. Similarly, the layer of higher education context takes into account institutional characteristics and attitudes. Finally, the social, policy, and economic context layer includes greater population demographics, labor market trends, and policies that may affect HE enrollment. Together, these layered influences, which act to help readers visualize the choice process, interact to shape students' decisions.

Even newer models of student choice have been proposed, yet, given their young age, they have not gained sufficient momentum. While early models seem far too oversimplified in the face of multi-faceted modern conceptualizations, they still offer strong groundings and accessible frameworks for stakeholders and perhaps even individuals to approach student choice. Still, there is an agreement within the HE field that linear conceptualizations are too simple and that comprehensive models are too constraining to accurately describe student behavior. Additionally, when tested in predictive capacities, most of these models perform poorly.

This study does not use any one conceptualization or model to approach disadvantaged students' HE considerations; instead, it combines tenants of those most successful to better facilitate this investigation through a lens of access and equity. Following Chapman (1981), influences are investigated both as personal characteristics and external influences. Taking from modern conceptualizations, however, the scope of these influences is significantly widened to better reflect the increased availability of educational options and social inequities. In the same vein, the path from consideration to choice is not treated as linear; due attention is given to the intersectionality of student characteristics and conditions. As this study focuses on students' considerations and not definitive choices, timeline-focused models (i.e. Hossler and Gallagher, 1987; Cabrera

and Lanasa, 2000) provide particularly relevant insight, especially considering the students included are spread throughout all secondary grades and may fall into different stages.

Below, relevant literature is consulted to better understand the social, economic, and psychological implications associated with the characteristics and conditions of disadvantaged students and their aspirations for HE.

3.2 Educational Aspiration

Because no education beyond the secondary level is legally required, virtually all modern conceptualizations of student choice include students' educational aspirations – the desires they express about the future which act to limit what they perceive as "realistic options" (Chapman, 1981, p. 493). Chapman's initial inclusion of educational aspiration followed Coleman's (1966) and Alexander and Cook's (1979) findings that college aspirations could have significant impact on actual attendance if developed early on – a finding that was replicated through subsequent studies. Later, aspiration proved key to Hossler and Gallagher's (1987) three-stage model, and has remained prevalent in choice models ever since.

Following these trends, early studies included aspiration as a central tenant and predictor of student choice (see Bateman, 1990; Hossler, Braxton, and Coopersmith, 1989). Subsequent findings, however, have since problematized understandings of aspiration as a flat phenomenon that is straightforwardly measurable. For example, Smith-Maddox (1999) found that parental education, involvement, and expectations could act as builders of educational aspiration – a key finding that has been corroborated in recent contexts by Davies, Qui, and Davies (2014) and Perna and Titus (2005).

Appadurai (2004) attempts to reframe common conceptions of aspiration through the use of the term "capacity to aspire" – an ability to aspire that is either encouraged or hindered over time by students' surroundings and circumstances (p. 34). Parental

involvement, for example, acts as a central builder of aspiration, widening students' archives of experience and improving their navigational capacities; lack of parental involvement, unsurprisingly, can have the opposite effect. However, the relationship between parental involvement and aspiration grows more complicated; Smith-Maddox (1999) and Bateman & Hossler (1996) independently found that these parental effects on aspiration differ between races, suggesting the influence of race and culture as a separate issue.

To make sense of these findings, many researchers reference Bourdieu's (1984) sociological research, which proposes that differing dispositions may exist as "markers of class" across different cultures and races, directly impacting students' aspirations; these claims have thus disrupted accepted presumptions of what constitutes "low" and "high" aspirations (i.e. non-attendance vs attendance). To this point, studies centered around educational aspirations have not always been successfully predictive across racial groups (Hossler, Schmit, & Vesper, 1999; Bateman & Hossler, 1996). For example, while African-American students have long expressed some of the highest educational aspirations (Sirin & Rogers-Sirin, 2005; Kao & Tienda, 1998), enrollment data has never mirrored this.

Aspiration takes on another layer when considering the effect of students' socioeconomic conditions. Prevailing notions of low-SES students as chronically underperforming or less valuable to HEIs than other students (see Sellar, 2013) are often subscribed to by disadvantaged students themselves, effectively resulting in self-marginalization through reduced capacity to aspire (Gale & Parker, 2015, p. 142). Additionally, low-SES students are less likely to come from households where either parent has earned any HE qualification (Conley, 2001), resulting in hindered archives of experience to reference and a decreased likelihood of "aspiration support" from parents (Pitre, 2002). In one of the most recent large-scale studies focused on student aspiration, Mazenod et al. (2019) found that, despite high aspirations, few students from disadvantaged backgrounds pursued higher education, limiting the value of aspiration as

a predictor of enrollment. Anders (2017) further identifies SES background as an especially salient feature in moderating aspirations over time.

Finally, prior educational attainment, as a mediator of college admittance, also acts as a key regulator of student aspirations (Anders, 2012; Chowdry et al., 2010). Students who exhibit higher levels of academic achievement are more likely to receive support from parents, teachers, and counselors (Hossler, Schmit, & Vesper,1999). Additionally, the common phenomenon of tracking, whereby students are grouped based on prior academic achievement (Organization for Economic Cooperation and Development, 2013), often dictates which courses students take. This, in turn, has an effect on aspiration and eventual choice (Pitre, Johnson, & Charrise., 2006; Venezia & Kirst, 2005). Despite the potentially negative effects of tracking on disadvantaged students (Francis, Connelly, Archer, Hodgen, Mazenod, Taylor, Tereshchenko, & Pepper, 2017; Parsons & Hallum, 2014; Oakes, 1985), it remains a common practice in secondary schools and has been linked to "tiering" of aspirations that match attainment group hierarchies (Mazenod, et al., 2019, p. 3).

For these reasons, educational aspiration remains difficult to objectively measure when compared to other, straightforward personal characteristics (Johnson, Halpin, & Halpin, 2001). Furthermore, despite the wide acceptance of aspiration as a valid predictor of enrollment, the proof remains tenuous. Although associations between aspiration and educational attainment have been demonstrated, Gorard, See, & Davies (2012), in one of the most extensive reviews of aspirational research, found no causal relationship between the two. Though the vast majority of secondary students express aspirations to enroll in higher education (Mazenod, et al., 2019; Berrington, Robers, & Tammes, 2016; Hartas, 2016), current enrollment statistics do not coincide with this data.

Gale and Parker (2015) offer a succinct yet particularly useful conceptualization of aspiration to use when approaching student choice through a lens of access and equity: "Aspirations are not simply an array of all futures from which people pick and choose according to individual taste, even though this is how it is represented in much policy and

practice" (p. 141). With this in mind, it proves necessary to further investigate the characteristics and conditions that have proven to impact HE aspirations and eventual choices.

3.2.1 Socioeconomic Status

Even before Chapman's model brought educational aspiration into focus for student choice researchers, the famous "Coleman Report" – a government-commissioned study that involved over 650,000 American students – found that SES showed significant effects on student achievement and aspirations evident as early as the first grade (Coleman et al., 1966). This sparked wide interest in the educational effects of SES, setting off a chain of studies that yielded comparable findings (see Brookover et al, 1967; Rehberg, 1967). Shortly after, Trent & Medsker (1969), Tillery, (1973), and Tillery & Kildegaard (1973), were amongst the first to directly investigate how SES might affect sectoral enrollments. These studies revealed students from higher-SES backgrounds were much more likely to enroll at 4-year colleges and universities than students from lower-SES backgrounds, and these findings were key to Chapman's (1981) interpretation of SES as a backdrop that "influences a series of other attitudes and behaviors that, in turn, are related to college choice" (p. 493). Referenced earlier, the nationally-representative 2002 and 2009 longitudinal studies conducted by the National Center for Education Statistics (U.S. Department of Education, 2014b, 2018b) uphold this claim in modern contexts.

However, there has been debate surrounding exactly what SES reflects – economic position or social class. According to Coleman (1988), SES strictly denotes access to resources in the form of physical, human, and social capital. These forms of access then widely affect lifetime personal exposure and further access (Saegert, Adler, Bullock, Cauce, Liu, & Wyche, 2007). While notions of prestige and status have been shown to impact internalized self-perceptions and psychological functioning (Fouad & Brown, 2000; Alder et al., 2000), these are more representative of social class than SES. For this reason, it may be beneficial to investigate SES and social class as separate

contributing characteristics, especially given that notions of prestige largely support institutions at the top of the vertically stratified American HE system. However, Goodman et al. (2001) found that the impacts of social class are less able to be captured through the objective measures that capture SES data, and so using this characteristic as a filter becomes more difficult in a quantitative setting.

In any sense, a wide range of negative impacts on *achievement* have also been consistently linked to low-SES. These include decreased cognitive development, poorer language and memory skills, and lowered socioemotional processing (Buckingham, Wheldall, & Beaman-Wheldall, 2013; Morgan, Farkas, Hillemeier, & Maczuga, 2009). Furthermore, under-sourced schools have been widely associated with lower academic progress and outcomes (Aikens & Barbarin, 2008), which means that even students from non-low-income households may experience these negative side-effects due to the overall income level of their school.

The negative impacts of SES on attainment may then compound to further depress the aspirations of students, whose institutional options are thus limited by their qualifications. The increased likelihood for low-SES students to have less access to informational resources about college (Brown, Wohn, & Ellison, 2016) helps to exacerbate the effects of this cycle. Combined, these conditions further increase the risk of non-enrollment for a group in an already disadvantaged position.

Despite this grim picture, the relationship between SES and higher education attainment has shifted throughout the past several decades; an array of factors, likely including widened access initiatives and increased social expectations to enroll in higher education, closed the immediate enrollment[3] disparity between low and high-SES students from 38.6% in 1977 to only 14% by 2015 (U.S. Department of Education, 2018a). However, it is necessary to reiterate that enrollment data alone can only

[3] Immediate enrollment refers to higher education enrollments made by the October following high school or equivalency completion. High school completers included anyone aged 16 - 24 who met this requirement (U.S. Department of Education, 2018).

tenuously support claims of increased educational equity; retention and completion data – the true keystones of such claims – have not yet materialized. Furthermore, the implications of sectoral enrollments made in a vertically stratified system remain quite clear.

3.2.2 High School Performance

Aside from impacting student choice through indirect influence on aspiration, high school performance, as indicated by achievement criteria HEIs screen for admittance (i.e. grade point average [GPA], standardized test scores, etc.), affects student choice in more explicit ways; students gauge performance against that of others to calculate their chance of admission (Chapman, 1981, p. 494). In turn, institutions do the same, widely promoting admissions criteria and acceptance rates as a way to establish an appropriate student market. Academic performance, then, widely affects the ways students can distribute themselves across the HE system (Teranishi, Allen, & Solarzono, 2004; Hurtado, Inkelas, Briggs, & Rhee, 1997).

This more explicit relationship between academic performance and student choice has resulted in relatively few exploratory and predictive studies between the two. Instead, government and educational agencies collect higher education *completion* data, sometimes isolating previous academic attainment as a variable. Most often, this is measured through mathematics performance, following patterns of classroom attainment grouping (also known as tracking) worldwide (Mazenod, 2019; Organization for Economic Cooperation and Development, 2013).

For example, Collegeboard (2016), in a longitudinal cohort study, found completion rates to vary widely on the basis of mathematics achievement and SES background. Among students who enrolled in college immediately following high school completion, 15% of students in the lowest math achievement and SES quartiles received a bachelor's degree within eight years; this was overshadowed by an 85% completion rate amongst students from the highest achievement and SES quartiles (Collegeboard,

2016). Given the manifest associations between SES and academic achievement, this correlation is not surprising but does demonstrate the importance of previous academic achievement in predicting post-secondary success.

Though limited, the studies that do pertain directly to academic performance and student choice paint a grim picture. Not only does achievement act a lens that explicitly widens or narrows students' ranges of HE choices, but higher-achieving students are more likely to aspire to HE in the first place (Gardner, Ritblatt, and Beatty, 2000; Hossler, Schmit, and Vesper, 1999). Additionally, these same students are more likely to have access to HE information (Hurtado, Inkelas, Briggs, & Rhee, 1997). Together, these contribute to the tendency for higher-achieving students to enroll more frequently and at more elite institutions (U.S. Department of Education, 2014b, 2018b; Hearn, 1991).

Though the relationship between academic performance and student choice seems obvious, the literature suggests that academic performance is closely linked with other important characteristics, giving it distinct purpose in HE choice studies.

3.2.3 Race and Ethnicity

Though not identified through Chapman's (1981) model, a wealth of educational and sociological research has identified inequitable outcomes on the basis of race and ethnicity. Of the roughly 16.8 million enrollments made in fall 2017, over half were made by white students (U.S. Department of Education, 2019b). Since 2010, when overall enrollments first began to decline in the US, white enrollments have been amongst those least affected[4] (U.S. Department of Education, 2019b), reflecting potentially different racial/ethnic sensitivities to social and economic conditions. Furthermore, as students of color are often overrepresented in lower-resource categories (Bergeson, 2009, p. 64), conflation has sometimes occurred between social class-oriented research and

[4] White and black enrollments both decreased at a rate of 19%, but white enrolled students still eclipse black enrolled students at a rate of roughly 4:1 (U.S. Department of Education, 2018b)

racially/ethnically-oriented research. This leaves the need for race and ethnicity to be explored more purposefully as influences on student choice.

While attainment gaps have long existed between races, stakeholders have historically approached the issue with a deficit approach. That is, attainment gaps were seen as a product of racial and ethnic minorities valuing education less than their majority counterparts. Solorzano (1992) was amongst the first to refute this claim; he investigated aspirational differences between black and white students and found that even though black students actually had *higher* aspirations on average, the aspiration-attainment gap was much greater for black students than for white students. Pitre (2006) found a similar pattern, supporting the claim that actual attainment amongst black students might be negatively affected by schools and by lack of HE information.

Conversely, Kao and Tienda (1998) identified black and Hispanic students as having lower and far more unstable aspirations than their white peers. Hamrick and Stage (2000) posit that differences in aspiration may be traced back to parental expectations, which they identified as particularly impactful for African American and Hispanic students. Similarly, Gutman and McLoyd (2000) note that parents' education level likely affects how involved they become in their children's educational choices; as white and Asian parents are typically more educated than either African American or Hispanic parents, observed gaps seem naturally consequential (Perna, 2000).

Despite variations in findings, no major study has been able to identify identical aspirational patterns across races and ethnicities. Following this, successive research has investigated the ways race and ethnicity might intersect with other central personal characteristics. Perhaps the next most obvious intersection occurs between race/ethnicity and high school performance. Lucas and Good (2001) investigated the effect of race on track mobility – the ability of students to switch between attainment groups. They found black and Hispanic students experienced downward mobility at a higher rate than white students, especially in diverse schools. In more homogeneous settings, Solorzano and Ornelas (2004) found that fewer advanced placement and other college-oriented courses

were offered when minority students made up the school majority; however, when whites made up the school majority, this phenomenon did not exist. These findings support Solorzano's (1992) claim that schools might be at fault for limiting the aspirations and preparation of minority students. This also suggests a much more pervasive, systemic inequity that has only partially been addressed.

Not only does race need to be investigated for the sake of its intersectionality with other personal characteristics but also for its more explicit influence on student choice. For example, research has found students of color to exhibit higher sensitivity to financial factors in the form of price increases and financial aid type/availability (Callender & Jackson, 2008; Grodsky & Jones, 2007; Dynarksi, 2002, 2003). According to the findings of Hao & Bonstead-Bruns (1998) and Post (1990), this is likely derived from less access to information about both. In the same vein, Beattie (2002) found differences across races in the ability to accurately weigh the costs and benefits of HE participation. This decreased knowledge –and consequentially increased sensitivity – have documented repercussions on aspirational abilities (Hao & Bonstead-Bruns, 1998) but also surely impact HE preparation, enrollments, and sectoral distributions. Historic choice models largely assumed that all students had equal access to information, but this clearly is not the case.

