

# The Paradox of High Satisfaction and Low Choice: A Study of Student Satisfaction and University Access in Haiti

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**BOSTON COLLEGE**  
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Program  
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THE PARADOX OF HIGH SATISFACTION AND LOW CHOICE:  
A STUDY OF STUDENT SATISFACTION AND UNIVERSITY ACCESS IN HAITI

Dissertation by  
HARRY E. DUMAY

Submitted in partial fulfillment of the requirements  
for the degree of  
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2009

THE PARADOX OF HIGH SATISFACTION AND LOW CHOICE:  
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By

Harry E. Dumay

Dissertation Chair: Philip G. Altbach

The literature on Latin American higher education indicates the existence of a relationship between socio-economic status and college enrollment. One of the hypotheses of this study was that in Haiti, socio-economic status is related not only to college access but also to students' ability to enter their preferred field of study. As a result, students from higher socio-economic status were expected to report higher levels of satisfaction with their academic situation.

In this quantitative survey study, an instrument was developed and administered to 742 college students in 5 different Haitian institutions in order to determine whether there exists this hypothesized relationship between students' socio-economic status and their satisfaction with their academic situation.

Data analysis revealed a weak, negative relationship between students' socio-economic status and their satisfaction with their academic situation. No significant relationship could be established between socio-economic status and access to a preferred field of study, across all students. Instead the study found what seems to be a paradox: although a majority of students were not able to access their desired field of study, they showed a

high level of satisfaction with their academic situation. This paradox is explained by the importance of intrinsic factors as well as job prospect in predicting students' satisfaction.

Other findings include (a) a low level of participation for women in Haitian higher education, (b) a lower level of satisfaction for Haitian female science, engineering, and technology students, and (c) little differentiation in academic preparation between science, engineering, and technology students and the rest of the sample.

Based on the research findings, the study concludes with policy recommendations to help Haitian higher education achieve its economic development mission.

## DEDICATION

To Maggie, Joshua, and Cassandra

Thank you for your patience, love, and support

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## **Chapter 1. The questions, their relevance and theoretical grounding**

A record percentage of students - 62.19%- completed successfully the two national exams which mark the final steps of Haitian secondary education (Le Nouvelliste, 2008 a). The percentage of success was even higher for the more than 50,000 students who underwent the last step, the *Baccalauréat* II exam certifying high school completion. That news was announced with great satisfaction by the Haitian Ministry of Education and Professional Formation (MENFP) at the end of the 2007-08 academic year. Although these results show steady progress in achievement (Le Nouvelliste, 2008 b), they do not describe an altogether hopeful picture. The troubling question is, “what happens to those graduates?” From prior years, we can predict that some of them will elect to join the workforce, competing for the rare jobs that one can obtain with a high school diploma in Haiti. A few others, perhaps up to three thousand at the most, will become international students, traveling to study mainly in the Dominican Republic (Cadeau, 2007; Juste, 2005), Cuba (Jerome, 2007), the United States (Hudson, Towey, & Shinar, 2008), or Mexico. They will be sponsored by their families, foreign governments, and some bilateral agreements between Haiti and other countries. The rest will pin their hope on obtaining a post-secondary degree in Haiti. Their aim is to enhance their employment prospect in a country with chronic unemployment. They will be ready to endure great sacrifices, to move away from their home town and face living conditions that are even more precarious than usual.

Those will be the lucky ones, because for decades, the scores of thousands of students who graduate from high school have competed not only with their peers for a



college spot but also with previous years' graduates who did not make it then. All are vying to be one of the approximately two thousand students to whom the *Université d'Etat d'Haiti* (State University of Haiti) offers a free college education. That scenario has repeated itself for generations. Recently it has been mildly ameliorated by the appearance of some private institutions, which offer an alternative to students who can afford it.

Haitian higher education is widely viewed as a key element for the country's progress. Indeed, the Haitian government continues to fund public higher education because of its role in forming the country's professionals, technocrats, and politicians (Alexis et al., 1991). In spite of this stated importance of higher education, high school seniors' difficulty at accessing college has persisted for decades without receiving much attention by researchers or policymakers. There is no previous study that attempted to apprehend Haitian students' experiences in accessing college, selecting their field of study, or choosing an institution.

My dissertation intends to begin to address this oversight. I realize that an in-depth way to document the phenomenology of students' triumphs or despair at accessing college in Haiti would be through rich descriptive texts. This is not what I attempt to do through this research, however. Rather, I am seeking to identify variables that are associated with one particular aspect of students' experiences, their level of satisfaction with their options.

This introductory chapter sets the stage for this endeavor. In it, I first pose the specific questions that I intend to address. I then explain the relevance of this enquiry at

both philosophical and practical levels. Finally, I present some of the theoretical grounding for the study.

### **1. Problem statement and research questions**

By all socio-economic indicators, Haiti is one of poorest countries in the Americas and one of the 50 least developed countries identified in the United Nations Conference on Trade and Development Report (United Nations Conference on Trade and Development, 2007). The Haitian government reports that 55% of the Haitian people live on less than \$1 and 71% on less than \$2 per day (Ministère de la Planification et de la Coopération Externe, 2004). Life expectancy is 57 and infant mortality is at more than 72 babies for every thousand births, more than twice the regional average (Ministère de la Planification et de la Coopération Externe, 2004). It is estimated that only 54.5% of the population above age 15 knows how to read and write (Ministère de la Planification et de la Coopération Externe, 2004). Statistics and data from international agencies paint an equally sobering picture. More than two-thirds of the labor force do not have formal jobs (Central Intelligence Agency, 2008). The Haitian national budget, at just over \$1 billion (Central Intelligence Agency, 2008), is less than that of many American mid-size universities. Haiti's overall Human Development Index (HDI) in 2005 was .529, well below the regional -Latin America & Caribbean- index of .82 (United Nations Development Program, 2007). With a Gini index of 59.2, the richest 10% of the population earns 47.7% of all household income.

Many factors have contributed to Haiti's economic under-development since the birth of the nation, two centuries ago. A lack of major natural resources (Anglade, 1981; Anglade, 1982), two hundred years of corruption and mismanagement by political leaders (Farmer, 2004; Pean, L. J. R., 2000), residual post-colonial class division based on skin color (Lobb, 1946), and discrimination and isolation by the international community (Trouillot, 1990; Trouillot, 1995) can all be cited as equally important causes.

However, in the two decades following the 1987 ousting of dictator Jean-Claude Duvalier, the country experienced an alarming deterioration of its already precarious political and socio-economic conditions. The downward spiral reached a crisis point in 2004. An international intervention forced then-President Aristide into exile and installed an interim government backed by a multinational peace-keeping force, avoiding a full-blown civil war (Polgreen, 2004). Since then, some stability has returned to the country. Bilateral and multilateral donors have pledged to assist with economic revitalization and to rebuild institutions (Marquis, 2004).

The current blueprint for Haiti's socio-economic growth is contained in the *Document de Stratégie Nationale pour la Croissance et la Réduction de la Pauvreté*<sup>1</sup> (DSNCRP). This strategy paper, written in collaboration with the World Bank and the International Monetary Fund (IMF) and approved by the Haitian Parliament, lays out the plans to achieve targeted levels of growth, human development, and democratic governance in a two-phased approach by 2010 and 2015 (International Monetary Fund, 2008). The calculated cost of \$3,864,000,000 is expected to come from the Haitian

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<sup>1</sup> Growth and Poverty Reduction Strategy Paper

government, foreign assistance, loans from international agencies such as the IMF and the World Bank, and foreign direct investment (International Monetary Fund, 2008). Consistent with the Millennium Development Goals, the strategy document places a great emphasis on human development, education, and training as important elements of sustainable growth (International Monetary Fund, 2008). Not surprisingly, expanding access to basic education for all is viewed as the most urgent priority. However, still in keeping with the Millennium Development Goals, the strategic growth plan also places importance on the development of science and technology and therefore on higher education (International Monetary Fund, 2008; United Nations Millennium Project, 2005).

The current state of higher education in Haiti reflects both the under-investment and general degradation prevalent in the rest of the country over recent decades. After years of turmoil, a lack of reliable information makes it difficult to truly ascertain most basic aspects of Haitian higher education: from student enrollment to the number of faculty members (Lloyd, 2005). One element of consensus, however, is that much effort is required to bring the Haitian tertiary education system to an acceptable level, by international standards (Kolker, 1994).

As Haiti and its international funding agencies contemplate investing in Haitian higher education, given the country's meager resources, they will need to make strategic decisions about what type of higher education to promote and what sector to bolster. Science, engineering, and technology seem to be the areas promoted by the United Nations (United Nations Millennium Project, 2005). Are Haitian students motivated to

study science, engineering, and technology? Why or why not? Enrollment data in the few institutions that offer degrees in those areas do not provide adequate answers to these questions because they do not reveal the number of students who wished to enroll.

Much research has been conducted about the factors that influence American students' choice of their majors (Briggs, 2006; Malgwi, Howe, & Burnaby, 2005; Porter and Umbach 2006). For many reasons, not the least of which is the vast difference in the two countries' socio-economic realities, the determinants of choice for American students cannot be assumed to be the same for Haitians who wish to attend college. Given the lack of reliable information on higher education in Haiti in general, it is not surprising that the literature offers no answer to questions related to Haitian students' academic choices. Consequently, such inquiries remain extremely relevant for Haitian and international policy-makers.

American students enjoy universal access to higher education (Trow, 2006) because at least two conditions exist in the United States. First, the country has a differentiated system which presents a great number of very diverse institutions offering everyone the opportunity for some form of post-secondary education (Johnstone, 2005; Perkin, 2006; Trow, 2006). Second, a well developed system has been put in place for students to finance the cost of their education through various possible channels: family assets, scholarships, grants, public or private loans (Johnstone, 2005). In this context, the decision to attend college or not is practically dependent on the student's preference and interest and has almost no limiting factor. Each student determines, based on their social, intellectual, and economic values, whether attending college is a worthwhile undertaking,

given that there are practically no other obstacles to their participating in some form of tertiary education.

This “freedom of choice” is not the case in poor countries where only a very small minority of students enroll in college (Mungaray & Lopez, 1996). The capacity of existing Haitian institutions to absorb 7,500 students annually (Rameau, 2007) does not meet the demand of the tens of thousands of students who complete secondary school every year (Kolker, 1994). Moreover, there is no well developed system in place to finance the education of students who are not admitted to the public institutions. Johnstone (2006) outlines the difficulties for developing countries especially in Africa to establish viable financial assistance programs to support higher education.

My hypothesis is that given their lack of options, Haitian students, especially the less fortunate, do not get to select the institution that they attend or the field of study in which they engage. Their academic “decisions” are driven by variables other than their preference, interest, or even academic ability. Rather, they end up enrolling in any institution that will accept them, leading to low levels of satisfaction with their so-called choices. By contrast, just as in Chile (Matear, 2006), Brazil (Warden, 1998), and Colombia (Forste, Heaton, & Haas, 2004), the more privileged Haitian students, those who attended the best private high schools, are more academically prepared and have a greater chance of attending an institution and enrolling in a field of study that they truly select. To test this hypothesis, I am seeking to answer this primary question:

***Is there a correlation between Haitian students’ socio-economic status and their level of satisfaction with their academic situations?***

I will also attempt to answer two secondary questions:

*1. What other factors are also correlated with Haitian students' level of satisfaction with those academic "decisions"?*

*2. Is there a correlation between students' socio-economic status and their access to a preferred field of study and do these combined factors influence students' level of satisfaction with their academic and career "decisions"?*

Finally, to examine Haitian higher education's performance against the Millennium Development Goals of promoting science and technology, I will evaluate the status of this academic area in Haiti and will seek to answer two tertiary questions:

*1. Is there a difference in socio-economic status between students who pursue science and engineering fields of study and those who do not?*

*2. Is there a difference in the level of satisfaction and access to preferred field of study between science and engineering students and their counterparts?*

Thus, this dissertation intends to begin illuminating circumstances surrounding Haitian students' academic decisions. It seeks to identify factors, both positive and negative, associated with those academic choices or lack thereof. As interesting as these lines of inquiry may be, do they have any relevance?

## **2. Topic relevance**

Three different sets of pertinent questions come to mind when thinking of the relevance of this research study. The first one addresses on a philosophical level the

purpose of higher education: is economic development a generally accepted goal of higher education? The second one is practical and questions one of my premises: how can higher education promote economic development in the poorest countries? The third is directly related to the outcome of this study: will its findings have any importance for higher education in Haiti?

*Economic development: a purpose for higher education*

An important element that will be taken for granted throughout this dissertation is that economic development is a key purpose of post-secondary education. Indeed, part of the study's relevance stems from the assertion that Haitian higher education must play a significant role in the country's growth. However, it is not a universally accepted principle that tertiary education has an inherent economic objective. Before moving on with this concept in subsequent chapters, it is relevant to spend some time laying the ground for this basic assumption of relevance.

Some would wonder whether economic development is congruent with the traditional role of higher education. In the Deweyian view, considering higher education as an engine for economic development is overly reductionist. Narrowing the purpose of higher education within an economic plane fits too well with global capitalism and subordinates the aspirations of the individual to the needs of corporations and societies. Individuation, or "the active realization of a citizen's moral, intellectual, and physical improvement" (Martinez Aleman, 2001 p. 385), should be the primary aim of higher education.



For Rorty (1999), higher education's primary purpose is to induce enquiry. Lower level education produces literate citizens and lays the foundation. In turn, higher education builds on that base and prompts college students to seek their own truth, by introducing a dose of skepticism in them about generally accepted "truths." This process of "self-creation" is what Rorty calls individualization. Rorty, nevertheless, also views a vocational role for tertiary education. Thus, the ideal form of higher education should mix professional training with prodding for doubt, enquiry, and self-awareness. In that regard, Rorty is in agreement with Guttmann (1982) who states that schooling should equally serve the functions of expanding the intellectual imagination and of preparing for a socially useful and desirable profession.

Hook (1974) would argue that none of these views is in contradiction with the role of higher education as a catalyst for socio-economic development. They all converge to highlight the role of education for a prosperous society. Industrious nations need educated citizens who make the right political and economic choices. In other words, "the health of the commonwealth depends upon the intellectual sophistication of its citizens." (Hook, 1974 p. 37). But even more concretely, higher education must have an economic purpose for the individual. A broad or liberal education should be "education for a vocation" (Hook, 1974, p.37) that accomplishes the "legitimate desire" of improving students' "economic lot" (Hook, 1974, p.34).

Ultimately, Martinez Aleman, Rorty, and Guttmann are all inspired by Deweyian pragmatic principles. Dewey's pragmatism is a very practical view of the world which is motivated by "devising ways of diminishing human suffering and increasing human

equality, increasing the ability of all human children to start life with an equal chance of happiness” (Rorty, 1999 p.xxix). Reducing suffering, inequality, and lack of opportunity are indeed clear socio-economic objectives.

The philosophical debate on the purpose of higher education is important, for it serves as a unifying constant across times and across countries. However, notwithstanding these considerations, it is hard to ignore modernity. The heavy footprint of today’s universities and the undeniable impact of the research that they conduct on life in the 21<sup>st</sup> century are all too ubiquitous. People in developed nations can expect to live longer than ever before in human history. Advances in information and communication technology have exponentially increased productivity, creating unparalleled levels of wealth for many and raising standards of living for most. Much of this improvement in the human condition can be credited to universities which produce the research and professional experts that drive our post-industrial society (Perkin, 2006). Thus, one must accept the fact that higher education, in addition to forming inquisitive, independent minds and preparing the individual for a profession, also plays an overall important socio-economic role. But where does Haitian higher education fit into this scenario? This technologically-oriented, growth-promoting education beyond the secondary level sounds more like a “developed world” phenomenon. Is any of it applicable for the poorest countries?

Higher education is widely viewed as an essential agent for economic development (Ryan & Heim, 1997; Walshok, 1997; Wyman, 1997). This is not only true in advanced industrialized societies; it is also relevant in the least advanced countries,

where the majority of the people live in extreme poverty and for which, “the knowledge gap” with the rest of the world seems to be widening (The World Bank, 2000). Scholars, policymakers, as well as international funding agencies now view the development of human capital through higher education as one way for the poorest countries to rise out of poverty (The World Bank, 2000; Zaglul & Sherrard, 2006). They assert that developing countries should develop their own capacity and create their own technologies (Juma & Yee-Cheong, 2005) in order to solve developing world problems, which are no longer the concern of industrialized nations (Sachs, 2005).

Now that I have established the philosophical relevance of higher education’s role in economic development, I will turn my attention to explaining how this function can take shape on a practical level.

#### *How higher education achieves poverty reduction*

Increasingly, the developing world has come to realize the potential for higher education to better human lives and assist people in extricating themselves from poverty. Universities in the least developed nations are adapting themselves to their “third mission” (Etzkowitz, Webster, Gebhart, & Terra; 2000). Three new important functions have emerged for developing countries’ higher education: knowledge generation, partnership with private industry and government for innovation, and entrepreneurship. All these functions must have a direct impact not only on economic development but also on poverty reduction. Let us review these three roles and examine how new they really are.

Serving as a generator of knowledge is nothing new for universities. The promotion of new understanding is well viewed as a traditional role of higher education. Kerr (2001) defines the university as a knowledge producing institution and Altbach (2001, p.1) points out that “for almost two centuries, research, especially basic research has been a key function of a university.” It is true that the university produces knowledge, but for what purpose?

Simpson and Wendling (2005) state that knowledge application-not just creation-is also an important concern for higher education. This view resonates among many contemporary higher education scholars. This is because, as they see it, knowledge is acquired to benefit the human condition and alleviate misery. For that purpose, higher education comes out of its ivory towers and serves a more urgently economic and practical goal, especially in developing countries (Etzkowitz, Webster, Gebhart, & Terra, 2000). This very active problem-solving orientation of developing countries’ higher education is not without controversy. It departs from the Cambridge-Oxford model which inspired American liberal arts institutions. But it is also nothing new as it approximates the American land-grant model.

For developing countries, in our 21<sup>st</sup> century economy where know-how is the currency, universities -“the main actors in the knowledge generation process” (Karrison & Zhang, 2001 p. 181) - are the banks. This environment has “cast a new spotlight on the role of knowledge institutions in general, and universities in particular (Zaglul, Sherrard, & Juma, 2006). They have a crucial and vital role to play in developing countries that are at various stages of establishing a foothold in the knowledge economy. Given the

expenses associated with educating students at the tertiary level, poor countries can ill afford to promote knowledge for knowledge's sake when it is so crucial for their advancement. Thus, the creation of practical knowledge that can be applied to local socio-economic problems is the first role of universities in developing countries.

This leads to universities' second role, which is to partner with government and industry. This three-way partnership, which redefines the university's function, has been dubbed the *triple helix model* (Almeida, 2008; Etzkowitz & Leydesdorff, 2000; Razak & Saad, 2007; Saad, 2004). According to the model, a continuous exchange of ideas and a complex inter-institutional relationship between the university, government, and industry are essential for knowledge generation and innovation (Almeida, 2008). The university's role is dramatically influenced in two ways. First, it has more of an economic stake in the research it pursues, prompting critics to argue that through this model, the university loses its essential objective role in society (Etzkowitz, Webster, Gebhart, & Terra; 2000). Second, it becomes more attuned to industry, creating new functions such as an office of technology transfer. Despite the critics, the model "is increasingly... used as a policy framework in both developed and developing countries to strengthen their national and regional economies through learning and innovation" (Saad, 2004, p. 18). Form follows function and the university in the triple helix model evolves to being an "amalgam of teaching and research, applied and basic, entrepreneurial and scholastic interests" (Eskowitz, Webster, Gebhart, & Terra, 2000 p.326).

Several successful applications of the *triple helix model* have been reported by scholars. Several universities in Brazil, including the Pontifical Catholic University in

Rio, the University of Itajuba, and the Federal University of Minas Gerais have implemented successful programs to partner with business and government to affect product and market innovations (Almeida, 2008). In Malaysia (Razak & Saad, 2007) and Algeria (Saad, 2004) the university system has made great strides in their collaboration with industry and government and is continuing to improve this triple-sided partnership.

In partnering with government and industry, universities in the developing world are expected to develop one additional characteristic and take on their third role, entrepreneurship. The entrepreneurial university manifests itself in the activist role it plays in transferring the knowledge and technology generated through research for solving practical world problems. One example is of the work of Tabeisa, a consortium of African and British higher education institutions in Ghana. Using prior research that it conducted on gender, poverty, and entrepreneurship, Tabeisa promoted entrepreneurship among women cooperatives to enhance the garment manufacture sector (Conlon & Humphreys, 2007). “Academic entrepreneurialism is a unique feature of the Triple Helix model, built on the idea that universities take on a generative role in directing regional economic development” (Razak & Saad, 2007 p. 213). To fulfill that mission, universities set up commercial arms or create business incubators to facilitate the transfer of technology from the laboratory to the production facility.

One frequent criticism of such university ventures is that, though they may promote economic growth in the long run or even in the short run, they do not have an immediate effect on poverty reduction. With poverty reduction being one of the chief objectives of the Millennium Development Goals, an investment in higher education

would not be an attractive proposition for policymakers worldwide if it could not have an immediate effect on extreme poverty. Given the many other pressing needs in the least developed countries, higher education would not be viewed as a wise investment if it only provided indirect or spillover benefits to the poor. From the Tabeisa example, however, Conlon and Humphreys (2007, p. 130) conclude that “ the project described serves to illustrate the point that Universities can deploy their expertise in such a way to directly reduce poverty; and on this basis we welcome the increased recognition of the role of higher education institutions in international development.”

In sum, just like Tabeisa in Ghana or the Institute of Itabeja in Brazil, Haitian institutions can create knowledge, be entrepreneurial, and partner with industry and government to bring about innovation and reduce poverty. In order to do that, they must first be able to answer some basic questions about their most important constituency that will assist them in positioning themselves better strategically. How do they attract students? Why do students chose to attend them? What prompts students to select one field of study over another? It would be a challenge to answer all of these basic questions in one study. However, this dissertation aims to begin providing some answers and to lay the ground for further studies.

### *The specific relevance for Haiti*

This brings me to the specific relevance of this dissertation for Haiti. Even if I establish that economic development is a legitimate purpose for higher education and I

further indicate that higher education-through its new roles of knowledge producer, business and government partner, and entrepreneur-offers great potential of economic progress for the developing world and poor countries like Haiti, I still have not answered one very crucial question: how will this specific dissertation and its research questions be relevant for Haiti and its economic development? My assertion is that it will be relevant in four ways: its potential policy outcomes, its contribution to the literature on Haitian higher education, its social justice orientation, and its implications for Haiti's economic development.

There are some potentially serious policy outcomes to be derived from this study. Fundamentally, the research is concerned with Haitian students' access to higher education in general and their desired field of study in particular. It seeks to identify the obstacles to access. Many of the potential hurdles for Haitian students are similar to those of students in different countries. Studies in those countries have determined that national or regional policies addressing the cost of higher education, financial aid to students, the decentralization of institutions, students' access to quality primary and secondary education, among other factors have an impact on access. It is hoped that the findings from this study will elucidate which of these factors are positively or negatively associated with access in the Haitian context. In that case, they would provide policymakers some information to guide them in the design of public policy if their goal is to promote and expand access to higher education in general and even to certain fields of study.



Another hope for this dissertation is that it contributes to updating the literature on Haitian higher education. Just a handful of publications have been produced on Haitian higher education and most of these date from the 1980s and 1990s. They all examine Haitian higher education from the standpoint of institutions, either cataloguing Haitian institutions (Romain, 1987) or the various faculties of the *Université d'Etat d'Haiti* (Alexis et al., 1991; Bunn and Gutt, 1945) or introducing a plan for one or more institutions (Rameau 2007; UNICA, 1970). One book chronicled the power struggle between the *Université d'Etat d'Haiti* and the Haitian government (Deshommes, 2005). No publication has examined higher education solely from the experience of students. Thus, this work will contribute to the literature in two ways. First, it aims to establish the current state of Haitian higher education, touching on private and public institutions, overview of curricula, student life, and the professoriate. Second, it seeks to bring the unique perspective of the students.

This research is also addressing some social justice concerns. Haiti is one of the countries with the most extreme case of inequalities worldwide. While “80 percent of the population controls a mere 32 percent of income... 2 percent of the wealthiest segment controls 26 percent of total income” (International Monetary Fund, 2008 p. 19). Apparently education, which is often associated with social mobility worldwide, does not offer any remedy to this situation in Haiti. To the contrary, according to the Haitian government report, “[t]he education system in Haiti is a highly exclusionary one that contributes to the perpetuation and reinforcement of inequalities through limited access to schools...and differences in the quality of schools, the result being that generally, poorer

children have access to low-quality education” (International Monetary Fund, p.22). This status quo is maintained at the higher education level because access to the few spots is based on academic competition. As a result, the students from the lowest socio-economic status who attended the less performing schools are strongly disadvantaged. Therefore, this study hopes to bring attention empirically to this inequality in opportunity by making the relationship between socio-economic status and access its primary question.

Finally, this dissertation hopes to offer a paradigm change in the thinking on Haitian economic development, although indirectly. Haiti receives most of the funding for its development projects from international agencies and bilateral donors. In general, these funding sources did not grant or lend money for higher education because the conventional wisdom has been that basic education, not higher education should be the main focus of the poorest countries (Banya & Elu, 2001; Kempner & Jurema, 2002). This study uses as a premise that the millennium development goals and their emphasis on the development of science and technology to accelerate poverty reduction have shifted the paradigm. Despite the lack of investment in the sector, Haitian higher education has always been viewed as having a role to play on the country’s economic development (Alexis et al., 1991). The two new elements that this study is calling Haitian policymakers to consider are the extent of the investment and the sectors in which to invest. If higher education is going to be truly seen as an agent for economic development, many more resources will need to be invested in the sector to bring it from its current state. Moreover, if science and technology are the sectors promoted by the international community, significant efforts will be needed to build the inexistent sector

of science and to enhance the offerings in technology. Lessons learned from this study about what motivates Haitian students to choose or not to choose science and technology as a career path could guide decision makers in making the sector more attractive and reachable for Haitian high school graduates. Finally, if Haiti were to follow the triple helix model and the unequivocal engagement of universities in promoting entrepreneurship, appropriate resources and policies would need to be brought to bear.

In sum this dissertation is relevant on a broad philosophical level: it is the role of higher education to promote economic development, in addition to creating independent thinkers and liberal citizens. It also matters on a practical level: higher education has been demonstrated to promote economic development in developing countries when universities adopt the roles of producing applicable knowledge, partnering with industry and government, and being entrepreneurial. Finally, it has potentially direct applications for Haiti at the policy, research, social, and economic levels. It is also important to note that the premise that higher education is important for economic development has strong theoretical underpinning through human capital theory. I will lay out the theoretical framework for this study in the next section.

### **3. Theoretical framework**

I have stated previously that the study finds its relevance in the importance of higher education for economic development in general, and for the economic development of Haiti in particular. The insights gained from the research questions may

assist Haitian policymakers in positioning Haitian tertiary education better in order to accomplish that key objective. In this chapter's final section, it is relevant to reveal the body of work that supports this assertion, human capital theory.

Although human capital theory was formally formulated in the 20<sup>th</sup> century, it is believed to have been introduced by Adam Smith (Baptiste 2001; Sweetland 1996). Contributions to the field have been extensive. Sweetland (1996) estimates the productivity in the area to exceed 120 publications per year between 1966 and 1976, resulting in the award of five Nobel prizes to scholars endeavoring in the discipline. These statistics indicate that an exhaustive review of human capital theory is an awesome task which goes well beyond the scope of this dissertation.

Some scholars view human capital theory as the field of study in which economics and education intersect; it is "the branch of economics concerned with education" (Sweetland, 1996 p. 342). Fundamentally, the theory suggests that individuals and society both gain economically from an investment in education (Baptiste, 2001; Brist and Caplan, 1999; Hlavna, 1992; Little, 2000; Menon, 1997; Mixon Jr. & Hsing, 1994; Sweetland, 1996). Many of the benefits are non-economic and not quantifiable. They include an educated citizenry, improvement in health and nutrition, increase in overall quality of life and the promotion of civic values, among other outcomes (Sweetland, 1996). Economic benefits derived from education, on the other hand, can be measured in two ways: by isolating the gains to society from increased levels of education in the population (public return) and by assessing the difference in earnings between people with various levels of education (private return) (Baptiste, 2001;

Sweetland, 1996). In either method, education is considered a form of human capital (Little 2000). Its deliberate cultivation is human capital formation and the costs associated with it are deemed human capital investment (Baptiste, 2001).

The link between investment in education and economic growth generally dominates the discourse around **public** return of investment in education (Baptiste, 2001). Several country-specific studies have explored the role of education in development (Little, 2000). In the United States, regional efforts to enhance economic expansion through states' investment in higher education specifically have been documented (Ryan & Heim, 1997; Washok, 1997; Wyman, 1997). Hlavna (1992) demonstrated that community colleges are an important component of regional economic growth strategies by promoting an increased productivity in the workforce. Two World Bank reports have asserted the link between higher education and economic growth worldwide (The World Bank, 2000; The World Bank, 2002). The United Nations' Millennium Goals deem the development of science and technology through higher education an indispensable tool for the least-developed countries to progress economically (Juma & Yee-Cheong, 2005b).

Let's concede that higher education provides economic benefits to the state. However, are those benefits worthwhile when stacked against the opportunity costs for the individual citizen? Several studies have determined the **private** costs and benefits of higher education. Viewed in that context, higher education is a vehicle for socio-economic mobility (Baptiste, 2001). In fact, many economists believe that the benefits of higher education which accrue to individuals are more substantial than the dividends that

the public receives from it (Johnstone, 2005), hence a call for citizens to increasingly share a greater portion of the cost of tertiary education (Johnstone, 2006).

Human capital theory, therefore, asserts that an investment in higher education benefits both the state and the individual. The inverse has also been proven to be true. Indeed, development studies, by comparing the effects of various levels of investment in higher education, further demonstrate in a comparative perspective the negative impact of a lack of investment in the sector at a national level (Little, 2000).

Thus, the theory supports the premise for this study, which is that an investment in higher education will be beneficial to Haiti's economic progress despite its opportunity cost. This assertion is echoed by The World Bank, through the Millennium Development Goals (MDG).

“Sustainable MDG-based strategies require the buildup of indigenous institutions and skills to advance science, technology, and innovation.” (United Nations Millennium Project, 2005 p.31)

This introductory chapter laid out the research questions, explained their relevance, and provided the theoretical support for this dissertation. The body of the work itself is contained in the next seven chapters. The second chapter outlines the elements of the methodology that will be utilized to gather and analyze the data needed to answer the primary, secondary, and tertiary research questions. The third chapter provides an overview of Haitian higher education and concludes with a definition of key terms and concepts that will be used throughout the study. The fourth chapter reviews the literature surrounding key themes in the study: career and major selection, the definition and

measurement of satisfaction, and access and financing of higher education especially in Latin America and the Caribbean. The fifth chapter offers a global, cursory view of the data and presents descriptive statistics for key variables. The sixth chapter answers the primary and secondary research questions. The seventh chapter focuses on the tertiary questions. The final chapter summarizes the findings, offers policy recommendations, and presents the study's limitations.

## **Chapter 2. Methodology**

This chapter provides a detailed outline of the methodology used in the study. The first section presents a rationale for the method of analysis used. The second piece covers the development of the instrument. The third part explains the refinement of the survey instrument through a pilot data collection. The fourth segment discusses the data gathering and the target sample size. The fifth section lays out the data analysis techniques used in the study. An addendum to the chapter in Appendix A recounts the data gathering experience.

### **1. Research method**

A review of the relevant literature revealed that most studies in the area of student academic decisions followed a quantitative approach. Many used pre-existing instruments (Dickinson & Tokar, 2004) while others deployed newly created survey instruments (Robert & Mosher-Ashley, 2000; Porter & Umbach, 2006) or took advantage of secondary data (Ogiegbaen & Uwameiye, 2005; Perna & Titus, 2004).

The various studies employed a combination of statistical analysis techniques. Most used logistic regression analyses (Cabrera & La Nasa, 2000; Enman & Lupart, 2000; Forste, Heaton, & Haas 2004; Grodsky & Jones 2007; Porter & Umbach, 2006; St. John, Paulsen, & Carter 2005). This is due to the fact that the dependent variable in these studies represented discrete nominal or dichotomous outcomes. In addition to logistic regression, Pitre (2006) performed chi-square and ANOVA analyses and Kim (2004), chi-square analyses. Stokes (2007) was primarily interested in differences between



various groups vis-à-vis a career in teaching. As a result, chi-square analyses allowed him to test for those between-group differences. Briggs (2006) and Malgwi, Howe, and Burnaby (2005) used ANOVA F-test and t –tests respectively. Phinney, Dennis, and Osorio (2006) and Dickinson and Tokar (2003) evaluated the reliability of their survey instruments through factor analysis. Finally, Perna and Titus (2004) used hierarchical linear modeling (HLM) to examine the contextual effect of states on the relationship between their dependent (student enrollment) and independent variables (socioeconomic status, gender, race, test scores, mathematics achievement, and parental influence).

A few studies were conducted using qualitative methods. For example, Arzy, Davies, and Harbour (2006) used a phenomenologic approach to understand the experiences of fourteen low-income university students in private institutions. Also, through a purposeful sampling of students at five colleges, Somers et al. (2006) distributed questionnaires to 223 students who also participated in focus groups. Each set of transcripts from the focus groups was coded by two researchers using NUDIST.

From the preponderance of quantitative over qualitative studies, it seems that a quantitative methodology is more appropriate to examine factors influencing students' academic choices. This is not surprising given that most of the studies attempted to inferentially predict how several variables may predict students' behavior. Inferential statistics are generally associated with quantitative methods (Howell, 2006). This dissertation also intended to predict how several variables may affect students' decision, or their satisfaction with these decisions, through inferential techniques. As a result, this research was conducted through a quantitative survey study. The survey was distributed

to Haitian college students, with a preference for students in their first year in college. The results were analyzed using various statistical techniques. I will discuss next the survey development, data collection, and analysis.

## **2. Survey development**

The review of the counseling psychology and career counseling literature showed that many scales have been developed to study the factors that influence students' indecision in their college selection (Hawkins, Bradley, & White, 1977; Chartrand et al., 1990). Some instruments were also written to study what impacts students' choices of their field of study (Porter & Umbach, 2006; Aycan & Fikret-Pasa 2003). I reviewed these existing instruments for their applicability to my research study and concluded that none of them could be used in their current forms for two main reasons: first, they do not reflect the social, cultural, and economic specificities of Haiti and second, they were not developed to address the questions of this dissertation. The Cooperative Institutional Research Program (CIRP) freshman survey that is administered annually to American college students across the United States attempts to measure many of the variables that are important for this study. However, the CIRP survey also seeks a lot of additional information that is not relevant for this project. Moreover, some of the CIRP questions would not be applicable to Haiti. For example to measure students' ability, the survey asks "What were your score on the ACT and/or SAT?" (Higher Education Research Institute, 2008)

The review of the literature provided a list of variables and constructs that are believed to be associated with students' academic choices and their college experiences. This list of variables is represented in Table 2.1.

Future earnings	Socio-economic status
Perception of future earnings	Educational aspirations
Availability of future jobs	Career aspirations
Perception of availability of future jobs	Parental encouragement
Academic ability	Institution financial policies (i.e. tuition, financial aid)
Academic self-concept	College attributes
Demographic aspects (age, gender, race)	Students' interest

Given the limitations of existing instruments, I developed a questionnaire for this research study based on DeVellis' (2003) guidelines. The variables that I intended to measure through these questions are included in Table 2.2. The measurements for these variables were obtained directly from the scores generated by the respondents' answers, in the case of a single-item variable. For multiple-item scales, the score is a composite obtained by adding the scores generated by the respondents' answers to each of the item in the scale. The final grouping of the items into single- item or multiple-item scales was determined through factor and reliability analyses and is presented in Chapter 6. The next section provides the rationale for the inclusion of the items/constructs into the instrument. The English version of the survey instrument can be found in Appendix C.

**Table 2.2 List of variables**

<b>Variable/ Construct</b>	<b>Item</b>	<b>Variable/ Construct</b>	<b>Item</b>
Age	1	Motivated by institutional characteristics	23
Gender	2	Motivated by access	24
Institution type (public/private)	3	Motivated by finances	25
Field of study	4	Student academic preparation	26-30
City of origin	5	Perception of career outlook	31-32
Social capital	6 - 9	Socio-economic status	33-38
Enrollment in desired field	10 - 12	Disposition toward individual interest	39
Enrollment in desired institution	13-15	Disposition toward merit	40
Satisfaction with field/institution	16-20	Disposition toward financial ability	41
Motivated by academic preparation	22	Ranking of reasons for choosing a major	42
Motivated by prestige	21	Ranking of majors	43

*Demographics items (questions 1, 2, 5)*

Items capturing demographic characteristics were included in all the instruments and studies that I reviewed. Given that most studies were conducted in the United States, demographic aspects included mainly age, race, and gender. Race was not relevant for Haiti, a country where 95% of the population is black (Central Intelligence Agency, 2008) and the majority of the remaining 5% is of mixed-race. In addition to age and gender, city of origin was relevant in this study as it determines proximity of the nearest institution of higher education.

*Institutional characteristics items (question 3)*

Whether the institution attended by the student is public or private was one important characteristic for this research study for the potential relationship between the type of institution and access.

*Field of study (question 4)*

The student's current field of study was also an important variable as the purpose of the study is to determine students' satisfaction with their academic situation, one aspect of which is their field of study. Item 4 addressed this variable with an open-ended question.

*Influence of students' social network (questions 6 to 9)*

Consistently with the sociological theoretical framework, the relationship between the students' social network and their academic situation was examined. Forste, Heaton, and Haas (2004) and Kim (2004) included in their instruments items that assessed the influence of significant others, friends, peers and teachers in students' academic decision making. Parental, friends, and previous teachers' influence were relevant aspects to consider in the context of this study. Therefore, several items were included in the instrument in order to come up with the "influence of social network" scale.

*Enrollment in the desired field of study (questions 10 to 12)*

One hypothesis in this study is that a lack of access prevents students from entering their desired field of study. Items 11 and 12 measured the extent to which students believed that they are enrolled in their desired field of study.

*Enrollment in desired institution (questions 13 to 15)*

A lack of access may also prevent students from entering their institution of choice. Because some Haitian institutions are single-subject institutions, the score for "enrollment in desired field of study" could be the same as this variable's score in some

instances. The introduction of this variable in the questionnaire allowed for validation of the responses for single-subject institutions and to capture the difference in the cases where institutions offer multiple majors.

*Satisfaction with field of study (questions 16 to 18)*

Students' satisfaction with their field of study is one aspect of their overall satisfaction with their academic situation, which is the dependent variable in this study. It was therefore important to ensure that it is measured accurately. There are few examples of scales for satisfaction with field of study in the literature. A vast literature on career satisfaction exists. Appleton, House, and Dowell (1998) for example, measured job satisfaction through such items as work hours, recognition for good work, pay, freedom to design one's work, physical working conditions, opportunity to use skills and abilities, fellow workers, variety in the job, and responsibility. Similarly, many studies were conducted in which college satisfaction was measured. In these studies, however, students' level of satisfaction with their choice of a field of study *per se* was not being evaluated. Instead, what was measured was their satisfaction with either their overall college experience or the services that they received from the institution. For an example of the former, Aitken (1982) predicted academic satisfaction based on students' performance, the curriculum, the quality of instruction, academic advising, students' satisfaction with major, and students' personality. In this model, satisfaction with field of study was one independent variable, which was itself measured by a single question in the survey. Aldridge and Rowley (1998) considered students as customers and measured

their satisfaction with the services that they received from the institution. Many items were included in Rowley's "satisfaction scale" including course details, teaching, academic support, services and facilities, etc. One example in which "satisfaction with field of study" was measured through more than one item is in a study by Umbach and Porter (2002). As in this dissertation, students' satisfaction with their field of study was a dependent variable in that study as well. It was assessed with a two-item scale. The questions asked alumni their level of satisfaction with their major and the extent to which it prepared them for their career.

Given that I surveyed mostly freshmen in their first semester and given that the study is interested in finding out their satisfaction as it relates to their field of study selection in itself and not in relation to the quality of institution, three items assessed their satisfaction. The questions addressed their stated level of satisfaction, the degree to which their field of study matches their aspiration, and whether they would recommend this field of study to a friend.

#### *Satisfaction with institution (questions 19 and 20)*

Here again, the variable "satisfaction with institution" was expected to have the same score as "satisfaction with field of study" in the case of single-subject institutions. This item therefore served as a validation for "satisfaction with field of study" in those specific instances. For institutions with multiple majors, it helped to establish the nuances of individuals' satisfaction with their academic situations. The construct "satisfaction with institution" was measured through two items that estimated students' stated level of

satisfaction with their institution and whether they would recommend their institution to a friend.

*Motivation for the choice of a field of study (questions 21, 22, 23, 24, and 25)*

Porter and Umbach's (2006) instrument assessed the elements of students' personalities and proclivities that led to their choice of a field of study. For the purpose of this study, it was hypothesized that students' interests and motivations for selecting their field could help explain their satisfaction with their academic situation or access to their desired field. Given the lack of access to higher education in Haiti described before, students' reasons for making their choices could be one of the aspects where Haitian students' reality is most different. Five independent variables measured through single items the extent to which the choice of the current field of study was motivated by "prestige of the field," "academic aptitude," "institutional characteristics," "the institution that accepted the student," or "cost."

*Academic preparation (questions 26 to 30)*

Academic preparation as a student-level predictor of major or college choice has been included in several of the instruments reviewed (Grotsky & Jones, 2007; Perna & Titus 2004; St. John, Paulsen, & Carter 2005). It was assessed through students' GPA, test scores, highest level of specific subjects (i.e. mathematics) taken in high school. In the context of Haiti, class rankings, national exam scores, and high school quality served to evaluate academic preparation. Five items were used to measure this variable.



*Career aspirations (questions 31 to 32)*

Consistently with the economic theoretical framework, several instruments included measurements of students' career aspirations and post-college economic expectations (Kim, 2004; Porter & Umbach, 2006). Students' financial expectations were used in these instruments. In addition to salary expectations, in the context of Haiti's high unemployment rate, I also assessed students' expectations vis-à-vis their job finding prospects.

*Socio economic status (questions 33 to 38)*

Along with demographic items, socio-economic status is another variable that was also evaluated in all the instruments that I reviewed. Socio-economic status was determined in all studies through (1) family income, (2) father's educational attainment, and (3) mother's educational attainment. Grodsky and Jones (2007) added home ownership to the elements contributing to socio-economic status. Socio-economic status is the second most important variable in this study because the primary question seeks the association of this independent variable with the dependent variable "satisfaction with academic situation." As in the existing instruments that I reviewed, family income and parents' educational attainment were used to measure socio-economic status.

However, family income is often an objectionable question to most responders (Dillman, 2007). Several survey design techniques can be used to make the question feel less invasive. Nevertheless, to prepare for the eventuality of many non-responses to the

“family income” item, I added two questions which can help to determine socio-economic status. One asked the respondent to check a list of items found in their parents’ household. The other one enquired about parents’ type of employment. Thus, socio-economic status was measured through six items.

*Attitudinal dispositions (questions 39 to 42)*

Porter and Umbach (2006) included a number of items assessing students’ attitudinal dispositions, grouped under the independent variable “political liberalism.” For the purpose of this study it was relevant to assess students’ disposition towards why people choose their field of study. Furthermore, given the aforementioned issues with access and under-investment related to Haitian higher education, it was also relevant to assess students’ perceptions of those issues to determine to what extent they affect students’ academic choices and their satisfaction with the result of those choices.

*Ranking of fields of study (question 43)*

A rank order of various fields of study was necessary to evaluate which is most desirable to Haitian students. Respondents were asked to rank the various fields of study found in Haitian institutions based on their personal preferences. Responses were aggregated to produce a rank order for the various fields of study.

Most items, except for demographic information, which are categorical in nature, are on a Likert scale along a 6-point continuum, anchored with *strongly agree* at 1 and *strongly disagree* at 6. A Likert scale is an appropriate technique that is widely used

when the latent variable that is being measured- as is the case in this study- involves “opinions, beliefs, and attitudes” (DeVellis, 2003 p. 79). Income items were measured on a scale with equal intervals. The intervals were constructed to be wide enough so that they are less objectionable to respondents (Dillman, 2007) and carry a greater probability of eliciting an honest response. Scores in national exams were also measured on a scale with equal intervals. Open-ended items were included for some person-specific information or preference statements.

The items were originally written in English for this dissertation. For the purpose of the study, I translated them into French and Haitian Creole, the two official languages of Haiti. The next phase in the survey development included testing and piloting the instrument.

### **3. Testing and pilot**

In the development of the scale, according to DeVellis (2003, p. 86), “asking a group of people who are knowledgeable in the content area to review the item pools” is a valuable next step. I selected four “subject matter experts” and asked them to complete the French/Creole questionnaire and provide feedback. My criteria for the selection of the “experts” were that the individuals (a) competed for acceptance to college in Haiti, (b) completed college in Haiti and (c) still lived and worked in Haiti. They were asked to provide feedback on:

- The clarity of the questions
- The relevance of the questions to the Haitian context

- Their relative ease in answering the questions
- The degree to which questions were objectionable
- The length of the survey
- Any other feedback that they wanted to provide.

Experts' feedback helped to sharpen the instrument translation into French and Creole and to add answer categories. For example, one of the "experts" suggested adding an employment category for "vendors, laborers, craftsmen" given that large segments of the Haitian population are employed in that informal sector.

After the experts' feedback was incorporated, the survey was piloted in the summer of 2008 to further refine its formulation. It would not have been practical to pilot the instrument on a group of Haitian college students because of the cost involved and because that could have limited the final pool of participants in the actual study. As a result, the pre-test of the instrument was done by administering it to a Haitian online forum for people interested in the regional development of the city of Ouanaminthe (Groupe de Reflexion sur le Development de Ouanaminthe<sup>2</sup>) - <http://groups.google.com/group/ouanaminthe/post?hl=fr>. This was a convenience sampling because I belong to this forum.

Forum members were sent an initial email with a link to the survey, which was hosted on a server of the online service "Survey Monkey." Forum members who had completed their college studies in Haiti or who were currently in college in Haiti were asked to complete the survey as though they were in their first year in college. They were

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<sup>2</sup> Reflection Group on Ouanaminthe's Development

also asked to provide feedback on the instrument through an open-ended question. The online instrument was available to forum members for approximately three weeks starting on July 14, 2008.

There are approximately 360 members of the forum. It is not known how many of these members have a college education and how many completed college in Haiti. Thirty-six forum members (10%) browsed the content of the survey and twenty-three (6%) provided complete responses. Respondents were generally very positive about the survey and provided feedback to further refine item categories and responses. A brief qualitative analysis of the pilot study follows. The pilot sample size was not large enough for me to engage in factor and reliability analyses with adequate predictive power.

#### *Pilot qualitative analysis*

Feedback provided to the open-ended questions indicated that the items were generally clear and relevant, relatively easy to answer, non-objectionable, and that the survey's length was appropriate. General, open-ended feedback was provided both in French and Haitian Creole, which indicated a difference in language preferences and further justified the need for the survey to be in both languages.

Some feedback for improvement in the items addressed the answer options. For example, it was suggested that I included an option for "none of the above" in the answer choices. The comment and its translation are below:

*Il fallait avoir une rubrique "aucun" parmi les réponses à choisir*

There should have been an option for "none of the above" in the answer choices.

Rather than introducing a “none of the above” category, I modified the survey, where appropriate, to include an “other; please describe” category.

Another piece of feedback addressed the ranking order. In the pilot, I did not indicate in which direction the ranking was moving –whether best or worst was equal to 1, which prompted the following feedback:

*Importance des critères, il faudrait souligner par exemple entre 1 et 4 qui est plus élevé pour éviter les confusions.*

Importance of the criteria, you should explain between 1 and 4, which is higher to avoid confusions.

I was also reminded of some fields of study that were not included in the initial instrument but which are very popular in Haiti. The oversight was corrected in the final instrument.

*On a oublié la comptabilité et le secrétariat, les facs de comptabilité et les écoles professionnelles sont très fréquentées en Haïti, car ce sont les premiers débouchés en matière d'emploi.*

Accounting, secretarial sciences were omitted; the faculties of accounting and the professional schools are very well attended in Haiti, because they offer the best job prospects

Finally, some feedback was provided not necessarily on the survey instrument itself but on sampling methodology.

*.... Je souhaite que tu diversifies le plus que possible l'échantillonnage. Malgré les failles du système, il existe de bons étudiants/élèves à tous les niveaux qui continuent de surprendre. .. Bonne chance dans ta recherche!*

...I wish that you will diversify the sampling. In spite of the shortcomings in the system, there are still good students at all levels who continue to amaze... Good luck in your research!

The complete and updated English version of the survey instrument, incorporating feedback from the pilot study, in its final form is in Appendix A. The French/Creole version that was distributed to participants is in Appendix B. The first page of each survey contained a disclosure page along with a space for the respondent to provide consent. The formatting and presentation of the survey was constructed using elements of the tailored design method (Dillman, 2007).

#### **4. Data gathering**

I traveled to Haiti in November 2008 to distribute the survey to students in five institutions in the capital city of Haiti, Port-au-Prince, and one institution in the northern part of Haiti. A purposive sampling method for selecting the institutions was utilized. The institutions chosen provided a broad representation of mainstream higher education in Haiti and of the choices available to Haitian college students. As will be explained in Chapter 3, there are a number of small institutions on the Haitian higher education scene which call themselves universities but which offer neither the types of programs nor the minimum level of quality generally associated with a higher education institution. They were not included in this study. The ratio of institutions within Port-au-Prince to those in other cities is representative of the distribution of Haitian higher education institutions, given the general lack of decentralization in the sector. Although I do not reveal specifically the institutions that participated to maintain their confidentiality, I provide in Chapter 3 a brief description of all the schools that I targeted for the study.

The survey instrument was designed to be completed in 20-30 minutes. To ensure a greater response rate, I distributed it in person to students in class at a time agreed upon with officials of the institution. I asked volunteers to respond anonymously and place their response in an envelope. A token appreciation gift was provided to students who completed the survey.

As mentioned before, questions about income are often objectionable to most survey responders (Dillman, 2007). This could even be more applicable to Haiti where many young people may feel embarrassed about their poverty. Dillman (2007, p.87) recommends to place objectionable questions towards the end of the survey, where they “may seem less objectionable in light of previous questions answered” and where a respondent may be less likely to react to the question by quitting. Also, Dillman advises researchers to use ranges of income as participants may feel more willing to state whether their income falls in a certain bracket as opposed to stating an exact amount.

However, prior to accessing students and obtaining their consent to participate, it was necessary to obtain consent from officials in the selected institutions. I contacted officials of the targeted institutions by various means: in face-to-face meetings in Haiti, in the United States, or via email. They assured me of their support for the project and put me in contact with staff at their institutions in charge of coordinating my visits. In an Addendum to this chapter in Appendix A, I provide a more detailed account of my access to the institutions and of the data gathering experience. The information provided is relevant to contextualize the data and some of the comments that I made in its analysis.



For the purpose of confidentiality, I refer to the participating schools in this study by the name of the first five presidents of Haiti.

*Sample size and power*

One important question in the study design concerns the appropriate number of students that should be included in my sample to provide enough validity to the study. A sample size of 400 students was targeted as it was estimated that such a sample would provide the predictive power needed for both ANOVAs and regression analyses. The actual participation exceeded my expectations. A total number of 742 students from 5 institutions enrolled in 20 different fields of study took part in the survey. A G-Power analysis (Table 2.4) estimated the predictive power obtained from this sample for both multiple regressions and one-way ANOVAs with fixed effects

**Table 2.3 G-Power Analysis**

<b>Test</b>	<b>ANOVA</b>	<b>Multiple Regression</b>
Effect size f	0.25	0.15
$\alpha$ err prob	0.05	0.05
Total sample size	740.00	742.00
Number of groups	20.00	6.00
Critical F	1.60	2.11
Numerator df	19.00	6.00
Denominator df	720.00	735.00
Power (1- $\beta$ err prob)	1.00	1.00

Power was calculated for the ANOVA with the largest number of groups (20) and for the regression with the largest number of variables (6). The results indicated that, with

estimated medium effect size for both tests, the resulting predictive power is greater than .99.

### *Sample characteristics*

It is relevant to provide a quick overview of the sample and its characteristics. More information will be provided in Chapter 5 through an exploratory data analysis.

**Demographics.** Gender, age, type of institution attended, and city of origin constitute the demographic information collected in this study. Both men and women from two *public* and three *private* institutions participated in the survey. Respondents were given three choices of a city of origin and they came from all three:

*Port-au-Prince* (the capital city of Haiti)

*A Regional Capital* (one of the eight regional capital cities in Haiti)

*Another City or Town* (any other city or town in Haiti other than the nine above)

**Schools.** Five of the six targeted institutions took part in the survey. As mentioned before, for the purpose of this write-up, I have named them after the first five presidents of Haiti. The appellations of colleges or universities (determined by the author) reflect the relative sizes of the schools.

*Dessalines College* is a private institution in Port-au-Prince with several faculties in one location

*Christophe School of Law* is a public school outside of Port-au-Prince affiliated with University Pétiou.

*University Pétion* is a public institution in Port-au-Prince with many faculties in many dispersed locations

*Boyer College* is a private institution in Port-au-Prince with several faculties in one location

*University Hérard* is a private institution in Port-au-Prince with many faculties in one location.

**Facultés/ Faculties.** Within each of the schools, *facultés* are units in which students can pursue one or several programs of study. Some of the *facultés* are common across a number of institutions whereas others can be found in only one institution. It should be noted that the absence of a *faculté* from this study does not mean that it is not in existence at a particular institution. It only means that I did not survey anyone from such a *faculté*.

**Fields of study.** Each of these faculties offered one or several fields of study. In total, students in my survey sample were enrolled in 20 different fields. This is by no means an exhaustive list of majors that can be found in the higher education system in Haiti. For example, I did not get a chance to survey students in the *facultés* of human and social services and therefore those fields are not represented in this list.

Many of the majors were offered in one *faculté*. Moreover, one field can be found in different *facultés* at different institutions. Table 2.4 provide a summary listing of the five institutions, the *facultés* from each in which I surveyed students, and the majors in which the students that I surveyed were matriculated. Once again, this is not an exhaustive list of the *facultés* at these institutions or of the majors offered by these institutions.

**Table 2.4 List of Majors by Institution and by Faculty**

<b>School</b>	<b>Faculty</b>	<b>Major</b>
Dessalines	Agronomy	Agronomy
	Education	Education
	Engineering and Sciences	Civil Engineering
	Administrative Sciences	Accounting
		Management
Computer Science	Computer Science	
<b>School</b>	<b>Faculty</b>	<b>Major</b>
Christophe	Law	Law
Petion	Agronomy	Agronomy
	Law	Rural Engineering
		Law
	Education	Literature
		Philosophy
		Social Sciences
	Admin. Mgmt. & Intl Studies	Public Administration
		Accounting
		Management
		Political Sciences
		Linguistics
Linguistics	Linguistics	
Medicine	Medicine	
Dental Medicine	Dental Medicine	
Engineering & Sciences	Chemistry	
	Civil Engineering	
	Electromechanical Eng.	
Boyer	Administrative Sciences	Accounting
Herard	Education	Management
		Education
	Economics & Admin. Sciences	Accounting
		Economics
		Finance
	Management	

## 5. Data analysis

The analysis of the data included several steps. First, the reliability of the scales was estimated through reliability analysis. This was done to assess whether the scales measured the latent variables that they were intended to measure (DeVellis, 2003). In addition, factor analytic procedures were also performed to ensure that each measure was unidimensional, meaning that its items addressed only one variable (DeVellis, 2003).

All items, except those that are categorical or open-ended, received a numerical score based on the number of choices. For example, item 4 “parental income” received a score between 1 and 5 because there are five choices. Most items were right-coded, given that they were expected to move in the same direction as “satisfaction with academic situation.” For item 7, “parental involvement in secondary education” for example, the hypothesis is that the higher the parents’ involvement (therefore, the higher the influence of students’ social network), the higher “satisfaction” will be. Therefore, *strongly agree* received a score of 6 whereas *strongly disagree* received a score of 1. By contrast, items 24, 25, 33, 34, 35, and 36 were reverse coded as they were expected to be inversely related to “satisfaction with academic situation.” Therefore, for the item “I chose my field of study because this is the faculté or university that accepted me,” *strongly agree* received a score of 1 and *strongly disagree*, a 6. Composite scores were calculated for each multiple-item scale, by adding the scores for each item after a factor analysis determined which items should remain in the scale.

Descriptive statistics were calculated for various groups and for the overall sample. Descriptive statistics were used just to provide some general information about the data. However, descriptive statistics also allowed me to perform exploratory data

analysis (Howell, 2007), to pay close attention to the data and examine it before proceeding to more involved analysis. Perna and Titus (2004) for example, used their descriptive statistics to examine differences among students.

Ordinary least squares regressions generally help to examine the relationships between independent and dependent variables, and predict how variations in the latter affect the former (Studenmund, 2006). As I mentioned before, logistic regression or ordinary least squares (OLS) regressions were used in most previous studies on student choices. The use of OLS for these studies was appropriate in so far as they were interested in how individual characteristics affect students (Umbach & Porter, 2002). This study was also interested in the relationship between variables, mainly between students' socio-economic status and their satisfaction with academic situation. As a result, I used ordinary least squares regressions to test for the relationships between those two variables as well as their relationships with other variables.

The OLS analysis of the data allowed me to answer the primary question: whether socio-economic status is a statistically significant predictor of students' satisfaction with their academic situation. Additionally, it helped me to determine other variables that have a statistically significant relationship with students' satisfaction with their academic situations or with students' access to their preferred field of study.

But ordinary least squares regressions with the existing variables and scales did not provide me with much insight into differences by field of study or other group differences (for example between men and women or between students in science, engineering, and technology and the other students). The introduction of dummy

variables helped with those comparisons. For example, a gender dummy variable in which men are coded as “0” and women as “1” made it feasible for me to check for some differences between men and women in the samples. In addition, analysis of variance between multiple groups along with independent sample t-tests between two groups allowed me to investigate differences between these groups. The pairing of the groups was informed by the research questions, the exploratory data analysis, and findings from initial data analysis.

The data analysis will begin in Chapter 5 with the presentation and review of descriptive statistics and will continue in Chapters 6 and 7 with hypothesis testing. Prior to engaging in exploring and analyzing the data, however, it is relevant to provide some additional background and information on the various underlying concepts and topics for this research. That is the purpose of the next two chapters. In Chapter 3, I frame the context for Haitian higher education and in Chapter 4, I review the literature for important themes associated with the research questions.

### Chapter 3. Haitian higher education

Haitian higher education has experienced quite an active period since the end of the 1980s. With the fall of the Duvalier dictatorship in 1986, there was an exuberance of optimism for the future of Haiti. Expatriates who had been in exile for decades considered returning. Many of them were scholars who had a productive life in their adopted countries. Feeling that a new day of progress was within reach, Haitians began re-examining the role of the university as a catalyst for growth and democracy. Two major reports were commissioned. The United Nations Educational Scientific and Cultural Organization (UNESCO)'s Regional Committee on Higher Education in Latin America and the Caribbean funded a report on the status of higher education in Haiti. Three years later, the Center for Caribbean Research at the *Université de Montreal* along with the *Université d'Etat d'Haïti* organized a conference on higher education and development in Haiti. The report and the proceedings from the conference provided a great deal of the information for this study.

Unfortunately, the post-Duvalier enthusiasm did not last long, as political chaos followed the dictatorship and worsened people's conditions. Nonetheless, some of the forward momentum in Haitian higher education persisted. Growing demand ushered in the rise of private institutions, some of which are now helping to advance Haitian higher education.

This chapter presents the state of higher education in Haiti. It is divided into six parts. First, I provide a brief history of Haiti in order to contextualize the history and evolution of Haitian education. Second, I outline the Haitian educational system. Third, I



review public and private higher education. Fourth, I analyze some themes in Haitian higher education. Next, I provide some basic definitions of the words and concepts that I will use throughout this study. I end the chapter with an overview of the *facultés* of the *Université d'Etat d'Haïti* (State University of Haiti) and of the *facultés* in the main private institutions.

### **1. A brief history of Haiti**

French adventurers made their first appearance in Haiti around 1625 (Dorsainville, 2005). By that time, the original inhabitants of the island had been almost completely decimated by Spanish colonizers (Dorsainville, 2005). The gold mines had been practically depleted and the Spaniards deserted the western part of the island. It became host for fierce French adventurers who very quickly spread throughout it (Dorsainville, 2005). Unlike their Spanish predecessors, the French set out to cultivate the land and practice agriculture in what they called Saint-Domingue. Their settlements were frequently raided by their Spanish neighbors from the east. The treaty of Ryswick in 1697 put an end to the incessant battles between French and Spanish settlers. Spain ceded the western third of the island to France (Dorsainville, 2005). This inaugurated a period of stability and economic progress for the French colony. Cities were started and blacks were brought from Africa as slaves to work the plantations. Agribusiness became the main occupation that created wealth for both the French expatriates in the colony and the merchants back in France. That made Saint-Domingue one of France's most prized colonies in the 18<sup>th</sup> century (Dorsainville, 2005).

Saint-Domingue remained a source of tropical goods and fortune for France in relative tranquility throughout the eighteenth century. However, the revolutionary wind that was blowing through France towards the end of the eighteenth century made its way to the colony as well. In 1791, the black slaves began a violent revolt, demanding nothing less than the abolition of slavery. Their movement took different twists and turns and, at times intersected with the wars between France and England or Spain. Despite French multiple maneuvers, which included the expedition of a powerful army to the colony and the ambush and capture of the revolutionary leader Toussaint Louverture, the army of former slaves prevailed and defeated the French. On January 1, 1804 they proclaimed the independence of the nation, reclaiming its Indian name of Haiti.

For the next few decades, the hard task of nation building that was incumbent upon the former slaves was made even more difficult by a complete international isolation. The defeated France had not given up on its former colony and did not recognize it as an independent nation. Neither did other European nations (Ardouin, 2005). For example, Britain had had a very active trade with Haiti even during the revolutionary period which continued after independence. Yet, the United Kingdom did not recognize Haitian independence. Even the United States did not recognize Haiti, despite the fact that free blacks from Saint-Domingue had helped the Americans during their independence war at the battle of Savannah and despite an active trade between the state of Louisiana and the new nation (Ardouin, 2005). Powerful Southern slave owners, who were very worried about the subversive message given by the advent of former slaves to independence through a violent revolution, made their views clear to the federal

government (Trouillot, 1990). It did not help that the Haitian Constitution of 1816 considered Haitian “any African, Indian, and their descendants, born in the colonies of foreign countries who would come to reside in the Republic.” (Ardouin, 2005, p.44)

The new leaders of the nation were very aware of the international hostility. They spent the first decades of the nation building fortresses and getting themselves ready to fight against an eventual return of the French. Finally, in 1838 a treaty between France and Haiti recognized the independence of Haiti. The Haitian government accepted to pay a heavy indemnity to reimburse the French colonizers who had been expelled from their lands and properties (Dorsainville, 2005).

After independence, as the country set about to organize its institutions, rivalry between former war generals and despotism were the key elements in the political landscape. The government of Dessalines, the general who led Haiti to independence, was mainly concerned with land distribution and repressing infighting (Ardouin, 2005). In that context, organizing education did not rise to the top of agenda. This was no departure from the past because education had not been a priority during the French colonial period either. In fact, Dorsainville (2005, p. 334) reports that “instruction for the black slaves was considered dangerous” to the safety of the white masters. Young French citizens as well as mulattoes had to travel to France to obtain an education. After independence, the difficulties in establishing an educational system were exacerbated by the international isolation of Haiti. Indeed, in former colonies of Catholic countries, religious educators continued to be very instrumental in helping to educate the population, even after independence (Trouillot, 1990). The Vatican’s refusal to recognize

Haiti and to establish an independent diocese until 1860 (Dorsainville, 1950) deprived the country of the help of European religious educators for the first half of the nineteenth century.

Yet some steps were taken to promote education three years after independence. In the Constitution of 1807, written for the Republic of the North - at that time Haiti was split into a northern and a southern state – President Christophe proclaimed freedom of education and mandated the establishment of a public school in each region. A lack of professors would make that mandate unachievable (Dorsainville, 1950). Nevertheless, Christophe created the first Haitian institution of higher education, *l'Académie Royale du Nord*, in Cap Haitien in 1815 (Rameau, 2007, Romain, 1987). Foreign teachers, mainly from England, staffed the *Académie* (Ardouin, 2005, Dorsainville, 2005).

Article 36 of the Constitution of 1817 in the South also called for the establishment of schools in all the major cities as well as the smaller towns (Ardouin, 2005). Given that the country's financial as well as human resources did not permit turning this vision into reality, Pétion decided to begin in the capital city with the establishment of the Lycée<sup>3</sup> national de Port-au-Prince as well as a boarding school for young women (Ardouin, 2005)<sup>7</sup>. Those institutions were responsible for Haitian education throughout the first half of the nineteenth century. Basic education in Haiti would be strengthened when the Vatican finally established a mission in Haiti in the 1860s (Dorsainville, 2005). European missionaries came to Haiti and established primary and secondary institutions in many cities (Dorsainville, 2005). Those same institutions

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<sup>3</sup> A Lycee is a French establishment of secondary education roughly equivalent to the American middle school, high school, and the first year of college

are still in existence for the most part and constitute an important element of the backbone of Haiti's education system.

## **2. Primary and secondary education in Haiti**

Based on the French system, education in Haiti has traditionally consisted of two cycles. A primary education was obtained through seven years of schooling capped by a national exam, the *certificat d'études primaires*<sup>4</sup> (Rameau, 2001). Students enter primary school at about 6 and take the national exam for the *certificat* at approximately 13. This is not always the case because many students may be delayed in entering primary school because of their parents' financial conditions or may be forced to repeat a grade if their performance is not satisfactory (Rameau, 2001). Secondary education for a long time consisted of another seven-year cycle. During the last four years of secondary school students chose to focus on one of four areas or sections: Language (Section A), Humanities and Social Sciences (Section B), Pure Sciences (Section C), Applied Sciences (Section D) (Rameau, 2001). After the sixth year, students take a first national exam, called *Baccalauréat I*. Students who pass are eligible to complete the last year of high school. Those who are close to a passing grade are "adjourned," or allowed to repeat the exam in the same year (Rameau, 2001). Students who do not pass the *Baccalauréat I* repeat the grade or wait for another opportunity to retake the exam the following year. In 1999, out of 78,777 students who took the *Baccalauréat I* exam, 17,582 passed (22.32%) and 27,412 were adjourned (34.80%).