3.2.4 Sex and Gender

Though males historically made up the majority of HE enrollments, often by way of discriminatory policies and/or socio-cultural gender expectations, females, in the transition to mass and then to universal enrollment, have accounted for much of the growth within HE (U.S. Department of Education, 2018b). As of Fall 2017, females comprised 56% of all undergraduate enrollments and are projected to outpace males at a similar rate throughout at least 2028 (U.S. Department of Education, 2019b). Sociological research has gradually shifted much of the focus on these issues from sex to gender.

This enrollment disparity is matched by path-specific disparities, with males typically being overrepresented in math and science disciplines and females being overrepresented in arts and humanities disciplines (Pinxten, de Fraine, van den Noortgate, van Damme, & Anumendem, 2012; Charles and Bradley, 2009). These disparities have garnered much attention as to how gender might influence choices of college major, but less focus has been given to the ways students might make differing enrollment and institutional decisions on this basis.

Though limited, the evidence points to gender as a potential influence on the HE choices of students. For example, Van Langen, Rekers-Mombarg, and Dekkers, (2006, 2008) found educational attitudes to differ between boys and girls by early adolescence, and Ceja (2006) and David, Ball, Davies, and Reay (2003) found that boys and girls received different parental support and involvement in their educational choices. Given the effects of parental support on student aspiration (Davies et al., 2014; Perna & Titus, 2005; Smith-Maddox, 1999), gender may emerge as an important impact on considerations. Furthermore, Beattie (2002) found the ability to accurately weigh the costs and benefits of HE varied by gender, and Dickson (2010), even in a study more concerned with college major choice, found gender to a strong influence on institutional choice.

Still, given the increased representation of transgender and binary non-conforming students within HE, it becomes necessary to move beyond the traditional gender binary when investigating the influence of gender on student choice. Such research proves especially salient in the face of the Trump administration's recent revocation of Obama-era discrimination protections for these students. Still, the research remains scant. In one of the only large-scale studies of its kind, Stolzenburg and Hughes (2017) sought to investigate the experiences of transgender students using data from the Cooperative Institutional Research Program Freshman Survey. Financial factors emerged as a prominent concern for these students, who were more likely to have major concerns about financing their education, were more likely to come from low-income households, and were more likely to express the need to work full-time during study than the general

population. Additionally, transgender students exhibited lower average academic achievement than peers, increase the risk of non-attendance.

Given the understood importance of these factors, more student choice research should be conducted that is inclusive of these traditionally underrepresented groups. Only then can research claim equity as its goal.

3.2.5 First-Generation Status

Another characteristic that has emerged as potentially influential is first-generation status. Typically, a student is considered first-generation if neither parent/guardian has had any postsecondary education experience (U.S. Department of Education, 2018d), though some organizations (i.e. Upward Bound) tighten this definition to hinge on parental completion of a bachelor's degree. Unsurprisingly, inequitable outcomes have been found for these students.

According to Conley (2001), income and parental education are confounded variables, meaning that lower levels of parental education typically result in lower incomes. As such, first-generation students typically experience higher sensitivity to financial factors due to low family income (Paulsen and St. John, 2002). This sensitivity has been observed in reaction to both tuition changes and financial aid availability (Keane, 2002). However, due to rising tuition costs for all students, econometric (i.e. financially-centered) conceptualizations of student choice have regained popularity, placing financial factors at the forefront of student choice perceptions. Even in access-oriented research, due to this confounded relationship, first-generation status is often researched only indirectly through its intersection with SES. It remains necessary to investigate first-generation status for all of its potential effects on student choice.

Extrapolating on ELS:2002 data, researchers determined that only 24% of enrollments tracked were made by first-generation students, who, on average, were much

more likely to come from a low-income background than their continuing-generation[5] peers and, as such, more often cited financial reasons for eventual drop out (Redford & Hoyer, 2017, p. 4). Additionally, amongst those who did enroll, first-generation students were more likely to first distribute themselves across public institutions than private institutions; Radford, Tassoff, and Weko (2009) corroborated these findings, discovering that continuing-generation students were nearly 2.5 times more likely to enroll in a private four-year institution than first-generation students, showing the influence of parental education on sectoral enrollments. Furthermore, there existed the tendency among students of parents/guardians with postsecondary experience but no bachelor's degree to exhibit behaviors and attitudes that more closely aligned with those of first-generation students than those students from bachelors-holding households. This suggests HE completion to be more positively impactful than HE experience alone.

One commonly cited reason for these enrollment and sectoral disparities is lack of support from parents due to their limited (or even nonexistent) higher education experience. For example, Grodsky and Jones (2007) found parental understanding of financial aid programs to differ greatly by generation status, potentially resulting in varying levels of debt aversion and opinions surrounding the value of HE. As outlined in Chapter 3.2, parental education has been identified as one of the keystones of students' aspirational capacities (see Davies et al., 2014; Perna & Titus, 2005; Smith-Maddox, 1999). Kern (2000) even found that parental encouragement was considered *vital* for college aspiration for over 75% of her participants. However, as parents without personal HE experience have smaller archives of experience from which to make grounded judgements and provide informed support, it seems obvious differences between first-generation and continuing-generation students exist.

Generation status also shows important intersections with other characteristics, such as race. ELS: 2002 data revealed that while white students comprised only 49% of

[5] In this study, continuing-generation status denoted that at least one parent/guardian had some type of postsecondary experience but not necessarily a bachelor's degree. These two student populations are jointly referred to as continuing-generation.

all first-generation enrollments, they comprised 70% of all continuing-generation enrollments. For black students, the relationship was reversed; black students comprised 14% of all first-generation enrollments made but only 11% of all continuing-generation enrollments made. Meanwhile, Hispanic students made up 27% of first-generation enrollments and only 9% of continuing-generation enrollments (Redford & Hoyer, 2017, p. 6). Similar to SES, generation-status intersects strongly with race – a consequence of deeply ingrained social stratification.

3.3 Literature Review Conclusion

Early models (i.e. the Chapman Model) oversimplify the choice process by failing to recognize a sufficient breadth of students' personal characteristics that work to impact HE choices. Educational, sociological, and psychological research has since identified a larger set of impactful personal characteristics, discovering a variety of ways they impact student success, attitudes, and choice.

Modern models have taken this research into account, using non-linear conceptualizations that better take into account the tangled, intersectional relationships of these characteristics to more accurately represent student choice for traditionally underrepresented groups. However, given their young age, these models have not been employed or tested to the same degree as older, prevailing models, limiting claims about their predictive capabilities. Still, they provide much more comprehensive conceptualizations for approaching and designing student choice studies.

Collectively, the above findings are used to posit that disadvantaged students may consider and make HE choices differently than their non-disadvantaged peers. Below, this possibility is explored through quantitative research with a disadvantaged population and subsequent data analysis.

Chapter 4: Research Methodology

4.1 Research Design

This study employs factor analysis, a statistical procedure used to measure unobservable variables (i.e. latent variables) by exploring attributable observable variables. Factor analysis is often used by social science researchers to simplify and study complex social phenomena, like emotions or personality, by reducing variable sets into manageable dimensions called "factors." Similarly, factor analysis can be used to construct and validate questionnaires that measure the variables under investigation (Field, 2013, p. 667). As such, it is a popular method amongst educational researchers hoping to simplify and investigate the factors that influence the student choice process. This study uses factor analysis in this same way but isolates a sample of disadvantaged students to explore the factors that weigh on their' HE considerations.

Factor analysis exists in two forms: exploratory factor analysis (EFA) and confirmatory factor analysis. As the names suggest, the two forms are used for different purposes – to explore a phenomenon (exploratory) or to test hypotheses about a phenomenon (confirmatory). This study takes a purely exploratory approach, with no hypotheses or assumptions about the variable relationships made or tested. The research process began with the creation of an original survey instrument designed to explore impactful factors.

To begin the instrument creation process, a master list was comprised of influences that may prove impactful to students' HE considerations. These influences were selected from various student choice models, relevant literature, and personal experience teaching and advising students. Following the Chapman Model (1981), the influences were categorized as personal characteristics and external influences.

Following the advice of Devellis (1991) and Robinson (1991), the list of influences was refined through expert review to ensure content validity; ten high school guidance counselors, three high school teachers, and three higher education access

administrators independently reviewed and scored both the interpretability/clarity and the relevance of these influences to disadvantaged students, leaving their own suggestions for additions and improvements. Additionally, expert reviewers were asked to independently categorize influences between the five factor categories most commonly identified across substantive student choice literature. This was done to explore if and where expert reviewer conceptualizations of choice differed from empirical findings. Initial changes were made, and the survey went through a second and final collaborative revision through the use of shared electronic document editing. Only the highest scored influences were extracted for use. The expert review form used by reviewers, which includes all proposed influences, can be found in Appendix A.

Below, the expert review process is explored in more detail to substantiate the chosen questionnaire items. Expert reviewers provided many unique insights and suggestions – only some of which support previous findings and conceptualization of student choice. Deviations suggest disconnections in student and adult understandings of this process, providing avenues for further exploration.

4.2 Expert Review: Demographic Questions

First, given the prevailing enrollment disparities shown between males and females (U.S. Department of Education, 2018b), a question concerning sex was included. However, following the findings of Stolzenburg and Hughes (2017), this question was modified to survey gender instead of sex, with “non-binary/other” included as an option. This change was supported by the expert review process, which, interestingly, did not suggest including a question about sexual orientation for parental permission reasons. Because no research was found that supported the notion of sexual orientation impacting HE choices – and because the survey was conducted in a conservative majority environment – this question was not included as per expert advice.

Given its important implications on access and attainment (see U.S. Department of Education, 2018b; Solorzano, 1992), the survey included a single question concerning race. Race and ethnicity were not separately surveyed for concision purposes and as per

advice of expert reviewers, who believed students were not capable of differentiating between the two. The specific wording of the question was taken directly from UB program application materials.

With the impact of high school performance on student choice in mind (Collegeboard, 2016; Teranishi, Allen, & Solarzono, 2004), a number of questions were posited to gather information on students' educational attainment. However, questions that pertained to standardized test scores and earned college credit did not pass expert review because they did not apply to the majority of the sample. Instead, a question about GPA was included, using GPA ranges based on the Collegeboard GPA (2018) conversion guide.

Next, given the relation between parental education and student outcomes (Redford & Hoyer, 2017; Conley, 2001), students were asked to report on this topic. Because parental/guardian bachelor's degree completion is used as one of the qualifying criteria for the UB program, this was included as the only measure of parental education. Additionally, expert reviewers noted that a bachelor's degree is the qualification most likely to impact other student conditions (i.e. SES), so alternative options were not included.

As SES presents clear impacts on educational success and attainment (U.S. Department of Eduation, 2018b; Brown, Wohn, & Ellison, 2016), a question was included to explore familial incomes. UB income requirements state that a student's family income "must not exceed 150 percent of the poverty level amount" based on family size (US Department of Education, 2019d). However, expert review confirmed that students would not be able to provide accurate estimates of family income. Furthermore, income information is considered private and could not be accessed for the purpose of this study. In an attempt to differentiate UB participants who qualify on the basis of income from those who qualify on the basis of first-generation status alone, a question was included that referred to students' ability to qualify for free and reduced lunch. Through the *No Child Left Behind Act of 2001*, students from low-income

backgrounds qualify for free or reduced lunch prices based on income standards similar to those used by the UB program, (Benefits.gov, 2019). Though not directly transferable, this income-based question allowed the survey to collect information on low-income students and first-generation students separately in attempt to independently explore their effects on HE considerations.

As the literature review revealed, educational aspiration is difficult to directly and clearly research, especially when using quantitative methods. The students in this sample, by enrolling in a pre-collegiate bridge program, inherently show aspirations for higher education, complicating this measure. To tap into students' aspirations, however, a question was included to survey institutional enrollment plans. Students were asked which type of institution they were most likely to attend (if any) following high school: technical/vocational school, two-year college/community college, or four-year university. This question was supported by research connecting aspiration, family income, and education to sectoral enrollments (Radford, Tassoff, and Weko, 2009; Tillery, 1973).

4.3 Expert Review: External Influences

Consulting relevant student choice literature to investigate factors that have commonly been identified through similar EFA studies, external influences were proposed as loosely belonging to five overarching categories: institutional influences, financial influences, academic influences, social influences, and reputational influences. These categorizations did not constitute a hypothesis that was put forward for testing by EFA; rather it was a simple way to organize and describe conceptualizations of these influences based on the findings of previous studies. Similarly, it allowed for deeper exploration into the alignment of expert reviewers' opinions and researchers' findings. While slight overlaps occurred in the initial review process, no changes in categorization were made following expert conceptualizations that strongly aligned with empirical findings.

4.3.1 Institutional Influences

Chapman (1981) outlines fixed college characteristics as a key external influence, but the criteria for inclusion as a "fixed characteristic" is vague. According to Chapman, fixed characteristics are those that cannot be readily changed, including location, costs, campus environment, and the availability of desired programs (p. 495). Conversely, this study and other modern conceptualizations – especially those that use factor analysis – more strictly define and group influences together for the purpose of investigating correlation and common variance. As such, final questionnaire items need to be closely related on a conceptual level, meaning, for example, that some of Chapman's identified characteristics belong to entirely separate categories. Simply identifying them by their "fixedness" becomes too inapt of an approach.

For organizational purposes, this study attempts to tighten Chapman's definition for fixed college characteristics and applies it to what are called institutional influences; institutional influences include those that are "within the power of the institution to effect and modify over time" but which are "relatively stable" and not readily changed (Chapman, 1981, p. 495). Thus, many institutional influences may work to ultimately help students differentiate between HEIs.

Chapman (1981) identifies campus environment as an important fixed characteristic, but, again, the vagueness of this term proves to be problematic. Building off of substantive literature, influences were listed that specifically pertained to the importance of campus size and appearance (Wilkins, Balakrishnan, and Huisman, 2012; Hoyt and Howell, 2012; Imenda, Kongolo, and Grewal, 2004; Veloutsou, Paton, and Lewis, 2004) campus proximity to home (Hoyt and Howell, 2012; Pasternak, 2005; Drewes and Michael, 2006; Callender and Jackson, 2008; Abubakar, Shanka, and Muuka, 2010; Bonnema and Van der Weldt, 2005), student-to-professor ratios/class sizes (Drewes and Michael, 2006), and institutional diversity. Expert review revealed many of these factors to be too similar or too irrelevant to the student population.

However, expert review also suggested including the influence of any religious identification of an institution. This comes given the prominence of the Latter Day Saint (also known as Mormon) religion in the state of Utah, which reports a nearly 68% majority (Church of Jesus Christ of Latter-Day Saints, 2018). This church owns and operates popular research universities with codes of conduct and unique campus environments. As such, reviewers noted that many students elect to only attend these institutions or those with a strong extracurricular Latter Day Saint program. For all students, however, the religious component of an institution may emerge as important and, for exploratory purposes, was included.

It is worth noting that campus environment is studied more thoroughly in international education research – a separate body of literature that attempts to research the "push and pull factors" that exert influence on students. However, these studies are most often conducted with international participants, and findings are limited in their applicability to disadvantaged domestic students. Furthermore, these studies are framed through a very clear recruitment lens, with little attention given to issues of access and equity. As such, few studies of this nature are referenced.

4.3.2 Financial Influences

As the name suggests, financial influences are those that interact with student financial conditions and limitations to impact HE considerations. These financial influences have repeatedly emerged across the literature as legitimate and pressing concerns for students. Many financial influences were posited in an attempt to robustly represent the various costs associated with higher education.