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<sup>4</sup> Certificate of primary studies

The last year of high school has a curriculum comparable to that of the first year of college in the United States. At the end of that last year, students take another national exam, the *Baccalauréat II*. Upon passing that national exam, students are eligible to obtain the *Baccalauréat II* diploma, certifying high school completion. Students who are close to a passing grade are again adjourned and students who do not pass, may choose to repeat the grade or to retake the exam independently another year.

A reform of the traditional Haitian educational system was initiated in 1979 but has not yet been fully implemented. Fundamental education now consists of nine years and is comprised of the six years of primary school and the first three years of secondary school. Secondary education is now the last four years of the traditional high school. According to the Haitian Constitution, the first six years of primary school (basic education) are mandatory (Ministère de la Planification et de la Coopération Externe, 2004). Yet only sixty percent of children 6-11 attend primary education and twenty percent of children between 12 and 18 years attend secondary school (Ministère de la Planification et de la Coopération Externe, 2004). Plans are in place and the current government is working with international funding agencies such as the Inter-American Development Bank to make primary education available to all and to increase participation in secondary education. If successful, this effort will undoubtedly cause additional strain to an already inadequate higher education sector. Before delving into the reality of Haitian higher education, let us spend some time on reviewing the historical context that brought it forth.

### 3. Public and private higher education in Haiti

It is important to familiarize the non-Haitian readers with the context for Haitian higher education in order for this research project to make sense. I attempt to do this by first providing a history of higher education in Haiti. Second, I describe public higher education and the *Université d'Etat d'Haïti*. Third, I touch on the emerging private higher education sector.

#### *History*

Historians agree that the first Haitian institution of higher education was created in the Kingdom of the North governed by Henri the 1<sup>st</sup> (after President Henri Christophe proclaimed himself king) between 1815 and 1820 (Ardouin, 2005, Dorsainville, 2005; Rameau, 2007, Romain, 1987). The *Académie Royale du Nord* (Northern Royal Academy) offered programs in medicine, surgery and pharmacy, agriculture, and arts and trades (Romain, 1987). After the unification of the country during the Boyer administration, the *Académie Nationale de Port-au-Prince* was created. It was followed by the *Académie d'Haïti*, which is the real predecessor of the current public university system, the *Université d'Etat d'Haïti*. It was started on January 15, 1822 in Port-au-Prince under the direction of Dr. F. Pescay (Ardouin, 2005). It was supposed to offer courses in medicine and law. Its internal regulations prescribed many details including curriculum, schedules, and number of exams. For example, courses would last one hour four days a week. Law courses would take place in the morning and medicine in the afternoon. Vacations would take place in January, February, and September (Ardouin, 2005).

Despite this good start, the program in law could not continue because Dr. Pescay was transferred to the direction of the *Lycée national*, due to the sudden death of the incumbent director. “The Academy had a brief existence, but medicine continued to be taught in the School of Health attached to the military hospital in Port-au-Prince.” (Bunn & Gut, 1946 p. 75) A Law School was started in 1859; it closed and reopened in 1890. A School of Applied Sciences was started in 1902 and the School of Agriculture, in 1924 (Bunn & Gut, 1946).

All of these units stood alone until 1943 when a university council was created to coordinate the institutions of higher learning. The university council was charged with raising the general standards of higher education in the country (Bunn & Gut, 1946). The Haitian Constitution of 1945 centralized all higher education under the auspices of the Department of Public Education (Bunn & Gut, 1946; Romain, 1987). Plans were drawn out for a campus that would bring all the disparate schools together. By that time, many of the schools started taking their current appellation of *facultés*. The university had four *facultés*: medicine, sciences (which offered an engineering degree), law, and agriculture. It had 421 students, 108 faculty members, and was assigned a budget of \$88,819 by the Haitian government (Bunn & Gut, 1946).

During the Duvalier dictatorship, the university was renamed *Université d'Etat d'Haïti* (State University of Haiti) in 1960 and its centralization further completed (Rameau, 2007; Trouillot, 1990). But the purpose of centralization, this time, was not for better coordination as it was in the 1940s. Rather, just as he did with all other institutions, Duvalier promoted centralization of the university to undermine the institution's



autonomy and further the regime's control (Trouillot, 1990). Despite governmental interference, Romain (1987, p. 17) wrote in 1987 that "the last 40 years represented a period extremely rich and interesting for Education in Haiti."<sup>5</sup> No matter what the true state of Haitian higher education was at the end of the Duvalier dictatorship in 1986, the twenty years of political chaos that followed were extremely destructive to all Haitian institutions. Higher education was no exception. In a November 17, 1993 article Kolker (1993) declared that the education system was facing "economic and academic ruin." She offered the following as evidence.

"Constant disruptions, including politically motivated changes in the university's leadership as well as attacks on students and faculty members, have contributed to the decline. The problems resulted in the loss of the 1992-93 academic year for most students."

As is increasingly the case in Latin America (Brunner, 1997; Bernasconi 2005), Haitian higher education has both a public sector and a private component. The public sector is represented by one institution, the *Université d'Etat d'Haïti*<sup>6</sup> (UEH). The private sector is comprised of several institutions of different types and sizes.

#### *The Université d'Etat d'Haïti*

Until the 1980s the UEH was practically the only higher education institution in Haiti. Therefore, talking about higher education was equivalent to describing the UEH.

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<sup>5</sup> Translated from the original French text

<sup>6</sup> State University of Haiti

Since the 1980s, however, a number of private institutions have emerged (Kolker, 1994). Nonetheless, the UEH still educates half of the estimated 15 to 20,000 students who participate in Haitian higher education (Agence Universitaire de la Francophonie, 2008) and still remains its most dominant player. The institution has undergone some transformations since its inception as a university in the 1940s, which was further asserted in the 1960s (when it obtained its current name) and cemented in the late 1980s. Table 3.1 shows three snapshots of the *facultés* and institutes that comprised the UEH along the years as reported by Bunn and Gutt (1946), Romain (1987), the Haitian constitution of 1987 (Deshommes, 2002), and the website of the UEH (Université d'Etat d'Haïti, 2008). All of the units in existence in 1947 are still active. The School of Pharmacy has been merged with the School of Medicine and the Surveying School has been subsumed within the Faculty of Sciences. The School of Nursing, which exploded into three campuses in 1987, now exists outside of the UEH. Similarly, the School of Medical Technology, the Institute of Psychology, and the Institute of Development Sciences are now within the School of Medicine, the Faculty of Human Sciences, and the Faculty of Ethnology, respectively.

The “university” is really a collection of very independent and physically dispersed group of eight *facultés* and four institutes. A *faculté* is loosely equivalent to a school or college in an American university. Like the school, it is headed by a dean and usually consists of several departments offering concentrations within a discipline. Unlike schools or colleges in an American university, however, the *facultés* of the UEH have traditionally been quite independent of one another. They are physically dispersed

throughout the city of Port-au-Prince. They admit their own students who identify themselves primarily as matriculated in the *faculté* and less as a student of the UEH. Students and faculty members from one unit do not normally come into contact with those of a different unit. Although all *facultés* teach some common courses in the first year such as mathematics and writing, those courses are developed separately and offered to students from the unit only (UNICA, 1977).

Each *faculté* of the UEH offers a specific degree. Students are less concerned about their major concentration than with the overall degree offered by the *faculté*. For example, the *Faculté des Sciences* offers an engineering degree with concentrations in civil, electro-mechanical, computer engineering. Nevertheless, most students enter the *Faculté des Sciences* to obtain an engineering degree; their concentration is rather secondary. That point is important for this study. The implication is that students view themselves as entering a *faculté* of the UEH and not a department in that *faculté*.

Several plans have been drawn out to reorganize or reform the UEH. In 1977, in response to a request from the UEH, the Association for Universities and Research Institutions in the Caribbean (UNICA) in collaboration with the Organization of American States wrote a report on reforming higher education in Haiti. This plan revisited the question of a unified campus and made far-reaching recommendations for the academic and administrative orientation of the UEH (UNICA, 1977). Unfortunately, there is no evidence that this plan was ever implemented.

The current administration of the UEH has recently engaged in an effort to reform the institution and bring about greater coordination. One such example is in the admission

process. Traditionally, each *faculté* had its own admission process which was independent of that of other *facultés*. Currently, students apply to all *facultés* of the UEH through one centrally coordinated process. Other elements of the reform have included a coordinated revision of the curriculum in all *facultés* and an updating of program descriptions and catalogues.

The UEH is led by a rector and two vice-rectors who form the executive council. Its “orientation, control, and mediation”<sup>7</sup> (Deshommes, 2002 p. 156) is assured by a University Council (*Conseil de l’Université*) composed of the executive council, deans and directors of *facultés* and institutes, a faculty representative, and a student representative (Deshommes, 2002). Many of the *facultés* and institutes have a dual reporting relationship: to the University Council, on one side, and to the ministry of tutelage on the other (Alexis et al., 1991). A brief description of the major units of the UEH is included in another section of this chapter.

#### *Private Higher Education in Haiti.*

As mentioned, an increasingly larger private sector also endeavors in the higher education sector in Haiti. Haitian private higher education has been fostered by some of the same trends that promoted the privatization of the tertiary sector in Latin America and Africa: increased demand and inability of the public sector to cope (Kolker, 1994). In addition in Haiti two other factors played a role. In the first instance, the return of scholars from the diaspora after the fall of the Duvalier dictatorship provided additional

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<sup>7</sup> Translated from the original French text

**Table 3.1. Facultes & Insitutes of the UEH along the years**

1946	1987	2002	2008
Faculte de Medecine	Faculte de Medecine	Faculte de Medecine et de Pharmacie	Faculte de Medecine et de Pharmacie
Ecole d'Odonthologie	Faculte d'Odonthologie	Faculte d'Odonthologie	Faculte d'Odonthologie
Faculte des Sciences	Faculte des Sciences	Faculte des Sciences	Faculte des Sciences
Ecole de Pharmacie	Ecole de Pharmacie		
Ecole Nationale d'Agronomie	Faculte d'Agronomie et de Medecine Veterinaire	Faculte d'Agronomie et de Medecine Veterinaire	Faculte d'Agronomie et de Medecine Veterinaire
Faculte de Droit	Faculte de Droit et des Sciences Economiques	Faculte de Droit et des Sciences Economiques	Faculte de Droit et des Sciences Economiques
Econole Normale	Ecole Normale Superieure	Ecole Normale Superieure	Ecole Normale Superieure
Ecole d'Arpentage	Ecole d'Arpentage		
Institut d'Ethonologie	Faculte d'Ethonologie	Faculte d'Ethonologie	Faculte d'Ethonologie
Ecole des Infirmieres	Ecole des Infirmieres de Port-au-Prince Ecole des Infirmieres du Cap-Haitien Ecole des Infirmieres des Cayes Faculte des Sciences Humaines Ecole de Technologie Medicale		Faculte des Sciences Humaines
	Institut National d'Administration de Gestion et des Hautes Etudes Internationales	Institut National d'Administration de Gestion et des Hautes Etudes Internationales	Institut National d'Administration de Gestion et des Hautes Etudes Internationales
	Institut des Sciences du Developpement		
	Institut d'Etudes et de Recherches Africaines d'Haiti	Institut d'Etudes et de Recherches Africaines d'Haiti	Institut d'Etudes et de Recherches Africaines d'Haiti
	Institut de Psychologie		
	Centre de Linguistique Appliquee	Faculte de Linguistique Appliquee	Faculte de Linguistique Appliquee
	Centre de Planification et d'Economie Appliquee		Centre de Planification et d'Economie Appliquee
	Academie Militaire		

intellectual capital. On the other hand, the political chaos that ensnared the *Université d'Etat d'Haïti*, discouraged many students and made private institutions look more attractive.

Unfortunately, the rise of the private sector occurred without much oversight and has resulted in a proliferation of institutions of dubious quality.

“Scores of proprietary schools, which are virtually unregulated, now thrive at all levels, many without credentials, some of them fraudulent. Most are unaccredited cash cows, academics here say, and do not adequately prepare students for jobs or graduate education. The appeal the upstart institutions enjoyed had a lot to do with the fact that they had places available.” (Kolker, 1994)

Institutions that call themselves universities range from vocational enterprises offering programs in secretarial studies and introduction to computing to larger institutions with decent campuses, several *facultés*, and affiliations with reputable foreign universities.

Not surprisingly, it is difficult to have a definitive list of private higher education institutions in Haiti. Part of the problem resides in the fact that, the sector is widely unregulated and that there are no standard definitions. The Haitian director of higher education, the highest government official for higher education, lamented that reality in an interview with a Haitian newspaper in 2007 (Le Nouvelliste, 2007). The second difficulty with obtaining an authoritative list of Haitian higher education is the lack of data in general. There have been few systematic efforts to collect information on the private sector and such efforts have not been consistently updated.

Romain (1987) listed the private institutions in Table 3.2 as part of the Haitian higher education landscape towards the mid-1980s. The Accreditation Council for

Further and Higher Education lists seven private accredited institutions (ACFHE, 2008). Moreover, a reference guide on Haitian higher education lists twelve private institutions (Haiti-Reference, 2008). Finally, a more recent database of all Haitian post-secondary institutions has been compiled by jobpaw.com<sup>8</sup> (Table 3.3). Although this list does not differentiate between the more decent private institutions and the “pseudouniversities,” it provides a more updated view of all the post-secondary institutions public and private presently functioning in Haiti.

**Table 3.2 Private institutions in Haiti circa 1987**

<b>Institutions</b>	<b>Degree programs</b>
Faculte de Droit du Cap-Haitien	Bachelor's
Universite du Roi Henri Christophe	Bachelor's; Doctor of medicine
Centre Universitaire International	Bachelor's
Institut des Hautes Etudes Commerciales	Bachelor's
Institut Superieur Technique d'Haiti	Bachelor's
Institut Polytechnique d'Haiti GOC	Bachelor's
Institut de Technologie Electronique d'Haiti	Bachelor's
Institut Superieur des Sciences Economiques et Politiques	Bachelor's
Ecole de Droit des Cayes	Bachelor's
Ecole de Droit des Gonaives	Bachelor's
Ecole de Droit de Jacmel	Bachelor's
Grand Seminaire Notre-Dame	
Ecole Evangelique de la Bible	Bachelor's
Seminaire Episcopal d'Haiti	Bachelor's
Seminaire de Theologie Evangelique	Bachelor's
Seminaire Franco-Haitien de Diquini	Bachelor's
Seminaire Theologique d'Haiti	Bachelor's

<sup>8</sup> Jobpaw.com is the Haitian equivalent to monster.com

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**Table 3.3 List of Haitian post-secondary institutions on jobpaw.com**

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Académie des Sciences Pures et Appliquées  
Académie Nationale Diplomatique et Consulaire  
Centre de Formation des Enseignants du Fondamental (Publ)  
Centre de Recherche et de Formation en Sciences de l'Education et d'Intervention Psychologique  
Centre de Techniques de Planification et d'Economie Appliquée (UEH)  
Centre d'Etudes Diplomatiques et Internationales  
Centre Universitaire de Management et de Productivité  
Centre Universitaire Maurice Laroche  
CHEMTEK  
Collège Universitaire de Christianville  
Ecole Nationale d'Administration Financière (Publ)  
Ecole Nationale de Géologie Appliquée (Public)  
Ecole Nationale des Arts (UEH)  
Ecole Nationale des Infirmières de Port-au-Prince (Public)  
Ecole Nationale Supérieure de Technologie (Public)  
Ecole Normale Supérieure (UEH)  
Ecole Supérieure d'Infotronique d'Haïti  
Ecole Supérieure de Droit de Jérémie  
Faculté d'Agronomie et de Médecine Vétérinaire (UEH)  
Faculté d'Ethnologie (UEH)  
Faculté de Droit et des Sciences Economiques (UEH)  
Faculté de Linguistique Appliquée (UEH)  
Faculté de Médecine, de Pharmacie et Technologie Médicale (UEH)  
Faculté des Sciences (UEH)  
Faculté des Sciences Appliquées  
Faculté des Sciences Humaines (UEH)  
Faculté d'Odontologie (UEH)  
Grand Séminaire Notre-Dame  
Institut de la Francophonie pour la Gestion dans la Caraïbe  
Institut des Hautes Etudes Commerciales  
Institut Haïtien des Sciences Administratives  
Institut National de Gestion et de Hautes Etudes Internationales (UEH)  
Institut Supérieur de Recherche et de Développement Technologique  
Institut Supérieur des Sciences Economiques Politiques et Juridiques  
Institut Supérieur d'Etudes et de Recherches en Sciences Sociales (UEH)  
Institut Supérieur Technique d'Haïti  
Institut universitaire Quisqueya-Amérique  
Institution de Technologie Electronique d'Haïti  
Institution Universitaire des Sciences Juridiques et de Développement Régional  
Université Adventiste d'Haïti  
Université Américaine des Sciences Modernes d'Haïti  
Université Autonome de Port-au-Prince  
Université Caraïbes  
Université Chrétienne du Nord d'Haïti  
Université de Port-au-Prince  
Université Episcopale d'Haïti  
Université GOC  
Université Jean Price-Mars  
Université Lumière  
Université Métropole d'Haïti  
Université Notre Dame d'Haïti  
Université Para-médicale  
Université Quisqueya

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A close examination of all the “pseudouniversities” reveals that in the private sector, there are perhaps a handful of institutions which approximate the status of an American, private, tuition-driven college. Such institutions have student bodies ranging from 500 to 2000 students. They offer degree programs in several fields and in several sub-specialties within those fields. They own their facilities, which typically consist of more than one building. They require at least a high school diploma for admission and have regular curricula of three to five years leading to a bachelor’s degree. Some even offer a graduate degree. Detailed information about institutions that fit these criteria is provided in the last section of this chapter.

#### **4. Themes in Haitian higher education**

As part of an international community, Haitian higher education is not functioning in a vacuum. It is relevant to examine how it fares along a number of themes in a comparative perspective with institutions worldwide. Such themes include autonomy and academic freedom, globalization and internationalization, the professoriate, the role of research, and student life.

##### *Autonomy and academic freedom*

The concept of academic freedom originated with the Humboldtian German university. In Humboldt’s view, to serve society, the university required the highest level of knowledge (*wissenschaft*) secured through complete freedom of teaching and learning

(*lehrefreiheit* and *lernfreiheit*) (Perkin, 2006). That 19<sup>th</sup> century German ideal is echoed in the 21<sup>st</sup> century view of the true university, which Altbach (2001) defines as “a school of higher learning combining teaching and scholarship and characterized by its corporate autonomy and academic freedom.” Are autonomy and academic freedom present in Haitian higher education? Not surprisingly, this question has different answers for the *Université d’Etat d’Haïti* and for private institutions.

As is the case in many Latin American countries, the Haitian constitution of 1987 guarantees the autonomy and independence of the *Université d’Etat d’Haïti* (Deshommes, 2002). It establishes provisions for the budget of the institution to protect it from the vagaries of Haitian politics. Also, its guidelines stipulate that the university rector be, not a political appointee but elected by the university council (Deshommes, 2002). Despite these guarantees, the UEH has been a frequent victim of the repressive regimes of the last two decades. In 2002, the Ministry of Education revoked the university council and appointed its own provisional leaders, causing a stand-off between the government on one side and the elected university officials, students, and academics on the other side (Deshommes, 2002).

Ambiguity still persists with regards to the true autonomy of UEH leaders. The rector and vice-rectors are elected by the university council (Deshommes, 2002) but their election must be ratified by the Minister of National Education (Alexis et al., 1991). All faculty members in the UEH are government employees. The Dean recommends their appointment; however, the Ministry ultimately makes such appointments (Alexis et al., 1991). In addition, many of the *facultés* have a direct relationship with the ministry of

tutelage (for example the Faculty of Agriculture and Veterinary Medicine with the Ministry of Agriculture). This is due to the fact that some of these institutions of higher learning were created to help carry out the politics of the government in matters of economic development. Those various links with the ministries would seriously jeopardize autonomy and academic freedom in any stable democracy. That is even more so in a politically unstable and fragile country like Haiti.

The election of the rector and vice-rectors by the University Council, and that of the deans by the faculty is supposed to put their position above the fray of national politics. Following the Duvalier dictatorship when political appointees were the puppets of the government, the framers of the 1987 Constitution envisioned that electoral system in order to provide autonomy to the *Université d'Etat d'Haïti* while maintaining a sense of democracy. If this arrangement ensured that the public university is relatively protected from the interference of national politics, it created a whole new set of internal politics. Indeed, the deans of the various *facultés* tend to view themselves as accountable to the students and faculty members who elected them, rather than to the rectorate who has no real power over them. It did not take long for students to realize that they hold some leverage, which leads to the very frequent strikes and protests originating from the student body. As a result, some deans tend to sacrifice the pursuit of rigor and quality in order to appease the whims of a few vocal students who are often manipulated by faculty members. Powerless, officials in the rectorate criticize in private incompetent or negligent deans without the ability to remove or reprimand them.

As they do not receive any funding from the government (Ecole Supérieure d'Infotronique d'Haiti, 2007; Université Quisqueya, 2007), private institutions can truly be autonomous. Although no report or scholarship can be found about the state of academic freedom in Haiti, it is to be assumed that in the politically volatile atmosphere in Haiti, institutions which have invested serious capital in building themselves probably take a cautious approach and do not take controversial stances. Furthermore the very practical nature of these institutions help them steer clear from political hot-button topics as they do not generally conduct research and teach very practical, professionally oriented programs.

Although one can understand the survival instinct that makes private institutions take apolitical stances, it is truly unfortunate that these institutions have not played more of a role in establishing an objective voice. In the loud cacophony of Haitian politics, it is often difficult to come across objectivity. Higher education institutions could play a vital democratic role in sorting out propaganda from facts. It could do so through its scholars investigating facts dispassionately and publishing objective results in reputable fora. A concrete example where such an academic analysis would have been helpful is in the never-ending discussion on neo-liberal economic policies. This is not to suggest that academics would provide the truth. However, a reasoned and academically sound debate on the topic would help interested citizens navigate through some of the demagogical stances that many politicians have taken.

### *Globalization and international cooperation*

Much has been written about globalization and its effects on higher education (Jobbins, 2005; McBurnie, 2001; Scott, 2000; Stromquist, 2002). Defined as the increased interconnectedness of the world because of economic factors as well as advances in transportation and communication (Knight, 2004), globalization is seen as an inevitable phenomenon. It is even more so in higher education which, from its medieval days, has brought together an international community of scholars and learners (Perkin, 2006). An increased internationalization of Haitian higher education is the trend for the foreseeable future for many reasons. First, the increased desire for collaboration between Haitian scholars in Haiti and a growing number of Haitian academics in the diaspora will make cross-border exchanges increasingly necessary. Second, Haitian institutions will need to build capacity through viable graduate programs and will need to collaborate with foreign institutions to get these programs off the ground. Finally, the scramble to meet demand will require continued exchanges.

One of the ways that internationalization helps to meet Haitian demand for higher education is of course, through the flow of Haitian students to other countries. Another way is through distance education. Various forms of synchronous or asynchronous distance learning are still in their infancy in Haiti, mainly because of the lack of availability of electricity and the resulting relative lack of penetration of information and communication technologies. The collaboration between the *Faculté des Sciences* and the *Université de Caen*, for example, is both a “twinning” (Altbach, 2004; Altbach, 2006) and a distance education program. Other examples of “twinning” for capacity

building can be found in the series of grants offered by the USAID to institutions in the United States to partner with the UEH's INAGHEI and *Faculté d'Agronomie et de Médecine Vétérinaire*, the *Ecole Supérieure d'Infotronique*, and Quisqueya's *Faculté des Sciences Economiques et Administratives* for student and faculty exchange programs.

Language barrier constitutes one of the strongest challenges to exchanges between Haiti and the United States. French and Haitian Creole are the two languages of instruction in Haiti and although Haitian students take years of English in high school, the levels of fluency in English are not adequate for students to follow an English course without some additional training. This also constitutes a hindrance for collaboration between Haitian scholars in the United States who have been trained in English and their counterparts in Haiti who speak French. Even when Haitian Creole remains a maternal tongue for Haitian-American academics, their language of trade is English, be it for the humanities, the sciences, or the professions.

### *The professoriate*

The professoriate is in crisis throughout the world at the beginning of the 21<sup>st</sup> century (Altbach, 1999). It is even worse in Haiti. Full-time faculty appointments are the exception rather than the norm. Out of 563 people who taught in the *Université d'Etat d'Haïti* in 1990, only 63 worked full-time including 15 foreign exchange faculty members (Alexis et al., 1991). If we include the private sector, 998 out of the 1073 professors worked part-time in 1987 (Romain, 1987). Of these 1073 professors, 73% held only a bachelor's degree, 18% a master's and 8% a doctorate (Romain, 1987). One

should note that the percentage of faculty members holding graduate degrees has markedly improved with the appearance of some of the best private institutions such as Uniq and ESIH in the late 1980s and 1990s. However, the percentage of faculty working full-time has changed if only for the worse, as private institutions tend to hire even more part-time faculty members.

The salaries for Haitian university teachers are abysmal. The 1960 decree creating the UEH set full-time professors' salaries at \$150 and \$200 per month and that of part-time faculty at between \$100 and \$150 per month (Romain, 2007). In 1991, INAGHEI full-time faculty members were the best paid at \$1,000 per month (Alexis et al., 1991). Full-time faculty from the FAMV came next at \$800 per month. Some of the worst paid adjunct faculty members were paid as low as \$14 per hour or \$150 per month. The current pay for a "full-time" Haitian faculty member at the State University of Haiti is between \$1,200 and \$1,500 US dollars per month.

With such low pay, it is not surprising that even "full-time" faculty do not devote their entire time to their institution. Many are also full-time government officials. Recently, reforms in the government and the UEH have tried to curtail the number of employees who are full-time in both a government office and the UEH. Such efforts have been met with strong resistance from faculty members.

Part-time faculty must combine as many teaching opportunities as possible on top of their full-time, white-collar jobs in order to enjoy a decent standard of living in an increasingly expensive society. These faculty members who are paid for a number of hours of teaching (Alexis et al., 1991) are truly Haitian versions of the "taxicab faculty"

(Altbach, 2000). They have practically no time available for students outside of the classroom and do not engage in any scholarly activity.

Unfortunately, there is not much relief in sight for the fate of the Haitian professoriate. Despite the presence of the better performing private institutions, the academic profession does not really exist yet in Haiti. Isolated islands of faculty members who spend their time in teaching and research can be found at the FAMV. Otherwise, the vast majority of Haitian professors are part-time faculty members who teach to supplement their income from their full-time employment.

### *Research*

In a system dominated by adjunct-faculty members, it is not surprising that research is at the embryonic stage. Until the creation of the INRETA at the *Ecole Supérieure d'Infotronique d'Haiti*, the little research that was done happened almost exclusively at the UEH. The Faculty of Agronomy and Veterinary Medicine leads Haitian institutions, in terms of research capacity. With its five research laboratories, it had an annual research budget of around \$1.5M in the 1980s (Alexis et al., 1991; Romain, 1987). Some research is also conducted at the Faculty of Ethnology but resources are minimal for investigations. Given the absence of long-lasting peer-reviewed journals, faculty publications take mostly the form of monographs and textbooks. This absence of research and publications is somewhat paradoxical given that many of the bachelor's programs require a research thesis for graduation. The low rate of completion



of this graduation requirement is another proof of the inadequacy of the research infrastructure in Haitian higher education.

The minimal amount of research in Haitian universities can be explained by the fact that the higher education system in a lot of way imitates inadequately the French model. The French system has this unique multi-tiered approach. Research is conducted in the most prestigious *polytechniques* and *grandes écoles*, who strive to be on par with research universities internationally, and at the much less well regarded public universities (Kumar & Usunier, 2001). The majority of *grandes écoles*, on which the Haitian higher education system is loosely based, do not conduct research which they regard as wasteful activities of disconnected ivory towers (Economist, 2006). In France however, research is conducted in public research centers which exist outside of universities. Unfortunately, such national research centers do not exist in Haiti. Besides, it would not be practical for the Haitian system to have this dual track of university professors and national center researchers because there are not enough trained PhDs in the country to populate both systems in parallel.

### *Student life*

Haitian colleges are generally commuting institutions. With the exception of the UCNH, the Faculty of Nursing at the UNDH, and the Faculty of Agronomy and Veterinary Medicine at the UEH, which have each a small residential component, the concept of the residential campus is foreign to Haitian universities. This gives the Haitian higher education institution a strictly professional function. The psychosocial development of the student, which American student affairs professionals view as their

role in addition to cognitive development (Reason, Terenzini, & Domingo, 2007) is absent in Haitian higher education. As a result, the concept of *in loco parentis* is foreign to the Haitian tertiary education system which views and treats students as adults.

Campus conditions in some of the best private institutions and the most sought-after public faculties are adequate. For the least desired *facultés*, recent reports suggest that conditions are terrible. Lloyd (2005, p. A26) describes one of the faculties as follows:

“The campus, in the heart of the capital, has the look of an untended farmyard. Chickens roam freely under groves of banana trees. The “cafeteria,” a dusty patch of ground under a plastic tarp, offers plates of rice and beans for 70 cents for those who can afford them.”

Haitian students are also very politically active (Lloyd, 2005) as mentioned previously. Indeed, student activism is one of the reasons why the university system is often targeted by the political elite. University students are organized under various groups. The most notable are the *Fédération Nationale des Etudiants Haïtiens*<sup>9</sup> (FENEH), the *Komite Inisyativ Lit Etidyan*<sup>10</sup> (KILE), and the *Jenes Etidyans Kretyen*<sup>11</sup> (JEK) (Deshommes, 2002). These student organizations have been a vital part of all the major protests of the last two decades from the fall of the Duvalier regime to the ouster of Aristide, and even in recent months to the protest against inflation and hunger (Alter Presse, 2008).

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<sup>9</sup> National Federation of Haitian Students

<sup>10</sup> Committee for the Initiative of the Student Struggle

<sup>11</sup> Christian Student Youth

Given the high rate of unemployment in Haiti, most students attend school full-time. The Haitian education system still relies on a great deal of memorization. Professors often dictate notes that students assiduously copy, as text books are often not available or too expensive (Lloyd, 2005). Students spend a great deal of their time outside of school memorizing concepts and theories. A few campuses offer basketball, volleyball, or soccer courts. Some institutions have a cafeteria (Alexis et al., 1991). Beside that, there is not much to maintain students on campus outside of taking courses.

## **5. Definitions**

Given the conditions described above and given that national spending in the sector is estimated at less than \$8 million (Lloyd, 2005), it is easy to dismiss Haitian higher education as irrelevant, especially when considering higher education in the US or even in some Latin American countries. Haitian universities are far from Kerr's (2001) ideal of knowledge producing institutions. Yet, the tertiary education sector in Haiti has a long history of nearly two centuries (Romain, 1987). For all its shortcomings, Haitian higher education has formed most of the country's doctors, lawyers, engineers, professionals, and government leaders. The Haitian government as well as international policymakers believes that it has a strong role to play in the future economic development of the country.

Haitian higher education is better understood in comparison with the French higher education system than the American. The strong influence of the French can be found in the fact that, until recently, universities have been free institutions in which little

research is conducted and which attracts a commuter population. But even within the French comparison, one must take some further subtleties into account. The fact that Haitian higher education admits students selectively and that it is mainly geared towards a professional education brings it closer to the *grandes écoles* (Ben-David and Zlockzower, 1962; Economist, 2006) than to the other French universities.

Given all these differences, it is important to establish a common frame of reference. I provide in this section a brief list of descriptions that should help to clarify the contexts in which terms are utilized in this dissertation.

**University.** I use the term university to describe an institution of higher education that offers at least a bachelor's degree in more than one distinct field of study. It is understood that the term university is loosely utilized in this context. The utilization is not intended to equate the institutions described with the American Carnegie description of universities which offer graduate degrees and, in which, research is a vital part of the institution.

**Faculté/ faculty.** A *faculté* is an organizational unit within a university that offers degrees in a distinct field of study. A *faculté* typically (but not necessarily) has several departments (i.e. the *Faculté des Sciences* at the UEH has the departments of civil engineering, electro-mechanical engineering, etc.). *Facultés* at the UEH are very independent and physically dispersed whereas *facultés* in most of the private universities are on the same campus and experience a higher level of coordination from the office of

the rector. The French version of the word and its English translation (faculty) will be used interchangeably.

**Rector.** The rector is usually the head of a university and reports to the university board. It is the equivalent of the president of an American college.

**Dean.** A dean is typically the head of a *faculté*. The decanal role in Haiti is similar to that in an American college

**Centers and institutes.** Many centers and institutes (i.e. CTPEA, CREH, INAGHEI) play the same role that *facultés* play. They admit students, teach them a curriculum, and graduate them with at least a bachelor's degree.

**Class.** We will use the term class in this dissertation to designate a cohort (i.e. first-year class). Many Haitian universities do not have a credit system. Students enter as a cohort and take the exact same courses throughout their student career as other students from the same "class" who concentrate in the same area.

**Classroom.** As students take the same courses, they do not need to move from room to room. Instead, teachers come in and out of the classroom to teach the "class." Thus, it is possible for all students from the same "class" who specialize in the same area (i.e. all first-year students in civil engineering) to have a designated classroom.

## 6. Facultés of the *Université d'Etat d'Haïti*

The UEH has eight facultés and 3 institutes. Details of each of these units are presented in this section.

### *Faculté des Sciences*

The Faculty of Sciences is one of the rare units of the UEH to have been started by the private sector. Six Haitian professionals started the *Ecole des Sciences Appliquées*<sup>12</sup> (ESA) in 1902. The ESA became public in 1947 and became *l'Ecole Polytechnique d'Haïti*. In 1961, it was renamed the *Faculté des Sciences (FDS) de l'Université d'Etat d'Haïti*. Currently, the FDS offers five-year bachelor's degrees in architecture, civil engineering, electromechanical engineering, electronic engineering, chemistry, and a two-year diploma in topography. Students spend the first two years taking common courses in mathematics, physics, and chemistry. They obtain a diploma of general studies after completing the second year, go on an internship and during their last three years, they focus on their chosen area of specialization. During the 2004-05 academic year, the FDS has an enrollment of 528 students.

Admission to the FDS is based upon an entrance exam in math, material sciences, and reading comprehension. The 200 top engineering applicants and the 30 top topography students are admitted.

Since 1999, a joint program between the FDS and the Faculté des Sciences de l'Université de Nice-Sophia Antipolis (UNSA) in France offers a distance education

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<sup>12</sup> School of Applied Sciences

program leading to a master's degree in databases and systems integration (Université d'Etat d'Haiti, 2008).

In 1990, the FDS had 3 full-time professors, 5 full-time French exchange faculty members, 7 half-time professors, and 83 part-time professors. It had a 3,000- volume library and 5 laboratories (Alexis et al., 1991). The *faculté* charged students fees totaling \$45 to supplement the FDS' \$300,000 budget, of which \$280,000 covered personnel salaries (Alexis et al., 1991). Many students apply to the FDS because of the prestige associated with the profession and the favorable salaries, when compared to other professions in Haiti. It is estimated that the majority of graduates from the FDS find employment in their profession within three years of graduation (Alexis et al., 1991).

#### *Faculté de Médecine et de Pharmacie (FMP)*

The oldest of the units of the UEH, the FMP offers a doctorate in medicine, a bachelor's degree in pharmacy, an associate's degree in medical technology, a diploma in specialized studies, and a master's in health care management (Université d'Etat d'Haiti, 2008).

The medical program has 12 departments. It is a ten-semester program followed by a clinical rotation year in various sections of the UEH Hospital. Students receive their MD degree after the clinical rotation year and must spend a year of service at a public hospital. Following their year of service, students can apply to a three-year specialization program as residents at the UEH Hospital or several affiliated institutions (Université d'Etat d'Haïti, 2008).

The pharmacy program lasts four years and has an affiliation with the *Université de Caen*, in France. The two-year technology program became attached to the FMP in 1977 (Université d'Etat d'Haiti, 2008).

Along with the *Faculté des Sciences*, the *Faculté de Médecine* is the destination of choice for the Haitian intellectual elite due to the prestige associated with both professions and the expected employment potential in a country with very high unemployment. As a result, the majority of students are from the middle and upper middle class. Approximately seventy percent are from Port-au-Prince, an equal percentage is from private high schools and five percent of the students have a doctor as a parent (Alexis et al., 1991). The competitive nature of the entrance examination and the high demand for the few slots resulted, for a long time, in access to the FMP not being based solely on merit but also on connections. Influential Haitians based on their political affiliations or their wealth played a great role in determining who was admitted into those *facultés* in a system that Haitians called *parrainage*, or god-fathering. In a 1990 report on the state of the FMP, the dean explained that they had taken great steps to limit this practice. "Students are now admitted only based on their excellence and we have eliminated external pressures."<sup>13</sup> (Alexis et al., 1991 p. 57)

Despite the prestige associated with obtaining the doctoral degree, the FMP does not have more resources than the other *facultés*. Of the 135 faculty members, only 1 was full-time in 1990. It had 5 laboratories and a 300- person auditorium. Its \$600,000 budget

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<sup>13</sup> Translated from the original French text.



covered mainly salaries. The FMP charged students a \$100 fee per year to supplement its operation budget (Alexis et al., 1991).

*Faculté d'Agronomie et de Médecine Vétérinaire (FAMV)*

Reflecting that the economy of Haiti has been for a long time, for the most part, based on agriculture, the Faculty of Agronomy and Veterinary Medicine is the best equipped unit of the UEH. It has the highest number of full-time faculty members of all Haitian institutions- 38 out of 90 in 1990 (Alexis et al., 1991), currently 32 out of 87 (Faculté d'Agronomie et de Médecine Vétérinaire, 2008). The majority of the faculty (48 out of 57) was reported to have a graduate degree in 1987 (Romain, 1987). The FAMV has 8 teaching and 6 research laboratories and a 30,000-volume library. Currently the FAMV has 450 students.

Started in 1924 by Americans during the Occupation of Haiti, the Central School of Agriculture was shut five years later due to student revolt. It reopened in 1931 and took several denominations until 1968 when it received its current appellation, although the veterinary medicine branch is not yet functional.

The FAMV offers a 5-year program in agricultural engineering. Students follow the same curriculum during the first three years and specialize in one of six options in the last two years. The program puts a great deal of emphasis on practical training in addition to theoretical learning. The FAMV estimates that students spend half of their time in laboratories, field trips, or internships through the course of the program. After

completing their five years of study, students must submit and defend a thirty-page research thesis (Faculté d'Agronomie et de Médecine Vétérinaire, 2008).

*Institut National d'Administration de Gestion et de Hautes Etudes Internationales (INAGHEI)*

The National Institute of Administration, Management, and International Higher Studies was founded in 1958 as the *Institut des Hautes Etudes Internationales* and took its current name in 1973 (Alexis et al., 1991). The INAGHEI's once innovative business and accounting programs -it was one of the first Haitian institutions to adopt the credit system- made it very popular with Haitian students and professionals. Presently, those programs have much competition from the private sector. However, it remains the one public institution with the mandate to form Haitian public administrators. Its importance among UEH facultés is evidenced by its highest enrollment (2,000 students in 1976) and the relatively high salaries earned by its faculty members (Alexis et al., 1991). It is only second to the FAMV in full-time faculty members and in faculty members with a graduate degree (Alexis et al., 1991; INAGHEI, 2008; Romain, 1987). One should note, however, that the trend is going in the wrong direction for the INAGHEI in terms of full-time employment of the faculty. Indeed, both the Alexis et al. (1990) and the Romain (1987) reports indicated that the INAGHEI had 70 faculty members and the former pointed that 25 of these faculty members were full-time. In its 2007 statement of needs to the USAID's Higher Education for Development program, however, the INAGHEI

explained that “[T]here are 147 full- and part-time staff members at INAGHEI, 5% of whom are full-time academic staff” (INAGHEI, 2008 p.3).

The INAGHEI offers bachelor’s and associate’s degrees in Business Administration, Accounting, Public Administration, Political Science, and International Relations. Students follow a common core curriculum (30 credits) in the first year and take an examination in order to continue. After the first year, students must declare a major for which the requirements can be completed by accumulating 90 credits. Full-time day students complete the program in four years whereas part-time evening students take six years to do so (Alexis et al., 1991). To obtain the bachelor’s degree, students in all areas but accounting must submit and defend a 60- to 90-page thesis (Alexis et al., 1991; INAGHEI, 2008). Many students complete the course requirements but only 3.1% of students annually have been able to complete the thesis requirement and graduate in recent years (INAGHEI, 2008). This is due to the fact that the curriculum does not contain research method courses and students are expected to learn how to conduct research on their own with the support of the INAGHEI Research Director. The INAGHEI has recently completed a draft revision of its curriculum which will replace the thesis requirement with a senior project related to the students’ internship.

#### *Faculté de Droit et des Sciences Economiques (FDSE)*

One of the oldest of Haitian *facultés*, the Faculty of Law and Economic Sciences offers four-year bachelor degrees in law or economics. Given the importance of forming Haitian jurists, the FDSE has established branches in all nine major cities of Haiti. In

addition, in the main branch in Port-au-Prince, where there was only an evening program for a long time, a day program was also added to meet the demand. In 1987, that branch had 30 part-time faculty members, 7 of whom had a graduate degree (Romain, 1987).

The FDSE can only accommodate 150 entering students. Students compete for admission by taking an entrance examination. Admitted students follow a very structured program in cohorts. They are required to pass all subjects (with a 50% passing grade) in order to move to the next year. Students who fail a subject can take a make-up exam for that subject in September. If they still do not pass, they are required to repeat the year (*Faculté de Droit et des Sciences Economiques*, 2008). Upon successfully completing the second year, students can petition to start practicing in the equivalent of the district court. After completing the four-year cycle, each student must complete a research thesis and submit it to a jury composed of three faculty members.

#### *Faculté d'Ethnologie*

The Faculty of Ethnology (FE) was launched in 1961. A presidential decree established its charter in 1959 to prepare specialists in human and development sciences; form teachers for secondary and higher education; prepare librarians and archivists; and publish reports on Haitian environment and culture (Alexis et al., 1991). The FE enrolls 230 students annually based on placement in an entrance examination (*Faculté d'Ethnologie*, 2008).

As in most of the *facultés* of the UEH, students have a first common year of general education, after which they choose an area of specialization in psychology and

socio-anthropology (for a four-year bachelor's degree) or development sciences for a six-year master's degree. All programs require students to complete a thesis in order to graduate (*Faculté d'Anthropologie, 2008*).

The FE faculty members are all part-time. Their appointment is for two hours of course per week. The FE is the third unit of the UEH to have a majority of its faculty with a graduate degree. In 1990, 8 faculty members had a bachelor's degree, 15 held a master's and 21, a doctorate.

#### *Faculté de Linguistique Appliquée (FLA)*

The Faculty of Applied Linguistics is the new incarnation of the Center of Applied Linguistics which was started in 1978 to form specialists in methods to teach the two national languages of Haiti, French and Creole (*Université d'Etat d'Haiti, 2008*). The Faculty offers a four-year bachelor's degree in Applied Linguistics as well as a master's program administered jointly with the *Université des Antilles et de la Guyane*. Students who hold a certificate of high school completion can participate in an entrance competition exam to be admitted to the FLA. Fifty to seventy-five students are admitted annually to the FLA (Alexis et al. 1990).

In 1990, the FLA had 2 full-time and 8 part-time professors to serve its 90 students. Many of the FLA students are full-time teachers or school administrators (Alexis et al. 1990). Among severely under-funded *facultés* and institutes, the FLA is the poorest. It had no library or laboratory in 1990. Only faculty salaries are covered by the

UEH budget. For an operating budget, in 1990 the FLA charged each student a fee of \$30 (Alexis et al., 1991).

### *Ecole Normale Supérieure*

The *Ecole Normale Supérieure* is the equivalent of the UEH's school of education. It has been in existence since 1947 (Alexis et al., 1991) and is mandated by the government to form Haitian secondary school teachers. The following statement by the Dean of the ENS reflects the standing of the *faculté* among Haitian students. "If some students choose the *Ecole Normale Supérieure* because of a real professional motivation, many enroll without any great motivation." (Alexis et al., 1991) Some enroll for a year while awaiting the chance to re-apply to the *faculté* of their choice the following year.

The ENS offers a three-year bachelor's degree program in secondary education with a possible major in sciences, humanities, philosophy, social sciences, and mathematics (Alexis et al., 1991; Romain, 1987). After three years, students receive a secondary education certificate. In order to receive the bachelor's degree, they must submit a research thesis. In 1985, the ENS had no full-time faculty members for its 145 students. Part-time faculty members are responsible for four hours of teaching weekly (Alexis et al., 1991)

### *Faculté des Sciences Humaines(FDSH)*

The Faculty of Human Sciences (FDSH) was started in 1974. Its mandate is to educate sociologists, social workers, psychologists, and technicians in social

communication (Alexis et al., 1991; *Faculté des Sciences Humaines*, 2008). The FDSH offers a four-year bachelor's degree in each of those four areas. Following a common core year, students take courses in their respective discipline and can obtain their degree after accumulating 120 credits and submitting their thesis.

According to the FDSH's website, in 2008 it had 22 full-time faculty members. Seven of them have a doctorate and the rest a master's degree. In addition, it had 74 adjunct-faculty members, a number of whom have doctorates or master's degrees. In 1991, the FDSH had a total enrollment of approximately 300 students.

#### *Faculté d'Odontologie(FDO)*

The Faculty of Dental Medicine was started in 1928 and was initially part of the Faculty of Medicine. It became an independent unit of the UEH in 1950. The FDO enrolls approximately 30 students annually in a five-year program, leading to the doctorate of dental surgery, D.D.S. Thirty-five part-time faculty members of the Faculty of Medicine also had an appointment at the FDO in 1991 where they taught basic medicine. An additional 21 part-time faculty members teach dentistry-specific topics. FDO students use some facilities of the Faculty of Medicine such as the library and the cafeteria.

## **6. Selected private institutions**

Given the lack of available updated information, I conducted a mini-ethnographic study of the most important private Haitian higher education institutions, using data

available from the internet, printed brochures and the few publications on the matter. Information of primary importance sought on each institution was (a.) location, (b.) whether it is still functional, (d.) the degree programs offered, (e) its approximate current enrollment. The six main private higher education institutions in Haiti along with their units and programs of study are described in this section.

*Collège Universitaire Caraïbe, Delmas 29 Port-au-Prince*

The Caribbean University has two branches. The main campus is in Delmas, which is a town adjacent to Port-au-Prince. The other location is in Montrouis, a seaside town located at one hour and a half from Port-au-Prince. Admission to the Caribbean University is based upon submitting the proper documents proving completion of secondary school, a copy of the student's transcript, as well as an entrance examination. Students who do not pass the entrance examination could still be admitted to a remedial program.

The University has the following six facultés: education, sciences and engineering, agriculture, administrative sciences and accounting, computer science, arts and humanities.

The Faculty of Education offers programs in preschool, primary, secondary, andragogy, and bilingual education as well as a school administration program. The Faculty of Sciences and Engineering offers bachelor's degrees in architecture and civil, industrial, electro-mechanical and electronic engineering. It also offers technical diplomas in public work, electronic and electro-mechanical technology. The Faculty of



Agronomy offers a bachelor's degree in agriculture and an agricultural technician diploma. The Faculty of Administrative Sciences and Accounting offers bachelor degrees or diplomas in seven areas including tourism management. The Faculty of Computer Science offers a bachelor's degree in computer science as well as technician and secretary diplomas. The Faculty of Arts and Humanities offers programs in music, sociology, psychology, and humanities.

*Université Chrétienne du Nord d'Haiti (UCNH), Limbe*

The Christian University of Northern Haiti is located in Limbe which is approximately 1 hour and 30 minutes from the second largest city in Haiti, Cap-Haitien. The University offers bachelor's degrees in agronomy, theology, arts, and administrative sciences. Bachelor degrees are obtained after one year of preparatory studies plus four years of studies. The university functions on a semester calendar and students accumulate a number of credits. The bachelor's degree is expected to be obtained after 16 semesters of studies and 128 credits.

The UCNH also offers a master in theology that can be obtained in three 16-credit semesters. A master's thesis is expected to be submitted by each student seeking the master's in theology. The program of study includes courses in the following areas: contemporary theology, theology of the New Testament, sociology of religion, psychology of religion, pastoral psychology, Haitian theology, philosophy of religion, and methodology.

To be admitted to the UCNH, students must prove that they have completed their secondary studies. In addition, they must pass an entrance examination. All students are tested in French and English. In addition, depending on their field of study they are also tested in math, physics, biochemistry, general knowledge.

According to the UCNH website, students contribute 80% of the cost of their education. The UCNH awards scholarships equivalent to 20% the cost of tuition. In 2007, 82 students graduated from the UCNH's various programs. That number was slightly lower than the previous cohort of graduates who numbered 86. In 2005, 69 students had graduated from UCNH.

*Université Episcopale d'Haïti (UNEPH) Champ de Mars, 14 Rue Légitime Port-au-Prince*

Founded in 1920 by the Anglican Church in Haiti and a member of the network of the Anglican communion universities, UNEPH aims to contribute to higher education in Haiti by making “a quality program accessible to all those who desire a high level education” (UNEPH, 2008). The University functions according to the credit system and offers the following programs through its eight *facultés* or institutes.

*Faculté des Sciences Administratives (FSAD)*. The Faculty of Administrative Sciences offers degrees and diplomas in business administration and accounting.

*Faculté des Sciences Agronomiques (FSAG)*. The Faculty of Agricultural Sciences offers a five-year program leading to a degree in Agricultural Engineering. It aims to form entrepreneurs and students are required to participate in internships every year. During

the fifth year, students are taught research methods and culminate the program by submitting a research thesis.

*Faculté des Sciences de l'Éducation (FSE).* The Faculty of Education Sciences offers a four-year program leading to a bachelor's degree in education. The program consists of 110 credits in courses and internship and 10 credits in a final thesis. A continuing education program also allows practicing teachers to audit courses in order to enhance their skills.

*Faculté des Sciences Infirmières (FSIL) à Belval (Léogâne).* The Faculty of Nursing was started in 2003. In 2006, the program had 25 students in its junior year, 25 in the sophomore year, and an entering class of 36.

*Faculté des Sciences Informatiques (FSI).* The Faculty of Computer Science offers a bachelor's degree in Computer Science or a diploma in computing support. The bachelor's degree can be obtained after four years of study and the accumulation of 124 – 131 credits. Students majoring in a BS in computer science can focus in programming or management.

*Faculté des Sciences Religieuses (FSR).* The Faculty of Religious Studies offers a 4-year degree in theology. The program is offered to all students, not only those who want to become ministers.

*Business and Technology Institute (BTI).* The Business and Technology Institute is an affiliated institution in the southern city of Les Cayes. It offers a three-year program leading to the equivalent of an associate's degree in administrative sciences or computer sciences.

For the 2008- 2009 academic year, registration fees at the UNEPH were \$130. In addition, all students had to pay a general fee of \$900 per session. The cost per credit was \$150 - \$160 if it is a laboratory course. Thus the total annual fee for a student taking 2 15-credit semesters would be approximately 6,450 Haitian dollars or \$US 921.

*Université Notre Dame d'Haïti 6, Rue Sapotille, Port-au-Prince*

The UNDH was started in 1995 by the Conference of Haitian Bishops. With 1,000 students (Agence Universitaire de la Francophonie, 2008), it is truly decentralized and has programs in the three main cities of Haiti. The Faculty of Medicine and Nursing is in Port-au-Prince. The Northern city of Cap Haitien hosts the faculties of administration and education. Les Cayes in the south is home to the faculty of agronomy.

Completion of the secondary cycle is required to apply to the UNDH. Admission exams in the month of September help to select the 100 highest scoring applicants for admission. Students may transfer to the UNDH during their second or third year if they have successfully completed the first or second year at a reputable Haitian or foreign institution. The UNDH offers programs of study through its four *facultés* and its center. *La Faculté de Médecine et des Sciences de la Santé*. The Faculty of Medicine offers a doctoral degree in medicine and a bachelor's degree in nursing. The MD degree can be obtained in seven years, the Nursing degree in three years.

*La Faculté des Sciences Economiques, Sociales et Politiques (FSESP)*. The Faculty of Economics, Social, and Political Sciences offers bachelor degrees in economics, business administration, sociology and criminology, public administration, and political sciences

and international studies. The FSESP offers short programs that full time employees can complete in two years, including an internship in a Haitian or foreign company as well as the traditional four-year bachelor's degrees.

*Le Centre de Recherche et de Formation en Sciences de l'Education et d'Intervention Psychologique (CREFI).* The Research and Teaching Center in Education and Counseling Psychology offers various programs catering to high school graduates as well as professionals working in education. Five types of programs are offered. The certificate of preparatory studies can be obtained in 10 months and readies high school graduates for continuing a bachelor's degree in education. The bachelor's degree can be obtained in three or four years. A master's degree can be obtained in one or two years. Focused programs for professionals can be completed in 15 months. Finally, a specialized studies diploma can be obtained in 1 year for directors and other leaders in educational institutions.

*La Faculté des Sciences Administratives.* The Faculty of Administrative Sciences offers a four-year bachelor's degree in business administration, a ten-month certificate in administration, or a ten-month certificate in computer science.

*La Faculté d'Agronomie.* The Faculty of Agronomy offers a five-year bachelor's degree in agricultural engineering. Students can focus in agricultural production, natural resources and environment, and economics, research, and development.

The annual cost of attendance for selected programs at UNDH ranges from \$1,200 for a diploma to \$6,400 for the medical degree.

*Université Quisqueya Boulevard Harry Truman, Port-au-Prince*

University Quisqueya (Uniq) is a private non-profit higher education institution located in Port-au-Prince. It was founded in 1988 and is arguably the leading private institution in Haiti with 2,000 students (Agence Universitaire de la Francophonie, 2008). Its main campus is located on 75 acres and has 40 classrooms, 1 auditorium, 1 library, 12 teaching laboratories, 3 computer labs, 5 administrative buildings, and some sports facilities. (University of Quisqueya, 2007). Uniq has six *facultés*: economics- *Faculté des Sciences Economiques et Administratives (FSEA)* ; engineering and sciences- *Faculté des Sciences, de Génie, et d'Agriculture (FSGA)*; agriculture and environment- *Faculté des Sciences de l'Environnement et d'Agriculture (FSEAG)*; law- *Faculté des Sciences Juridiques et Politiques (FSJP)*; education- *Faculté des Sciences de l'Education (FSED)*; health sciences - *Faculté des Sciences de la Sante (FSSA)*.

It offers bachelor's degrees in all the above areas. It also offers two-years diplomas in business, accounting, marketing, school administration, and linguistics. Uniq offers a few master programs and a doctoral-level degree in collaboration with a French university (University of Quisqueya, 2007). Uniq also functions according to the credit system. Students must complete 140 credits and complete a thesis in order to obtain their bachelor's degree.

Uniq has 50 full and part-time and 220 adjunct faculty members (University of Quisqueya, 2007). All the full- and part-time faculty members have a graduate degree and 30% hold a doctorate.

Like all private Haitian institutions, Uniq is almost exclusively tuition-driven. It receives 7% of its budget from private or NGO funding. Three percent of the students receive some form of financial aid (University of Quisqueya, 2007).

*Ecole Supérieure d'Infotronique d'Haïti (ESIH), 29, 2ème Ruelle Nazon Port-au-Prince*

Located in Port-au-Prince, the Superior School of Infotronics of Haiti was only started in 1995. Specializing in information technology it is the leading institution of information and communication technology in Haiti. It offers bachelor's and master's degrees in computer science and business (Ecole Supérieure d'Infotronique d'Haïti, 2008). ESIH's growth has been remarkable moving from 295 students in 1996 to 1234 in 2003. Freshman enrollment is estimated to be around 1200 students in 2008. (Ecole Supérieure d'Infotronique d'Haiti, 2007). ESIH's rapid growth has prompted the School to build a new campus to which it plans to move by 2010.

ESIH has 39 faculty members, of whom 5% hold a doctorate degree and 85% a master's (Ecole Supérieure d'Infotronique d'Haiti, 2007; Ecole Supérieure d'Infotronique d'Haiti, 2008). Most of the faculty members who hold a graduate degree were educated in France (Ecole Supérieure d'Infotronique d'Haiti, 2008). ESIH's strategic plan calls for the institution to create a license-master-doctorate program evolution similar to that of the European Union (Ecole Supérieure d'Infotronique d'Haiti, 2007)

ESIH has not adopted the credit system. Students move in cohorts and must pass the year with an average of 60% in their courses in order to be allowed to continue onto the next year. Students who do not have this passing grade must repeat the year. Course

requirements for the bachelor's degree program can be completed in four years. In order to graduate, however, students must complete and submit a professional project. Less than 30% of students have been able to meet this graduation requirement thus far (Ecole Supérieure d'Infotronique d'Haiti, 2007; Ecole Supérieure d'Infotronique d'Haiti, 2008).

In 2004, ESIH established a research arm, l'Institut de Recherches et de Technologie Appliquées (INRETA)<sup>14</sup>, to help support students' research project and to promote scholarship within its ranks and in the Haitian academic ITC arena. The INRETA planned to publish an edited quarterly bulleting called Sapiens. It is not evident that Sapiens has published any issue beside the inaugural October-December 2004 one.

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<sup>14</sup> Institute of Applied Research and Technology



## **Chapter 4. Literature review**

To help me frame the research on Haitian students' satisfaction with their academic options, I reviewed the literature covering the following three areas: (a) the factors that influence academic choices, (b) the measurement of academic or career satisfaction, (c) access and financing in higher education.

### **1. The factors that influence academic choices**

What influences students in their academic choices? Two types of decisions have been singled out in the literature: major choice, and college selection. Different factors come into play for each of these decisions. It is relevant to examine each separately.

#### *The determinants of major choice*

Much has been written about the factors that influence college students in choosing their major. The majority of the studies, however, have taken place in -or focused on- American students. A few studies have looked at the motivating factors for students to select teaching as a career choice in Turkey (Aycan & Fikret-Pasa, 2003), the Caribbean (Brown, 1992), Britain (Kyriacou & Coulthard, 2000), and Australia (Stokes, 2007). Nevertheless, for the most part, the studies that have looked broadly at factors influencing students' major choices have had American students studying in American colleges as participants. Within the American student population, specific groups have been targeted for studies. For example, some studies have tried to probe into differences between majority and minority groups. They have sought specifically to understand what

influences young women in their decision to pursue or to avoid science majors (Enman & Lupart, 2000; Karpiak & Buchanan, 2007; Ware & Lee, 1988). They have also examined the academic motivations of ethnically diverse students (Phinney, Dennis, & Osorio, 2006; Daire, LaMothe, & Fuller, 2007). Another commonality among the studies published in this area is that they have all looked at factors influencing major choices with the implicit assumption that the only obstacles for students to select their preferred major are their academic preparation and qualification.

In spite of its limitations, the current literature on students' choice of a major can serve as a starting point to understand the determinants of such choices in Haiti. The review will be organized along the following themes: the most common factors in major choice, major-specific determinants, differences between genders and among ethnic groups, and some country-specific information.

Given the breadth of the literature on factors that influence major selection in general, I have relied on some existing thorough reviews to provide a synthesis. Porter and Umbach (2006) conducted one such review and sought to unify what they consider to be many disparate and mutually exclusive theories of factors influencing major choice. They identified three such groups of theories. The first emphasizes academic ability, academic self-concept, and demographics aspect of students. The second focuses on the impact of social issues and the influence of family. The third draws a relationship between student personality and political orientation and their major choices.

Briggs (2006) conducting a study on factors influencing undergraduate students' academic choice in Scotland, reviewed the American literature on the subject, given that,

as mentioned above, most of the scholarly work in this area has revolved around American students (Briggs, 2006). She listed the variety of choice factors included in the literature. Educational and career aspirations, socio-economic status, ability, parental encouragement, college attributes and financial limitations are all factors that have been identified (Briggs, 2006). She noted that the many possible variables can be grouped under four umbrellas: intellectual emphasis, practicality, advice of others, and social emphasis (Briggs, 2006).

Malgwi, Howe, and Burnaby (2005), in their study of the influences on major choices for students in business schools, reviewed the general literature and noted that the following factors have been reported to have a strong influence: students' interest in the subject, availability of jobs, aptitude for the subject, and earning potential (Malgwi, Howe, & Burnaby 2005; Enman & Lupart 2000).

Finally, taking an econometric view of the major selection process, Arcidiacono (2004) reviewed the economic literature on the topic and determined that math and verbal SAT scores, expected earnings, and college choice were reported to be associated with major choice. He concluded that the previous studies did not model the dynamic process of major choice accurately enough. From his modeling, he found math ability along with the following factors to be important in major choice: "monetary returns to various abilities, preferences in the workplace, and preferences for studying particular majors in college." (Arcidiacono, 2004 p. 373)

Several studies have looked at the factors influencing students' choices of specific majors. For business majors, some of the factors influencing their choices include career

opportunities and salaries (LaBarbera & Simonoff, 1999), parental occupation, socioeconomic status, personality traits, values and interpersonal behavior (Malgwi, Howe, & Burnaby, 2005). Students are motivated to become teachers by reasons that fall into three main areas: altruistic reasons such as a desire to help children succeed, intrinsic reasons such as an interest in using their subject matter knowledge, and extrinsic reasons such as level of pay and status (Kyriacou & Coulthard, 2000). Brown (1992) also reports altruistic reasons as the motivation for Caribbean students to become teachers. Conversely, low social status, poor remuneration, and irregular salaries have a deterrent effect on Nigerian students, leading them not to want to become teachers (Ogiegbaen & Uwameiy, 2005). Students choose to work with elderly persons for both intrinsic values such as personal goals and interests and extrinsic values such as environmental conditions and economic return (Robert & Mosher-Ashley, 2000).

Gender is only reported to play a role in the motivation of students to major in science. It is reported to have a negative influence on women in that area (Enman & Lupart, 2000; Karpiak & Buchanan, 2007; Ware & Lee, 1988). Race also appears to influence the factors that motivate college students' choices. Daire et al. (2007) found that future income has a greater influence on the career choice of black students than on the career choice of white students.

Economic and cultural factors seem to also play an important role in major selection. One would suppose, therefore, that given the vast economic and cultural differences between countries, the factors influencing students' choice of a major would reflect those distinctions. The few country-specific studies found in the literature did not

attempt to pinpoint country-specific variations. This represents one of the main limitations of the existing literature on major choice. With universal access and a differentiated system, the modeling of choice for the American student, around whom most of the current studies revolve, cannot be generalized to most other countries.

### *The determinants of college choice*

Students' major choices are often very closely associated with the type of institution that they attend. Indeed, Arcidiacono (2004) reported that college choice is associated with major choice in the United States. But, this is particularly true in Haiti where many institutions are either single-subject faculties or offer few choices. It is therefore appropriate to review the literature on college choice. I will do that in two steps. First, I will report the framework used by scholars to figure out the determinants of college choice. Then, I will note the most common factors.

Four main theoretical frameworks have guided the studies of students' college choices. Perna and Titus (2004) use primarily an economic theoretical approach. That approach assumes that individuals make college choices through a cost-benefit analysis. They compare the benefits of attending with the costs for all possible alternatives and select the alternative with the net possible benefits. The estimation of benefits depends on individual preferences. As a result, the authors incorporate concepts of social and cultural capital as means of determining differences in students' expectations and their preferences for investing in higher education.

St. John, Paulsen, and Carter (2005)'s study is guided by the financial nexus model. This model posits that the financial reasons for choosing a college in the first place also influence the college experiences. In addition, the actual price of college influences students' persistence in their college careers.

Somers et al. (2004) summarize the theoretical approaches to student decision-making. They concluded that most of the research in the area employs economic and sociological frameworks. The economic framework, as noted above, expects students to make decisions based on the results of a cost-benefit analysis. The sociological framework, which the authors also call status attainment model, assumes that students make a utilitarian decision that reflects occupational and educational aspirations. Recognizing that college choice is a complex process, the authors also include a third framework, the combined model, which includes aspects of both the economic and sociological models.

Rational choice theory is the fourth framework cited in studies on college choices. Grodsky and Jones (2006) explain that within this framework, students and their parents make college choices that serve to maximize their subjective utilities. The authors theorized that rational choice theory functions with the assumption that decision makers have access to pertinent information about the potential utility of a course of action. Lack of appropriate information will hinder students and their parents in their efforts to make rational choices.

Using these models and frameworks, researchers have found that many factors influence American students and their families in their college choices. Those factors include financial considerations (Ashburn, 2007; Grodsky & Jones, 2006; Kelsay, 2007; Perna & Titus, 2004; Somers et al., 2006; St John, Paulsen, & Carter, 2005), students' academic preparation (Ashburn, 2007; Perna & Titus, 2004; Pitre, 2006; Somers et al., 2006), social and cultural factors such as family support and aspirations (Perna & Titus, 2004; St John, Paulsen, & Carter, 2005), and institutional characteristics (Somers et al., 2006) among other factors.

“Financial consideration” is a variable commonly reported by most studies to influence college choice. Perna and Titus (2004) report that the choice of a college is still subject to economic stratification. They also indicate state financial policies that determine the types of students in colleges and universities. Such policies include direct appropriations to higher education institutions, financial aid to students, and tuition rates. In their study of the reasons for which students choose to attend community colleges, Somers et al. (2006) found that price, along with location, is one of the two most often cited reasons. Grosky and Jones (2007) theorized that families' perception of the cost of college will determine whether and where students go to college. Their study found that, in general, families believe that the cost of college is higher than it actually is and that African American families have less accurate information about the true cost of college than do white families. St John, Paulsen, and Carter (2005) posited that students' college choices are constrained by their socio-economic status and financial conditions and that the financial reasons for choosing a college impacted the college experience. Their study

found differences in the way that financial considerations influenced the college-choice process, showing that a larger percentage of African-American students made their choices based on financial concerns.

Students' academic preparation also contributes to their college choices. In a study of African American and white students' college aspirations, Pitre (2006) showed that students who held negative perceptions of their high school preparation were less likely to aspire to attend college. Recognizing that different levels of preparation lead to different college choices, Grodsky and Jones (2007) make the connection between information about the true cost of college and lack of preparation. They assert that parental lack of information about true college costs causes them to be less motivated to make sacrifices that help their children prepare adequately for access to the most competitive institutions. Perna and Titus (2004)'s study of state policies that affect college choices include state policies regarding academic preparation as one of their variables. They measure such policies through spending on elementary and secondary education as well as math requirement and number of teachers with master's and doctoral degrees.

Students' personal aspirations as well as the aspirations and support of their families also influence their college choices. Ashburn (2007) shows that high-achieving Hispanic students often choose Hispanic colleges over more prestigious institutions in order to remain near large Hispanic populations. By contrast, Arzy, Davies, and Harbour (2006) found that low income students who take advantage of private foundation scholarships to attend private colleges do so with a social mobility motivation, even



though they do not feel quite at home among wealthier students and away from their family support. Pitre (2006) compared the college aspirations of African American ninth graders to those of their white counterparts based on the theory that aspirations are an important psychological aspect of students' decision with regards to college. Grosky and Jones (2007) studied parents' aspirations for their children and included in their questionnaire a series of questions that probed the type of institutions that parents believed their child would first attend. Somers et al. (2006) also identified the influence of peers and family as a strong factor in students' college choices.