The most obvious cost associated with higher education – and perhaps the one most thoroughly researched – is tuition. However, additional listed influences pertained to the broader costs, prices, and affordability associated with HE enrollment (Imenda et al., 2004; Pasternak, 2005; Drewes and Michael, 2006; Bonnema and van der Weldt,

2008). Expert review revealed tuition cost (also referred to as sticker price) as very relevant to students but fees (i.e. course, student association, and records fees) as less relevant. This difference in relevancy might be traced to the comparative lack of fee transparency and lowered student knowledge of fee prices. In the same vein, the "cost of living" was reported as too difficult for students to properly gauge, and research concerning students' inability to accurately estimate costs (Beattie, 2002) supports this claim.

Related to tuition cost, qualification for in-state tuition was listed as a potential influence. In the US, institutions largely operate on public funds, and so students receive subsidized tuition rates if they attend an institution in the state in which they are a resident and their parents/guardians have paid taxes; attending an institution in a different state results in unsubsidized "non-resident tuition." Higher tuition rates have been shown to exert negative impact on disadvantaged students, and though no substantive research was found concerning student choice and out-of-state institutions, expert review supported inclusion of this question.

A preliminary item concerning the availability of financial aid (Imenda et al, 2004; Perna and Titus, 2004; Drewes and Michael, 2006) did not emerge as relevant after expert review. Reviewers noted the average public HEI tuition would be entirely or nearly entirely covered by financial aid since students in this population "almost certainly" qualify for the maximum amount of aid due to the SES requirements of the UB program. Similarly, due to regulations that prevented access to familial income information, the relationship between income level and financial aid sensitivity could not be explored meaningfully. Instead, a question concerning scholarship availability was included, supported by reviewers' claims that disadvantaged students were "far less knowledgeable" about financial aid and apt to conflate free financial aid with student loans. These claims are in line with previous research that has identified disadvantaged students as much less knowledgeable and further removed from HE resources and information.

The availability of student jobs through an HEI was also rated as very relevant. By nature, student jobs provide flexible hours that must work around students' course schedules. Research by Veloutsou, Patron, and Lewis (2004) and Price, Matzdorf, Smith, and Agahi (2003) has demonstrated the importance of part-time employment for HE-enrolled students. Furthermore, research that has revealed higher debt aversion amongst disadvantaged populations also supports the inclusion of this question. For obvious reasons, employment was limited to include only student jobs at institutions.

Lastly, following research by Harker, Slade, and Harker (2001) that concerned the ability of students to live at home with their parents, a question was formulated that pertained to housing options. However, this question was altered so that it pertained specifically to the cost of on-campus housing, the prices of which are widely advertised and relatively stable. One expert reviewer noted: "For many students, part of the 'college experience' comes from living in the dorms. Many students I've talked with have expressed the college experience as their reason for choosing a traditional university over a technical school." Another guidance counselor noted: "By college, many students desire to move away from their hometown. For disadvantaged students, simply moving out of their home is the only realistic option. Student housing becomes a viable option since the charges are rolled in with tuition and can be covered by financial aid." No relevant research was found concerning on-campus housing and institutional choice, but this question was included for further exploratory purposes.

4.3.3 Academic Influences

While high school performance is viewed as a personal characteristic that acts as a lens to control students' institutional options, academic factors – as external influences – work more to help students differentiate between HEIs. Academic factors were defined as those that are closely tied to the academic goals of students and the academic capacities of institutions. Barring other external influences, a good goal-capacity match should greatly aid students in making an institutional choice.

Items were initially posited that pertained to course content (Lopez-Bonilla, Barrera, Serrano, Lopez-Bonilla, Florencio, Rodriguez, and Altamira, 2012; Bonnema and Van der Weldt, 2008; Pasternak, 2005) and programmatic factors (Brown, Varley, and Pal, 2009; Lang, 2009; Mastekaasa and Smeby, 2008; Callender and Jackson, 2008). However, expert review filtered out all but those that pertained to the availability of evening classes and online classes. This follows the logic that many disadvantaged students are more likely to seek work and need a flexible schedule (especially if they cannot find a student job). Lastly, a question was included pertaining to the availability of concurrent enrollment and early college classes. These are classes that high school students can take at their school, online, or at a local campus to earn college credit at a greatly subsidized price. Through these classes, students even have the ability to earn an associate's degree by the time they graduate high school.

A question concerning the breadth of degree options available at an institution (i.e. certifications, associate's degrees, bachelor's degrees, etc.) was posited by an expert reviewer. In the second review, it was scored highly, and one reviewer wrote: "Students often go to the school that has the most options, especially if they are unsure of what they want to study. They know they will not be limited by degree offerings and thus be forced to transfer if they want to earn a higher credential or pursue another path. This is the major benefit of universities [over two-year colleges or technical schools]."

Finally, the survey included a question pertaining to the quality of teaching (Keskinen, Tiuraniemi, and Liimola, 2008; Imenda et al., 2004). This question was broadened to include teaching and research after reviewers noted that some students -- particularly those in the science and health fields -- might hope to learn research skills in preparation for graduate school or their desired career. Similarly, HEIs are often assessed on both abilities by accrediting agencies and independent assessors, and some institutions heavily market themselves through their research capacity.

4.3.4 Social Influences

As the doors of HE have opened to include a wider audience, HE attendance has largely come to be considered a social norm and its own socializing process. As such, it is not surprising that many social factors bear on the HE decisions of students. Social influences were loosely defined as those derived from relationships and personal interactions which help students to make decisions and succeed in their education.

Several key studies have demonstrated the impact of social forces on students' choices (Bonnema and Van der Weldt, 2008; Gatfield and Chen, 2006), including the influence of friends (Price et al., 2003) and parents (Cho, Hudley, Lee, Barry, and Kelly, 2008). This study, however, given the inherent HE aspirations of the student population surveyed, aimed to look more specifically at the ways institutional considerations may be directly affected by social forces. Consequently, an item was formulated that asked how important it was that a friend would enroll or be enrolled at the institution at the same time as the survey respondent. Expert reviewers marked this question as relevant, noting that many students (especially first-generation students) experience considerable anxiety when making decisions and thrusting themselves into an "entirely new world." Similarly, a question was included that surveyed the importance of parental/guardian input. Studies have repeatedly found parental/guardian input to be a central influence on students' choices, but this study is unique in that it involves a population in which the level of parental education is significantly lower than that across the average population. With low or even nonexistent HE experience, many parents of the students surveyed will likely have less information to share – what Appadurai (2004) would call smaller "archives of experience." It was proposed that this may result in students valuing parental/guardian input differently.

Relatedly, the importance of having an alumni relation – that is, another friend or non-parent relative who graduated from the institution in question –was suggested and rated highly. Reviewers noted that students are more likely to have friends and/or family members from similar social backgrounds, so it was proposed that having an alumni

relation who successfully progressed through an institution may work to increase that institution's appeal. Expert reviewers also noted the prevalence of alumni scholarships, which are only available to students who are related to an alumnus (usually a parent or close relative), and the normative pressure for students to "follow in their parents' footsteps." Together, these two forces may act to persuade students toward a certain institution.

Callender and Jackson (2008) researched the importance of the social and experiential benefits associated with HE participation to students' choices. Similarly, Bonnema and van der Weldt (2008) revealed the importance of the overall expected HE experience, inspiring questions that pertained to the "college experience" referenced earlier. Through expert review, these questions were synthesized into two questions. The first related to the prominence of the social life at the university, supported by students' expressed desire to, as one reviewer phrased it, "find opportunities to party, socialize, and explore independently." The second question surveyed the importance of extracurricular activities offered through the institution. This question was included separately since extracurricular activities (i.e. clubs, organizations, etc.) are controlled at the institutional level and offer all students a chance to be involved, whereas social life is more subjective and likely dependent on personality, interests, and other variables.

4.3.5 Reputational Influences

Reputational factors are related to the overall prestige or reputation surrounding institutions and programs. The positional competition that typifies HE means that certain programs and/or institutions come with a much higher rate of return in the form of social capital (see section 2.3). Differences in sectoral enrollments between disadvantaged and non-disadvantaged students suggest differences might exist in the importance of these influences.

The first item posited simply referred to the prestige or reputation surrounding the institution. This question does not specifically relate to any sort of methodological

ranking or evaluation system; instead, it ties into the prevailing institutional reputation free from any sort of data. Another item posited related to the importance of the prestige or reputation of students' intended major programs. According to several expert reviewers, the status of individual programs matters more than that of the institution itself. One noted: "An average school can have an amazing program. Take [name redacted] for example. It has a nationally ranked nursing program but is one of the most affordable institutions in the state. It's open enrollment, so anyone with a high school diploma can get in." However, another reviewer held the opposite view: "The name of the school carries a lot of weight. If you graduate from Harvard, it doesn't really matter what your major is. You will be successful in finding a job in your field, and you will be hired before the community college graduate." Both influences were rated highly in the second expert review, leading to their inclusion in the final survey.

A third item related to the formal ranking of an institution. Popularized institutional ranking systems, such as Times Higher Education World University Rankings and the US News and World Report Best Colleges Rankings, publish yearly reports in which institutions (mostly universities) are ranked on a number of metrics. Though these systems can be highly subjective or even methodologically flawed (Marginson, 2016), they still carry much weight with policymakers, funding bodies, and future enrollees. Students often turn to these rankings to easily compare institutions and seek information that ultimately aides in their decision. Reviewers noted that rankings might exert stronger influence on those students with high educational aspirations but concluded that their prevalence warranted inclusion in the final survey instrument.

Callendar and Jackson (2008), Pasternak (2005), and Leslie (2003) researched the importance of entrance standards, inspiring a question that related to the selectivity of an institution. While many universities surrounding the population surveyed are open enrollment, meaning that only a high school diploma or equivalent certificate is needed for admission, reviewers noted the stigma that can surround these institutions: "Some students love the idea of open enrollment because it relieves a lot of the pressure. They know they have somewhere to go even if they don't perform that well in high school.

Others perceive these schools as less reputable or less likely to make them competitive for graduate programs or the job market."

Finally, a surprising suggestion surfaced through expert review – one that related to the reputation of the collegiate sports programs at an institution. According to one reviewer, "Many students hope to play college sports. However realistic those dreams are, I frequently hear students comment on the division and ranking of collegiate sports teams. This may prove to be a relevant reputational factor that contributes to student choice." In the second review, another reviewer corroborated this idea: "These [sports] programs undeniably add to the reputation of an institution. Any school with money invests in its sports programs because they bring in such huge revenues. Most students would rather be a college athlete than attend Harvard, so I can see student basing their decision on the basis of reputation." This rationale seems logical considering larger schools (especially those in competitive divisions) have agreements with major broadcasting companies and popular sports apparel companies. Though no solid research was found to support the idea that the reputation of sports programs might impact student choice, the increased presence and money brought in by elite sports programs at least supports this claim as feasible.

4.4 The Final Questionnaire

Only the influences with the highest average ratings were extracted for use, resulting in a final questionnaire that was comprised of six demographic questions and twenty-five Likert-scale questions. Scoring options ranged from 1 (Not important at all) to 5 (Very Important). To avoid response validity reduction (Schriescheim & Hill, 1981) and systematic error (Jackson, Wall, Martin, and Davids, 1993), reverse-phrased items were not used. Additionally, an "I don't know/I have not thought about this" option was included to reduce forced midpoint responses; these responses were later calculated as missing data to avoid unintended effects on data analysis. A copy of the final study questionnaire can be found in Appendix B.

4.5 Population and Sample

The data for this study came from the questionnaire that was distributed electronically to Upward Bound (UB) student participants. UB participants, as per federal regulation, must come from a low-income family and/or be a first-generation student, neither of whose parents/guardians have received a bachelor's degree (US Department of Education, 2019). For the purposes of this study, this population was simply referred to as "disadvantaged" due to the empirical evidence linking income and parental education to inequitable HE outcomes.

Individual UB programs associated with public universities and their regional branches were invited to participate in this study. Of the six programs that were invited, five elected to participate. The programs invited were spread throughout the state in an attempt to avoid any geographic biases. Cooperating UB programs introduced this study to students and parents/guardians during orientation nights using researcher-provided information sheets and consent forms (see Appendix C). These materials were made available for all attendees and were signed and collected by UB staff after the event. In the following week, UB staff members were then given access to the survey link and distributed it appropriately during program instruction time. This eliminated the ability of students to access the survey multiple times. Lastly, as it is not advisable to collect EFA information at multiple points or over a long period of time (Tabachnick & Fidell, 2007), the survey remained open for approximately two weeks before closing.

Across the five university-led programs that participated in the study, 234 eligible participants were invited, and 158 surveys were completed. Of these, 149 were usable, resulting in a response rate of roughly 64%. A full breakdown of respondent demographics can be found in Appendix D.

4.6 Factor Analysis

Although the participant response rate passed researcher expectations, response rate recommendations laid out for EFA can be quite strict. For example, Nunnally (1978) recommends an item-to-response ratio of 1:10, meaning this 25-question survey needed

to garner at least 2,500 responses. Conversely, Kass and Tinsley (1979) argue that test parameters tend to remain stable regardless of this ratio, leading Tabachnick and Fiddell (2012) to suggest 300 as a comfortable sample size (p. 613). Both Guadagnoli and Velicer (1998) and Comrey and Lee (1992) also point to 300 as a good size. Although these guidelines suggested that the sample may not be a good fit for EFA, the study proceeded relying on other adequacy measures.

EFA was conducted (with SPSS version 25) using maximum likelihood extraction and Varimax rotation to determine the underlying factors of the 25 items proposed to impact students' HE considerations. An orthogonal rotation was used as it was theorized that the factors were uncorrelated with one another (Field, 2013, p. 689). Using Kaiser's criterion of retaining factors with eigenvalues greater than one (Kaiser, 1970) and factor loadings greater than .40 for ease of interpretation (Field, 2013, p.681), initial EFA was unsuccessful. Although influences were theorized as belonging to five larger categories of external influences, factor analysis did not yield a five-factor solution, and too many cross-loadings occurred to discern the data meaningfully. In addition, financial influence items were scored extremely highly and uniformly by respondents, drastically skewing the data. This is not surprising considering 1) previous studies have frequently outlined financial concerns as amongst the most prevalent for *all* students and 2) the majority of respondents in the sample are classified as low-SES, increasing the likelihood of familial debt aversion and sensitivity to financial influences.

While these findings concerning financial influences have important implications for increasing the collective understanding of HE access and equity, they did not prove to be useful (or appropriate) for EFA due to the lack of variability in responses. As such, all financial variables were excluded and EFA was performed again with identical conditions in place. Although this sample did not meet sampling guidelines, the Kaiser-Meyer-Olkin measure of sampling adequacy (Kaiser, 1970) produced a value of .731, indicating that the sample was acceptable. Sampling guidelines set out by Hutcheson and Sofroniou (1999) also indicated a moderate rating of sampling adequacy.

As Field (2013) notes, communalities in the .5 range may indicate that a sample between 100 and 200 can be sufficient provided there are "relatively few factors, each with only a small number of indicator variables" (p. 684). The proposed influences met the latter half of this recommendation but did not quite meet the communality requirements, suggesting, again, that a bigger and less homogeneous sample was needed (Kline, 1999). This study proceeded with the understanding of these limitations due to inability to gain a larger sample.

The Bartlett test of sphericity ($p < .001$) indicated that the data had a sufficient degree of correlation between a minimum number of variables, making it suitable for EFA. Kaiser's eigenvalue criterion was ignored in favor of scree plot interpretation, which indicated that either a four, five, or six-factor solution could provide a reasonable output. Exploration revealed that neither a four-factor nor six-factor solution fit the data in a comprehensible manner. Explaining 58% of the variance, a five-factor solution produced the most interpretable patterns of item loading. As a rule of thumb, the factor solution should explain at least 60% of variance (Field, 2013, p. 685). However, Hair, Black, Babin, and Anderson (2012) outline a number of considerations that must be made before taking this recommendation: first, fewer factors are required when the heterogeneity of the sample is low; second, one should keep in mind any "predetermined number of factors based on research objectives and/or prior research"; next, the factors chosen should show "substantial amounts of common variance"; lastly, alternative solutions (i.e. one less and one more factor solution than that chosen) should be considered and explored (p. 109). With all of these considerations in mind and tested, the five factor solution was pursued as the most accurate interpretation of the data. .

To test the reliability of the scale used, a reliability analysis was conducted using Cronbach's $\underline{\alpha}$ coefficient. The alpha values ranged from .648 to .676. Although, across the literature, .7 to .8 is widely considered the acceptable alpha range (Field, 2013, p. 709), the picture is not so simple. Kline (1999) notes that values below .7 can be considered acceptable –and even expected – when dealing with diverse psychological constructs (i.e. attitudes). Nunnally (1978) even suggests that in the early stages of

research, alpha values as low as .5 will suffice (p. 39). The alpha values produced indicated that the measures used in each factor neared reliability standards, and since removing individual items did not significantly improve any individual score, no changes were made.

As this analysis neither failed any of the required tests nor drastically failed to meet any of the guidelines suggested for EFA – all while explaining the most variance – the five-factor solution was accepted. However, the stability of the findings is likely decreased by the small sample size and several highly-correlated variables. As such any interpretation of the results must be approached with caution.

Chapter 5: Results

Interestingly, the majority of items did not load onto factors in ways that represented the categorizations proposed. For example, most of the items proposed through expert review as Institutional Influences were not correlated and thus could not comprise a single factor. Additionally, a number of the items did not load significantly onto any factor. In effect, only some of the factor labels commonly used across student choice literature proved capable of accurately describing the correlated items.

The five factors[6] identified were thus named: Social Factors (SOC), Familial Factors (FAM), Future Impact Factors (FUT), Reputational Factors (REP), and Flexibility Factors (FLEX). Table 2 indicates the factor loadings of the questionnaire items.

Table 2. Rotated Factor Matrix: Influences on Students' Higher Education Considerations

	SOC	FAM	FUT	REP	FLEX
A prominent social life at institution:	0.799				

(Continued)

[6] While the proposed financial influences were removed before EFA could be performed successfully, these corresponding items should be considered as comprising a clear factor and are treated as such.

The breadth of available extracurricular activities at the institution:	0.682				
Having friends who will attend the institution at the same time:	0.552				
The overall diversity of the institution:	0.450				
The physical size of the institution's campus:	0.402				
The prestige or reputation of the institution's sports programs:					
The average student-to-professor ratio at the institution:					
Having a parent or relative who attended this institution (alumni relation):		0.690			
Parental/guardian input or opinion:		0.617			
The institution's proximity (closeness) to home:		0.518			
A religious identification of the institution:		0.486			
The quality of teaching and/or research at the institution:			0.830		
The prestige or reputation of the institution:			0.607		
A variety of degree choices (certifications, associate's/bachelor's/master's/doctoral degrees):			0.518		
The prestige or reputation of my intended major program:					
The ability to complete institution credits while in high school through early college or concurrent enrollment:				0.722	
The institution's ranking in comparison to other institutions:				0.556	

(Continued)

High selectivity or competition level for admission to the institution:				0.517	
The availability of online classes:					0.836
The availability of evening classes at the institution:					0.562

Note. Factor loadings <.40 are suppressed for ease of interpretations. Items set off by crosshatches did not load significantly onto any factor.

In addition to exploring the factors that impact disadvantaged students' HE considerations, this study had a secondary purpose of investigating whether the importance of these factors differed significantly between demographic groups. However, some limitations were encountered in analyzing the data for this purpose. First, an insufficient number of continuing-generation students were included in the sample to make meaningful comparisons between first and continuing-generation students. Similarly, only a few respondents intend to enroll in any institution other than a 4-year university, preventing deeper exploration into sectoral enrollment differences. Even the potential influence of race could only be explored between white and Hispanic students due to the low response rate of other races. Lastly, students in all GPA ranges could not be analyzed due to a skewed distribution; thus, students were divided into two groups – those with a GPA at 3.0 or above and those with a GPA below 3.0 – to investigate the effects of high school performance. *Table 3* includes the descriptive statistics concerning these factors, which acted to facilitate or aid inhibit further exploration.

Table 3. Student Response Descriptive Statistics

		SOC	FUT	FIN	FLEX	FAM	REP
N	Valid	146	147	146	146	147	146
	Missing	3	2	3	3	2	3
Mean		3.6839	4.2188	4.4055	3.839	3.0805	3.879
Median		3.8	4.3333	4.4	4	3.25	4
Std. Deviation		0.66822	0.62629	0.48707	0.8943	0.85599	0.652
Skewness		-1.115	-0.673	-1.293	-0.941	-0.374	-0.325
Std. Error of Skewness		0.201	0.2	0.201	0.201	0.2	0.201
Minimum		1	2	2	1	1	2
Maximum		5	5	5	5	5	5

These data constraints meant that only gender, grades, socioeconomic status, and – to some extent – race could be explored meaningfully. Normal response distributions suggested that some factors (e.g. Reputational Factors) might be better explored through the use of parametric measures. Meanwhile, the non-normal response distributions of other factors (e.g. Social Factors) suggested that non-parametric measures would be more suitable for analysis. Using a non-parametric Mann-Whitney-U test produced the same results as an independent samples T-test, signifying that either approach was appropriate from a conceptual standpoint. For the sake of simplicity and to comply with trends of previous research, only the independent samples T-test results are used to explore the data.

FUT showed the most differences between demographic groups. Females assigned significantly more importance than males, $t(145) = -3.79$, $p < .001$. Additionally, higher-performing students also assigned significantly more importance to these factors than lower-performing students, $t(145) = -2.63$, $p = .010$.

The importance of REP differed significantly only on the basis of high school performance, with higher-performing students assigning significantly more importance, $t(144) = -4.32$, $p < .001$.

Lastly, significant differences in the importance of FAM existed between SES groups; interestingly, it was low-SES students who rated these factors as less important, $t(123) = -2.46$, $p = .015$.

Chapter 6: Discussion

FIN emerged as the most impactful factor on students' higher education considerations, aligning with much previous research. However, even financial influences that have not been widely researched (e.g. the affordability of on-campus housing) proved important to students, suggesting that research may widen its approach when considering the various financial responsibilities associated with HE. No significant

differences were found in the reported importance of FIN between any demographic groups – even SES groups, surprisingly. While this could be due to the limitations of the sample or even the measure used to differentiate these groups, another explanation is that the financial anxieties surrounding HE are experienced fairly uniformly by all students in the face of rising tuition. Previous research seems to support this notion (see Fridley & Sharpe, 2016; Schultz, 2013).

Interestingly, the majority of students (88.6%) reported that they were most likely to enroll in a 4-year university – by far the most expensive HEI option. While data limitations prevented further exploration into sectoral enrollment plans, this indicates that students included hold universities in the highest regard despite their financial anxieties, likely complicating the consideration process. Further exploration, especially of qualitative nature, could greatly untangle this relationship and explore any cognitive dissonance.

FUT emerged as the second most impactful to HE considerations. Accurately naming this factor proved difficult as the corresponding items were not accurately reflected by any factor label used in previous research. Yong and Pierce (2013) point to accurately identifying and naming factors as one of the main limitations of EFA (p. 81), but this label was chosen given the way each item is thought to greatly impact the future of the student. While previous EFA studies have identified career factors, none of the factors in this study related directly to students' work opportunities (e.g. internships available or job placement rates) and were thought to have more of an impact on futures broadly (i.e. future success, future employability, etc.). This is, however, only one interpretation of this factor and can only be considered conjecture until further research is conducted.

Females, non-low-income students, and higher-performing students rated FUT as more important than their demographic counterparts. All things being equal, this would suggest that students who are, in general, already more likely to enroll in HE think about their future more sophisticatedly and consider the consequences of their HE choices more

seriously. This poses serious concerns for missions of access and equity. While educators and policymakers must first push for underrepresented and disadvantaged students to enroll in HE, they should also keep in mind the disparate benefits experienced on the basis HE choice and encourage all students to think of these factors more carefully. Following the advice of Aikens & Barbarin (2008), more HE resources should be introduced into low-income schools to help foster aspirational capacities equally amongst groups. Furthermore, as Pitre et al. (2006) imply, attainment tracking practices should be further discontinued in order to support equitable education attainment.

REP emerged as the third most important factor. The first two items that loaded onto this factor (the comparative ranking of the institution and a high level of competition for admission) clearly contribute to reputation. However, the relation of the third item (the ability to complete concurrent enrollment/early college class through the institution) is less clear. The most plausible explanation for this grouping is that institutions offering concurrent enrollment and/or early college courses are able to increase their "brand recognition" amongst students. That is, by maintaining a presence in high schools, institutions are further legitimized because students gain a personal familiarity with their names, brands, missions, etcetera.

While the tenants of vertical stratification may point to dual-enrollment as a survival strategy used by low-tier "recruiting universities" (Moodie, 2008), one might argue that, outside of the few universally recognized universities (e.g. Harvard), disadvantaged students are not familiar with the reputation of other institutions (and, realistically, probably have no reason to be). As such, their reputational perceptions may not align with those held by the general population. Additionally, given the prevalence of for-profit institutions (see Chapter 2.1.2), any institution legitimated by a disadvantaged student's high school probably seems reputable – or at the very least, legitimate – in their eyes. This is another gap that would be greatly filled by qualitative exploration.

Higher-performing students rated REP as more important than lower-performing students. Given the links between low performance and aspirational capacities

(Appadurai, 2004), it seems predictable that low-performing students would care less about the reputation of an institution, especially considering that selectivity standards may completely prevent them from admission. While GPA was used in this study because it was the only measure of performance applicable to the entire sample, future studies may develop more comprehensive methods to measure performance and thus explore its impact on HE considerations.

FLEX emerged as the next most important to students, and no significant differences existed between groups. This implies that all disadvantaged students similarly desire alternative course options (i.e. online or evening classes) that fit with their preferences or schedules. While the need for disadvantaged students to work may partially contribute to the high rating of FLEX, the increased presence of online education programs (see Chapter 2.1.3) has likely contributed to this preference for all students.

FAM – a factor that was carefully identified as separate from SOC given the clear familial links of each corresponding item – received the next highest score from students. Interestingly, low-SES students rated FAM as significantly less important than their counterparts. This contradicts previous assumptions that low-income students may have more family responsibilities (e.g. a job or duties to care for a younger sibling) and would thus care more about these factors when making HE choices. However, some expert reviewers also posited that first-generation students would value FAM less due to the lack of parental/guardian experience and related differences in support. The questionnaire items that loaded onto this factor were varied, but perhaps the common familial link identified was too tangential. Future research may work to further differentiate items that relate to familial responsibilities and the influence of parental opinion as separate.

The last factor, SOC, did not reflect significantly different responses between any of the demographic groups. It did, however, emerge as the least important of the six total factors, contradicting previous research that has identified social influences as amongst the most important to students (Wilkins, Shams, and Huisman, 2013; Callendar and

Jackson, 2008; Bonnema and Van der Weldt, 2008). This might imply that disadvantaged students care less about the social aspects of HE than their non-disadvantaged peers. More likely, however, it implies that disadvantaged students do not have the *freedom* to care about social aspects as much as their non-disadvantaged peers due the increased pressure of other influences and their social conditions.

It is important to note that several items did not load strongly onto any factor. For example the average student-to-professor ratio at an institution loaded only onto SOC but very weakly; this may indicate that some students conceive smaller class sizes as providing more possibilities for one-on-one interactions and connections, but this item's inter-item correlation was not high enough to defend this stance. Similarly, the reputation of the student's intended major program also failed to load strongly onto any one factor. This is surprising given this item's prominence in previous EFA studies. Lastly, the reputation of the institution's sports programs cross-loaded onto SOC and FAM. It is not hard to conceive how renowned sporting events could be conceived as social events. However, any rationalization for this item's grouping with FAM seems tenuous, and more research is surely needed.

Given the demands of EFA, a larger and less homogeneous sample would have greatly improved the process and better substantiated the claims made. It is important to note that these factors are only hypothesized explanations; a subsequent qualitative component (e.g. focus groups with student respondents) would have greatly helped to clarify how students conceptualize these variables as relating. Similarly, involving disadvantaged students in the expert review process may have lead to proposals that more realistically aligned with student conceptualizations.

Chapter 7: Conclusion

The survey instrument used in this study was constructed through consultation of substantive student choice literature and then tested for content validity through expert review. However, the analysis of the data reveals that the sample did not respond in ways

that could be expected based on previous patterns of reporting or expert review conceptualizations. That is, EFA of this data produced item groupings (i.e. factors) unlike those seen in previous studies and unlike those expert reviewers anticipated.

This has two important implications. First, the results suggest that the findings of prior EFA studies might be poorly suited to understand the ways disadvantaged students' HE considerations are impacted. Put another way, disadvantaged students may make HE considerations differently than non-disadvantaged students. Second, the findings suggest that expert reviewers and researchers conceptualize the influences that impact disadvantaged students' HE considerations differently than those students do. That is, disadvantaged students approach HE and make their considerations differently than experts in the field would presume. The difficulty encountered in assigning factor labels that accurately describe the underlying connection of items supports this stance.

However, the findings of this study are also inhibited by several factors – chiefly the small size and homogeneity of the sample used. Secondly, this study, unlike most EFA studies referenced, did not measure definitive choices. Further research into the *choices* of disadvantaged students could indicate if and how actual choices align with self-reported data related to considerations. With these limitations in mind, the findings of this study must be taken with caution.

The disadvantaged students included in this study identified six primary factors that impact their HE considerations. The importance of these factors were found to vary significantly on the basis of gender, race, SES, and high school performance, suggesting that students in various demographic groups make HE considerations in different ways. Educators, policymakers, and even researchers need to keep these characteristics and potential differences in mind when pursuing widened HE access. Similarly, attention must be given to the intersectionality of these characteristics to account for any compounded effects.

Unsurprisingly, Financial Factors emerged as the most important to all students in this sample. However, meaningful comparisons between disadvantaged and non-disadvantaged students could not be made by this study; given that disadvantaged students have long enrolled in and completed HE at some of the lowest rates, there is reason to believe rising tuition and fees might disparately impact considerations and choices across SES groups. While attempts have been made to mitigate the negative effects of stratification, including affirmative action policies and modifications in federal aid availability/repayment demands, concrete action (e.g. the institution of tuition caps) has failed to materialize. Furthermore, free tuition programs, like the statewide model recently adopted in California, work to steer those who are least able to afford education (i.e. disadvantaged students) into community colleges, where they experience the least return in social capital. Even for students within federally-funded pre-collegiate bridge programs, which waive application fees, actively aid students and families in the financial aid process, and provide supplemental educational classes and resources, exhibit high amounts of anxiety surrounding the financial pressures of HE.

Ironically, for the sample studied, these financial anxieties do not seem strong enough to convince many students to pursue more affordable institutional options (i.e. technical/vocational schools or 2-year/community colleges). The strong preference for 4-year universities speaks to the power of vertical stratification and sectoral reputations on student perceptions. This is supported by students' ratings of Future Impact Factors and Reputational Factors as important to their considerations. The strong university affiliations of the Upward Bound program likely play into this preference as well, but follow-up research tracking the sectoral enrollments of these students could better investigate any alignment with national trends.

Social Factors also work to impact disadvantaged students' HE considerations. As Wilkins, Shams, and Huisman (2013) note, despite ongoing stratification, HE enrollment is gradually becoming the norm for students from all social backgrounds (p.136), providing important opportunities for expected and desired socialization. The students surveyed clearly gauge the social characteristics of institutions and the opportunities they

provide when making considerations, and while Social Factors do not present explicit barriers to HE access in the manner Financial Factors do, the risk remains for disadvantaged students to miss out on these opportunities and benefits due to inequitable access.