Finally, institutional characteristics also play a role in students' college choices. As mentioned above, Ashburn (2007)'s study demonstrated Hispanic students' preference for Hispanic institutions. Somers et al. (2006) reported institutional characteristics as one of the main themes in students' description of their motivation to attend a two-year college. Such characteristics include a more supportive and nurturing environment, smaller classes, more faculty contact, the flexibility of the institution and an easy enrollment process.

## **2. The measurement of academic and career satisfaction**

The level of students' satisfaction with their field of study is the dependent variable in this study. Therefore, it is helpful to examine how satisfaction has been measured in previous studies. I will briefly review the vast literature on career satisfaction. Then I will focus on the much less voluminous body of work on satisfaction with academic experience.

Career or job satisfaction has been widely studied. Appleton, House and Dowell (1998, p.1060) report the following variables as positively associated with job satisfaction: “recognition for good work, freedom to choose methods of working, physical working conditions, and job variety.” They also noted that “hours, pay, and opportunity to use abilities” had a negative association.

In one of the rare studies that linked job satisfaction with academic decisions, Cabrera, Vries, and Anderson (2008) reviewed the literature on job satisfaction and determined that it has been examined under three lenses. First, an economic approach based on human capital theory explains job satisfaction in terms of individual returns on their investment. Income is very important in this model, but so are challenging tasks and pleasant work environment (Cabrera, deVries, & Anderson, 2008). Second, from an industrial psychology standpoint, the match between intrinsic and extrinsic job rewards and the individual’s needs determine the level of job satisfaction. Meaningfulness of the work, responsibility for outcomes, and knowledge of the results are factors that are positively associated with job satisfaction in this framework. Finally, a vocational psychology perspective associates job satisfaction with the level of congruence with individuals’ vocational preferences as expressed by their college majors.

All these models measure job satisfaction through the variables, factors, and concepts mentioned. They serve as examples for how satisfaction level is measured in the workforce. Most of them do not take academic preparation into consideration. Only the vocational psychology model makes the connection between job satisfaction and academic choice. But even that framework cannot serve as a guide for measuring

academic satisfaction. Can we find information more specifically on the measurement and prediction of student satisfaction?

According to Umbach and Porter (2002 p.213), “very little work has been done on predicting student satisfaction.” For ease of review as well as for linkages with my research question, I have grouped the available literature in four categories: student satisfaction and retention, the satisfaction of non-US students, measuring student satisfaction, and measuring satisfaction with college/major choice.

### *Student satisfaction and retention*

Scholars and administrators who are interested in student satisfaction can be concerned with the student’s experience as a customer or as a learner. Ultimately, their common goal is to ensure that the student persists and remains in school.

The tendency to consider higher education as a service and the student as a customer of that service has been embraced by many scholars (Aldridge & Rowley, 1998; Douglas, McClelland, & Davies, 2008; Mavondo, Tsarenko, & Gabbott, 2004; Schertzer & Schertzer, 2004). For them measuring students’ satisfaction is equivalent to evaluating customer satisfaction. Two aspects of the interaction between the customer and the institution are assessed: their satisfaction with the teaching and learning and their satisfaction with their overall experience. Aldridge and Rowley (1998) concede that most other studies of student satisfaction have focused on teaching and learning. However, they contend that “[t]eaching and learning is not something that occurs solely in the classroom or under the tutor’s direct supervision and the total student experience is

becoming ever more central to the student's attitude to the institution." (Aldridge & Rowley, 1990 p. 198) Similarly, Forrester (2006) found some relationship between students' recreational sport involvement and their satisfaction with their overall academic experience.

By contrast, many studies have focused on students' satisfaction with aspects of their learning, ranging from aspects of the classroom environment to interactions with instructors. Jones (2008) found that students reported higher levels of satisfaction with highly supportive teachers whom they access out of class. Inside the classroom, various factors are reported to contribute to students' satisfaction, including small-group interactions for case studies (Curran, Sharpe, Forristall, & Flynn; 2008), instructors' use of influence tactics (Stanfird, Pons, & Moshavi, 2008; Teven & Herring, 2005), and the use of technology to supplement classroom instruction (Lin, 2008). Students' satisfaction with non-traditional or non-classroom methods of learning have also been the subject of several studies (Schweizer, Hayslett, & Chaplock, 2008; Walker & Kelly, 2007). The variables commonly recognized to be associated with satisfaction in online or distance education include personalized feedback and attention (Gallien & Oomen-Early, 2008; Shu-Hui & Smith, 2008) as well as students' learning styles and attributes (Manochehri, 2008; Sanders & Hirschbuhl, 2008).

Whether the student is a learner or a customer, satisfaction matters because it determines whether students re-enroll. As it stands, 50% of freshmen eventually drop out and close to one-third of first year students do not return (Schertzer & Schertzer, 2004). It should therefore come as no surprise that student retention as an outcome of satisfaction

has also been closely studied. Aitken (1982) built a model to predict students' persistence. In that model, academic satisfaction is one of four predicting factors and is itself a function of seven variables: academic performance, the curriculum, instruction, academic advising, satisfaction with major, and personality. Satisfaction with major was measured through one item in a survey. Schertzer and Schertzer (2004, p.81) identify the following factors as having an effect on retention: "academic fit, student-institution values congruence, student-faculty values congruence, academic advising, [and] institution social opportunities."

#### *Satisfaction of students globally*

On an international level, a few studies have examined the academic satisfaction of students. Qaraeen, Al-Omari, and Abu-Tineh (2007) studied students' satisfaction at Jordanian universities, paying particular attention to differences in levels of satisfaction based on gender, field of study, and the attendance of a public rather than a private institution. In another study, the general levels of satisfaction against expectation was measured for nursing students in Turkey (Baykal, Sokmen, Korkmaz, & Akgun; 2005). In Malaysia, the concern of students seeking an international higher education prompted Sohail and Saeed (2003) to examine Malaysian students' level of satisfaction in private institutions. Similarly, Chapper et al. (2006) found some similarities as well as differences between students from public and private dental schools in Brazil. The Utrecht University in the Netherlands has created a model to measure student satisfaction that relies on existing data and feeds into the university's planning and decision making

(Moller, 2006). Finally, Mavondo, Tsarenko, and Gabbott (2004) found that foreign students in Australia were more likely than Australian students to express satisfaction and to recommend their institutions.

### *The measurement of student satisfaction*

How to measure academic satisfaction is perhaps the potentially most important contribution of the literature to this research study. The most common student satisfaction instrument is the Student Satisfactory Inventory (Bryant, 2006; Elliott & Shin, 2002; Qaraeen, Al-Omari, & Abu-Tineh, 2007). It is a 43-item survey which produces five scales: registration effectiveness, academic advising effectiveness, academic services, instructional effectiveness, and admission and financial aid. Specific instruments are often created for measuring student satisfaction in an international context (Moller, 2006; Baykal, Sokmen, Korkmaz, & Akgun; 2004).

Elliott and Shin (2002) point out the two general approaches to the measurement of satisfaction. In the traditional approach, “students’ overall satisfaction has been measured with either a simple yes or no question, or with one question assessing the degree of overall satisfaction” (Elliot & Shin, 2002 p. 199). The alternative approach, which they recommend, measures satisfaction as a multi-attribute score.

Mavondo, Tsarenko, and Gabbott (2004, p. 50) indicated that the timing of student satisfaction measurement matters. For their study, they chose to measure student satisfaction towards the student’s junior or senior year given that “[e]xpectations before enrolling will have been transformed and dramatically changed by the time students are

in their second or later years in a university.” The converse should also be true. If one wants to have a true sense of students’ satisfaction with their choice, it is best to get their impression as early in their freshman year as possible before students’ sense of satisfaction is influenced one way or the other by the school environment, institutional support, or their own willingness or unwillingness to engage and study.

### *Measuring satisfaction with academic situation*

Of all these studies on academic satisfaction, very few have focused on student satisfaction with their major or college decision *per se*. Umbach and Porter (2002)’s study examined the association of students’ major with their academic satisfaction and included “satisfaction with major” as one of their dependent variables. However, what the researchers were really investigating was the effect of the departments offering these majors on student satisfaction. Therefore, the level of satisfaction measured was not with the selection itself, but with the experience of being in a certain department as a result of making that choice.

By contrast, Kmett, Arkes, and Jones (1999) were squarely interested in student’s satisfaction with their college choice. They were interested in determining whether “introspecting about the bases of one’s decision can result in lower satisfaction with the decision” (Kmett, Arkes, & Jones, 1999 p. 1293). Previous studies on the matter have found that post-decision analysis may lead to post-choice regret. The authors posited, however, that most of the prior research had used low-importance tasks such as choosing a poster. They believed that a significant, life-altering decision like the choice of a

college would negate the findings of previous results. They measured student's satisfaction with their choice through a survey with one question asking them "if the college they were attending had been their first choice" and requesting that they "rate their level of satisfaction with their choice of college on an 11-point scale" (Kmett, Arkes, & Jones, 1999 p. 1297). The authors found that pre- and post-decision reflection did not lower students' satisfaction with their choice.

The underlying assumption in the literature on student satisfaction is that the customer-student has many options and a great number of institutions are competing to attract and maintain them. Even the studies on satisfaction with choice also assume this array of choices. This study differs in a fundamental way because the availability of choices is not taken for granted. To the contrary, student satisfaction is examined because a lack of choice is one of its hypotheses.

### **3. Financing and access in higher education**

Given the emphasis in the literature on the importance of cost in students' decisions, it is important to review the literature on the financing of higher education. The modalities of higher education financing in a country play a major role in determining access to higher education in general and to higher education programs in particular. It is not surprising therefore that the two concepts are often interlinked. In addition to reviewing the theory on both financing and access, I pay attention to the literature around these topics in Haiti and in countries of Latin America and Africa that are more like Haiti in terms of economics, culture, or history.



### *The financing of higher education*

General themes of higher education finance include at a macro-level issues concerning the national level of spending on higher education and the appropriate payer for higher education: the individual or the state. At an institutional level, they include the sources and uses of funds and the determinants of higher education cost. Both the macro- and institutional themes are worth reviewing for the purpose of this study.

At an international level, researchers are often interested in comparing national levels of investment in higher education. Hauptman (2006) provides a general framework for cross-country comparison of spending. He cautions against using total number of dollars spent because that does not take into account the country's size and cost of living (Hauptman, 2006). Higher education spending can be conveyed more meaningfully as a percentage of overall spending on education, which itself is calculated as a percentage of GDP. Another meaningful metric is the amount spent per student.

There is a wide disparity in the spending on higher education across nations. The World Bank's 2000 report on higher education lists public current spending on higher education both as a percentage of total spending on education and as a percentage of GNP per capita for most countries (The World Bank, 2000). These numbers are not quite revealing because countries with very low GNP per capita tend to show large spending on higher education as a percentage of GNP per capita. This is true in the case of Burundi (941%), Ethiopia (592%) or Kenya (540%). By contrast the United States' spending as a percentage of GNP was only 23%. In another study, Mungaray and Lopez (1996) report

public financing of higher education for Latin America as a percentage of GDP. It ranged from 23.5% in Venezuela to 8.9% in the Dominican Republic.

An inadequate level of investment in higher education in the face of increased levels of demand has been noted worldwide (Eicher & Chevaillier, 2002). Faced with the economic crisis of the 1980s, macro-economists and policy makers at the international level engaged in a re-evaluation of the need for higher education investment. Whereas in the 1970s international agencies such as the World Bank and the Interamerican Development Bank as well as private foundations, such as Ford, Rockefeller, and Mellon, supported and financed the expansion of the higher education system (Rodriguez-Gomez & Alcantara, 2001), fiscal austerity was the mandate from these institutions in the 1980s. The result was not only a cut in public spending on education but also a re-prioritization of spending, with the majority of the education budget being shifted toward elementary education (Rodriguez-Gomez, 1999).

Part of the rationale for reduced spending on higher education, nationally and internationally was the idea that higher education is a private good that accrues more to the citizen than to the state (Johnstone, 2005). Through rate of return analysis, Psacharopoulos (1994) and others have demonstrated that the returns of higher education accrue more to the individual. More specifically, private rates of return of a science and technology degree in the Caribbean have proven to be very favorable to the individual (Bourne & Dass, 2003). Hauptman (2006) also supports that point of view and explains that although the state benefits a great deal from higher education through increased tax collection, a more educated citizenry, reduced social costs, and a more productive

economy, the gains derived by individuals are even greater. As a result, the worldwide trend, championed by international funding agencies such as the IMF and the World Bank and imposed on developing countries (Banya & Elu, 2001; Kempner & Jurema, 2002) has been to make individuals, rather than the state, underwrite the cost of higher education.

Still, in many countries throughout the world, the state has provided the majority of the funding for higher education (Eicher & Chevaller, 2002; Banya & Elu, 2001). This is particularly the case in Latin America (Silva 1996) where many nations' constitution includes a provision for state funding for public universities. The reduction in public spending has been accompanied by an effort "to expand the share of the private sector in the financing of higher education, charging tuition in public institutions.... and to increase the cost of tuition everywhere" (Schwartzman, 1999 p.53). Chile, Columbia, Costa-Rica, and Peru are examples of Latin American countries that actively encouraged the emergence of private post-secondary institutions. (Mungaray & Lopez, 1996).

The increased role of the private sector has been experienced at two levels. First, privately-owned institutions have been playing an increasing role in the supply of higher education (Altbach, 1999; Roane, 1999). Second, the private citizen has been called on to "cost-share" or pay an increasing portion of higher education expenses (Johnstone, 2004). Cost-sharing has taken many forms worldwide. In the US, it has translated into increased tuition and fees. In many European countries where tuition and fees had been nominal previously, they have been introduced at a more than nominal level. The direct consequence of privatization and higher cost-share is that young people of lower socio-

economic status have increasingly more difficulty to access higher education in the developing countries of Africa (Johnstone, 2006) or Latin America (Forste, Heaton, & Haas, 2004; Matear, 2006; Warden, 1998)

Cost-sharing and the introduction of tuition and fees have given rise to the question of college affordability in the US (Bowen, 1980; Buss, Parker, & Rivenburg, 2004; Robst, 2001; Schwartz & Scafidi, 2004) and abroad (Psacharopoulos & Papakonstantinou, 2005). What is the cost of higher education in Latin America? There are not many recent studies or publications on this subject. In 1990, spending per student was approximately \$1,500 for Chile and \$1,000 for Argentina and Mexico. In the region, it ranged from \$9,000 for Brazil to \$500 or less in countries such as Bolivia, Cuba, Ecuador, Haiti, Nicaragua, Paraguay, and Peru (Schwartzman, 1999). Brazil also led the region in terms of the cost of graduate studies. Such costs ranged from \$1,600 in the Dominican Republic to \$9,600 in Brazil (Arbelaez, 1993).

At the institutional level, officials are preoccupied with the sources and uses of their funds. Beside direct funding from the state and taxpayers in the form of budgetary allocations or grants, universities receive their financing from three different sources: parents, students, and philanthropists (Johnstone 2005). The United States has a very advanced model for higher education financing that allows students to afford tuition rates through scholarships and loans (Davis, 2000; Johnstone, 2005; St. John & Noel, 1996). Few countries have such a structured system to help individuals pay for higher education.

Bowen (1980)'s theory of higher education states that universities raise all the money that they can and spend all the money that they raise. This is because the goal of higher education institution is to enhance educational excellence, prestige, and influence and that there is no limit to these goals. In their competition to do better and more than before and than their peers, universities constantly "ratchet" up the price and cost of higher education. This is clearly a developed-country phenomenon given that in the poorest countries, budget pressures on universities have resulted in cutting costs at the expense of faculty quality. An increased number of part-time or "taxicab" faculty members (Altbach, 1999) and depressed faculty wages (Banya & Elu, 2001) have resulted in the fact that many faculty members spend just the time needed to dispense courses. Moreover, the absolute lack of resources and the enormous budget pressures on higher education particularly in the poorest countries have given rise to "pseudouniversities" (Altbach, 2001), institutions which exist merely for the purpose of making money or institutions without the generally accepted characteristics of universities in the western world.

In Haiti, for example, many would question the status of the main institution, the Université d'Etat d'Haïti (State University of Haiti), when comparing spending levels with that of institutions in other nations. Data about spending on higher education is not abundant. Lloyd (2005) reports that the total budget for the *Université d'Etat d' Haiti* was \$ 7.4 million in 2005. UNESCO's institute for statistics reports that total spending on education in Haiti represented 16.6% of total government spending in 2005 (UNESCO, 2005). Spending on higher education represented 9% of the total education spending,

therefore 1.5% of total government spending. The National Bank of Haiti, however, in its 2005 annual report indicates that total spending on education was only 7% of total government spending, which stood at HTG 19,248B –approximately \$500M (Banque de la République d'Haïti, 2007). Those numbers put spending on public higher education, therefore on the National University of Haiti, at between \$5million and \$8million annually.

### *Access to higher education*

My hypothesis is that the majority of Haitian college students end up in a field of study not based on their preference or ability but rather on what is available to them. In a country with extremely limited access to higher education, most students are happy just to be able to attend college- any college. It is therefore relevant to look at the level of access to higher education for Haitian college-age students. Given the scarcity of information in the literature on Haiti, we will examine access in Latin America and the Caribbean to obtain an approximation of the situation in Haiti. This comparison is appropriate both because of the common traits that Haiti shares with many countries in the region not only because of geography, but also because of history, politics, and economics. This section is organized in three parts: a general definition of access as it is understood in the higher education literature, a review of access in Latin America, and a review of access in the Caribbean.

Trow (2006) identifies three levels of penetration of higher education in a society. In an elite system of higher education, less than 15% of the eligible age group attends

college. Typically, those who attend are a privileged few from higher socio-economic groups. Systems that enroll more than 15% of their eligible population have moved towards massification of higher education. In these systems, a college education is no longer reserved for an elite minority; it is the key for most to achieve middle-class status. Finally, a system is said to have achieved universal higher education if it enrolls more than 50% of its graduating high school seniors that desire a college education. Countries that have universal access usually also have a differentiated system offering some form of higher education to all its citizens. In those countries, a college education is deemed a key requirement for a certain standard of living. Advanced nations have been moving from elite, to mass, to universal access (Altbach, 1999; Trow, 2006).

It should be clear by now that one of the biggest factor in students' access to college is, of course financing. St John and Noell (1996) reviewed the literature and determined that other factors that influence access are socio-economic background, region of origin, academic ability and achievement, high school experience, and pre-secondary aspirations. Moreover, Forste, Heaton, and Haas (2004) identify government policies on educational outcomes as another factor influencing the availability of higher education for students in developing countries.

Across Latin America, inequality in access to higher education based on socio-economic status is prevalent. As governments have been unable to cope with the increased demand for post-secondary education and as the private sector has stepped up to meet this demand, the ability to pay has become an important determining factor in whether graduating seniors continued on to college. This phenomenon is especially

visible in countries like Brazil (Warden, 1998) where only 35% of the college students attend state institutions. Moreover, socio-economic status plays a role in access to college in Latin America because it is linked to the rate of high school completion. Bonal (2004) reports that it is 2.64 times greater for children from lowest income groups to drop out of school than for children from higher economic status.

Although access has generally increased in Latin America over the past four decades (Forste, Heaton, & Haas, 2004), it has occurred at different levels within and across the countries of Latin America and the Caribbean. In Latin America, some countries have responded to increased demand for higher education by pursuing policy to expand access, others have chosen to restrain growth (Forste, Heaton, & Haas, 2004). Many Latin American countries such as Argentina, Mexico, Honduras, Bolivia, Guatemala, Venezuela and Costa Rica (Bernasconi, 2005) have provisions in their constitution that aim to place higher education at the reach of all qualified students. However, even in countries with no such constitutional provisions, such as El Salvador and Nicaragua, public universities are free of charges (Bernasconi, 2005). Yet, in spite of these explicit provisions for free higher education, there is a wide variety of success for these countries in massifying higher education. On one side of the spectrum, is Argentina where 42% of the eligible age group attends higher education (Bernasconi, 2005). On the other hand is Guatemala with only 8%.

On a country by country basis, the picture is also mixed. Bolivia, for example, has an open access that guarantees all students with a high school degree a place in the university (Forste et al., 2004). This has allowed Bolivia to increase its access to 24% in



1997. By contrast, Columbian students compete to earn entrance into the university. Only the students with the highest scores are admitted. Those students tend to be from higher income families, therefore ensuring that “access to the best universities is still heavily stratified by socioeconomic status” (Forste et al., 2004 p. 62). Similarly, Brazil’s public university accepts students based on entrance exam results (Warden, 1998). As a result, less than 10% of Brazil’s eligible age group was going to college in 1998 (Warden, 1998). By contrast, a high proportion of Cuba’s eligible age group attends college. Bernasconi (2005) reports gross tertiary enrollment in Cuba at 38%. In Uruguay, more than 20% of eligible high school graduates go to college. Just as in Colombia, attendance at the state university is completely free and guaranteed to anyone with sufficient qualifications (Warden 1998).

There is little information in the scholarly literature about access to higher education in the Caribbean. Information on the Spanish speaking Caribbean countries such as Cuba and the Dominican Republic are usually encompassed in the literature on Latin American countries. With regards to the French speaking territories, Martinique, Guadeloupe, and French Guyana are considered overseas departments of France and are not often analyzed. Haiti finds itself isolated both as the only French-speaking, independent nation in the Caribbean, and because political turmoil in the country over the past three decades have prevented any systematic data collection. Therefore, even when Haiti is included in international agencies’ reports such as the World Bank or UNESCO (World Bank 2000) missing data hinders the researcher in determining trends or making

meaningful comparisons. Thus, the sparse literature on Caribbean students' access to higher education is dominated by information on the English-speaking Caribbean.

Roberts (2003) reports that enrollment in tertiary education across the English-speaking Caribbean has remained low when compared to the rest of the world and even to Latin America. Much of this is due to the fact that the very young Caribbean higher education sector has always had a very elitist orientation (Roberts, 2003). Indeed, across the region, during the colonial era and until the 1950s, higher education was limited to a very small minority of children whom their expatriate parents sent to Europe for an education (Roberts, 2003). In the 1950s and 1960s post-secondary education came to the Caribbean but was limited to a very small number of highly qualified students. By the 1970s, the push to expand the higher education system came from both governments, which realized that they needed a more qualified workforce for nation building and economic development (Roberts, 2003), and from students.

The barriers to higher education access are the same in the Caribbean as for other countries, including geographic location, cost, attitude of government and businesses. Other barriers specific to the Caribbean can also be identified. The first is economies of scale (Roberts, 2003; Crossley & Louisy, 1994). It is much more difficult for small Caribbean nations, often with populations under 5 million to establish a comprehensive university system on their own. The size of the population makes the per student cost of higher education prohibitively high for small nations. Barbados, for example, spends 10% of its total national budget on higher education (Roberts, 2003). The second difficulty is gender. Paradoxically, the gender gap is reversed in the English-Speaking Caribbean

where women clearly outnumber men (Roberts, 2003, Quamina-Aiyejina, 2007). In spite of the progress made in the region, gross enrollment in tertiary education still remains in the single digit in Caribbean countries. Jamaica and Trinidad & Tobago both enrolled 8% of their population in 1997. This represented a 1% growth for Jamaica but a 4% growth for Trinidad over the previous two decades. Haiti trails the pack with only 1% of the eligible age group enrolled.

## Chapter 5. An initial look at the data

Essential to any in-depth statistical analysis is, according to Howell (2007), a thorough understanding of the data. Who are the respondents and what are some of their preliminary characteristics? Is it possible to get some initial information about the variables most important for the study? The answers to these questions not only provide context but also help to guide the analysis by pointing out aspects of the data that might warrant further investigation. Indeed, the survey instrument used in this study contained 43 questions of various types. More than 700 students responded to these items in various schools and faculties. This resulted in a vast amount of information that had to be sorted before any analysis could

be attempted. Presenting the data in a summary fashion is a necessary first step to the statistical analyses that will come in Chapters 6 and 7.

For this reason, this chapter is devoted to exploratory data analysis. In it, I reiterate the variables that are important for this research project and provide summary descriptive statistics for those variables. This is not yet the analysis phase. What is important at this point is not so much drawing any conclusion as starting to make note of patterns that may lead to further analysis or illuminate the results thereof.

The chapter is organized into five sections according to the five most important aspects of the data. The first part reviews demographic information about the respondents and starts to draw some parallels between demographic groups. The second section examines respondents' attitude toward the dependent variable *satisfaction with academic situation*. The third piece does the same for the main independent variable

*socioeconomic status*. The fourth segment explores descriptive statistics and comparisons for various other potential independent variables. Finally, in the last section, I look at the respondents' ranking of fields of study. Some limited data is presented in tables within this chapter, but more detailed information about various aspects of the data can be found in tables in Appendix C.

### 1. Sample size

Seven hundred forty-two students, across five institutions and seventeen different *facultés* took part in the survey. The sample sizes at each institution are shown in Table 5.1.

Dessalines College	80
Christophe School of Law	35
University Pétion	509
Boyer College	46
University Herard	72
	742

University Pétion seems to dominate the sample. That is to be expected because it has the largest number of *facultés* and the largest overall enrollment. One initial concern was that the large size of University Pétion may skew the data and make students appear to be more homogeneous than they really are.

Students from several *facultés* were surveyed in each institution. The number of respondents per *faculté* varied within a particular institution. Despite its large number of participants, University Pétion did not have the largest average number of respondents

per *faculté*, however. It only came second in that regard. But that statistic is misleading because the Christophe School of Law only had one *faculté* and all the 35 students surveyed were within that one *faculté*, which gave it the highest average number of respondents per *faculté*.

The number of participants per *faculté* ranged from 8 at the Faculty of Computer Science in Dessalines College to 108 at the Institute of Administration, Management, and International Studies in University Pétion. Two factors account for this great difference: the coordination of the site visits and the institution's structure. The level of coordination of the site visits influenced the level of access that I had to students. At University Pétion, access was coordinated from one *faculté* to the next. I was therefore able to meet the whole cohort of students (mostly first-year) at each of the *facultés* that I visited even though in the first one, I elected to not survey all students. By contrast, at the other multi-*faculté* institutions, the visit was not coordinated on a *faculté* by *faculté* basis. I was not assured of meeting students from all the *facultés*, let alone all students in a cohort for a *faculté*. The structure of the institutions is the second reason for the difference. As mentioned before, the *facultés* of University Pétion are very independent from one another and the students from one do not come into contact with those of the other. Because of that, I met distinct cohorts of students from University Pétion within their distinct *facultés*. By contrast, at three of the other institutions, students from various *facultés* intermingle and take courses together. Thus the groups that I met in classrooms (or even more so in the colloquia) were students from various *facultés* enrolled in the same course.

Similarly, the number of participants in a group (students who major in the same discipline at the same institution) ranged from 8 to 81, much for the same reason. As noted before, aside from the first *faculté* in University Pétion where not all students were given a chance to participate, all students who wanted to volunteer were provided with the opportunity to do so. As a result for University Pétion, where I systematically met first year students in almost all the *facultés*, the number of participants is fairly representative of the overall enrollment in the *facultés* visited. The same cannot be said about enrollment in the other institutions' *facultés* where I have no way of knowing whether I met all the first year students.

Nevertheless, given the large number of students surveyed and the number of *facultés* and institutions involved, I believe that this overall sample can provide a fairly good representation of the universe of students in Haitian higher education.

## **2. Descriptive statistics for demographic data**

Having described the overall sample size, I will spend some time exploring demographic aspects of the respondents, specifically, their gender, age, city of origin, and the type of institution that they attended.

### *Gender*

The literature review revealed an unequal access to higher education between men and women in Latin America and the Caribbean. Is it the case for this sample?

A great majority of survey participants was male. Five hundred forty-nine men responded (74.2%) as opposed to 191 women (25.8%). This split represents fairly

accurately the composition of the classrooms visited. As mentioned before, almost all students who were asked to participate in the survey did so and a great majority of students who attended the two lectures completed a survey. Therefore, the skewed data does not represent a difference in responsiveness between men and women.

Men outnumbered women within all the institutions, except for Boyer College, where women were 56.55% of the student body. It is also the institution where there was closer parity between the number of men and women. The greatest gender disparity was at the Christophe School of Law where 86% of the respondents were men.

Among the 20 fields of study identified, only one- public administration- had an equal number of men and women. In all others, men outnumbered women. Four fields of study (electromechanical engineering, philosophy, rural engineering, and social sciences) had more than 90% male respondents. It is notable that all the science and engineering majors had more than 85% male respondents.

This first observation about the gender composition of the sample is noteworthy in and of itself and does not require additional statistical analysis. With women representing one quarter of the overall sample and 15% of the science and engineering majors, gender disparity in higher education enrollment is already one finding that should be of interest to policymakers.

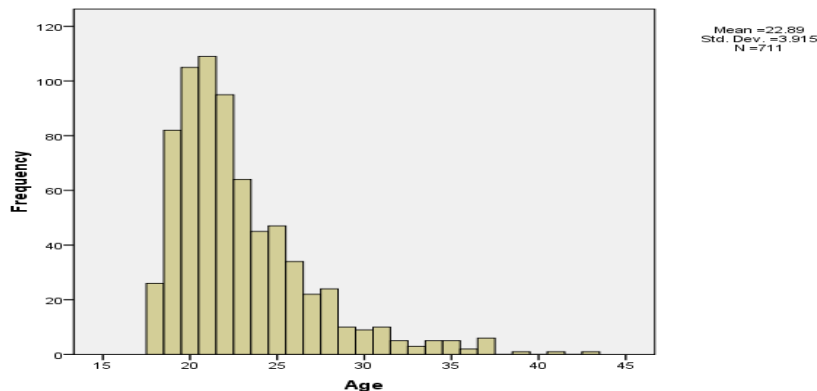
### *Age*

In places with universal access to higher education, a wide range in the age of students may demonstrate access to lifelong learning. In the Haitian context, given that many students try year after year to obtain one of the few seats at the public university,



the age of students may instead provide some clue into access. Except for the Christophe School of Law, which is a part-time, evening program, all the institutions visited are full-time and function during the day. Moreover, in the extremely tight Haitian job market, individuals do not forego a job opportunity in order to attend college. As a result, it can safely be assumed that the age of a freshman bears a close correlation to the number of years and the number of trials it took that individual before being accepted into college.

Out of the 742 respondents, 711 provided information about their age. The youngest participant was 18 year-old and the oldest 43. The average age for the overall sample is surprisingly high, considering that the majority of the students surveyed are supposed to be in their first year. A histogram of the participants' age distribution can be seen below. The mean age for the sample is approximately 23 years (22.89) and the standard deviation 3.92.



The histogram shows that 21-year old represent the largest age group, followed closely by 20-year old. One would expect a majority of 19- and 20-year old, given that in the Haitian education system, students complete primary and secondary school over 14 years and enter primary school between 5 and 6.

When age groups are compared across institutions, Christophe School of Law stands out as the school with the oldest group of students, with a mean age of 31 and a maximum age of 43. This is not surprising as Christophe School of Law is a night program, in which many of the students are most likely full-time employees during the day. University Pétion is the institution with the youngest group of students in average. The students at Boyer College have the least amount of dispersion in their age range (23 to 31) while students at University Pétion have the largest spread (22 to 39).

**Table 5.2 Age breakdown  
of participants per institution**

	Avg. Age	Oldest Participant	Youngest Participant
Dessalines	26	35	18
Christophe	31	43	21
Petion	22	39	18
Boyer	23	31	18
Herard	24	36	18

Women in the sample are slightly younger than men with an average age of 22 as compared to 23 for men.

Age differences are more noted across schools than across majors. Indeed, within schools, the average age for the various fields of study is fairly similar. However, an age difference can be noted for students who are enrolled in the same field of study but at different institutions. For example, the average age for accounting students in Dessalines College is the highest among accounting majors (26) whereas accounting students at University Pétion are youngest on average (21) and accounting students at University

Hérard fall in the middle (24). Management students follow a similar pattern. Law students at Christophe School of Law are 10 years older in average than those at University Pétion. Education students have the same average age (24) at Dessalines College and University Hérard and engineering students are younger at University Pétion in average than at Dessalines College. Women in general, are younger than men across all majors, except for civil engineering, education, and social sciences.

The initial conclusion that the breakdown of age across fields of study is leading to is that “major” is not the grouping that provides students with similar characteristics, at least when it comes to age. Rather the institution attended is more of a source of similarities or differences.

#### *City of origin.*

Given the high concentration of activity, including higher education activity, in Port-au-Prince, city of origin may be a factor contributing to access.

Almost half of the students surveyed (43%) came from Port-au-Prince, the capital city. Twenty-nine percent came from a town or city other than Port-au-Prince or one of the regional capitals. The eight regional capitals accounted for the fewest number of respondents with 26%. Table 5.3 provides a break-down of survey participants according to their city of origin.

A regular city or town	213.0	28.6	29.5
A regional capital	191.0	25.7	26.5
Port-au-Prince	318.0	42.7	44.0
Total	722.0	97.0	100.0
Missing System	22.0	3.0	
Total	744.0	100.0	

When city of origin was examined within schools, some differences were noted. University Pétion, Boyer College, and University Hérard reproduced the average pattern: close to half of the students (respectively 49%, 44%, and 51%) came from Port-au-Prince. By contrast, Dessalines College and Christophe School of Law had the lowest number of their students coming from Port-au-Prince (27% and 0%) respectively. The greatest number of students in Dessalines College (39%) came from a city or town other than the capital city whereas the greatest number for Christophe School of Law (56%) came from one of the regional capitals. That is somewhat surprising, given that Christophe School of Law is not located in a regional capital but in another city or town. What is not surprising is that no student from Port-au-Prince attends Christophe School of Law. Indeed, the student migratory process is expected to be from the provinces toward the capital and not the other way around.