Future research that aims to study at-risk or otherwise disadvantaged populations might take from this study the importance of establishing a large sample so that findings can be explored more deeply and generalized to wider populations. For example, by working with all TRiO programs instead of UB alone, future research can explore demographic groups more carefully to better explore the effects of personal characteristics on HE considerations. Additionally, future research may seek to explore the work habits of disadvantaged students as it seems plausible these students might experience increased pressure to work, especially given familial SES conditions. Relatedly, these work habits may prove influential to sectoral enrollments given the economic advantages of vocational/technical institutions.

Regardless of the approach, further student choice research needs to be pursued in the name of access and equity. Otherwise, the attainment gap between disadvantaged and non-disadvantaged groups threatens to increase, deepening the stratification and inequity of the US education system. Only when *all* students' higher educational needs and desires are better understood and facilitated can education truly be termed "the great equalizer."

References

Abubakar, B., Shanka, T. and Munka, G.N. (2010). Tertiary education: An investigation of location selection criteria and preferences by international students- the case of two Australian universities. *Journal of Marketing for Higher Education*, Vol. 20 No. 1, pp. 49-68.

Adler, N., Epel, E., Castellazzo, G., & Ickovics, J. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy, White women. Health Psychology, 19, 586–592. doi:10.1037/0278-6133.19.6.58

Aikens, N. L., & Barbarin, O. (2008). Socioeconomic differences in reading trajectories: The contribution of family, neighborhood, and school contexts. Journal of Educational Psychology, 100, 235-251. http://dx.doi.org/10.1037/0022-0663.100.2.235

Aldighrir, W. M. (2013). An examination of the leadership practices of university presidents of land-grant universities in the United States (Order No. 3576283). Retrieved from https://search.proquest.com/docview/1465383976?accountid=13042

Alexander, K. L., & Cook, M. A. (1979). The motivational relevance of educational plans: Questioning the conventional wisdom. Social Psychology Quarterly, 42(3), 202-213. Retrieved from https://ezproxyprd.bodleian.ox.ac.uk:7316/docview/61022227?accountid=13042

Anders, J. (2012). The link between household income, university applications and university attendance. Fiscal Studies, 33(2), 185-210. doi:http://ezproxyprd.bodleian.ox.ac.uk:2066/10.1111/j.1475-5890.2012.00158.x

Anders, J. (2017). The influence of socioeconomic status on changes in young people's expectations of applying to university. Oxford Review of Education, 43(4), 381-401

Appadurai, A. (2004). The capacity to aspire: Culture and terms of recognition (R. Vijayendra & M. Walton Eds.), *Culture and Public Action*. 59-84. Stanford: Stanford University Press.

Armor, D., Marks, G., & Aron, M. (2018). The impact of school SES on student achievement: Evidence from U.S. statewide achievement data. Educational Evaluation and Policy Analysis, 40(4), 613-630. doi: http://ezproxyprd.bodleian.ox.ac.uk:2066/10.3102/0162373718787917

Bateman, M. (1990). Correlates of black and white student predisposition to pursue postsecondary education. Unpublished doctoral dissertation, Indiana University, Bloomington.

Bateman, M., & Hossler, D. (1996). Exploring the development of postsecondary education plans among African American and white students. College and University, (72)1, 2-9

Baum, S. (2007). College costs and debt. FDCH Congressional Testimony.

Beattie, I. R. (2002). Are all "adolescent econometricians" created equal? Racial, class, and gender differences in college enrollment. Sociology of Education, 75(1), 19-43.

Benefits.gov (2019). National School Breakfast and Lunch Program for Utah. Retrieved from https://www.benefits.gov/benefit/1991

Bergeson, A. A. (2009). College choice and access to college: Moving policy, research, and practice into the 21st century. ASHE-ERIC Higher Education Report, 35(4). Salt Lake City, UT: School of Education, The University of Utah.

Berrington, A., Robers, S., & Tammes, P. (2016). Educational aspirations among UK young teengarers: exploring the role of gender, class and ethnicity. British Educational Research Journal, 42(5), 729-755.

Bonnema, J., & van der Weldt, D.L.R. (2008). Information and source preferences of a student market in higher education. International Journal of Education Management, 22(4), 314-327.

Bourdieu P. (1977). Cultural reproduction and social reproduction (J. Karabel and A.H Halsey eds.) *Power and ideology in education*, 487-511. New York: Oxford University.

Bourdieu, P. (1984). Distinction: A social critique of the judgement of taste (R. Nice, Trans.) London: Routledge & Kegan Paul.

Brookover, W. D., Erickson, E., & Joiner, L. (1967). Educational aspirations and educational plans in relation to academic achievement and SES. The School Review (75), 392-440

Brown, C., Varley, P., & Pal, J. (2009). University course selection and services marketing. *Marketing Intelligence and Planning*, 27(3), 310-325.

Brown, M. G., Wohn, D. Y., & Ellison, N. (2016). Without a map: College access and the online practices of youth from low-income communities. *Computers & Education*, 92, 104-116. doi:10.1016/j.compedu.2015.10.001

Buckingham, J., Wheldall, K., & Beaman-Wheldall, R. (2013). Why poor children are more likely to become poor readers: The school years. *Australian Journal of Education*, 57, 190-213. doi:10.1177/0004944113495500

Cabrera, A. F., and LaNasa, S. M. (2000). Understanding the college-choice process. New Directions for Institutional Research, 107, 5 – 22

California State Department of Education. (1960). A Master Plan for Higher Education in California. Retrieved from https://www.ucop.edu/acadinit/mastplan /MasterPlan1960.pdf

Callender, D., & Jackson, J. (2008). Does the fear of debt constrain choice of university or subject of study? *Studies in Higher Education*, 33(4), 405-429.

Cantwell, B., Marginson, S., Smolentseva, A. (2018). High Participation Systems of Higher Education. Published to Oxford Scholarship Online, Nov 18. Retrieved from https://ezproxyprd.bodleian.ox.ac.uk:10137/view/10.1093/oso/9780198828877.001.0001/oso-9780198828877-chapter-5

Carnegie Classification of Institutions of Higher Education. (2019). *About Us*. Retrieved from http://carnegieclassifications.iu.edu/

Ceja, M. (2006). Understanding the role of parents and siblings as information sources in the college choice process of Chicana students. *Journal of College Student Development*, 47, 87–104.

Charles, M., & Bradley, K. (2009). Indulging Our Gendered Selves? Sex Segregation by Field of Study in 44 Countries. *American Journal of Sociology* 114 (4), 924–976. Retrieved from http://www.ncbi.nlm.nih.gov/

Cho, S., Hudley, C., Lee, S., Barry, L, and Kelly, M. (2008). Roles of gender, race, and SES in the college choice process among first-generation and non-first-generation students. Journal of Diversity in Higher Education., Vol. No. 2, pp. 95-107.

Chowdry, H., Crawford, C., Dearden, L., Goodman, A., & Vignoles, A. (2010). Widening participation in higher education: Analysis using linked administrative data. St. Louis: Federal Reserve Bank of St Louis. Retrieved from https://ezproxyprd.bodleian .ox.ac.uk:7316/docview/1698570156?accountid=13042

Church of Jesus Christ of Latter Day Saints. (2019). Facts and Statistics. Retrieved from https://newsroom.churchofjesuschrist.org/facts-and-statistics/state/utah

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, S95–S120

Coleman, J.S, & others. (1966). Equality of Educational Opportunity. Retrieved from https://ezproxy-prd.bodleian.ox.ac.uk:7316/docview/64462185?accountid=13042

Collegeboard. (2018). How to Convert Your GPA to a 4.0 Scale. https://pages.collegeboard .org/how-to-convert-gpa-4.0-scale

Collegeboard (2016). *Education Pays 2016*. Retrieved from https://trends. collegeboard.org/sites/default/files/education-pays-2016-full-report.pdf

Comrey, A., & Lee, H. (1992). *A first course in factor analysis* (2nd ed.). Hillsdale, NJ: Erlbaum.

Conley, D. (2001). Parental assets and postsecondary schooling. *Sociology of Education*, 74(1), 59-72.

David, M.E., S.J. Ball, J. Davies, and D. Reay. 2003. Gender issues in parental involvement in student choices of higher education. *Gender and Education, 1*5(1), 21–36.

Davies, P., Qui, T., & Davies, N. (2014). Cultural and human capital, information and higher education choices. *Journal of Education Policy,* 29(6), 804-25.

DeVellis, R.F. (1991). *Scale development: Theory and applications*. Newbury Park, CA: Sage.

Dickson, L. (2010). Race and gender differences in college major choice. *Annals of the American Academy of Political and Social Science*, 627(1), 108–24. http://ann.sagepub.com/content/627/1/108.full.pdf

Drewes, T. & Michael, C. (2006). How do students choose a university?: An analysis of applications to universities in Ontario, Canada. *Research in Higher Education*, 47(7), 781-800.

Dynarski, S. (2002). The behavior and distributional implications of aid for college. *American Economic Review*, 92(2), 279-285.

Dynarski, S. (2003). Does aid matter? Measuring the effect of student aid on college attendance and completion. *American Economic Review*, 93(1), 279-288.

Education and Social Inequality. (n.d.) Available: http://www.trinity.edu/-mkearl/strat-ed.html

Fairweather, J. S. (2000). Diversification or homogenization: How markets and governments combine to shape American higher education. Higher Education Policy, 13(1), 79-98. doi:http://dx.doi.org/10.1016/S0952-8733(99)00027-6

Finney, J. & Kelly, P. (2004). Affordability: Obtaining and making sense of information about how students, families, and states pay for higher education. *Change*, 54-59.

Fouad, N., & Brown, M. (2000). The role of race and class in development: Implications for counseling psychology (In S. D. Brown & R. W. Lent eds.), *Handbook of counseling psychology*, 3, 379–408. New York, NY: Wiley

Francis, B., Connelly, P., Archer, L., Hodgen, J., Mazenod, A., Taylor B., Tereshchenko, A., & Pepper, D. (2017). Attainment grouping as self-fulfilling prophecy? A mixed methods exploration of self-confidence and set level among year 7 students. *International Journal of Educational Research*, 86, 96-108.

Fridely, J., & Sharpe, R. (2016). Advancing understanding of affordability in Washington state: An interactive model exploring student higher education financing. *Journal of Education Finance*, 41(4), 473-489.

Gale, T., & Parker, S. (2015). Calculating student aspiration: Bourdieu, spatiality and the politics of recognition. *Cambridge Journal of Education*, (45)1, 81-96.

Garder, P.W., Ritblatt, W N., and Beatty, J.R. (2000). Academic achievement and parental school involvement as a function of high school size. *High School Journal*, 83(2), 21-27.

Gorard, S., See, B., & Davies, P. (2012). *The Impact of Attitudes and Aspirations on Educational Attainment and Participation*. York: Joseph Rowntree.

Grodsky, E., and Jones, T.M. (2007). Real and imagined barriers to college entry: Perceptions of cost. *Social Science Research*, 36, 745-766.

Guadagnoli, E., & Velicer, W. F. (1988). Relation to sample size to the stability of component patterns. Psychological *Bulletin*, 103 (2), 265-275. doi: 10.1037/0033-2909.103.2.265j

Gutman, L.M., & McLoyd, V.C. (2000). Parents' management of their children's education within the home, at school, and in the community: An examination of African American families living in poverty. *Urban Review*, 32(1), 1-24.

Hair, J., Black, W., Babin, B., Anderson, R. (2012*). Multivariate Data Analysis* (New International Eds.). Edinburgh: Pearson.

Hamrick, F.A., & Stage, F.K. (2004). College predisposition at high-minority enrollment , low-income schools. *Review of Higher Education*, 27(2), 151-168.

Hao, L., & Bonestead- Bruns, M. (1998). Parent-child differences in educational expectations and the academic achievement of immigrant and native students. *Sociology of Education*, 71(3), 175-198

Harker, D., Slade, P., and Harker, M. (2001). Exploring the decision process of school leavers' and 'mature students' in university choice. *Journal of Marketing for Higher Education*, 11(2), 1-20.

Hartas, D. (2016). Young people's educational aspirations: Psychosocial factors and the home environment. *Journal of Youth Studies*, 19(9), 1145-1163.

Hearn, J. C. (1991). Academic and nonacademic influences on the college destinations of 1980 high school graduates. *Sociology of Education*. 64(3), 158-171.

Hirsch, F. (1976). *Social Limits to Growth*. Cambridge, MA: Harvard University

Holmes, C., & Mayhew, K. (2016). The economics of higher education. Oxford Review of Economic Policy, 32(4), 475–496. https://doi.org/10.1093/oxrep/grw031

Hossler, D., & Gallagher, K. (1987). Studying college choice: A three-phase model and the implication for policy-makers. *College and University*, 62(3), 207-221.

Hossler, D., J. Braxton, and G. Coopersmith. (1989). Understanding student college choice. In Higher Education: A Handbook of Theory and Research, edited by J. C. Smart, 231-288. New York: Agathon Press.

Hossler, D., Schmit, J., & Vesper, N. (1999). *How Social, Economic, and Educational Factors Influence the Decisions Students Make*. Baltimore, MD: Johns Hopkins University Press

Hoyt, J. and Howell, S. (2012). Why students chose the branch campus of a large University. *Journal of Continuing Higher Education*, 60(2), 110-116.

Hurtado, S., Inkelas, K.K., Briggs, C., and Rhee, B.S. (1997). Differences in college access and choice among racial/ethnic groups: Identifying continuing barriers. *Research in Higher Education*, 38(1), 43-75.

Hutcheson, G., & Sofroniou, N. (1999). *The Multivariate Social Scientist*. London: Sage.

Imenda, S.N., Kongolo, M. and Grewal, A.S. (2004). Factors underlying technikon and university enrolment trends in South Africa. *Educational Management Administration & Leadership*, 32(2), 195-215.

Jackson, P.R., Wall, T., Martin, R, and Davids, K. (1993). New measures of job control, cognitive demand, and production responsibility. *Journal of Applied Psychology*, 78(5), 753-762.

Johnson, T., Halpin, G., & Halpin G. (2001). *Theory of Reasoned Action and Choosing a Major in Engineering.* Paper presented at the meeting of the Mid-South Educational Research Association, Little Rock, Arkansas.

Jones, J. (2016). *Americans Still Say Postsecondary Education Very Important*. Gallup Analytics. Retrieved from https://news.gallup.com/poll/190580/americans-say-postsecondary-education-important.aspx

Jung, J.Y. (2013). Amotivation and indecision in the decision-making processes associated with university entry. *Research in Higher Education*, 54(1), 115-136.

Kaiser, H. (1970). A second-generation little jiffy. *Psychometrika*, 35, 401-415.

Kao, G., & Tienda, M. (1998). Educational aspirations of minority youth. *American Journal of Education*, 106(3), 349-384. Retrieved from https://ezproxyprd.bodleian.ox.ac.uk:7316/docview/223984035?accountid=13042

Kass, R., & Tinsley, H. (1979). Factor analysis. *Journal of Leisure Research*, 11, 120-138.

Kern, C. W. (2000). College choice influences: Urban high school students respond. *Community College Journal of Research and Practice*, 24, 487-494.

Keskinen, E., Tiuraniemi T., and Liimola, T. (2008). University selection in Finland: How the decision is made. *International Journal of Educational Management*, 22(7), 638-650.

Kline, P. (1999). *The Handbook of Psychological Testing* (2nd ed.). London: Routledge.

Lang, D. (2009). Articulation, transfer, and student choice in a binary post-secondary system. *Higher Education*, 57(3), 355-371.

Leslie, D. (2003). Using success to measure quality in British higher education: Which subjects attract the best-qualified students?. *Journal of the Royal Statistical Society: Series A* (Statistics in Society), 166(3), 297-308.

Litten, L.H. (1982). Different strokes in the applicant pool: Some refinements in a model of student college choice. *The Journal of Higher Education*, 53(4), 382-402.

Lopez-Bonilla, J.M., Barrerra, R.B., Serrano, M.A.R., Lopez-Bonilla, L.M., Forencio, B.P., Rodriguez, M.C.R. and Altamira, B.S. (2012). Reasons which influence on the students' decision to take a university course: differences by gender and degree. *Educational Studies*. 39(3), 85-95.

Lucas, S.R., & Good, A.D. (2001). Race, class, and tournament track mobility. *Sociology of Education*, 74(2), 139-156.

Marginson, S. (2013). The impossibility of capitalist markets in higher education. *Journal of Education Policy*, 28(3), 353–70.

Mastekaasa, A., & Smeby, J.C. (2008). Educational choice and persistence in male and female-dominated fields. *Higher Education*, 21(6), 459-475.

Mazenod, A., Hodgen, J., Francis, B., Taylor, B., & Tereshchenko, A. (2019). Students' university aspirations and attainment grouping in secondary schools. *Higher Education*, 1-17. doi:http://ezproxy-prd.bodleian.ox.ac.uk:2066/10.1007/s10734-018-0355-x

McDonough, P. (1997). *Choosing Colleges: How Social Class and Schools Structure Opportunity*. Albany, NY: State University of New York Press.

Morgan, P. L., Farkas, G., Hillemeier, M. M., & Maczuga, S. (2009). Risk factors for learning-related behavior problems at 24 months of age: Population-based estimates. *Journal of Abnormal Child Psychology*, 37, 401-413. doi:10.1007/s10802-008-92798

National Student Clearinghouse Research Center. (2019). *Current Term Enrollment: Spring 2018*. Retrieved from https://nscresearchcenter.org/currenttermenrollmentestimate-spring2018/

Nunnally, J. (1978). *Psychometric Theory* (2nd ed.) New York, NY: McGraw-Hill.

Oakes, J. (1985). *Keeping track: How Schools Structure Inequality* (2nd ed). New Haven, CT: Yale University Press.

Organization for Economic Cooperation and Development. (2013). PISA 2012 results: What makes school successful? Resources, policies, and practice (Volume IV), PISA, OECD Publishing. Retrieved from: https://www.oecd.org/pisa/keyfindings/pisa-2012-results-volume-IV.pdf

Parsons, S., & Hallum, I. (2014). The impact of streaming on attainment at age seven: evidence from the millenium cohort study. *Oxford Review of Education*, 40(5), 567-589.

Pasternak, R. (2005). Choice of institutions of higher education and academic expectations: the impact cost-benefit factors. *Teaching in Higher Education*, 10(2), 189-201.

Paulsen, M. B. (1990). College choice: Understanding student enrollment behavior. ASHE-ERIC Higher Education Report (No. 6). Washington, DC: School of Education and Human Development, The George Washington University.

Paulsen, M.B and St. John, E.P. (2002). Social class and college costs: Examining the financial nexus between college choice and persistence. *Journal of Higher Education*, 73(2), 189-236.

Perna, L. W. (2006). Studying college access and choice: A proposed conceptual model (J.C Smart ed.). *Higher education: Handbook of Theory and* Research, 21, 99-157.

Perna, L., & Titus, M. (2005). The relationship between parental involvement as social capital and college enrollment: an examination of racial/ethnic group differences. Retrieved from hp://repository.upenn.edu/gse_pubs/14

Pinxten, M., B. de Fraine, W. van den noortgate, J. van Damme, & D. Anumendem. 2012. Educational Choice in Secondary School in Flanders: The Relative Impact of Occupational Interests on Option Choice. *Educational Research and Evaluation,* 18 (6), 541–569. doi:10.1080/13803611.2012.702991

Pitre, P. E., Johnson, T. E., & Charisse, C. P. (2006). Understanding predisposition in college choice: Toward an integrated model of college choice and theory of reasoned action. College and University, 81(2), 35-42. Retrieved from https://ezproxyprd.bodleian.ox.ac.uk:7316/docview/225613565?accountid=13042

Pitre, P.E. (2002). *An Exploratory Study of College Choice: A Comparison of African American and White Maryland High School Students' Aspirations Towards College Attendance*. Unpublished doctoral dissertation. College of Education, University of Maryland College Park.

Pitre, P.E. (2006). College choice: A study of African American and white student aspirations and perceptions related to college attendance. *College Student Journal*, 40(3), 562-574.

Post, D. (1990). College-going decisions by Chicanos: The politics of misinformation. *Educational Evaluation and Policy Analysis*, 12(2), 174-187.

Price, I., Matzdorf, F., Smith, L., and Agahi, H. (2003). The impact of facilities on student choice of university. *Facilities*, 21 (10), 212 -220.

Radford, A. W., Tasoff, S., and Weko, T. (2009). Issue tables. NCES 2009-186. Washington, DC: U.S. Department of Education.

Redford, J. & Hoyer, K.M. (2018). *First-generation and Continuing-generation College Students: A Comparison of High School and Postsecondary Experiences.* Retrieved from https://nces.ed.gov/pubs2018/2018009.pdf

Rehberg, R. A. (1967). Adolescent career aspirations and expectations: Evaluation of two contrary stratification hypotheses. *Pacific Sociological Review,* 10, 81-90

Robinson, P. C. (1991). *ESP Today: A Practitioner's Guide*. New York: Prentice Hall.

Rothblatt, S. (1997). The Idea of a University and its Antithesis (S. Rothblatt ed.) *The Modern University and its Discontents: the Fate of Newman's Legacies in Britain and America, Cambridge*. Cambridge University Press, 1–49.

Saegert, S., Adler, N., Bullock, H., Cauce, A., Liu, W., & Wyche, K. (2007). *Report of the APA Task Force on Socioeconomic Status*. Washington, DC: American Psychological Association

Schofer, E. & Meyer, J. (2005). The worldwide expansion of higher education in the twentieth century. *American Sociological Review,* 70, 898–920.

Schriesheim, C.A., & Hill, K.D. (1981). Controlling acquiescence response bias by item reversals: The effect on questionnaire validity. *Educational and Psychological Measurement,* 41(4), 1101-1114.

Sellar, S. (2013). Hoping for the best in education: Globalisation, social imaginaries and young people. *Social Alternatives*, 32(2), 31-38.

Selwyn, N. (2011). Does technology make education fairer?. Education and technology: Key issues and debates. London, England: Continuum, 92-115. Retrieved from https://ezproxyprd.bodleian.ox.ac.uk/login?url=http://ebookcentral.proquest.com/lib/oxford/detail.action?docID=661054

Shultz, J. (2013). *How am I going to Pay for That!?: First-generation University Students and Their Financial Concerns.* University of Minnesota.

Sirin, S. R., & Rogers-Sirin, L. (2005). Components of school engagement among African American adolescents. *Applied Developmental Science*, 9(1), 5-13. Retrieved from https://ezproxy-prd.bodleian.ox.ac.uk:7316/docview/1140129217?accountid=13042

Smith-Maddox, R. (1999). The social networks and resources of African American eighth graders: Evidence from the national education longitudinal study of 1988. *Adolescence*, 34(133), 169-83. Retrieved from https://ezproxyprd.bodleian. ox.ac.uk:7316/docview/195945194?accountid=13042

Solorzano, D.G, & Ornelas, A. (2004). A critical race analysis of Latina/o and African American advanced placement enrollment in public high schools. *High School Journal*. 87(3), 15-26.

Solorzano, D.G. (1992). An exploratory analysis of the effects of race, class, and gender on student and parent mobility aspirations. *Journal of Negro Education*, 61(1), 30-44.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics* (5th ed.). Boston, MA: Allyn & Bacon.

Teichler, U. (1988) *Changing Patterns of the Higher Education System*. London: Jessica Kingsley Publishers

Teranishi, R., Allen, W. R., & Solorzano, D. G. (2004). Opportunity at the crossroads: racial inequality, school segregation, and higher education in California. *Teachers College Record*, 106(11), 2224-2247.

Tierney, M.,Houang R., & Henson, J. (1979). *Alternative Estimation Procedures for Studies of Student College Choice Behavior: A Cross-Validation Analysis*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco

Tillery, D. (1973). *Distribution and Differentiation of Youth: A Study of Transition from School to College*. Cambridge, Mass: Ballinger

Tillery, D., & Kildegaard, T. (1973). *Educational Goals, Attitudes and Behaviors: A Comparative Study of High School Seniors*. Cambridge, Mass.: Ballinger

Trent, J., & Medsker, L. (1969). *Beyond High School*. San Francisco: JosseyBass

Trow, M. (1974). Problems in the Transition from Elite to Mass Higher Education (OECD ed.). *Policies for Higher Education,* Paris: OECD, 51–101.

Trow, M. (2000). *From Mass Higher Education to Universal Access: The American Advantage*. University of Berkeley; California: Center for Studies in Higher Education, UC Berkeley.

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2019a). *Glossary.* Retrieved from https://nces.ed.gov /programs/coe/glossary.asp#postsecinstitution

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2019b). Immediate College Enrollment Rate. Retrieved from https://nces.ed.gov/programs/coe/indicator_cpa.asp

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2018a). *Fast facts: Tuition Costs of Colleges and Universities.* Retrieved from https://nces.ed.gov/fastfacts/display.asp?id=76

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2018b). *High School Longitudinal Study of 2009 (HSLS:09) Second Follow Up: A First Look at Fall 2009 Ninth-graders in 2016.* Retrieved from: https://nces.ed.gov/pubs2018/2018139.pdf

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2018c). *Undergraduate Enrollment*. Retrieved from https://nces.ed.gov/programs/coe/indicator_cha.asp

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2017*). Educational Institutions.* Retrieved from https://nces.ed.gov/programs/digest/d17/tables/dt17_105.50.asp

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2016). *Advancing Diversity and Inclusion in Higher Education*. Retrieved from https://www2.ed.gov/rschstat/research/pubs/advancing-diversity-inclusion.pdf

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2014a). *Postsecondary Attainment: Differences by Socioeconomic Status.* Retrieved from https://nces.ed.gov/programs/coe/pdf/coe_tva.pdf

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2014b). *Education Longitudinal Study of 2002 (ELS:2002): A first Look at 2002 High School Sophomores 10 years later*. Retrieved from: https://nces.ed.gov/pubs2014/2014363.pdf

U.S. Department of Education. (2019c). *Federal TRIO Programs Current-Year Low-Income Levels.* Retrieved from https://www2.ed.gov/about/offices/list/ope/trio/incomelevels.html

U.S. Department of Education (2019d). *Upward Bound Program*. Retrieved from https://www2.ed.gov/programs/trioupbound/index.html

U.S. Department of Education. (2019e). *Accreditation in the United States*. Retrieved from https://www2.ed.gov/admins/finaid/accred/accreditation_pg9.html

van Ewijk, R., & Sleegers, P. (2010). The effect of peer socioeconomic status on student achievement: A meta-analysis. *Educational Research Review,* 5, 134–150.

van Langen, A., L. Rekers-Mombarg, & H. Dekkers. 2006. Sex-Related Differences in the Determinants and Process of Science and Mathematics Choice in Pre-university Education. *International Journal of Science Education* 28 (1), 71–94. doi:10.1080/09500690500338920.

van Langen, A., L. Rekers-Mombarg, & H. Dekkers. 2008. Mathematics and Science Choice following Introduction of Compulsory Study Profiles into Dutch Secondary Education. *British Educational Research Journal*, 34(6), 733–745. doi:10.1080/01411920802041590.

Veloutsou, C., Patron, A. and Lewis, J. (2004). University selection: information: requirements and importance. *The International Journal of Educational Management,* 18(3), 106-171.

Venezia, A., & Kirst, M. (2005). Inequitable opportunities: How current education systems and policies undermine the chances for student persistence and success in college. *Education Policy, 19(2),* 283-307

Wilkins, S., Balakrishnan, M.S. & Huisman, J. (2012). Student choice in higher education: motivations for choosing to study at an international branch campus. *Journal of Studies in International Education,* 16(5), 413-433.

Yong, A.G. & Pearce, S. (2013). A beginner's guide to factor analysis: focusing on exploratory factor analysis. *Quantitative Methods Psychology*, 9(2), 79-94.

Appendix A
Expert Review Form

Thank you for agreeing to participate in the expert review process for the formulation of the final survey instrument. Included below is a list of influences that have proven to impact students' higher education choices across educational and sociological literature. In order to complete the review, please fill in the form below as follows:

Please rate how *relevant* you believe each item is to disadvantaged students' higher education considerations using a 3-point scale (3= high, 2=moderate, 1= low).

Please also indicate if the item is *interpretable/clear* for student respondents by circling either "yes" or "no."

Please indicate in the comments column if you find any question might be confusing for students and how it might be refined.

In the columns on the right, please indicate which category you think the item best belongs to: Social Influences (SOC), Institutional Influences (INS), Financial Influences (FIN), Academic Influences (ACA), or Reputational Influences (REP). If you feel the item does not fit any of these categories, please write in a suggestion.

Please leave all suggestions for the inclusion of any additional items/influences at the end of the form.

1	The prestige or reputation of the institution		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
2	The prestige or reputation of my intended major program		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
3	The prestige or reputation of the institution's sports programs		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
4	Yearly tuition costs		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						

(Continued)

5	The availability of scholarships offered through the institution		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
6	The overall diversity of the institution		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
7	The institution's proximity (closeness) to home		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
8	The affordability of on-campus housing (dorms)		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
9	Having friends who will attend the institution at the same time		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
10	A religious identification or affiliation of the institution		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
11	Having a parent or relative who graduated from the institution (alumni relation)		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
12	The availability of evening classes at the institution		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
13	A prominent social life at the institution		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					

(Continued)

	Yes						
	No						
14	The quality of teaching and/or research at the institution		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
15	The ability to complete institution credits while in high school through early college or concurrent enrollment		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
16	The availability of online classes		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
17	The availability of student jobs at the institution		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
18	The variety of degree choices at the institution (technical certificates, associates degrees, bachelor's degrees, master's degrees, professional degrees, doctoral degrees)		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
19	The average student-to-professor ratio at the institution		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
20	The physical size of the institution's campus		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
21	Parental/guardian input or opinion		SOC	INS	FIN	ACA	REP

(Continued)

Relevant	Clear	Comment					
	Yes						
	No						
22	The breadth of available extracurricular activities at the institution		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
23	The ability to qualify for in-state tuition rates		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
24	The institution's ranking in comparison to other institutions		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
25	A high selectivity or competition level for admission		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
26	Campus appearance		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
27	Campus facilities available		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
28	A high selectivity or competition level for admission		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
29	Student fee costs		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
30	Financial aid availability at the institution		S	IN	FI	A	R

(Continued)

Relevant	Clear	Comment					
	Yes						
	No						
31	The average cost of living in the areas surrounding the institution		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
32	Overall expected experience		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
33	The course content of my intended major at the institution		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
34	The duration/credit requirements of my intended major at the institution		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						
35	Overall expected experience		SOC	INS	FIN	ACA	REP
Relevant	Clear	Comment					
	Yes						
	No						

Personal Characteristics

1	Race	
Relevant	Clear	Comment
	Yes	
	No	
2	Ethnicity	
Relevant	Clear	Comment
	Yes	
	No	
3	Socioeconomic status (qualification for free or reduced lunch)	
Relevant	Clear	Comment
	Yes	
	No	

(Continued)

4	Family income (at/below poverty line based on family size)	
Relevant	Clear	Comment
	Yes	
	No	*(Continued)*
5	GPA	
Relevant	Clear	Comment
	Yes	
	No	
6	ACT/SAT scores	
Relevant	Clear	Comment
	Yes	
	No	
7	Concurrent Enrollment or Early College classes taken	
Relevant	Clear	Comment
	Yes	
	No	
8	Do you qualify for free or reduced lunch?	
Relevant	Clear	Comment
	Yes	
	No	
9	Sex/Gender	
Relevant	Clear	Comment
	Yes	
	No	
10	Sexual Orientation	
Relevant	Clear	Comment
	Yes	
	No	
10	Parental/guardian education (bachelor's degree attained)	
Relevant	Clear	Comment
	Yes	
	No	

Appendix B

Final Study Questionnaire

University of Oxford Department of Education
15 Norham Gardens
Oxford, England OX2 6PY



[Name redacted]
MSc in Higher Education, 2019
[Email redacted]

PARTICIPANT ASSENT FORM

CUREC Approval Reference: ED-CIA-19-120

High Hopes, Low Odds: Factors Impacting the Higher Education Considerations of Disadvantaged Students

- Your Upward Bound program has agreed to take part in a study run by the University of Oxford that explores the attitudes and choices of at-risk students concerning higher education.
- You will be asked to complete an anonymous survey to rank the importance of factors that may impact your choices concerning higher education. This survey should take no longer than 10 minutes.
- If you choose to opt out of this study, you may simply close the survey at any point.
- To find out more about the study, please read the attached information sheet. You may also e-mail the researcher at the address listed above if you have any questions.