As I examined city of origin by gender, I noted that the majority of both men and women came from Port-au-Prince, but the magnitude of the difference is not similar. Fifty-nine percent of women in the survey came from Port-au-Prince against only thirty-nine percent of the men. The percentage of men and women who came from another city or town is similar, with 25% of the women and 27% of the men. However, proportionally

more men came from another city or town than from a regional capital -34% versus 27%- as compared to women (16% versus 25%). It should be noted that just about one sixth of all the women in the survey came from another city or town, much lower than the overall average. The gender disparity, therefore, continues and is even exacerbated when gender is combined with city of origin. In addition to women having a lower enrollment rate in general (relative to men), female students from outside of the major cities are less represented in the student population.

For most fields of study, the main pattern of the overall sample was reproduced: most students came from Port-au-Prince; students from a city or town other than a regional capital formed the second largest group, and fewer students came from a regional capital. There were a few exceptions to this rule however. Administration, agronomy, philosophy, and computer sciences had a majority of their students from another city or town. This is most self-explanatory for agronomy, given that agriculture is predominantly practiced in the provinces, outside of the capital cities. There is no similar ready explanation for the predominance of students from a city or town other than Port-au-Prince or one of the eight regional capitals in administration and philosophy.

Also of note is that all the science and engineering fields of study –chemistry, rural engineering, civil engineering, and electromechanical engineering- had more than half of their students coming from Port-au-Prince. The highest concentration of students per region in any concentration is students from Port-au-Prince studying dental medicine (71%). The lowest is students from another city or town majoring in finance (8%).

In sum, there seems to be some clear pattern that links access to certain fields of study to city of origin. Further statistical analyses will be conducted in the next chapter to ascertain whether these observations have any significance.

#### *Type of institution attended*

Approximately two-thirds of the survey participants attended a public institution. Once again, that is to be expected given the predominance of University Pétion in the sample, as well as on the Haitian higher education scene. As mentioned in Chapter 3, until the 1980s, higher education in Haiti was mainly a public enterprise. It was not until after the 80s that the main private institutions came into existence.

Sixty-one percent of the women in the survey and sixty-nine percent of the men attended a public institution. Thus, if we assume that attending a public institution is a better situation –because it is less costly and offers more choices–, then a slighter higher percentage of men than of women enjoyed this privilege.

Regardless of their city of origin, there were proportionally more students attending a public than a private institution. That breakdown was 65% (public) and 35% (private) for students who come from a regular city or town. A slightly fewer percentage of students from the regional capitals (61%) attended a public institution. A greater percentage of students from Port-au-Prince (72%) were in a public institution.

The data would suggest that a number of fields of study can only be found at public institutions and others only at private institutions. For example, chemistry, electromechanical engineering, rural engineering, literature, philosophy, political science, and social science are only in public institutions and computer science, finance, and

economics only at private institutions. While this is generally true for the areas only found in public institutions, it is not accurate for those only found in private institutions. For example, students can concentrate in economics at the Faculty of Law and in computer science at the Faculty of Sciences at University Pétion. This discrepancy is due to the fact that the sample surveyed did not contain an exhaustive list of majors and *facultés* for all institutions.

In reality, the public system offers almost all the fields of study that one can find in Haitian higher education. Most private institutions offer programs in business administration and accounting. A number of private institutions offer programs in education, engineering, and computer science. Less frequent are private institutions that offer programs in the humanities (anthropology, ethnology), pure sciences (i.e. chemistry), or human services (i.e. social services, psychology).

I have provided some summary demographic information about the students and formed a picture of some apparent disparity in access. In the next sections, I will review the main variables and present descriptive statistics obtained from students' responses to items related to those variables.

### **3. Descriptive statistics for satisfaction with academic situation**

I will begin with the dependent variable that the main question in this dissertation is trying to predict. Five items in the survey made statements about the respondents' satisfaction with their academic situation. All of these items may or may not be included in a final scale that measures satisfaction. Reliability and factor analyses will help to

determine which of these items should be included in that scale. But in the exploratory phase, I was interested in finding out how students responded on all these items. They sought to ascertain

- whether the respondent is satisfied with his/her major
- whether the respondent is satisfied with his/her institution
- whether the respondent’s field of study matches his/her aspirations
- whether the respondent would recommend his/her field of study to a friend
- whether the respondent would recommend his/her institution to a friend.

Three initial observations could be made about the descriptive statistics for these items. First, all items had means above 4.5, with the item “satisfied with major” scoring the highest 5.05 (Table 5.4). This indicated a relatively high level of satisfaction in the overall sample of students. Most students’ responses fell between “I somewhat agree” and “I agree” for these items- closer to “I agree.”

**Table 5.4 Descriptive Statistics for Satisfaction Items**

<b>Item</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Satisfied with major	734	1	6	5.1	1.1
Satisfied with institution	732	1	6	4.5	1.3
Major matches aspirations	737	1	6	5.0	1.2
Would recommend institution	735	1	6	4.8	1.3
Would recommend major	708	1	6	4.8	1.4
Valid N (listwise)	694				

Second, the mean scores for the various demographic categories did not seem to be widely different from one another. Women or men and students attending private or public institutions seemed to have the same average scores. Students from a regional capital seemed to have *satisfaction* scores slightly higher than those of students from Port-au-Prince or the other cities or towns.



Finally, some stronger differences could be noted in the mean scores of the different groups, which became more salient when those scores were added into a composite. Computer science students at Dessalines College had the lowest composite satisfaction score and Agronomy students at University Pétion, the highest.

It is not possible to say at this point whether the apparent differences between these groups are statistically significant or whether they are just caused by an acceptable level of randomness that inevitably occurs when tabulating the scores of so many respondents. Statistical tests that will be performed in Chapters 6 and 7 will determine whether there is any significance to these differences, especially for the variables that are of interest for this study.

#### **4. Descriptive statistics for *access***

Closely related to *satisfaction with academic situation* is the variable *access to a preferred field of study*. It tries to measure the extent to which students could access and enroll in their preferred area. The assumption is that, the more students are able to pursue their desired field of study, the greater their satisfaction will be. Four items in the survey were targeted to measure students' level of access to their preferred field of study.

- Whether students wished to enroll in their current field while in high school
- Whether students wished to enroll in a different field while in high school
- The number of schools to which the students applied
- Whether their current institution was their first, second, third, or fourth choice.

**Table 5.5 Descriptive Statistics for "Access" Items**

<b>Item</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Wanted this major in high school	740	1	6	4.0	1.9
Wanted other major in high school	731	1	6	2.9	1.8
No. of schools to which I applied	714	1	4	3.3	0.8
How I had ranked my current school	680	1	4	3.3	0.8
Valid N (listwise)	652				

The descriptive statistics for the items related to *access* (Table 5.5.) showed mean scores that are in the middle and range from 2.9 to 4.0. The item “I wanted another field of study in high school” is reverse coded, which means that a low score should lead to high satisfaction. Its score of 2.9- somewhere in the middle- indicates that students’ responses in average, fall close to “I somewhat agree.” The score of 4.0 for the right-coded item, “I wanted to pursue my current field of study while in high school” also indicated a response of “I somewhat agree.” These similar responses to opposite items seemed to invalidate each other. However, those mean scores revealed the tendency for the overall group but not ambivalent views in the individual student. Most students’ responses fall somewhere between “I somewhat agree” and “I somewhat disagree” for either item; the overall result leads to “I somewhat agree” on both.

Both of the other items “number of schools applied to” and “how did this school rank among your preferences” were reverse-coded. The supposition is that the student who applied to just one school or who had ranked his current school as his first choice would tend to exhibit higher levels of satisfaction. As a result, a low number as a response on either item received a high score because it should be associated with higher satisfaction levels. For example, a student who applied to just one school received a score of 4 and another student who applied to four institutions receives a score of 1 for the item. The

mean score for both items is between 3 and 4, indicating that, on average, most students applied to more than 1 school and ranked their current institution somewhere between their first and second choices. Approximately 350 students applied to just one school (score of 4), 280 students to two schools, 100 to 3 institutions and, roughly 10 students to 4. By contrast, slightly more students ranked their current school as their number 2 choice.

### **5. Descriptive statistics for socio-economic status**

Six items tried to ascertain the respondents' socio-economic status. They are the following:

- Parents' income: combined income of the respondents' parents ( on a seven-point scale)
- Father's job: type of employment held by the respondent's father (on a nine-point scale)
- Mother's job: type of employment held by the respondent's mother (on a nine-point scale)
- Father's education: the highest educational attainment of the respondent's father (on an eight-point scale)
- Mother's education: the highest educational attainment of the respondent's mother (on an eight-point scale)
- Items at home: list of household items that can be found at the respondent's house (up to 13)

Factor and reliability analyses would help to determine whether some or all these items should be included in the final socio-economic status scale. In the meantime, I included all these items in the exploratory data analysis.

Some clear patterns could be observed in the respondents' socio-economic status. Women showed higher scores than men on all items, yielding a higher socio-economic status than men. The picture was mixed when it came to institution types. Students in public institutions had higher scores on average for their parents' income and the number of items in their house. However, students in private institutions had higher average scores for their parents' education and employment. These two observations seemed somewhat contradictory and the expectation would be for these items to move in the same direction. Higher education attainment and better employment should result in higher income and more items in the household. This was a first alert to some possible inconsistency in the socio-economic status responses.

A clear delineation could be observed for students' SES scores depending on their city of origin. Students from Port-au-Prince had the highest average scores, followed by students from regional capitals. Not surprisingly, students from a city or town other than Port-au-Prince or the regional capitals had the lowest scores on the socio-economic status items. These scores were consistent with Haiti's extreme centralization and the concentration of economic activities in the major cities. Additional statistical analyses would be needed to determine whether any of these observed differences was significant. This will be the main concern of Chapter 6 as I attempt to answer the primary research

question and determine whether differences in *socio-economic status* lead to differences in *satisfaction* and *access*.

Institutions' and groups' mean *socio-economic status* scores were also revealing. University Hérard, a private university with the highest tuition attracts with no surprise students with the highest average composite *socio-economic status* score. Christophe School of Law, the only institution outside of Port-au-Prince showed, also in a predictable fashion the lowest average composite score on the *socio-economic status* items. Although it is public, University Pétion had the second highest average composite *socio-economic status* score. If this is found to be true after statistical analyses, it will echo a pattern common in Latin American countries where students from more privileged backgrounds are able to compete for the few seats in prestigious public institutions because of their better pre-college preparation (Forste, Heaton, & Hass, 2004; Matear, 2006; Warden, 1998). Boyer College came third in terms of average composite SES scores and Dessalines College came fourth.

Among the groups, the three highest composite SES scores were found in University Hérard, which is the most expensive private university in Haiti. The data, in this aspect, seemed to reflect reality. The groups with highest mean SES scores were respectively the finance, economics, and management concentrators. The next three groups with highest composite SES scores were at the large public University Pétion, with students majoring in civil engineering, medicine, and public administration respectively. The group with the lowest average composite SES score was constituted by the computer science students at Dessalines College. That group was followed by the law

students at the sole institution in this study outside of Port-au-Prince. There was much dispersion in the composite average SES scores among the various groups of students.

With socio-economic status, as with some of the previous variables, the pattern that I continued to observe is that similarities did not seem to appear along the lines of majors but rather along institutions. Students in similar fields of study were not necessarily alike in their demographics and their survey responses. Instead, students within the same institution, though they could be in different fields, seemed to have more in common.

## **5. Descriptive statistics for other independent variables**

*Socio-economic status, satisfaction with academic situation, and access to a preferred field of study*, are the most important variables in this study. Other potentially important variables were derived from the literature. They include the *influence of students' social network* (to which I will refer as *social network* throughout the rest of this study for the sake of brevity), *academic preparation*, and their reasons for making their academic choices. The first two variables were obtained through a scale whereas several single-item variables addressed students' motivation for their academic decisions. I will present descriptive statistics for all variables and will present comparative data for only the first two.

### *The influence of students' social network*

*Social network* items intended to measure the extent of parents', teachers', and friends' involvement in the students' academic decision. The various items were:

- Parental involvement in the student’s secondary education: the extent to which parents were involved in the student’s secondary education
- Parental influence in academic decisions: the extent to which parents influenced the student’s choice of a field of study
- Teacher’s influence in academic decisions: the extent to which a teacher influenced the student’s choice of a field of study
- Friend’s influence in academic decisions: the extent to which a friend influenced the student’s choice of a major

The descriptive statistics for these items are as presented in Table 5.6.

**Table 5.6 Descriptive Statistics for Social Network Items**

<b>Item</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Parents' involvement during high school	735	1	6	5.2	1.1
Parents' influence in major choice	736	1	6	3.2	1.7
Friends' influence in major choice	739	1	6	2.8	1.7
Teacher's influence in major choice	734	1	6	2.7	1.7
Valid N (listwise)	721				

Whereas the students had responses of “agree” or “strongly agree” that their parents “followed closely their secondary education” (mean score of 5.21), they generally disagreed that they were “influenced” by their parents, friends, or a teacher in the selection of their field of study. Also, while only 6 students expressed strong disagreement to the first item in this scale, the number of “strongly disagree” responses to the second, third, and fourth items were respectively 161, 208, and 234. I concluded that these high numbers of “strongly disagree” responses to the 3 items could be highlighting an inadequate phrasing of these items in the survey instrument. Students may have

reacted negatively to the idea of being “influenced” by others in their selection of their field of study. As a result, the measurement of *social network*, which is a positive concept, may have been compromised by the phrasing of the related items.

Comparing the average scores by gender, institution type, and city of origin, I obtained conflicting patterns. For gender, women’s *social network* scores were higher than men’s on all items except for teacher’s influence. When looking at the variable from the perspective of the type of institution attended, students from public institutions on average had higher *social network* scores than those from private institutions. If this relationship held after statistical analysis, it would suggest that the students who ended up obtaining a coveted seat in the public institution had benefited from a richer influence from their social network.

With regards to city of origin, *social network* scores were the reverse of *socio-economic status* scores. Students from another city or town showed the highest scores and students from Port-au-Prince, the lowest scores on all items, except for parental influence in the secondary. The hurdle seems indeed to be higher for a student from the provinces to attend college, if only because they most likely have to move to Port-au-Prince where the majority of institutions are located. It would therefore be logical that students from the provinces require a stronger social network to overcome this comparatively higher level of difficulties.

Across the institutions, the pattern for *social network* was also the reverse of that of *socio-economic status*. Students from University Hérard, the expensive private school, scored the lowest in *social network* and students from Christophe School of Law, the



only institution outside Port-au-Prince, had the highest average composite score. The groups' composite *social network* scores ranged from 10.45 to 16.97 with a standard deviation of 1.5.

### *Students' Academic Preparation*

The *academic preparation* scale measured students' pre-college academic aptitude through both objective measures such as scores and rankings and subjective ones, such as their own perceptions of how well prepared they were. The specific items were:

- Rank in Philosophy: how the student ranked among peers in their last class in high school, called the Philosophy year in Haiti.
- Average in *Baccalauréat* I: the student's average score in the first national exam.
- Average in *Baccalauréat* II: the student's average score in the second and final national exam taken at the end of the final year in high school.
- High school reputation: the student's perception of the academic reputation of his/her high school.
- High school preparation: students' perception of how well their high school prepared them for their particular major.

The students' generally favorable perception of their high school should be noted. Indeed, on a score of 1 to 6, the sample's score of 5.35 to the item "My high school has an excellent academic reputation" showed that, on average, students' responses fell between agree and strongly agree. As we recall, students on average had a high level of satisfaction with their field of study and institution. The high average scores on both their satisfaction and perception of their high school painted the picture of a group that is

generally content with its academic experiences at the secondary and tertiary levels. In Chapter 6, I will try to identify some of the possible factors associated with this satisfaction and overall positive outlook.

The comparisons for various groups' mean scores based on their gender, city of origin, and the type of institution that they attended presented a mixed picture. Women had higher scores on two items "average in *Baccalauréat* II" and "high school reputation," whereas men scored higher in average on the other three items. Similarly, students attending public institutions felt that their high school had a better reputation and that their high school prepared them better for their major, while students from private institutions were better ranked in their philosophy class and obtained a higher average score in *Baccalauréat* I. The two groups tied in their *Baccalauréat* II scores.

In general, the *academic preparation* of students from Port-au-Prince was better on all items except for their rank in their philosophy class, where they were the lowest. The mean scores of students from a city or town other than Port-au-Prince or the regional capital were lower on all *academic preparation* items except from their rank in their philosophy class. This is counter-intuitive but would be indeed quite logical, if supported by statistical analyses. It would corroborate that a relatively fewer number of young people from those other cities and towns are making it into higher education institutions, given that only the top of their class – those with higher ranking scores- are represented in our sample of college students. It would further point to the different levels in access for young people who live outside of Port-au-Prince, in addition to the gender disparity that I noted previously.

The explanations for group scores on the academic preparation items were much less self-evident. Accounting majors at University Pétiou had the lowest *academic preparation* score and computer science students at Dessalines College the highest. The conflicting nature of some of these scores underlined the difficulty in obtaining reliable results with a scale that have objective test measures along with subjective perception scores. Reliability and factor analyses are going to be helpful to clarify the scale for *academic preparation*.

#### *Reasons for choosing a field of study*

Through single items, students were asked to indicate their reason for choosing their field of study as well as their disposition towards a number of possible reasons why other students choose their concentration. The various items were:

- Prestige: whether students chose their field because of the prestige associated with it
- Preparation: whether they chose their field because they felt academically prepared for this area of study
- Quality: whether they chose their field because of the quality of this program
- Access: whether they chose their field because this was the program that accepted them
- Finances: whether they chose their field because this was the institution that they could afford

It should be noted that the first four items are right-coded, meaning that a response of ‘strongly agree’ to the item “I chose my field of study for the prestige associated with it”

would yield a score of 6. By contrast, the last two are reverse-coded as they are expected to move in the opposite direction with *satisfaction with academic situation*. A student who answered these items affirmatively, it was assumed, would respond negatively to the statement “I am satisfied with my field of study.” As a result, a ‘strongly agree’ on the item ‘I chose my field of study because that’s the institution that accepted me’ would yield a score of 1.

The results showed that the mean scores for the first three items across all students fell between ‘agree’ and ‘somewhat agree’. The mean score for the item “I chose my major because of the institution that accepted me” fell between ‘somewhat agree’ and ‘somewhat disagree’. Finally, the mean score for the item “I chose my major because this is the institution that I can afford” fell between ‘somewhat disagree’ and ‘disagree.’

**Table 5.7 Descriptive Statistics for Motivation Items**

<b>Item</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Chose my major for the field's prestige	730	1	6	4.6	1.5
Chose my major because I'm prepared	731	1	6	4.5	1.3
Chose my major because of the school's quality	731	1	6	4.6	1.5
Chose my major because I was accepted	723	1	6	4.3	1.7
Chose my major for affordability reasons	714	1	6	3.7	1.9
Valid N (listwise)	691				

Similarly, students were surveyed on their opinion about various reasons (personal interest, academic aptitude, or financial situation) why a field of study should be chosen. Their responses showed that they agreed with the role of interest and academic aptitude in the choice of a field of study, but somewhat disagreed with the role of finances.

The responses provided a mixed picture when comparing the motivations for academic choices across various demographic groups. The most noteworthy elements were the general negative perception of finance as a motivator for academic choices. Though the scores were relatively close for all groups on the items related to their reasons for choosing their field, there was a noted spread between students from Port-au-Prince and those from another city or town in their average score for the item 'I chose my major because it is the institution that I can afford.' The responses for students from Port-au-Prince were closer to 'somewhat disagree' (score of 3.9) whereas those of students from another city or town were closer to 'somewhat agree' (score of 3.4). If this difference was statistically significant, it would suggest that financial constraints play a greater role in limiting access for students who live outside of Port-au-Prince.

Focusing on the items most closely related to *access* and *socio-economic status*, I noted that the responses of computer science students from Dessalines College fell somewhere between 'strongly agree' and 'agree' in response to the question 'I chose my field of study because this is the institution that I can afford' (mean score = 1.63). It is worth remembering that the same group of students had the lowest mean SES score and the lowest mean satisfaction score. Though the seeming consistency in the data was interesting at this point, it did not permit to draw any conclusion with regards to a relationship between *socioeconomic status* and *access*. Short of performing further statistical analysis, I cannot determine whether these observations are statistically significant.

## 6. Ranking of fields of study

The last category of information obtained from the data was concerned with the ranking of fields of study. Let's assume that in Chapter 6, I found a relationship between *socio-economic status* and *access to a preferred field of study*. I would not be able to draw the conclusion that wealthier students have access to better or worse fields of study unless I had some way to rank those fields of study. For this reason, I asked respondents to order various fields based on their personal preferences.

Certain disciplines such as political science or finance only had a handful of respondents, which gave them scores that may not be representative of the general student population. When I considered items with 400 or more responses, medicine emerged as the most preferred field of study. Next came law, followed by agriculture, and engineering. This classification provided a little bit of surprise. The traditional, though undocumented, classification among Haitian high school students has been (by order of importance) medicine, engineering, agronomy, and law. Engineering's low score could be due to the relatively low number of engineering students in the sample, given that all engineering students were not allowed to complete a survey, during my first site visit. Nursing was the least preferred major, preceded by anthropology, which was preceded by dental medicine.

It was also interesting to notice the behavior of these descriptive statistics for various groups. All groups agreed that medicine should be ranked first, but beyond that agreement, there were many variations. The average ranking for seven selected fields yielded by each demographic category was as follows:

Women:	Medicine, Law, Agronomy, Engineering, Dental Medicine, Nursing, Anthropology
Men:	Medicine, Agronomy, Engineering, Law, Anthropology, Dental Medicine, Nursing
Public:	Medicine, Agronomy, Law, Engineering, Nursing, Anthropology, Dental Medicine
Private:	Medicine, Law, Agronomy, Engineering, Dental Medicine, Anthropology, Nursing
Other city:	Medicine/Agronomy, Law, Engineering, Anthropology, Nursing, Dental Medicine
Regional:	Medicine, Agronomy, Law, Engineering, Nursing, Anthropology, Dental Medicine
Port-au-P.:	Medicine, Law, Engineering, Agronomy, Dental Medicine, Nursing, Anthropology

Students in all majors rated their own field of study very highly. For example, students from dental medicine, on average, rated their fields ahead of medicine, law, agronomy, and far ahead of engineering. The lowest rating was given by management students from Dessalines College to anthropology and the highest rating by computer science students from Dessalines College to engineering.

The explanatory analysis provided some initial insights. First, an apparent gender disparity in access to college emerged. Similarly, students from different cities seemed to have different opportunities for college. Coming from Port-au-Prince seemed to provide an advantage in college access. Second, although students within a particular field of study on average rated their field of study as the most preferred, across all the respondents, medicine emerged as the most desired concentration and nursing as the least preferred. Third, students in computer science at Dessalines College had the lowest average composite score for *socio-economic status*. They also seemed to have the lowest average composite score for their *satisfaction with their academic situation* and were the group that most agreed with the item ‘I chose my major because this is the institution that I can afford’. Moreover, several groups at University Hérard had the highest average scores on *socio-economic status*, which is to be expected at a relatively expensive private institution. Fourth, students in rural engineering had the highest average composite score for *satisfaction*. Finally, *social network* scores seemed to be moving in opposite direction with *socio-economic status* scores.

Any group difference observed here will have to be verified through statistical tests for their significance. Will the seemingly clear disparities in access by gender and city of origin hold to statistical tests? Will other group differences that I noted have any significance? Chapters 6 and 7 will try to provide some answers after addressing the study’s primary question. The focus in Chapter 6 will be on all the respondents, whereas Chapter 7 will only be concerned with students in a science, engineering, and technology field of study.



## Chapter 6. Relationship between SES and satisfaction

The primary question at the heart of this study is whether there exists a relationship between students' *socio-economic status* and their *satisfaction with their academic situation*. A secondary question is whether those relationships also exist in the subset of science, technology, and engineering (ST&E) students. The data review in the previous chapter suggested some possible relationships. More advanced statistical analysis is needed however to answer more definitively. The purpose of this chapter and the next is to present these analyses. While this chapter attempts to answer the research questions for the overall sample, Chapter 7 focuses on students engaged in an ST&E field of study.

But before proceeding with statistical analyses to test the questions, the scales that measure *socio-economic status*, *satisfaction with academic situation*, *access to a preferred field of study*, and other variables must be finalized. As a result this chapter contains six sections. First, I establish the reliability of the scales that will be used in the analysis. Second, I try to answer the dissertation's primary question. Third, I examine the relationship between *socioeconomic status* and *access*. Fourth, I try to identify the predictors of *access*. Fifth, I try to pinpoint other variables that may be associated with *satisfaction*. Finally, in a discussion section, I summarize the main lessons and conclusions gleaned from the data analysis.

### 1. The various scales and their reliability

Whenever a researcher administers a test in an attempt to measure a psychometric trait, one ever-present question is whether there is consistency or reproducibility in the

test scores, whether the score obtained from the survey is “the true score” (Crocker & Algina, 2006). When, in addition, a composite score is obtained by combining two or more items into a scale, the problem of the reliability of this composite score is magnified. A Cronbach’s alpha procedure helps to determine the reliability of a combined score by examining the degree to which the scores’ variances and covariances move in parallel (Crocker & Algina, 2006).

Another risk in combining several items into a scale that produces a composite score is that these items may not all be consistently measuring the only latent variable for the particular psychometric trait. Different questions in the scale may be measuring different latent variables. The statistical test that mitigates this risk is factor analysis. It helps to determine whether one or several latent variables underlie the combination of items (DeVellis, 2003). Factor analysis may also help to condense information by reducing the number of items needed to measure one variable (DeVellis, 2003).

Therefore, this section evaluates the scales for *socio-economic status*, *satisfaction*, *access to a preferred field of study*, *social network*, and *academic preparation* through reliability tests and factor analytic procedures.

#### *Socio-economic status*

Six items were intended to form the scale that measures socio-economic status:

Parents’ salary	Father’s education	Father’s employment
Mother’s education	Mother’s employment	Number of items at home

After performing a reliability analysis for all 6 items in the *socio-economic status* scale, I found a Cronbach’s alpha of .80. An alpha of .80 suggests that 80% of the variation among the item scores is due to the latent variable. The remaining 20% of the variation is explained by error. DeVellis (2003) cites Nunnally as recommending .7 as an acceptable threshold for alpha. With 80% of the variation in the item scores due to the latent variable, I concluded that the scale for *socio-economic status* is reliable.

The SPSS output table for the inter-item correlation matrix is reproduced in Table 6.1 and shows varying degrees of correlation among the items.

**Table 6.1 SES Scale: Inter-Item Correlation Matrix**

	<b>Parents' income</b>	<b>Father's education</b>	<b>Mother's education</b>	<b>Father's employment</b>	<b>Mother's employment</b>	<b>Items at home</b>
Parents' income	1.00	0.38	0.38	0.31	0.30	0.38
Father's education	0.38	1.00	0.75	0.52	0.35	0.46
Mother's education	0.38	0.75	1.00	0.39	0.44	0.50
Father's employment	0.31	0.52	0.39	1.00	0.50	0.31
Mother's employment	0.30	0.35	0.44	0.50	1.00	0.24
Items at home	0.38	0.46	0.50	0.31	0.24	1.00

Even though the scale is reliable, can I be sure that all the items are measuring the same latent variable, especially with such varying degrees of correlation? Factor analytical procedures using the principal component extraction method can help to answer that question. The SPSS output table for total variance explained (Table 6.2) and the component matrix (Table 6.3) for the six items in that scale are shown next.

**Table 6.2 SES Scale: Total Variance Explained**

Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings	
		% of Variance	Cumulative %	% of Variance	Cumulative %
1	3.10	51.66	51.66	51.66	51.66
2	0.89	14.82	66.48		
3	0.72	11.97	78.45		
4	0.56	9.25	87.70		
5	0.53	8.88	96.58		
6	0.21	3.42	100.00		

Extraction Method: Principal Component Analysis.

**Table 6.3. SES Scale: Component Matrix(a)**

	Component 1
Parents' income	0.61
Father's education	0.83
Mother's education	0.83
Father's employment	0.70
Mother's employment	0.64
No of items at home	0.66

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

One way to determine the number of factors -number of latent traits that are measured- in the combination is by reviewing the number of components with eigenvalues greater than 1. More than one component with an eigenvalue over 1 suggests that there is more than one factor (Crocker & Algina, 2006). Upon examining the eigenvalues in Table 6.2, I noted that only one component, component 1, has an eigenvalue above 1. That would suggest that only one factor was present. In addition, all the items had a strong loading on that scale (above .5) as can be seen in Table 6.3. This confirmed that a scale for *socio-economic status* consisting of all six items is reliable and measuring a single latent variable.

### *Satisfaction with academic situation*

Five items were involved with measuring students' satisfaction with their academic situation/decisions.

Satisfaction with field	Field matches aspirations	Would recommend institution
Would recommend field	Satisfied with institution	

I chose to test first the reliability of an overall scale that measures students' satisfaction with their overall academic situation. After performing a reliability test for all five items in the general scale "satisfaction with academic situation," I found a Cronbach's alpha of .75, indicating that 75% in the variation among the scores for the items in the scale are explained by the latent variable whereas 25% of the variation is explained by error. Consistently with the guideline that an alpha of .7 provides an acceptable level of reliability, I concluded that the scale for *satisfaction with academic situation* is reliable.

Similarly, I needed to verify that the scale measuring students' satisfaction with their academic situation is addressing only one latent variable, especially given that some items address students' satisfaction with their field of study and others their satisfaction with the institution. Factor analytic procedures using the principal component extraction method helped to answer that question. The SPSS output table for total variance explained only showed one component with an eigenvalue greater than 1 (Table 6.4). Moreover, the component matrix showed all items loading on that scale with values greater than .5 (Table 6.5).

**Table 6.4. Satisfaction: Total Variance Explained**

Component	Total	Initial Eigenvalues			Extraction Sums of Squared Loadings	
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.50	49.98	49.98	2.50	49.98	49.98
2	0.97	19.38	69.35			
3	0.72	14.41	83.77			
4	0.46	9.16	92.93			
5	0.35	7.07	100.00			

Extraction Method: Principal Component Analysis.

**Table 6.5. Satisfaction: Component Matrix<sup>a</sup>**

	Component 1
Satisfied with major	0.78
Satisfied with institution	0.74
My major matches my aspirations	0.67
I would recommend this institution	0.70
I would recommend this major	0.64

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Thus the overall scale for *satisfaction with academic situation*, including all five “satisfaction” questions is reliable. The scores for these five items were added to create a composite score that I used in the statistical tests.

*Access to a preferred field of study*

Very much related to *satisfaction with academic situation* is the scale *access to a preferred field of study*, which measures the extent to which students wanted their current field of study prior to enrolling in college. It is the next scale for which the reliability was tested. The first two questions addressed students’ preference for their current field of study and the last two, their preference for their institution:

Wanted this major in high school      Wanted other major in high school  
 Number of schools applied to      Applicant's ranking of the current school

A reliability test for all four items yielded a Cronbach's alpha of .61. The output table for the inter-item correlations (shown in Table 6.6) revealed that the last two items (*number of schools applied to* and *ranking of this school among preferred schools*) have low correlation with the first two.

**Table 6.6 Access: Inter-Item Correlation Matrix**

	Wanted major	Wanted other major	Number of schools	Ranking of school
Wanted this major in high school	1.00	0.62	0.09	0.27
Wanted other major in high school	0.62	1.00	0.07	0.31
Number of schools applied to	0.09	0.07	1.00	0.28
Ranking of this school among preferred schools	0.27	0.31	0.28	1.00

This may indicate that different latent variables are being measured. For this reason, I proceeded with factor analytic procedures using the principal component extraction method, to test whether I might have two different scales within these four items. The SPSS table for the total variance explained (Table 6.7) showed that two items have eigenvalues greater than 1, suggesting that there are two different factors or scales. Moreover, the component matrix table (Table 6.8) showed that the two items related to major (*wanted this major in high school* and *wanted another major in high school*) have a negative loading on the second factor.

**Table 6.7 Access: Total Variance Explained**

Component	Total	Initial Eigenvalues			Extraction Sums of Squared Loadings	
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.89	47.19	47.19	1.89	47.19	47.19
2	1.08	26.88	74.07	1.08	26.88	74.07
3	0.67	16.63	90.70			
4	0.37	9.30	100.00			

Extraction Method: Principal Component Analysis.

**Table 6.8. Access: Component Matrix<sup>a</sup>**

	Component	
	1	2
Wanted this major in high school	0.81	-0.34
Wanted another major in high school	0.83	-0.34
No of schools that I applied to	0.36	0.82
How I ranked this school	0.65	0.42

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

As a result, I tested for the reliability of two new scales: one for *access to preferred field of study* formed by the first two items and one for *access to preferred institution* formed by the remaining two items. Upon testing, the scale for *access to a preferred field of study* yielded a Cronbach's alpha of .77. With 77% of the variations among the two items explained by the latent variable, I concluded that the scale *access to a preferred field of study* is reliable.

Similarly, I tested the reliability of the scale *access to a preferred institution*. The Cronbach's alpha of .43 indicated that the scale for *access to a preferred institution* is not reliable. In my analysis for access, I will only use the scale *access to a preferred major*.

### *The influence of social network*

Four items in the survey were designed to measure the influence of the respondents' social network. They were:



Parents' influence in college selection      Parents' involvement in secondary education  
 Friends' influence in college selection      Teacher's influence in college selection

A reliability analysis for the scale composed of these four variables provided a Cronbach's alpha of .57 and an inter-item correlation matrix that showed low levels of correlation across all items.