I have read and understood the details of the above study, and have had the opportunity to ask questions and discuss the study with others. I have received satisfactory answers to my questions. I understand that the project has received ethics clearance through the University of Oxford's ethical approval process for research involving human participants, and I understand who will have access to the data, how it will be stored and what will happen to the data at the end of the study. I understand that participation is voluntary and that I am free to withdraw without giving any reason and without my education being affected in any way. I understand how to raise a concern or make a complaint.

I agree

→

(Continued)

Please select your gender:

- Male
- Female
- Non-binary/Other

Please select your race:

- Black
- Asian
- White
- Hispanic
- Pacific Islander
- Native American
- Other

(Continued)

Please indicate your current cumulative GPA:

- 0.00- 0.99
- 1.00- 1.99
- 2.00 - 2.99
- 3.00 - 3.99
- 4.0 or above

How many of your parents have earned a bachelor's degree?

- Neither parent or guardian
- One parent or guardian
- Both parents or guardians
- I do not know/I prefer not to say

(Continued)

Do you qualify for free or reduced lunch based on your family income?

- Yes
- No
- I do not know/I prefer not to say

Please select which type of institution you are most likely to first enroll in following high school:

- Technical/vocational school
- Community college/2-year college
- 4-year university
- I do not know
- I do not plan on pursuing higher education

→

(Continued)

Please indicate how important the following factors are when choosing which institution(s) (technical schools, colleges, or universities) you will apply to.

	Not Important At All	Somewhat Unimportant	Neutral	Somewhat Important	Very Important	I do not know/ I have not thought about this
The physical size of the institution's campus:	○	○	○	○	○	○
The affordability of on-campus housing (dorms):	○	○	○	○	○	○
The availability of scholarships offered through institution:	○	○	○	○	○	○
Parental/guardian input or opinion:	○	○	○	○	○	○
The availability of online classes:	○	○	○	○	○	○
The prestige or reputation of the institution's sports programs:	○	○	○	○	○	○
The breadth of available extracurricular activities at the institution:	○	○	○	○	○	○

	Not Important At All	Somewhat Unimportant	Neutral	Somewhat Important	Very Important	I do not know/ I have not thought about this
The quality of teaching and/or research at the institution:	○	○	○	○	○	○
Having a parent or relative who attended this institution (alumni relation):	○	○	○	○	○	○
The ability to complete institution credits while in high school through early college or concurrent enrollment:	○	○	○	○	○	○
Click to write Statement 26	○	○	○	○	○	○
The institution's proximity (closeness) to home:	○	○	○	○	○	○
Yearly tuition costs:	○	○	○	○	○	○
The institution's ranking in comparison to other institutions:	○	○	○	○	○	○

(Continued)

	Not Important At All	Somewhat Unimportant	Neutral	Somewhat Important	Very Important	I do not know/ I have not thought about this
Parental/guardian input or opinion:	○	○	○	○	○	○
The affordability of on-campus housing (dorms):	○	○	○	○	○	○
Having friends who will attend the institution at the same time:	○	○	○	○	○	○
A religious identification of the institution:	○	○	○	○	○	○
Having a parent or relative who attended this institution (alumni relation):	○	○	○	○	○	○
The overall diversity of the institution:	○	○	○	○	○	○
Yearly tuition costs:	○	○	○	○	○	○

	Not Important At All	Somewhat Unimportant	Neutral	Somewhat Important	Very Important	I do not know/ I have not thought about this
The prestige or reputation of the institution's sports programs:	○	○	○	○	○	○
The availability of evening classes at the institution:	○	○	○	○	○	○
The availability of online classes:	○	○	○	○	○	○
A variety of degree choices (certifications, associate's/bachelor's/master's/doctoral degrees):	○	○	○	○	○	○
Click to write Statement 26	○	○	○	○	○	○

→

We thank you for your time spent taking this survey.
Your response has been recorded.

Appendix C

Recruitment and Consent Forms

C1. Program Recruitment Form

University of Oxford Department of Education
15 Norham Gardens
Oxford, England OX2 6PY



[Name redacted]
MSc in Higher Education, 2019
[Email redacted]

Ethical Approval Reference: ED-CIA-19-120

Dear [Title and name],

My name is [Name redacted], and I am a student in education at the University of Oxford. I am contacting you because I am interested in conducting research with your program participants as part of my degree requirements. This project has already received ethical approval through the University of Oxford (Ethical Approval Reference: ED-CIA-19-120).

Mine is a quantitative study that seeks to gain perspective from disadvantaged students on the factors that impact their higher education considerations. If your program agrees to take part in this study, willing participants will be asked to complete a short electronic survey that will collect demographic information and data on their opinions concerning a number of factors related to their higher education considerations. **No personal information will be collected**. Student data will then be combined with data from other participating programs and analyzed to explore the factors that emerge as most important to disadvantaged students.

As the survey is electronic, I can provide you or cooperating staff members with the link in order to distribute it appropriately during program instruction time. The estimated time required to complete the survey is **less than 5 minutes**.

Please let me know your thoughts. I have included all information concerning my research, including my ethical approval, the information sheets, and the consent forms. Do let me know if you have any questions or concerns.

[Name redacted]

M.Sc. Higher Education, 2019
The University of Oxford

C2. Parental/Guardian Consent Form

University of Oxford Department of Education
15 Norham Gardens
Oxford, England OX2 6PY



[Name redacted]
MSc in Higher Education, 2019
[Email redacted]

PARENT/GUARDIAN CONSENT FORM

CUREC Approval Reference: ED-CIA-19-120

High Hopes, Low Odds:
Factors Impacting the Higher Education Considerations of Disadvantaged Students

- Your child's Upward Bound program has agreed to take part in a study run by [Name redacted], a student graduate student at the University of Oxford. This study explores the higher education choice and consideration process of disadvantaged students.
- If your child takes part, he/she will complete an anonymous survey to rank the importance of factors that may impact his/her choices concerning higher education institutions. This survey should take no longer than 5 minutes and will be completed during Upward Bound program time. This survey will collect **no** personal information.
- **If you wish for your child to take part, please fill in the form below and return it to an Upward Bound staff member.**
- To find out more about the study, please read the attached information sheet. You may also e-mail the researcher at the address listed above if you have any questions.

Name of child: _____ _____
Forename Surname

Upward Bound university affiliation: _____

I have read and understood the details of the above study and have had the opportunity to ask questions and discuss the study with others. I have received satisfactory answers to my questions. I understand that the project has received ethics clearance through the University of Oxford's ethical approval process for research involving human participants, and I understand who will have access to the data, how it will be stored and what will happen to the data at the end of the study. I understand that participation is voluntary and that my child and I are free to withdraw without giving any reason and without my child's education being affected in any way. I understand how to raise a concern or make a complaint.

I give permission for my child to take part in the above study.

Name of parent/guardian: _____

Signature: _____ **Date:** _____

C3. Participant Information Sheet



[Name redacted], MSc candidate
under the supervision of [Name redacted]

[Email redacted]
[Email redacted]

PARTICIPANT INFORMATION SHEET

Study Title: High Hopes, Low Odds: Factors Impacting the Higher Education Considerations of Disadvantaged Students

We'd like to invite you to take part in the research study listed above. Before you decide, it is important that you understand why the research is being done and what it would involve for you. Please take time to read this information, and discuss it with others if you wish. If there is anything that is not clear, or if you would like more information, please ask.

What is the purpose of the study?

- This study aims to explore the higher education considerations of disadvantaged students by exploring the factors that matter most to them.

Why have I been invited?

- Your child's Upward Bound program has agreed to participate in this study. All student participants of this program are invited to participate.

Do I have to take part?

- Participation is completely voluntary, and participants may withdraw for any reason before submitting the questionnaire.

What will happen to me if I decide to take part?

- Participants will complete a short questionnaire lasting approximately 5 minutes. This questionnaire will ask about the factors that influence which higher education institutions you are considering attending.
- Responses will be anonymized and combined with those from other Upward Bound participants across the state.

What should I consider?

- Please note that higher education institutions include technical schools, colleges, and universities. Even if you are planning on attending one of these institutions, your feedback is valued.
- Please note that no personal information is collected through this questionnaire. This means that responses cannot be rescinded once they are submitted.

(Continued)

Are there any possible disadvantages or risks from taking part?

- This study has received ethical approval, and no risks have been found for participants.

What are the possible benefits of taking part?

- Students may be able to more clearly consider their own higher education perceptions and choices after considering the wide range of factors that often impact choices.

Will my taking part in the study be kept confidential?

- Yes. No personally identifiable information (name, email, etc.) will be gathered from participants. All responses will be recorded blindly.
- All de-indentified data will be collected through the encrypted survey program *Qualtrics*^{TM}.
- Responsible members of the University of Oxford may be given access to data for monitoring and/or audit of the study to ensure that the research is complying with applicable regulations.

Will I be reimbursed for taking part?

- Participation is voluntary but no reimbursement is available as the survey will be conducted during program time.

What will happen to my data?

Data protection regulation requires that we state the legal basis for processing information about you. In the case of research, this is 'a task in the public interest.' The University of Oxford is the data controller and is responsible for looking after your information and using it properly.

We will be using information from your responses and will use the minimum personally-identifiable information possible. We will store the de-identified research data and any research documents with securely at the University of Oxford after the end of the study as part of the research record.

What will happen if I don't want to carry on with the study?

- Participation is voluntary, and participants may opt out of the study at any time before survey completion.
- After survey completion, de-identified information cannot be tracked or withdrawn.
- The survey will only collect completed responses, so there are no additional steps to take other than closing the survey if participants decide to opt out.

(Continued)

What will happen to the results of this study?

- All responses from students will be compiled and analyzed using the statistical software SPSS™ and incorporated into a research dissertation.
- This research is in part fulfilment of the requirements for an MSc in Higher Education.
- Any participant wishing to see the finalized research may contact the researchers.
- This research may be:
  - Published or presented at conferences

What if there is a problem?

- The University of Oxford, as Sponsor, has appropriate insurance in place in the unlikely event that you suffer any harm as a direct consequence of your participation in this study.
- If you wish to complain about any aspect of the way in which you have been approached or treated, or how your information is handled during the course of this study, you should contact [Name and email redacted].

Who is organising and funding the study?

- This study is organized under the direction of the University of Oxford Department of Education

Who has reviewed the study?

This study has been reviewed and given favourable opinion by the Department of Education Research Ethics Committee.

Further information and contact details:

Please contact [Name redacted] by email at: [Email redacted]

Thank you for considering taking part.

Appendix D

Participant Demographics

Gender		
	Frequency	Percent
Male	64	43.0
Female	85	57.0
Total	149	100.0

Race		
Hispanic	74	49.7
Pacific Islander	2	1.3
Native American	16	10.7
Other	4	2.7
Total	149	100.0

Parental bachelor's degree		
	Frequency	Percent
Neither parent or guardian	120	80.5
One parent or guardian	15	10.1
I do not know/I prefer not to say	14	9.4
Total	149	100.0

GPA		
	Frequency	Percent
1.00- 1.99	9	6.0
2.00 - 2.99	38	25.5
3.00 - 3.99	96	64.4
4.0+	6	4.0
Total	149	100.0

Free/reduced lunch qualification		
	Frequency	Percent
Yes	98	65.8
No	27	18.1
I do not know/I prefer not to say	24	16.1
Total	149	100.0

Appendix E

Study Approval Forms

CENTRAL UNIVERSITY RESEARCH ETHICS COMMITTEE (CUREC)

Form CUREC 1A Checklist for the Social Sciences and Humanities

The University of Oxford places a high value on the knowledge, expertise, and integrity of its members and their ability to conduct research to high standards of scholarship and ethics. The research ethics clearance procedures have been established to ensure that the University is meeting its obligations as a responsible institution.

They start from the presumption that all members of the University will take their responsibilities and obligations seriously and will ensure that their research involving human participants is conducted according to the established principles and good practice in their fields and in accordance, where appropriate, with legal requirements. Since the requirements of research ethics review will vary from field to field and from project to project, the University accepts that different guidelines and procedures will be appropriate.

- Please check **"Where and how to apply for ethical review"** and the **CUREC flowchart** first to see if you need ethics approval.
- Please complete this form using a word processor and email it, together with your supporting documents, to your **Departmental Research Ethics Committee (DREC) (if applicable)**. If you don't have a DREC please email this form to **ethics@socsci.ox.ac.uk** using your official **ox.ac.uk email** address. **Only emailed applications will be accepted.**

WHAT THIS CHECKLIST IS DESIGNED FOR

This **CUREC 1A checklist** is designed largely for research that falls within the Divisions of Social Sciences and Humanities where ethical issues are relatively few and straightforward. Interviews, field work and oral history are also included in the CUREC process.

The **full CUREC 2 application** is only required where certain project characteristics (e.g. type of participants, or procedures) result in a more complex set of ethical issues. It is expected that only in a limited number of cases will it be necessary for researchers to complete a CUREC 2 application. The checklist below will direct you to a CUREC 2 application if needed.

WHAT THIS CHECKLIST WILL NOT ASSESS

This checklist does not cover research governance, satisfactory methodology, or compliance with the requirements of publishers when administering their tests or questionnaires. As **principal researcher (i.e. principal investigator)**, it is your responsibility to ensure that requirements in these areas are met.

CUREC does not review studies classed as **audit** (see Glossary and Decision Flowchart for CUREC on our website).

If your study involves **NHS patients, NHS staff / data / facilities, or human tissue**, please check the Decision Flowchart for NHS approval and contact the Clinical Trials and Research Governance (CTRG) team in the first instance.

Further information on the University's research ethics procedures is available from the CUREC website.

(Continued)

SECTION A: Filter for CUREC2 application This section determines whether your study raises more complex issues which require the completion of a full application for ethical review, known as the CUREC 2 application. **(Please mark 'X' in the Yes/No column as appropriate to indicate your response.)**		
1. Are research participants classed as **people whose ability to give free and informed consent is in question**? (This may include those under 18 (though see "competent youths"), prisoners, or adults "at risk".) Your attention is drawn to the University's **Safeguarding Code of Practice** and its implications for researchers involving children or adults at risk, including the need for the work to be risk assessed and for researchers to undertake related training. (**Note**: If any of your participants are aged 16 or under, please answer 'Yes' here **and** also answer question 5 below.)	Yes X	No
2. By taking part in the research, will participants be at serious risk of criminal prosecution (e.g. by providing information on drug abuse or child abuse)?	Yes	No X
3. Does the research involve the **deception** of participants?	Yes	No X
4. Does your research raise issues relevant to the **Counter-Terrorism and Security Act (the Prevent duty)**, which seeks to prevent people from being drawn into terrorism? Please see advice on this on our **Best Practice Guidance web page**.	Yes	No X
If you have answered 'No' to all of the questions above please go to **Section B**. If you have answered 'Yes' to any question above continue to question 5 below.		
5. Is your project covered by a CUREC approved procedure (formerly known as "CUREC Protocols")?	Yes X	No
If yes, please give research procedure number(s): AP25		
If you answered **'Yes'** to **ANY** of questions **1-4, and** answered **'No'** to question **5, please stop completing this checklist and do not submit it for ethical review**. Instead, please complete the CUREC 2 application form from the CUREC website. Then submit the CUREC 2 form for ethical review. If you answered 'Yes' to ANY of questions 1-3, **and** answered 'Yes' to question 5, please go on to **Section B.**		
SECTION B: Contact details and project description (NB: must be typed not handwritten)		
Contact details:		
1. **Principal investigator** / supervisor (if student research (title and full name):	Dr. Ian Finlay	
2. Name of student (if student research):	Tanner Telford	
3. Degree programme, e.g. DPhil, BA, MPhil, BSc, MSc (if student research):	MSc in Higher Education	
4. Department or Institute name:	Oxford Department of Education	
5. Address for correspondence (if different from above):	15 Norham Gardens, Oxford England OX2 6PY	
6. University e-mail (**not** private email) and telephone:	Tanner.telford@education.ox.ac.uk	
7. Name and status of others taking part in the project, e.g. third year undergraduate; postdoctoral research assistant:	N/A	

(Continued)

SECTION B continued	
Project description:	
8. Title of research project:	Factors Influencing Utah Students' Higher Education Choices
9. List of location(s) where project will be conducted:	Remote data collection from Utah, USA
10. If your research involves overseas travel or fieldwork and your department requires a travel risk assessment, will you have completed and returned a risk assessment form beforehand? (This has to be approved by your department before you travel. If you are travelling overseas, you are strongly advised to take out University travel insurance.)	Yes No Not required in this instance X
11. Anticipated duration of research project overall:	5 months
12. Anticipated start and end dates of the research project involving human participants:	From: (01/04/19) To: (12/04/19) Please note that you will need ethics approval **before** you start your research. CUREC 1As may take up to 30 days to process.
13. External organisation funding the research (if applicable):	

14. Title and very brief and simple lay description of **research** (about 150 words), plus description (about 200 words) of the nature of participants.

a) Title, brief description of research (150 words) in lay language. When describing the research, please include your methodology, how you are applying professional guidelines, and the use to which results/data will be put. **Please also declare any conflicts of interest here.**

Title: Factors Influencing Utah Students' Higher Education Choices

Methodology: first the survey will be given to field experts (trained high school counsellors) to verify validity of survey items as legitimate influencing factors. The survey will then be refined and finalized.

Participation will be granted from the district level and then at the school level from administrators and participating teachers. Parents must then give consent for students to participate. Students will report on the importance of certain factors in choosing to which higher education institutions they will apply. Survey factors range from the yearly cost of tuition to institutional diversity. The anonymized results will be analysed using statistical software to look for trends and anomalies in regards to existing literature. Results will add to the existing knowledge base concerning student concerns and higher education choices, reaffirming or contesting literature on the issue.

Professional guidelines: the survey will collect no personal information and will be administered by school officials. Only students with parental permission can participate.

Conflicts of interest: NA

(Continued)

SECTION B continued

b) Description of participants and **obtaining informed consent** (200 words). When describing participants, please include

- criteria for inclusion/exclusion
- method of recruitment
- processes for consent to participate

Please ensure you attach as separate documents (if applicable, in English translation):

- your recruitment and advertisement material e.g. a poster or brief invitation letter/ email
- information for participants to read (or hear) before they agree to take part e.g. written information sheets or (only if applicable) oral information scripts.
- a document to record informed consent. Templates for written consent forms and/or oral information scripts (in case of an oral consent process) are available from the CUREC website
- a guide to interview questions (this may be a list of questions to be asked, or a preliminary scope of questions), or a sample of other instruments (such as a sample questionnaire)
- (if relevant) debriefing document after participants have taken part

Critera for inclusion/exclusion: participation is only open to juniors at participating Utah high schools whose parents have given written consent.

Method of recruitment: All advertisement and participation will be centralized through one core class and will be facilitated by cooperating high school teachers/counselors after principal permission is gained.

Obtaining informed consent: parental consent forms will be returned to cooperating teachers, who can then provide students with survey link to be completed in class. The student consent form will be included within the survey.

(Continued)

15. What are the ethical issues connected with your research and what steps have you taken to address them? Please do not answer 'none'. The committee needs to see evidence that you have identified potential ethical issues with respect to your research and have taken steps to address them. These issues could relate to:

- your own physical and psychological safety as a researcher (please see the University's and Social Science Division's Safety in Fieldwork guidance
- participant burdens and/or risks, and
- data protection/ confidentiality (please also see section 18).

For more guidance on ethical issues, please see
http://researchsupport.admin.ox.ac.uk/governance/ethics/resources

Physical/Psychological Safety: NA

Participant Burdens: participant burdens will be minimized through the administering of this survey during class time by cooperating schools. The survey should take no longer that 15 minutes. The preliminary sub-survey given to school counsellors has been simplified as much as possible, but will require time (5 to 10 minutes) taken out of personal schedules to complete.

Confidentiality: no personal student information will be recorded or gathered, including emails. Students with parental consent will be provided the unique link to complete the survey and submit their responses anonymously. This link will be released only to school officials, who will release it to students in the classroom.

Section B continued

16. Will you obtain informed consent according to CUREC guidelines and good practice in your discipline before participation?	Yes X	No

(Continued)

If you have marked '**No**', please give a brief explanation and justification for this decision here:		
17. Will your research involve discussing sensitive issues? This could be information relating to race or ethnic origin, political opinions, religious beliefs, physical/mental health, trade union membership, sexual life or criminal activities.	Yes	No X
If you have marked '**Yes**', please make sure that you have included some **supporting information** (as directed in question 14 of this section) showing the range of questions covering these issues. Demographic survey questions will ask students to provide some of this information if they feel comfortable, but there is no further discussion.		
18. **Management and handling of personal and other research data** Your management and handling of personal data and special category data of human participants, either directly or via a third party, will need to comply with the requirements of the General Data Protection Regulation (GDPR) and the new Data Protection Act, as set out in the University's Guidance on Data Protection and Research. In answering the questions below, please also consider the points raised in the Data Protection Checklist. For advice on research data management and security, please consult with the University's Research Data Team (**researchdata@ox.ac.uk**) and/or your local IT department and the University's web pages on research data management.		
a) Will your research involve the collection of **records of consent** (e.g. written forms, audio-recorded, or other recorded consent)? **If 'Yes', these will be classed as fully identifiable personal data (directly linked to an individual).** The consent forms will be collected by the teacher of the high school students, and none of the personal data will be made available to me.	Yes X	No
b) Will your research involve the collection of **other personal data?** **If 'Yes'**, specify in what form(s) this will be stored:	Yes	No X
• Fully identifiable (directly linked to an individual)	Yes	No X
• Pseudonymised (potentially identifiable as data may be attributed to an individual if linkage information can be accessed elsewhere by researchers)	Yes	No X
• Fully anonymised (i.e. cannot be linked to an individual)	Yes	No X
c) Will any of the personal data you collect classify as **special category** data? **If 'Yes'**, in what form(s) will this be stored:	Yes X	No
• Fully identifiable (directly linked to an individual)	Yes	No X

(Continued)

• Pseudonymised (potentially identifiable as data may be attributed to an individual if linkage information can be accessed elsewhere by researchers)	Yes No X
• Fully anonymised (i.e. cannot be linked to an individual)	Yes X No

d) How will any personally identifiable data be collected, transferred and backed up? Please describe the arrangements for any physical transfer of personal data (including paper records and data captured electronically via portable media) from where it is collected to local storage.

The only personal information will be contained within consent forms, which will be held within individual high schools according to their data protection protocols.

e) Where, and for how long, will participants' personally identifiable data be stored during and after the study? (Please outline the procedures for ensuring confidentiality, eg security arrangements, anonymisation or pseudonymisation of such data. Please distinguish between records of consent and other forms of personally identifiable data stored)

See above.

f) If storing pseudonymised data, please confirm that identifiers will be held separately from the research data and linked through a unique study number. Specify how and at what point the pseudonymisation will occur, how the linkage information will be stored and state whether or not (and when) the linkage will be destroyed.

NA

g) Who will have access to the personally identifiable data? If personally identifiable data is to be shared with another organisation, how will it be transferred/disclosed securely?

Only school officials will have access, who already have access to this information otherwise.

h) When and how will personally identifiable data be destroyed? (NB. Personally identifiable data should be destroyed when no longer required.)

Schools will destroy consent forms following the study.

i) How, where and for how long will other research data be stored after the study has finished? For more information about University and research funder retention policies, please see the University's web pages on research data management.

Anonymized data will be held on my personal computer and backed up using the Oxford University IT services.

(Continued)

SECTION C: Methods and procedures to be used	
Method used: Please ensure you have addressed any potential ethical issues related to these methods in Section 14 and in your Participant Information Sheet	**Please mark 'X'**
1. Analysis of existing records	
2. Snowball sampling (recruiting through contacts of existing participants)	
3. Use of casual or local workers e.g. interpreters	
4. Participant observation	
5. Covert observation	
6. Observation of specific organisational practices	
7. Participant completes questionnaire in hard copy	
8. Participant completes online questionnaire or other online task	X
9. Using social media	
10. Participant performs paper and pencil task	
11. Participant performs verbal or aural task (e.g. for linguistic study)	
12. Focus group	
13. Interview	
14. Audio recording of participant (you will generally need specific consent from participants for this)	
15. Video recording of participant (you will generally need specific consent from participants for this)	
16. Photography of participant (you will generally need specific consent from participants for this)	
17. Others (please specify):	

(Continued)

SECTION D: Professional guidelines and training		
In this section, please mark 'X' against at least one of the following professional guidelines you aim to adhere to. You should use the principles listed in your chosen guideline(s) in conducting your own research. **Note:** this is not an exhaustive list.		**Please mark 'X'**
Research specialism/ methodology	**Association and guidance document**	
Anthropology	Association of Social Anthropologists of the UK and Commonwealth	
Criminology	http://www.britsoccrim.org/ethics/	
Education	British Educational Research Association Ethical Guidelines for Educational Research	X
Geography	Association of American Geographers Statement on Professional Ethics	
History	Oral History Society of the UK Ethical Guidelines	
Internet-based Research	British Psychological Society: Conducting Research on the Internet Association of Internet Researchers Ethics Guide Also see our Best Practice Guidance on internet-based research	
Law (Socio-Legal)	Socio-Legal Studies Association: Statement of Principles of Ethical Research	
Management	Academy of Management's Professional Code of Ethics	
Political Science	American Political Science Association (APSA) Guide to Professional Ethics in Political Science	
Politics	Political Studies Association. Guidelines for Good Professional Conduct	
Psychology	British Psychological Society Code of Ethics and Conduct	
Social Research	Social Research Association: Ethical Guidelines	
Sociology	The British Sociological Association: Statement of Ethical Practice	
Visual Research	ESRC National Centre for Research Methods Review Paper: Visual Ethics: Ethical Issues in Visual Research	
Other professional guidelines. Please specify the other guidelines used here:		

Please indicate what training in research ethics the researchers involved with this study have received, e.g. the title of the course and date completed (online training available at http://researchsupport.admin.ox.ac.uk/support/training/ethics). If no formal training has been undertaken, please indicate any discussions of research methodology between researchers and supervisors here.
Pathway module concerning ethics and discussion with supervisor.

(Continued)

SECTION E: Signatures (The SSH IDREC Secretariat accepts either option below. If you have a DREC, check which signature option it prefers.)

- **Option 1:** 'Electronic signatures', i.e. email confirmations from a University of Oxford email address, can be accepted. Separate emails should come from each of the relevant signatories as outlined below, indicating acceptance of the relevant responsibilities. **Pasted images of signatures cannot be accepted in the sections below.**
- **Option 2:** Handwritten (wet-ink) signatures. Please scan them and the rest of the checklist pages to create a single PDF document and email through.

Please ensure this checklist is signed by:

For staff research:	For student research:
1. Principal investigator	1. Principal investigator (project supervisor)
2. Head of Department (or nominee)	2. Head of Department (or nominee)
	3. Student researcher

1. **Principal investigator signature/supervisor signature** (if student research)

I understand my responsibilities as **principal investigator** as outlined in the CUREC glossary and guidance on the CUREC website.

I declare that the answers above accurately describe the research as presently designed, and that a new checklist will be submitted should the research design change in a way which would alter any of the above responses so as to require completion of CUREC 2 (involving full scrutiny by an IDREC). I will inform the relevant IDREC if I cease to be the principal investigator on this project and supply the name and contact details of my successor if appropriate.

Signature: Name redacted

Print name (block capitals): Name redacted **Date:** .....02/25/2019.....

2. **Departmental endorsement signature**

I have read the research project application named above. On the basis of the information available to me, I:

(i) consider the principal investigator to be aware of her/his ethical responsibilities in regard to this research;
(ii) consider that any ethical issues raised have been satisfactorily resolved or are covered by relevant professional guidelines and/or CUREC approved procedures, and that it is appropriate for the research to proceed (noting the principal investigator's obligation to report should the design of the research change in a way which would alter any of the above responses so as to require completion of a CUREC 2 full application);
(iii) am satisfied that: the proposed project design and scientific methodology is sound; the project has been/will be subject to appropriate **peer review**; and is likely to contribute to existing knowledge and/or to the education and training of the researcher(s) and that it is in the **public interest**.

Signed by Head of Department or nominee *(example nominees for student research include the Director of Graduate Studies/ Director of Undergraduate Studies)*:

Signature: .....

Print name (block capitals): ...CUREC OFFICE... (L. MOLWAY) ..... **Date:** .....02/25/2019.....

3. **Student signature** (if student research)

I understand the questions and answers that have been entered above describing the research, and I will ensure that my practice in this research complies with these answers, subject to any modifications made by the principal investigator properly authorised by the CUREC system.

Signed by student: Name redacted

Print name (block capitals) Name redacted ...02/25/2019.....

(Continued)

SECTION F: SUBMITTING THE COMPLETED CHECKLIST	Please mark 'X'
1. Check you have completed all sections (A-E) 2. Ensure your application is signed by you, your supervisor (if student) and department 3. **Please attach all supporting documents (see section B, question 14b for details).** If the appropriate supporting documentation is not included with your application, you will then be asked to provide this separately. **This may well delay the ethical review process, and thus the start of your research.** 4. Ensure you have declared conflicts of interest (if any) in Section B, question 14a. 5. If your department has a Departmental Research Ethics Committee (DREC), submit this checklist and supporting information to the appropriate departmental officer. 6. If your department does not have a DREC, submit the checklist and supporting information to the SSH IDREC (email ethics@socsci.ox.ac.uk). 7. Applications must be sent by email from your official ox.ac.uk email account. Please do not send applications by post.	

D2. Dissertation Title Change Form

UNIVERSITY OF OXFORD
DEPARTMENT OF EDUCATION

Notification of Change of Title Form

All MSc Students

Please submit this form **electronically** to the Higher Degrees Office. Please do not submit it later than the 1st of August, or it will not be accepted.

NAME OF STUDENT:	[Name redacted]
CANDIDATE NUMBER:	1036948
NAME OF SUPERVISOR:	[Name redacted]
COURSE:	HE
PREVIOUS DISSERTATION TITLE: Factors Influencing Utah Students' Higher Education Choices	
PROPOSED NEW TITLE: High Hopes, Low Odds: Factors Impacting the Higher Education Considerations of Disadvantaged Students	
SUPERVISOR APPROVAL Please check this box to confirm you have discussed this title with your supervisor and received his/her approval for it: ☒	