**Table 6.9 Social Network: Inter-Item Correlation Matrix**

	Parents secondary	Parents college	Friends	Teachers
Parents' involvement in second.education	1.00	0.21	-0.01	0.05
Parents' influence in college choices	0.21	1.00	0.40	0.33
Friends' influence in college choices	-0.01	0.40	1.00	0.38
Teacher's influence in college choices	0.05	0.33	0.38	1.00

Moreover, factor analytic procedures using the principal component extraction method showed 2 components with eigenvalues greater than 1. Analysis of the component matrix revealed that “parents’ involvement in the student’s secondary education” is the only item that was loading strongly on the second factor. All three other items had a strong loading on the first factor.

**Table 6.10 Social Network: Component Matrix<sup>a</sup>**

	Component	
	1	2
Parents' involvement in second. education	0.24	0.93
Parents' influence in college choice	0.78	0.19
Friends' influence in college choice	0.76	-0.30
Teacher's influence in college choice	0.73	-0.20

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

A reliability analysis for a scale consisting of these three items yielded a Cronbach's alpha or .64, greater than the other levels of reliability but still not meeting the .7 threshold. DeVellis (2003 p.95) indicates that a scale that has an alpha value between .60 and .65 is "undesirable" whereas a scale with an alpha value below .6 is "unacceptable." Even though the scale for *social network* does not have an optimal level for alpha (perhaps because of potential confusion created by the word "influenced," as noted in the previous chapter), it will be included in the statistical analysis because, as seen in the literature review, a few studies established a relationship between the influence of *social network* on some academic decisions. The scale will consist of the three items "parental influence in college choices," "teacher's influence in college choices," and "friends' influence in college choices."

*Academic preparation scale*

Four items in the survey measured academic preparation:

- Average grade in *Baccalauréat* I      Average grade in *Baccalauréat* II
- High School reputation                      High School preparation for major

A reliability analysis for all four items yielded a Cronbach's alpha of .494 with the following SPSS output table for inter-item correlations.

**Table 6.11 Academic Preparation: Inter-Item Correlation Matrix**

	Rank Philosophy	Avg. Bac I	Avg. Bac II	HS Reputation	HS Preparation
Rank in Philosophy Class	1.00	0.22	0.25	-0.09	-0.04
Average in Baccalauréat I	0.22	1.00	0.57	0.10	0.07
Average in Baccalauréat II	0.25	0.57	1.00	0.09	0.07
High School Reputation	-0.09	0.10	0.09	1.00	0.42
Preparation received from HS	-0.04	0.07	0.07	0.42	1.00

The exploratory data analysis had started to point to the difficulty of mixing perception items with those related to real test scores in the *academic preparation* scale. Moreover, the two items referring to objective test scores, “average in *Baccalauréat I*” and “average in *Baccalauréat II*,” are the only ones with correlation coefficients above .5.

Factor analytic procedures using the principal component extraction method indicated that two components have an eigenvalue greater than 1. A review of the component matrix showed that the three items ‘rank in philosophy,’ ‘average in *Baccalauréat I*,’ and ‘average in *Baccalauréat II*’ load negatively on factor 2. In addition, only ‘average in *Baccalauréat I*’ and ‘average in *Baccalauréat II*’ (the two items with objective test scores) have a strong loading on component 1.

**Table 6.12 Academic Preparation: Component Matrix<sup>a</sup>**

	Component	
	1	2
Rank in Philosophy Class	0.45	-0.43
Average in Baccalauréat I	0.82	-0.17
Average in Baccalauréat II	0.83	-0.19
High School Reputation	0.33	0.77
Preparation received from HS	0.32	0.76

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

A reliability analysis for all three items yielded a Cronbach alpha of .62. By reducing the scale to contain the items that refer to test scores only (which are also the only items with a loading on factor 1 greater than .5) as opposed to perception items, I obtained a two-item scale with a Cronbach’s alpha of .73. With 73% of the variance in the data accountable to the latent variable, I concluded that the two-item scale is reliable.

This reduced scale provided me with objective measures of the construct *academic preparation*.

In sum, reliable scales have been found for *socio-economic status, satisfaction with academic situation, access to a preferred field of study, social network, and academic preparation*. A summary of the Cronbach alphas for all the scales tested is shown in Table 6.13. Having summarily explored the data and having established reliable scales, it is now relevant to test the data for my primary question.

**Table 6.13 Summary of Cronbach's Alphas for Reliability Tests**

Scale	No of items	Chronbach's Apha	Reliable?
Socio-economic status 1	6	0.80	Yes
Satisfaction (general)	5	0.75	Yes
Access (general)	4	0.61	No
Access (preferred major)	2	0.77	Yes
Access (pref. institution)	2	0.43	No
Social network 1	4	0.57	No
Social network 2	3	0.64	Yes
Acad preparation (all)	5	0.49	No
Acad prep. (factor 1)	3	0.62	No
Acad prep. (factor 2)	2	0.58	No
Acad prep. (factor 1 with objective scores only)	2	0.73	Yes

## **2. Is socio-economic status related to satisfaction with academic situation?**

I am interested in determining whether one can predict Haitian college students' level of satisfaction with their academic situation if their socio-economic status is known. I am therefore seeking to establish a model in which *satisfaction*- the dependent variable- can be expressed as a function of *socio-economic status*, among other variables.

An ordinary least squares regression is the statistical analysis that helped me to test for this relationship. Setting the *socioeconomic status scale* (*ses\_scale*) as the independent variable and the *satisfaction scale* (*sat\_scl*) as the dependent variable, I established the following equation:

$$\text{Predicted Sat\_scale} = \beta_0 + \beta_1 \text{ SES\_Scale}$$

where  $\beta_0$  is an intercept and  $\beta_1$  is the coefficient for the independent variable SES. I was testing for the null hypothesis that the relationship expressed in the equation does not exist. The null hypothesis assumes that the value of  $\beta_1$  is not different from zero. I would reject the null hypothesis if the probability of observing this value of  $\beta_1$  for this sample is small (i.e.  $<.05$ ), if the null hypothesis is true.

$$H_0: \beta_1 = 0$$

$$H_1: \beta_1 \neq 0$$

The SPSS output table for the linear regression test is in Table 6.14:

**Table 6.14 Coefficients<sup>a</sup> for Satisfaction (with SES as Predictor)**

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	25.09	0.48			52.67	0.00
Socio-economic status	-0.04	0.02	-0.11		-2.37	0.02

a. Dependent Variable: Satisfaction

The model has an  $R^2$  of .01, indicating that it is not a very good predictor of SES given that it only accounts for 1% of the variation in SES. The value of  $B_1$  is -.04 and its significance .02. This indicates that the probability of observing this relationship by chance if there is no relationship in the population is 0.02, less than the 0.05.

Consequently, I rejected the null hypothesis that  $\beta_1$  is equal to zero and concluded that there appears to be a statistically significant relationship between students' socio-economic status and their satisfaction with their academic situation ( $R^2 = .01$ ;  $B = -.04$ ;  $p = .02$ ).

The B value of  $-.04$  indicates a negative relationship between students' socio-economic status and their satisfaction with their academic situation. Holding all other variables constant, every one-unit increase in *socio-economic status* is associated with a predicted decrease in *satisfaction* score by  $.04$  points. Just a  $.04$  predicted decrease in *satisfaction* is one more indication (along with the small  $R^2$ ) that there does not seem to be a substantively important relationship between *socio-economic status* and *satisfaction*. Nonetheless, this result is intriguing because it runs counter to the research hypothesis that *socio-economic status* would move in the same direction as *satisfaction with academic situation*, given that wealthier students would have a better opportunity to engage in a field of study of their choice. Further analysis is needed to try to elucidate this finding.

#### *Relationship between socio-economic status and access to preferred major*

Examining the relationship between *socio-economic status* and *satisfaction with academic situation* was one way that I was trying to determine the relationship between students' socio-economic status and their access to their preferred field of study. Indeed, the hypothesis was that students who were not able to enroll in their desired field of study would show low levels of satisfaction, therefore a relationship with *satisfaction* would

indicate a relationship with *access*. There is a more direct way to test for this relationship, however, given that I have established a scale for *access*. As a result, I attempted to answer directly the question: is there a relationship between *socio-economic status* and *access to a preferred field of study*?

An ordinary least squares regression was again used to determine whether such a relationship exists. To do that, I established *access* as a function of *SES*. The mathematical expression of the linear equation is:

$$\text{Predicted Access\_scale} = \beta_0 + \beta_1 \text{SES\_Scale}$$

where  $\beta_0$  is the intercept and  $\beta_1$  the coefficient for the independent variable. In the statistical analysis, I was testing for the null hypothesis that the relationship described by the equation does not exist, which is the equivalent of  $\beta_1$  being equal to zero. The alternative hypothesis is that it is different from zero. Table 6.15 presents the linear regression output.

**Table 6.15 Coefficients<sup>a</sup> for Access (with SES as Predictor)**

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	13.50	0.43		31.42	0.00
Socio-economic status	0.00	0.02	0.01	0.17	0.86

a. Dependent Variable: Access

With a significance of .86, the probability of observing this relationship by chance if there is no relationship in the population is .86, greater than 0.05. As a result, I accepted the null hypothesis that  $\beta_1$  is equal to zero. A significant relationship could not be

established between students' socio-economic status and the extent to which they wanted their current field of study when they were in high school ( $p = .864$ ).

### **3. The relationship between socio-economic status and other variables**

Thus far, I have obtained what seems to be conflicting results. Students' socio-economic status is related to their satisfaction with their academic situation, but does not seem to be significantly related to their ability to access their preferred field of study. I continued to explore the relationship between *socio-economic status* and other variables, hoping that further analyses would shed some light on these results. The first question was whether there is any relationship between students' *socio-economic status* and the field of study in which they are enrolled? An analysis of variance helped to answer this question. That test allowed me to examine whether there exists a statistically significant difference among the mean *socio-economic status* scores for various fields of study. I wanted to check whether differences in average *socio-economic status* that I noted for various groups in the exploratory data analysis are indeed really meaningful statistically. The null hypothesis is that the mean *socio-economic status* for the 20 fields of study is the same. The alternative hypothesis is that at least one field of study has a mean *socio-economic status* different from the others.

The one-way ANOVA partitions the variability in students' *socio-economic status* into between-majors and within-majors variability. For the null hypothesis to be true (i.e. for students in various fields of studies to have the same *socio-economic status*), the ratio of between-groups to within-group variability provided by the F statistic must be close to



1 (Norusis, 2002). The output table obtained from a one-way ANOVA yielded a significance of less than .01 (Table 6.16). This signifies that the probability of obtaining an F statistic of 4.46 if the mean SES scores for the various fields of study are the same is less than .01. The null hypothesis was rejected and I concluded that the mean *socio-economic status* score for at least one field of study is statistically different from the other means,  $F(19, 456) = 4.46, p < .01$ .

**Table 6.16 ANOVA for SES by Field of Study**

Socio-economic status					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9330.48	19.00	491.08	4.46	0.00
Within Groups	50255.73	456.00	110.21		
Total	59586.22	475.00			

In which field of study do students have a mean *socio-economic status* different from that of other fields of study? A Bonferroni post hoc test in the one-way ANOVA compares the means for the various majors two at a time. It revealed that three fields of study have a mean *socio-economic status* that is statistically higher. Finance students have a mean *socioeconomic status* (37.33) that is significantly higher than that of students in agronomy (18.46),  $p = .01$ , linguistics (19.51),  $p = .04$ , philosophy (15.4),  $p = .01$ , and computer science (12.71),  $p = .01$ . Medicine students' mean *socio-economic status* (29.14) is significantly higher than that of their counterparts in computer sciences,  $p = .02$ , philosophy,  $p = .03$ , linguistics,  $p < .01$ , accounting (21.66),  $p = .01$ , and agronomy,  $p < .01$ . Finally, economics students have a significantly higher mean *socio-economic status* (32.9) than students in agronomy,  $p = .01$ , philosophy,  $p = .04$ , and computer science,  $p$

=.02. Finance and economic students are at the private University Hérard whereas medicine students are at the public University Pétion.

Another pertinent question is whether there is a significant difference between the mean *socio-economic status* scores of students in the five institutions. Indeed, I found out in the exploratory data analysis that there are more similarities between students in the same institution than between students in the same field of study. Students in the same major but at different institutions were found to have different demographic profiles. A one-way ANOVA, once again permits to test for this question. The null hypothesis is that the mean *socio-economic status* for all the five institutions is the same. The alternative hypothesis is that at least one institution has a statistically different mean *socio-economic status*. The ANOVA table (Table 6.17) once again indicated that the probability of obtaining an F statistic as large as 12.79 if the mean *socio-economic status* scores of the various schools are the same is less than .01,  $F(4, 471) = 12.79, p < .01$ .

**Table 6.17 ANOVA for SES by Institution**

Socio-economic status	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5839.43	4.00	1459.86	12.79	0.00
Within Groups	53746.79	471.00	114.11		
Total	59586.22	475.00			

The Bonferroni post hoc analysis revealed that the mean *socio-economic status* for students at University Hérard (31.36) is statistically higher than the means of all other schools. Moreover, the mean SES score for University Pétion (23.42) is significantly higher than that of Dessalines College (17.45),  $p < .01$  and the Christophe School of Law

(16.00),  $p = .03$ , but is not statistically different from that of Boyer College (22.4),  $p = .01$ .

The latter institution's mean SES is not statistically different from that of any other institution except for University Hérard.

I can conclude therefore, that students at the private, relatively expensive University Hérard have the highest mean *socio-economic status*. The institution with the second highest mean *socio-economic status* is University Pétion, the large public institution. The mean SES for University Pétion's students, a public institution, is even higher than that of students in several private institutions. One open-ended item in the survey asked students to identify their first choice for a faculty or university if they were not at their first choice. Out of the 374 students who provided a response for that item, 291 (78%) indicated that their first choice was either University Pétion or a faculty at University Pétion. Pétion is indeed the premier choice for Haitian college students due to its long history and to its relatively more diverse major offering. The result from the statistical analysis indicated that the students with the highest socio-economic background attend either the most expensive private university or the most sought-after university in Haiti.

Thus far, I have found that students' *socio-economic status* has a relationship with their *satisfaction with their academic situation*, but not with their *access to a preferred field of study* across the board. However, students in medicine, the most preferred field of study have significantly higher mean *socio-economic status* than those in many other fields of study. This indicates that even though there is not a statistically significant relationship between *socio-economic status* and *access to a preferred field*, access to

certain preferred fields of study may be related to *socio-economic status*. Moreover, access to institutions as well seems to be associated with *socio-economic status* because there are statistically significant differences between the mean SES of the various institutions. Not surprisingly, access to University Hérard, the most expensive, private university seems to be associated with students with the highest *socio-economic status* scores. Access to University Pétion, the large public university seems to be associated with students with the next highest level of *socio-economic status*.

As I continued to examine *socio-economic status* for its potential relationship with *access*, it was relevant to investigate how *socio-economic status* is different across various demographic groups. The exploratory data analysis showed that women have a disparity in access and suggested that students from the provinces may be disadvantaged when it comes to accessing higher education. Could *socio-economic status* play any role in that? To answer that question, I tested whether there are statistically significant differences in the mean *socio-economic status* of those demographic groups. The one-way ANOVA helped to test for that determination when there are several groups. Independent sample t-tests were also used when I was only comparing two groups as in the case of gender.

I first tested whether there was a significant difference between the mean SES scores of men and women. The null hypothesis is that the mean SES for women is the same as that of men. The alternative hypothesis is that they are different. The mathematical expression of this test is:

$$H_0: \mu_{\text{SES Women}} = \mu_{\text{SES Men}}$$

$$H_1: \mu_{\text{SES Women}} \neq \mu_{\text{SES Men}}$$

The t-test using gender as a factor revealed that the mean *socio-economic status* for women (26.48) is statistically higher than that of men (22.15). Table 6.18 shows that equality of variances can be assumed ( $p = .21$ ). In that case, the probability of observing a difference between the two groups' mean SES scores as large as 4.34 if the null hypothesis is true is less than .01,  $t(472) = 3.64$ ;  $p < .01$ . I concluded that the difference between the mean SES of women and that of men in the overall sample is statistically significant. Women have a higher socio-economic status than men.

Table 6.18 Independent Samples Test for SES and Gender

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
SES_All_SCL	Equal variances assumed	1.59	0.21	3.64	472.00	0.00	4.34	1.19
	Equal variances not assumed			3.52	180.02	0.00	4.34	1.23

Students from the provinces formed the second demographic group that seemed to be at a disadvantage. Does *socio-economic status* have some association with *city of origin*? Are there statistically significant differences between the mean *socio-economic status* of students based on where they come from? To answer this question I tested the null hypothesis that the mean *socio-economic status* scores for students from Port-au-Prince, regional capitals, or other cities or towns are the same. The alternative hypothesis is that at least one of the mean SES scores is different.

A one-way ANOVA allowed once again to test for this hypothesis. The SPSS output table (Table 6.19) showed significance of less than .01. The probability of having

an F statistic of 16.16 if the three mean SES scores are the same is less than .01,  $F(2, 465) = 16.16$ ,  $p < .01$ . I rejected the null hypothesis and concluded that at least one mean score is different.

**Table 6.19 ANOVA for SES by City of Origin**

Socio-economic status	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3822.50	2.00	1911.25	16.16	0.00
Within Groups	54984.19	465.00	118.25		
Total	58806.69	467.00			

To find out which group's mean SES is higher or lower than the others, I consulted the Bonferroni post-hoc output table for the One-Way ANOVA. One mean SES score is significantly higher than the other two. It is that of students from Port-au-Prince (26.26), which is higher than that of students from a regional capital (21.77),  $p < .01$  and higher still than that of students from another city or town (19.66),  $p < .01$ . There is no statistically significant difference between the mean scores of the two groups of students that come from outside of Port-au-Prince.

Analytically, this result helped to establish the socio-economic differences between students from Port-au-Prince and those from outside Port-au-Prince that we had noted in the exploratory data analysis. Also, one could infer from it some link between access in general (not access to a preferred field of study, which is a variable in this study) and *socio-economic status*. Indeed, students from the region with the significantly highest *socioeconomic status* also have the most level of representation in college. Finally, from a policy perspective it helped to put the disparity in access in perspective. Even though higher education at the public institution is free, students, coming from the

provinces to Port-au-Prince –where the majority of colleges are concentrated- incur greater expenses than their counterparts from the capital. In addition to costs associated with fees, books, and supplies, they must also cover their lodging and their meals, given that Haitian higher education is not residential. If they are less economically well-off to begin with as the analysis indicated, one understands why access to college is disproportionately in favor of the Port-au-Prince students.

#### **4. What factors are associated with access?**

*Access to a preferred field of study*, I have found so far, is not related to *socio-economic status*, but various groups (such as medical students) have significant differences in their mean *socio-economic status*. Do these groups also have significant differences in their *access to a preferred field of study*? One-way ANOVAs using *access* as the outcome variable and various demographic variables as factors will help to answer this question.

I first examined whether there is a significant difference in *access to a preferred field of study* based on field of study. The null hypothesis for this test is that the mean *access* score for all fields of study is the same. The alternative hypothesis is that at least one field of study has an *access* score significantly different from the others. We may recall that *access* in this context measures the extent to which students were able to enroll in the field of study that they wanted in high school. The one-way ANOVA output table for this test (Table 6.20) showed that the probability of obtaining an F statistic of 4.95 if the mean *access* scores are the same across all fields of study is less than .01,  $F(19, 724)$

= 4.95,  $p < .01$ . As a result, I rejected the null hypothesis and concluded that the mean *access* score for at least one of the majors is different from that of the others.

**Table 6.20 ANOVA for Access by Field of Study**

Access	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	971.32	19.00	51.12	4.95	0.00
Within Groups	7474.66	724.00	10.32		
Total	8445.98	743.00			

The more interesting question, once again, is which concentration enrolled the students who had a better opportunity to enter their preferred field of study. The Bonferroni post hoc analysis for the ANOVA provided the answer. Two fields of study are significantly different from the others. The mean *access* score for medicine (8.75) is significantly higher than that of administration (4.81),  $p < .01$ , accounting (5.74),  $p < .01$ , management (5.69),  $p < .01$ , linguistics (6.38),  $p = .02$ , and political sciences (4.38),  $p < .01$ . Moreover, the mean *access* score for agronomy (7.96) is significantly higher than that of accounting, law (6.28), management, and political sciences.

While this result seems to support my hypothesis for medicine, it is a bit puzzling for agronomy. Indeed, the pattern continues to hold for medical students. Medicine is the most preferred field of study in Haiti and students enrolled in medicine have the highest *socio-economic status*. They are also one of the two groups which show a significantly higher ability to access their preferred field of study. By contrast, agronomy is also a preferred field of study, but agronomy students do not have significantly higher mean *socio-economic status*. In fact, a relatively high proportion of agronomy students do not



come from Port-au-Prince but instead from regions with significantly lower mean *socio-economic status*. Moreover, the one-way ANOVA showed that agronomy students had mean *socio-economic status* significantly lower than that of medicine and finance students. These seemingly conflicting results may explain why *access* and *socio-economic status* do not have a significant relationship: of the two groups that have significantly higher scores for *access to a preferred field of study*, one has a higher *socio-economic status* and the other does not.

Thus, as discussed above, selected fields of study have statistical differences when it comes to levels of *access to a preferred field of study*. Do men and women show different levels of *access*? The null hypothesis, here again, is that men's and women's mean *access* scores are the same. The alternative hypothesis is that they are different. Given that equality of variances can be assumed ( $p = .91$ ) per the output in Table 6.21, the probability of observing a mean difference of  $-0.44$  if the null hypothesis is true is  $.12$ ,  $t(738) = -1.56$ ;  $p = .12$ .

**Table 6.21 Independent Samples Test Mean Access by Gender**

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
DESR SC	Equal variances assumed	0.01	0.91	-1.56	738.00	0.12	-0.44	0.28
	Equal variances not assumed			-1.57	334.45	0.12	-0.44	0.28

The null hypothesis was confirmed and I concluded that there is no statistically significant difference in *access to a preferred field of study* between the men and the

women in the sample. This means that neither gender is better positioned when it comes to its ability to access a preferred field of study, even though I found previously that women have significantly higher socio-economic status than men.

Do students from various cities have the same level of *access to their preferred field of study*? The null hypothesis in this analysis is that the mean *access* score for students from various cities is equal. It was confirmed with a one-way ANOVA which produced a significance of .58 and an F statistic of .55. The significance of .58 from the ANOVA table (Table 6.22) indicated the probability of obtaining an F ratio at least as large as .55 if the mean *access* scores are the same. It was greater than .05, leading me to accept the null hypothesis,  $F(2, 719) = .55, p = .58$ .

**Table 6.22 ANOVA for Access by City of Origin**

Access	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.33	2.00	6.16	0.55	0.58
Within Groups	8129.61	719.00	11.31		
Total	8141.94	721.00			

By contrast, when I tested for the probability that the mean *access* score is the same across the 5 institutions, I found statistical significance. The probability of obtaining an F statistic as large as 4.74 if the means are the same for the five institutions is less than .01. The null hypothesis was therefore rejected,  $F(4, 739) = 4.74, p < .01$ . Students have a different level of access to their preferred major in at least one of the schools.

**Table 6.23 ANOVA for Access by School**

Access	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	211.36	4.00	52.84	4.74	0.00
Within Groups	8234.62	739.00	11.14		
Total	8445.98	743.00			

The Bonferroni post hoc test revealed that the mean *access* score at the Christophe School of Law (5.4) is significantly lower than that of University Pétion (7.11),  $p = .03$ . In turn, the mean *access* score at University Pétion is significantly higher than that of University Boyer (5.55),  $p = .02$ .

Also, not surprisingly, there is a statistically significant difference between the mean *access* scores of students in public versus private institutions,  $F(1, 734) = 11.81$ ,  $p < .01$ . Public school students' mean *access* score (7.14) is significantly higher than that of private school students (6.23). The ANOVA output is in Table 6.24

**Table 6.24 ANOVA for Access by Institution Type**

Access	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	132.81	1.00	132.81	11.88	0.00
Within Groups	8204.95	734.00	11.18		
Total	8337.76	735.00			

What is the analysis revealing thus far, with regard to students' *access to their preferred field of study*? I found that *socio-economic status* is not a good predictor of *access*. Two results seem to indicate a relationship. Students in medicine, the most preferred field of study, have significantly higher average scores for both *access* and *socio-economic status*. University Pétion's students show significantly higher mean *socio-economic status* and *access* than many other schools. However, many other results do not support a relationship. For example, students in agronomy, another preferred field of study, also have higher average score for *access* but have significantly lower

*socioeconomic status* scores than medicine. Also, women have higher *socioeconomic status* scores than men but do not exhibit any difference in *access*. Moreover, students from Port-au-Prince have higher *socio-economic status* but do not seem to have higher levels of *access* than their counterparts from other cities or towns. Finally, University Hérard, the institution with highest mean *socio-economic status* does not have significantly higher mean *access*. Thus, for one particular field of study, medicine, and one particular institution, University Pétion, *socio-economic status* and *access* move in parallel. However, that does not translate into a statistically significant relationship between the two variables in the overall sample.

Given the lack of a relationship between *socio-economic status* and *access*, I attempted to predict *access* through other variables. The statistical process that I employed when I tried to use *socio-economic status* to predict *access* was a linear regression. To find out whether variables other than SES are good predictors of *access*, I proceeded in the same way to test the linear regression relationship between *access* scores and those other variables' scores. Previous analyses and the literature review served as guides as I paired variables in this iterative process.

Four variables in the study were found to have a significant relationship with *access*. The linear regression output for all four variables is in Table 6.25. However, among all four, they only combined to explain 14% of the variation in *access* ( $R^2$  of .14). Holding each other variable constant, two variables were found to have a positive relationship with *access*: whether students chose their field of study because of their “academic preparation” and whether they did so because this is “the institution that

**Table 6.25 Linear Regression Output Table for Access**  
Coefficients(a)

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.28	0.70		4.67	0.00
Chose major because they felt prepared	0.67	0.11	0.25	6.06	0.00
Chose major because accepted by institution	0.42	0.08	0.22	5.26	0.00
Relative ranking of finances as reason for choosing major	-0.34	0.14	-0.10	-2.36	0.02
Social network	-0.09	0.04	-0.10	-2.31	0.02

a. Dependent Variable: Access

accepted” them. Holding all other variables constant, for every unit increase in students’ perception that they chose their field of study because they felt academically prepared, their ability to access their preferred field of study is predicted to increase by .68 points. Similarly, for every unit increase in their perception that they chose their field of study because of the institution that accepted them, their access to their preferred field of study is predicted to increase by .43, holding all other variables constant.

By contrast, two variables have a negative relationship with access holding each other variable constant. The importance that students give to “the role of finances,” as opposed to other factors, in the selection of a major is negatively associated with *access*, as can be seen in Table 6.25. Holding all other variables constant, for every unit increase in students’ perception of the ranking of finance (over academic aptitude, interest, and the need of the country) as a deciding factor in students’ major decision, their ability to access their preferred field of study is predicted to decrease by .42 points. Similarly, for every unit increase in the influence of students’ *social network*, their ability to access their preferred field of study is predicted to decrease by .09 points, holding all other

variables constant. This is another surprising result: the influence of *social network* has been found in the literature to have a positive relationship with *access*. I will attempt to make sense of this finding in the discussion section at the end of the chapter.

The standardized coefficients indicate that the relative contributions of the variables “chose major because they felt prepared” and “chose major because they were accepted by the institution” are more substantive than those of “ranking of finances” and “social network.” Holding all other variables in the model constant, a unit increase in these variables is expected to increase *access* by respectively .25 and .22 standard deviations. By contrast, every unit increase in the variables “ranking of finance” and “social network” is only predicted to decrease *access* by .1 standard deviations for both variables.

One standard deviation in *access* is equivalent to 3.37 *access* points. Unfortunately, unlike *academic preparation*, which is measured by concrete numbers such as students’ average grades in national exams, the explanation for the value of a one-unit increase in *access* is not straightforward. Just like most variables in the study, *access* is measured through a composite score from several items. In addition, many of these items were in turn measured on a six-point Likert scale anchored by “strongly disagree” and “strongly agree.” Even though the value of one point or one standard deviation in *access* or other variables cannot be expressed easily in “real” terms, the standardized coefficients are helpful in determining the relative importance of each independent variable in predicting the outcome variable.

The resulting mathematical equation to predict access is:

$$\text{Predicted Access} = 3.28 + .67 \text{ Preparation} + .42 \text{ Acceptance} - .34 \text{ Rank of finance} - .09 \text{ Social network}$$

Where:

*Access* is the extent to which the students wanted their current major while in high school

*Preparation* is the extent to which the students chose their major because they felt prepared in the area

*Acceptance* is the extent to which students feel that they chose their major because of the institution that accepted them

*Rank of finance* is the relative importance that students give to finances in the major selection decision.

*Social network* is a scale that measures the influence of parents, teachers, and friends in students' academic decisions.

## **5. Variables associated with satisfaction**

I concluded previously that *satisfaction with academic situation* cannot be used as a proxy for *access to a preferred major*. Indeed, *socio-economic status* is a predictor of *satisfaction* but not of *access*. Once I identified some predictors of *access*, I proceeded to also try to determine what predicts *satisfaction*. I first tested whether there is a difference in mean *satisfaction* scores among various groups, then I tried to establish a mathematical equation to predict *satisfaction*.

I found that some fields of study had significantly higher mean *access* scores. Is it the same for *satisfaction*? Are students in some fields of study on average more satisfied than in others? To test for this, I established the null hypothesis that the mean *satisfaction* scores for all fields of study are the same. The ANOVA table for this statistical test (Table 6.26) yielded an F statistic of 4.49 and a significance of  $<.01$ . This indicates that the probability of obtaining a ratio of between-group to within-group variability as large as 4.49 if all the mean *satisfaction* scores are equal is less than .01. I rejected the null hypothesis and concluded that students in at least one field of study are significantly more satisfied than in others,  $F(19, 674) = 4.49, p < .01$ .

**Table 6.26 ANOVA for Satisfaction by Major**

Satisfaction	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1555.25	19.00	81.86	4.49	0.00
Within Groups	12289.29	674.00	18.23		
Total	13844.54	693.00			

The Bonferroni post-hoc test allowed me to determine which groups of students have statistically significant differences in their *satisfaction* scores. Students in many fields of study had a significantly higher mean *satisfaction* score than those in medicine (21.47). Those fields of study include agronomy (25.73),  $p < .01$ , law (24.77),  $p < .01$ , finance (26.64),  $p = .04$ , rural engineering, (27.27)  $p = .01$ , and dental medicine (26.64),  $p < .01$ . Agronomy students also had significantly higher mean *satisfaction* scores than those in computer science (19.78),  $p = .01$  and social science, (21.4)  $p = .01$ . Students in dental medicine also had significantly higher mean *satisfaction* scores than social science



students,  $p = .02$ . The surprise here is that the mean *satisfaction* score for students in medicine was significantly lower than that of their counterparts in several fields of study.

Moreover, the analysis did not reveal any significant difference between the mean *satisfaction* scores of other demographic groups: between men and women, among students from different cities, among the five institutions, or between students from public and private schools.

So how does one predict satisfaction? The first variable that I tested for a relationship with *satisfaction* is *access to a preferred field of study*. Even though *access* cannot be used interchangeably with *satisfaction*, one would surmise, however, that there must be a relationship between *access* and *satisfaction*. In other words, the ability for students to engage in their desired field of study should be associated with their level of satisfaction with their academic situation. Setting *satisfaction* as the dependent variable and *access* as the independent variable, I tested through a linear regression for the null hypothesis that the relationship expressed in the following relationship does not exist:

$$\text{Predicted Sat\_scale} = \beta_0 + \beta_1 \text{ ACCESS\_Scale}$$

The linear regression output in Table 6.27 showed that the probability of observing this relationship by chance if there is no relationship in the population is less than .01.

Therefore, I rejected the null hypothesis and concluded that there appears to exist a relationship between students' *access to a preferred field of study* and their *satisfaction with their academic situation* ( $R^2 = .03$ ;  $B = .25$ ;  $p < .01$ ). One unit increase in *access* is associated with a predicted .25-point increase in *satisfaction*, all other variables held constant. The relationship between the two variables has an  $R^2$  of .03, meaning that only

3% of the variation in the dependent variable is explained by the regression. Other factors may therefore be contributing to the remaining variability in satisfaction.

**Table 6.27 Coefficients(a) for Satisfaction (with Access as Predictor)**

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Beta		
1.000 (Constant)	22.46	0.38		59.84	0.00
Access	0.25	0.05	0.19	4.97	0.00

a. Dependent Variable: Satisfaction

Does *academic preparation* play a role in predicting satisfaction? By adding that variable to the model, I obtained a significance of .81 for the relationship between *academic preparation* scores and *satisfaction* scores (Table 6.28). As a result, it does not appear that *academic preparation* is related to *satisfaction* in a statistically significant way ( $p = .81$ ).

**Table 6.28 Linear Regression for Satisfaction with Access and Acad. Prep as Predictors**

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	22.31	0.68		33.02	0.00
Access	0.24	0.05	0.18	4.73	0.00
Academic Preparation	0.02	0.10	0.01	0.24	0.81

a. Dependent Variable: Satisfaction

Another possible factor associated with *satisfaction* is the students' optimism vis-à-vis their job prospect. On a 6-point likert scale, the mean score for the item 'It will be easier for me to find a job because of my major' is 4.8, which indicates that students' responses fell between "somewhat agree" and "agree" but closer to the latter. It is therefore relevant to determine whether that relationship is significant. When "job search ease" was added into the model, I found that it has a statistically significant relationship with *satisfaction*

In the literature review, intrinsic factors were found to have a relationship with satisfaction. Some intrinsic factors measured in the study were the reasons that motivated students to pursue their field of study. When those possible factors were added in the linear regression, two of them were found to have a significant relationship with satisfaction. They are the variables “I chose my field of study because I feel academically prepared” and “I chose my field of study for this school’s quality.”

At the end of the iterative process, it is found that the best model to predict *satisfaction* is one that does not include *socio-economic status* as a variable, even though *socio-economic status* by itself showed a statistically significant relationship with *satisfaction*. Table 6.29 shows the output for the linear regression that includes SES. It is no longer significant as a predictor of satisfaction ( $p = .19$ )

**Table 6.29 Linear Regression for Satisfaction (Including the Ind. Variable SES)**

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	14.36	1.17		12.24	0.00
Access to preferred major	0.20	0.06	0.15	3.35	0.00
Job prospect	0.42	0.16	0.11	2.57	0.01
Chose major because they felt prepared	0.78	0.16	0.22	4.77	0.00
Chose major because of institution's quality	0.73	0.14	0.24	5.18	0.00
Socio-economic status	-0.02	0.02	-0.06	-1.33	0.19

a. Dependent Variable: Satisfaction

The final model is in table 6.30. It contains only the four variables “job prospect,” “chose major because of academic preparation,” “chose major because of the quality of the

institution,” and “access to a preferred field of study. ” Its  $R^2$  value of .23 indicates that the model explains 23.2% of the variation in students’ satisfaction.

**Table 6.30 Final Linear Regression for Satisfaction**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	13.22	0.82		16.07	0.00
Access to preferred major	0.16	0.05	0.12	3.30	0.00
Job prospect	0.52	0.13	0.14	3.91	0.00
Chose major because they felt prepared	0.83	0.13	0.23	6.32	0.00
Chose major because of institution's quality	0.80	0.11	0.27	7.47	0.00

a. Dependent Variable: Satisfaction

Holding each other variable constant, all four variables have a positive relationship with *satisfaction*. For every unit increase in students’ ability to access their preferred field of study, *satisfaction* is predicted to increase by .16 points, holding all other variables constant. For every unit increase in their perception that it will be easier for them to find a job because of their field of study, their *satisfaction* is predicted to increase by .52 points, holding all other variables constant. Similarly, students’ *satisfaction with their academic situation* is predicted to increase by .83 points for every unit increase in their perception that they chose their field of study because they felt academically prepared, holding all other variables constant. Finally, students’ *satisfaction* is also predicted to increase by .80 points for every unit increase in their view that they chose their field of study because of the quality of the institution in which they are enrolled, holding all other variables constant.

The standardized coefficients indicate once again that the relative contributions of the intrinsic variables “chose major because they felt prepared” and “chose major because of the institution’s quality” are more substantive than those of “access” and “job prospect.” Holding all other variables in the model constant, a unit increase in the first two variables is expected to increase *satisfaction* by respectively .23 and .27 standard deviations. By contrast, every unit increase in the variables “access” and “job prospects” is only predicted to increase *satisfaction* by .12 and .14 standard deviations, respectively.

The resulting mathematical expression of this relationship is:

$$\text{Predicted Satisfaction score} = 13.22 + .16 \text{ Access} + .52 \text{ Job prospect} + .83 \text{ Preparation} + .80 \text{ Quality}$$

Where:

*Satisfaction* indicates the level of the students’ satisfaction with their field of study

*Access* is the extent to which the students wanted their current major while in high school

*Job prospect* expresses the extent to which students view their job prospects favorably because of their major

*Preparation* is the extent to which the students chose their major because they felt prepared in the area

*Quality* expresses the extent to which students chose their current field of study because of the quality of the institution.

## 6. Discussion

From the analysis of the data, I can make observations about four aspects of higher education in Haiti: the relationship between students' socio-economic status and their satisfaction with their academic situation, the relationship between students' socio-economic status and their access to a preferred field of study, the paradox of students' high satisfaction with their academic situation coexisting with their low access to a preferred major, and women's access and satisfaction in Haitian higher education.

### *The relationship between socio-economic status and satisfaction*

The primary question in this research project was answered in the affirmative. A statistically significant relationship was found between students' socio-economic status and their satisfaction with their field of study. However, the relationship was not in the direction stated in the research hypothesis. It was negative, indicating that as students' *socio-economic status* increases, their *satisfaction with their academic situation* is predicted to decrease. By contrast, the research hypothesis posited that students from higher socio-economic status would be more satisfied with their academic situation.

The negative relationship between students' *socio-economic status* and their *satisfaction with their academic situation* explains why one of the groups with higher levels of *satisfaction*, agronomy students, also have lower *socio-economic status* and why one of the groups with higher *socio-economic status*, medicine, also has significantly lower mean *satisfaction*. However that relationship is very weak. Every unit increase in *socio-economic status* is predicted to be associated with a .04-point decrease in

*satisfaction*. Moreover, the regression model only explains 1% of the variation in satisfaction. Finally, when I tried to identify other variables that predict *satisfaction*, I found that the contribution of *socio-economic status* in the prediction model became insignificant.

What then predicts *satisfaction*? My original hypothesis suggested a correlation between students' ability to engage in their preferred field of study and their level of satisfaction. As it turned out, *access to a preferred field of study* had a statistically significant positive relationship with *satisfaction*. Beside *access*, another variable identified in the data analysis to exhibit a relationship with *satisfaction* relates to the prospect of social mobility. Indeed, the students' perception of their ease of finding a job after college is found to have a positive relationship with *satisfaction*. The other two variables, which are predicted to have a comparatively greater association with *satisfaction* than the previous two, are intrinsic to the students. They relate to students' reason for choosing their field of study. The more they feel that their academic qualification was very important in their major selection, the more satisfied they are predicted to be. Similarly, the more they perceive the quality of the institution as playing a role in their major decision, the higher their satisfaction score is predicted to be.

Thus, intrinsic factors related to why students chose their field of study, job prospect, and *access to their preferred field of study* seem to be the main predictors of student satisfaction. The surprises in attempting to predict satisfaction are two-fold. First, students from medicine, the most preferred field of study, who also have higher mean *socio-economic status* are not the most satisfied. Agronomy, one of the preferred fields of

study but whose students in general have lower mean *socio-economic status* and are not from Port-au-Prince, has students with higher levels of *satisfaction*. Although these findings are consistent with a negative relationship between *socio-economic status* and *satisfaction*, they are contrary to the premise of the primary research question that students from higher socio-economic status enjoy greater satisfaction with their academic situation.

How do we make sense of this result? One explanation is found through human capital theory. According to the theory, the return of an investment in higher education can be calculated and compared for different groups. Given that Haitian higher education is mainly free, young people from various levels of socio-economic status make similar investments in their tertiary education. However, when expressed in terms of opportunity for social mobility, their returns on that similar investment are different. Those returns are expected to be much greater for students from lower socio-economic status, leading to a higher level of satisfaction. This finding is indeed consistent with those of Phinney, Dennis, and Osorio (2006) who indicated that young people from lower socioeconomic status have more to gain from attending college.

The second surprise in trying to predict satisfaction is that students in general reported a relatively high level of *satisfaction*. Across the 734 respondents, the mean score on a 6-point scale for the item 'I am satisfied with my major' is 5.05 with a standard deviation of 1.13. That signifies that on average students' response to that statement fell somewhere between 'I agree' and 'I strongly agree.' Similarly, their response to the items 'My major matches my aspirations' and 'I would recommend this



major to a friend' have means of 4.98 and 4.8 respectively, which puts them between 'I somewhat agree' and 'I agree' but closer to the latter.

The scores on satisfaction with institutions items also fall between 'I somewhat agree' and 'I agree' but closer to 'I agree.' They are 4.54 for the item 'I am satisfied with my institution' and 4.81 for the item 'I would recommend this institution.'

Other indications of students' high level of appreciation for their academic situation can be found in the data. Indeed, when asked to rank a number of fields of study, students rated their own field of study very highly, even if that field of study is viewed by the wider sample as not appealing. For example, dental medicine was the third least preferred field of study among the 742 students surveyed. However, dental medicine students in average ranked their field highest, even ahead of medicine, the most preferred field of study among all respondents. Similarly, management students, which are in the fourth least preferred field according to all the respondents, ranked their field in first place along with medicine.

The literature on satisfaction does not provide many possible explanations for this high level of satisfaction among Haitian students, despite the access issues identified. Umbach and Porter (2002) who conducted one of the rare studies examining satisfaction with education in the major found two variables that appear to be related to major satisfaction: the proportion of female undergraduates in a department and cumulative grade point average, which were both positively associated with satisfaction with major. Qarareen, Al-Omari, and Abu-Tineh (2007) found that students' satisfaction with their university experience was different across major disciplines. In most of the literature on

students' satisfaction with their academic experience, students are viewed as customers and their satisfaction is measured on items that are not necessarily related to academics but to their overall experience (i.e. gym facilities, ease of registration, quality of advising, etc.)

The student-customer paradigm would not be useful here as a predictor of satisfaction because these are mostly first-year students whom I surveyed in their first weeks, -some literally in their first days-, in school. Their perspective could not have yet been swayed by a very positive experience with items not related to academics. Besides, the classroom conditions that I described previously could hardly be the reason for exuberance due to an overall positive experience.

None of these explanations, therefore, seem to illuminate the reason for students' high level of satisfaction. In fact, quite the opposite should be expected: Haitian students should have a low level of satisfaction in light of the access issues that we have identified and that we will summarize next.

#### *The relationship between socio-economic status and access*

My motivation for examining the relationship between *socio-economic status* and *satisfaction*, in the first place, was to try to determine to what extent students were able to access their preferred field of study. I posited that *satisfaction* could be used as a proxy for *access*, given that students who did not get to enroll in their desired field of study would show low levels of *satisfaction* and vice-versa. I also measured *access* more directly through the "access scale" which assessed the extent to which students were able

to enroll in the major that they desired in high school. And I attempted to establish a relationship more directly between *socio-economic status* and *access*.

The analysis revealed that a statistically significant relationship between *socioeconomic status* and *access* could not be established. My hypothesis that wealthier students have a better probability of accessing their preferred field of study could not be validated across all majors. Moreover, my assumption that a direct correlation exists between *satisfaction* and *access* was not validated, given that *socio-economic status* has a relationship with *satisfaction*, albeit a weak one, but no relationship with *access*.

However, analyses of variance showed that students in medicine, the most highly rated field of study, have a mean *socio-economic status* that is statistically higher than that of students in most other fields. For that major only, it seems that the hypothesis is true: the students from the highest *socio-economic status* are those that are able to enroll in the most sought after field of study.

A somewhat contradictory answer was found for the field of agronomy. Students in agronomy have the mean *socio-economic status* which is statistically among the lowest. However, agronomy is far from being the lowest rated field of study. It is in fact the third most preferred field of study across the 742 respondents. How does one explain such conflicting results? Part of the answer may reside in the type of students attracted to agronomy. The exploratory data analysis showed that agronomy was one of the fields of study with the highest percentage of students coming from outside of Port-au-Prince. Moreover, the importance of agriculture for Haiti is often repeated by economists and politicians. One presidential candidate in the 1980s famously declared that the three most

important priorities for Haiti are agriculture, agriculture, and agriculture. In that context, it is understandable that wealthier students, especially those from Port-au-Prince, view agriculture as an important field of study for someone else but not for themselves.

In sum, there seems to be no statistically significant relationship between *socio-economic status* and *access to a preferred field of study*. Yet the data does show that *access* is a problem. In fact, when asked “If you wanted to study something else [while in high school], indicate what it is,” 624 out of the 742 respondents wrote a field of study that they wanted to pursue which is different from their current major. The most preferred alternative field of study for these 624 students was medicine, which would have been the preference of 144 students or 24.2% of them. Students’ responses to the other access-related items confirmed this inability to enter their first choice for a field of study. To the item, ‘When I was in high school, I wanted to study something other than what I am studying now’, the mean score was 2.9. That item was reverse-coded as it was expected to move in the opposite direction with satisfaction. Therefore a 2.9 score indicates a response between ‘I agree’ and ‘I somewhat agree’ but closer to ‘I somewhat agree’.

So, if *socio-economic status* is not a good predictor of *access*, what other factor is? Students attending a public institution were found to have a higher mean *access* score than their counterparts at public institutions. Also, students at University Pétiion were found to have a significantly higher mean score on *access* than students at the Christophe School of Law and those at University Boyer. In other words, attending the public University Pétiion is positively associated with a student’s accessing her preferred field of study. However that relationship is not very strong and account for only 2.7% of the

variation in access. Gender, city of origin, and age, were not found to be significant predictors of *access*.

I was able to express *access* as the outcome of a linear regression with four input variables: choosing a field of study because of academic preparation, choosing a field of study because of admission, the relative importance of finances in major selection, and the influence of social network. That relationship only explains 13% of the variation in *access* scores.

The variables related to the students' reasons for choosing their majors were predicted to have a greater influence on access. Moreover, they both moved in the same direction as access, such that an increase in either variable is predicted to result in a higher score for access to a preferred field of study, all other variables held constant.

By contrast, "ranking of finance" and "social network" were predicted to move in the opposite direction with access. This is not surprising for "ranking of finances." Indeed, one could conceive that the students who think that financial matters are important in academic decisions (those who worry about finances), may also feel that the odds are stacked against them when it comes to their ability to access their preferred field of study. On the other hand, the negative relationship between *social network* and *access* is quite surprising. Indeed, Somers et al. (2006) documented the positive influence of family and Grodsky and Jones (2007) indicated the positive role of parents on students' academic decisions. Briggs (2007) reported the positive "influence" of parents, friends, and teachers on academic choices. The main reason for this anomaly must be in the potential confusion created by the use of the word "influence" in the survey instrument.

The high number of “strongly disagree” responses to the items “I was influenced by [parents, friends, teachers] when I was choosing my field of study” can only be explained by a negative reaction to the idea of being “influenced.”

*The paradox of low access and high satisfaction*

Despite the fact that a great majority of students reported difficulty accessing their preferred field of study, the overall sample, as we recall, reported a very high level of satisfaction with their current academic situation. This is the second way in which my assumption of a direct correlation between *satisfaction* and *access* has been invalidated. So, how do we explain this paradox? Interestingly, the reason for this high level of satisfaction may be explained by expanding the notions of access beyond access to major, examining the issue of social mobility, and paying attention to the variables that are predicted to have the most influence on satisfaction.

In a country where 1% or less of the age group accesses higher education, the students whom I surveyed are indeed the lucky ones because they made it into a tertiary education institution. They belong to a true elite. Most did not make it into their preferred field of study but they made it into higher education and that latter part is more important. They embraced their newly found field of study and ranked it higher than others.

Moreover, with the high level of unemployment in Haiti, a college degree is bound to provide the graduate with a competitive advantage. Data for employment of college graduates is not available in Haiti. But in the neighboring Dominican Republic, unemployed college students are only 2.6% of all the people out of work. This shows a

proportionally lower unemployment rate in college graduates given that 5.9% of the appropriate age group goes to college (Rodriguez & Herasme, 2002). Employment leads to social mobility, especially for students from lower socio-economic status. This may be the reason why the field of study with one of the significantly lowest *socio-economic status* also has the highest level of *satisfaction*. Agronomy students, as we found out, come disproportionately from outside of Port-au-Prince and are comparatively less well-off. A college degree in this respected field offers these students a comparatively greater opportunity for moving up socially than their counterparts from higher socio-economic strata in the capitals. Moreover, agronomy students have a better employment rate in a country so focused on agriculture. They enter a paid internship after college and are very often employed by the government and deployed in the provinces.

The importance of the variable “job prospect” in predicting satisfaction underscores the idea of social mobility. This relationship is consistent with human capital theory, as mentioned before, and with the vast literature on students’ academic decision which found that future earnings and job prospects are strong predictors of students’ academic decisions (Briggs, 2007; Daire, Lamothe & Fuller, 2007; Phinney, Dennis, & Osorio, 2006; Somers et al., 2006)

Last but not least, another important part of the reason for students’ high level of *satisfaction* may be found in the predictive importance of “intrinsic” variables. I found that students’ perception that their academic decision is based on their own academic merit is positively associated with -and constitutes one of the strongest predictors of - *satisfaction*. Similarly, their view that their academic decision was deliberate and based

on the quality of the institution is the second strongest predictor of *satisfaction*. Intrinsic factors have been positively associated with American students' satisfaction and academic outcomes. Indeed, Enman and Lupart (2000) discussed that intrinsic factors have a greater relevance than utility reasons in students' choices. In the Haitian context of reduced access to higher education, this intrinsic sense of accomplishment may have reinforced the elite concept mentioned before and contributed to increase *satisfaction* even to a greater extent.

I believe that this paradox of students' high *satisfaction* co-existing with their low *access to a preferred field of study* is one of the most important findings in this study. In the context of the great limitations in choices and access with which Haitian students are confronted, they remain very satisfied with their academic situation. The classroom conditions that I visited are far from ideal. Moreover, students in several settings were sitting and waiting for their instructors, at times for more than half an hour. This set of circumstances would most likely yield very low satisfaction scores in the United States or other more developed countries where students' options are more expanded. It seems that the majority of students in the Haitian context have been able to re-adjust their initial wishes and feel satisfied, even in less than ideal learning situations.

#### *Women's enrollment and satisfaction in Haitian higher education*

The data revealed a disparity between men's and women's access to higher education. Approximately one quarter of the survey participants were women. We can



extrapolate that this is a generally fair representation of the true proportions in Haitian higher education for two reasons. First, almost all students who were asked volunteered to participate in the survey, therefore there was not a selection effect. Second, the large sample across a variety of institutions provides a good representation of first-year Haitian college students.

With such a disparity in access in general, it is not surprising that there is a majority of men in all fields of study. The most salient discrepancies are in science and engineering where men represent between 85 and 90%. Women were not represented in the sample in two fields of study: rural engineering and philosophy. By contrast, the field of public administration had an even number of men and women, a disproportionate percentage for women, given their representation in the overall sample.

How did women fare, with regards to the main questions in this research study? Women showed a significantly higher mean *socio-economic status* than men. However, there was no statistical difference between the mean *satisfaction* scores of women and those of men. Similarly, there was no significant difference between women's and men's average ability to access their preferred field of study.

What to make of those findings? First, it seems that it is more difficult for women than for men to enter college. This is not only supported by the sheer numbers, but also by the fact that female college students on average come from families with significantly higher mean socio-economic status. This suggests that only a minority of wealthier young women make it to college. But once they do make it into college is their experience similar to that of men when it comes to access and satisfaction? The fact that there is no

statistically significant difference between the two groups' mean *access* and mean *satisfaction* scores would suggest that this is the case. A chi-square analysis of women's distribution across majors finds that the distribution does not match what would be expected given the relative proportion of women. Of the three most preferred fields of study for the women in the survey, -medicine, law, and agronomy- women are over-represented relative to their proportion in medicine and law and under-represented in agronomy.

In sum, it does not appear that overall women's experience or situation while in college in Haiti is worse than that of men. The main problem is with their access to higher education in the first place. Clearly, this is not an issue that should be examined in isolation; it should be considered in the wider context of Haitian girls' participation in primary and secondary education. However, a first look at boys' and girls' enrollment in Haitian education does not support this disparity at the tertiary level. In fact, at the primary level, the net rate of school attendance is slightly higher for girls (60%) than for boys (59%). The rate is almost even at the secondary level with boys at 20% and girls slightly under 20% (Ministère de la Planification et de la Coopération Externe, 2004).

In conclusion, my primary hypothesis that there exists a relationship between students' *socio-economic status* and their *satisfaction with their academic situation* was supported by the analysis of the data collected, although the relationship was weak. However, the relationship was not in the direction that I hypothesized. *Socio-economic status* is negatively associated with *satisfaction*. On the other hand, my underlying

premise that there exists a relationship between Haitian students' *socio-economic* status and *their access to their preferred major* was not validated.

What the data supports, however, is that the mean *socio-economic* status of the students in the most preferred field of study, medicine, is higher than that of many other fields of study, even though the faculty of medicine is in a public institution. This seems to suggest that the relationship between *socio-economic status* and *access to preferred major* does not exist across all majors but is present in the most preferred field of study in Haiti. That result is weakened, however, by the fact that agronomy students who have a significantly lower *socio-economic status* are also in one of the most preferred fields of study. Some of the variables influencing *access* have been identified. They are the extent to which students chose their major because of their academic preparation, the extent to which they chose their field of study because of the institution that accepted them, their ranking of financial matters among factors that affect academic decision, and the influence of their social network. However these four variables explain only a small portion of the variability in *access* scores. Similarly, *access* is related to, but does not fully account for, the variation in *satisfaction*. Other predictors of satisfaction include by order of importance, the extent to which students chose their field of study because they felt academically prepared, the extent to which they made this choice because of the quality of the institution, and their perception of their job prospects. Thus, intrinsic factors, the prospect of employment, and *access to a preferred field of study* are the main predictors of *satisfaction*.

Part of the reason why it is difficult to make sense of the relationship between *access* and *satisfaction* is that *satisfaction* is generally high even though *access* is generally low: students are satisfied with their academic situation even though they have not been able to enroll into their preferred field of study. This paradox of high *satisfaction* and low *access* is perhaps one of the most important findings of this research study. It can be explained by expanding the notion of access, understanding students' desire for social mobility, and interpreting the variables that were found to predict *satisfaction*. In a country with such limited access to higher education, these students are satisfied that they were able to access college even if they could not access their preferred field of study. The positive association of intrinsic variables' with students' satisfaction suggests that their sense of academic accomplishment reinforces their satisfaction of belonging to the elite minority enrolled in higher education. Moreover, in the context of Haiti's chronic unemployment, college students feel that they have a better probability of getting a job. The importance of job prospect in predicting satisfaction underscores that explanation. The prospect of social mobility is even stronger for students from the provinces and students in agronomy who have lower *socio-economic status* in average but who are in a field with good prospects for employment.

One final observation that must be made is that with so much of the variation in *access* and *satisfaction* unexplained by the many variables collected in this study, one has to wonder whether some of the responses were completely candid. That question is more pertinent for the socio-economic status questions, which are usually sensitive for all respondents. The discomfort of students and perhaps inability to answer these items

truthfully must have been exacerbated by the extreme lack of privacy in the data collection settings. As I described in the methodology chapter, in almost all the classrooms, students were sitting in very close proximity to one another, such that it would be easy for them to read one another's responses. This does not invalidate the results that I found, but it may be part of the reason for the great deal of unexplained variability in both *satisfaction* and *access*.

## Chapter 7 Access to -and satisfaction with- science & technology majors

The previous chapter established the existence of a relationship between students' *socio-economic status* and their *satisfaction with their academic situation* and a lack of a relationship between students' *socio-economic status* and their *access to a preferred field of study* for the complete sample. It also identified the predictors for *access* and *satisfaction* for the same sample. Given the global emphasis on the importance of science, technology, and engineering (ST&E) as engines for innovation and economic growth, it is relevant to pay closer attention to the subset of students who are enrolled in ST&E fields of study. What factors are associated with students' access to these fields of study? Even though a relationship between *socio-economic status* and *access* could not be established in the overall sample, is such a relationship present in the sub-sample constituted by STE students only? This chapter will attempt to answer these questions.

It is divided into five sections. In the first part, I provide a working definition of science, engineering, and technology and identify the majors encountered in this research project that fall in the ST&E category. In the second section, I examine whether there are relationships between ST&E students' *socio-economic status* and their *satisfaction with their academic situation*; I also try to identify variables other than SES that are associated with STE students' *satisfaction*. The third segment focuses on the relationship between STE students' *socio-economic status* and their *access to a preferred field of study* as well as other variables that may be associated with *access*. Fourth, I attempt to find out whether there are notable differences between ST&E students and the rest of the student

body. Finally, I conclude the chapter with a discussion that puts the results of the various analyses into perspective.

### **1. Defining ST&E majors**

Physical sciences, life sciences, or engineering fields of study are rather straightforward to identify. The same cannot be said about areas of technology, however. From the obvious concentrations in high tech fields such as computer science, the discipline could be stretched in a non-traditional way to encompass even management, as was argued by Brooks (1980, p. 65), “Today, managerial innovations are becoming an increasingly important aspect of technology.” In this study, the conceptual framework for envisioning ST&E is one that views higher education as an engine for economic growth and poverty reduction through its promotion of science, technology, and innovation. As a result, a definition that fits better with this spirit is provided by the World Bank. Technology refers to the “capacity to handle such mundane but necessary tasks as repairing farm machinery or testing drinking water” or to the ability “to construct infrastructure projects or to work in innovative private enterprises” (Watkins & Ehst, 2008 p. 6). Consistently with this definition, five of the fields of study encountered in our study can be classified as science, technology, or engineering fields of study. They are agriculture, chemistry, computer science, electromechanical engineering, and civil engineering.

All these five STE majors were found in only two of the institutions surveyed. Some of University Pétion’s students concentrate in all the fields except for computer

science. By contrast, only agronomy, computer science, and civil engineering are available to Dessalines College's students. None of these ST&E fields of study were found at the Christophe School of Law, Boyer College, or University Hérard. It is worth reiterating that the majors encountered in the research project do not represent an exhaustive list of what is offered at these institutions. For example, students can concentrate in computer engineering at University Pétion. However, the random sample of first year students that was selected for this study in the Faculty of Sciences at University Pétion did not happen to have any computer engineering or computer science student. Does the fact that the list is not exhaustive mean that the sample is not representative? The answer is no. The large number of students surveyed in this project relative to the size of the entering class across all Haitian higher education makes it fairly safe to generalize the findings from this group.

*STE students: sample size and characteristics*

Out of the 742 students surveyed, 173 were enrolled in a science, engineering, or technology field of study (23%). The gender disparity that was documented in the general sample is even more accented among ST&E students: only 13% of ST&E students are women while women represent 26% of all the respondents. It should be noted that the low representation of women in ST&E fields of study is not unique to Haiti. Briggs (2007) reported barriers to women's participation in science, engineering, and technology courses. Enman and Lupart (2000) cited White's figures which indicate that 8% of engineering positions, 36% of mathematical and computer scientist jobs, and 27% of



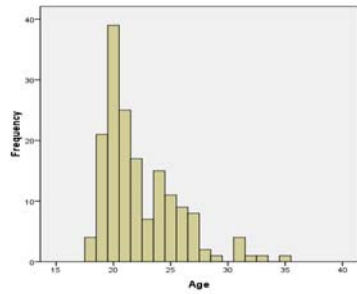
chemists positions are held by women. The breakdown by gender for all ST&E fields of study is presented in Table 7.1.

**Table 7.1 Students in ST&E Fields of Study, by Gender**

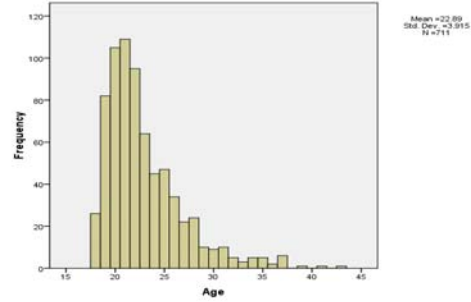
	Men		Women		Total
Agronomy	90	87%	13	13%	104
Chemistry	7	88%	1	13%	8
Computer Science	6	75%	2	25%	8
Electromechanical Eng.	10	91%	1	9%	11
Civil engineering	25	83%	5	17%	30
Rural Engineering	12	100%	0	0%	12
	150	87%	22	13%	173

The low number of students in chemistry (1) and electromechanical engineering (1) must be contextualized because only a sample of students was selected at University Pétiion’s Faculty of Sciences where one can major in these fields. However, the absence of women in rural engineering can almost be taken as a fact, given that rural engineering is only taught at University Pétiion’s Faculty of Agronomy where I surveyed practically all first-year students.

A side-by-side view of the histograms allowed me to compare the age distribution of students in ST&E and in the overall sample. It showed that they were fairly similar with minor differences. The mean age was closer to 22 for STE students whereas it was closer to 23 for all students, the range was smaller among STE students, and there were no STE students above 35 years old.



**ST&E students only**



**All students**

With regards to city of origin, the number of ST&E students from Port-au-Prince (64) was practically even with that of students from a city or town other than Port-au-Prince or a regional capital (63). This could be explained by the large number of agronomy students in the ST&E sample; a majority of agronomy students in the larger sample came from a city or town outside of Port-au-Prince or a regional capital. This was also consistent with the overall sample distribution, given that nearly half of all students came from Port-au-Prince.

Overall, demographic characteristics of ST&E students seemed to exaggerate some of the disparities observed in the general population. Even fewer ST&E students were women and an even a larger proportion of students came from Port-au-Prince.

## **2. Relationship between SES and satisfaction for ST&E students**

I found previously a positive response to the main question: whether there exists a relationship between all students' *socio-economic status* and their *satisfaction with their academic situation*. But the contribution of SES as a predictor of *satisfaction* did not hold when other variables were added to the model. It was relevant to check whether the same applied within the subset formed by all ST&E students. I used for this analysis the

reduced sample of 173 ST&E students only and tested for the relationship between *socio-economic status* and *satisfaction* through an ordinary least squares regression. As before, I examined whether the students' *satisfaction* scores could be expressed as a function of *socio-economic status* and whether the following mathematical equation exists:

$$\text{Predicted Sat\_Scl}_{\text{STE}} = \beta_0 + \beta_1 \text{SES\_Scale}_{\text{STE}}$$

The null hypothesis for this test is that this relationship does not exist and that  $\beta_1$  is equal to zero. The alternative hypothesis is that it does.

$$H_0: \beta_1 = 0$$

$$H_1: \beta_1 \neq 0$$

The SPSS output table for the linear regression (Table 7.2) showed that the probability of observing this relationship by chance if there is no relationship in the population is .09, greater than .05. I accepted the null hypothesis and concluded that there is not a significant relationship between students' *socio-economic status* and their *satisfaction with their academic situation* in the science, engineering, and technology sub-sample ( $p = .09$ ).

**Table 7.2 Linear Regression for Satisfaction and SES**

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	26.25	0.90		29.22	0.00
Socio-economic status	-0.07	0.04	-0.17	-1.73	0.09

a. Dependent Variable: Satisfaction

Beginning with the lessons learned in the general population, I continued to test for variables other than *socioeconomic status* which may contribute to predict *satisfaction*. When the other variables which predicted *satisfaction* in the overall sample

(access, preparation, quality, and job prospect) were added to the linear regression model (Table 7.3), *access* was no longer a significant predictor of satisfaction ( $p = .20$ )

**Table 7.3 Linear Regression Output Table Including Access**

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	10.75	1.76		6.10	0.00
Access to preferred major	0.13	0.10	0.09	1.29	0.20
Chose major because of institution's quality	1.02	0.21	0.34	4.87	0.00
Chose major because they felt prepared	1.22	0.26	0.34	4.76	0.00
Job prospect	0.58	0.27	0.15	2.18	0.03

a. Dependent Variable: Satisfaction

One new variable was found to have a significant relationship with *satisfaction*. The literature review had revealed the association of gender with satisfaction with major (Umbach & Porter, 2002). To test, whether gender could serve as a good predictor for *satisfaction*, I established a new “dummy” variable in which all female students were coded as 1 and all male students as 0. I tested the null hypothesis that there is no relationship between students’ gender and their level of *satisfaction with their academic situation*. The alternative hypothesis is that there is. The mathematical expression for this expression is as follows:

$$\text{Predicted Sat\_Scl}_{\text{STE}} = \beta_0 + \beta_1 \text{Gender}_{\text{STE}}$$

The linear regression output (Table 7.4) indicated that the probability of observing this relationship by chance if the null hypothesis is true is .01. I therefore rejected the null hypothesis and concluded that there is a significant relationship between gender and *satisfaction with academic situation* ( $R^2 = .05$ ;  $B = -2.96$ ;  $p = .01$ ).

**Table 7.4 Linear Regression for Satisfaction with Gender as a Variable**

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Coefficients Beta		
1 (Constant)	25.17	0.36		69.31	0.00
Women	-2.96	1.06	-0.22	-2.79	0.01

a. Dependent Variable: Satisfaction

According to the equation, the predicted *satisfaction* score is equal to the intercept  $\beta_0$  when the dependent variable gender is equal to zero. From the output table, I obtained a B value of 25.17. Given that I had set the dummy variable to be equal to zero for men, I concluded that the mean *satisfaction* score for STE men in the sample is predicted to be equal to 25.17. To find the mean satisfaction score for women, I replaced  $\text{Gender}_{\text{STE}}$  by the value for women in the equation. I had set the variable *women* to be equal to 1. As a result, the predicted mean satisfaction score for women was calculated as follows:

$$\text{Predicted Sat\_Scl}_{\text{STE}} = \beta_0 + B \text{ Gender}_{\text{STE}} = 25.17 - 2.96 (1) = 22.21$$

I concluded that gender is a significant predictor of *satisfaction* among STE students and that female STE students' mean *satisfaction* is predicted to be lower than that of men by 2.96 points.

The linear regression relationship between STE students' gender and their *satisfaction* was very weak, however ( $R^2$  of .05) and the relative contribution of gender as a predictor of *satisfaction* became insignificant ( $p = .27$ ) when other variables were added (Table 7.5).

**Table 7.5 Linear Regression for Satisfaction (Including Gender and Access)**

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.22	1.81		6.20	0.00
	Access to preferred major	0.11	0.10	0.08	1.17	0.24
	Chose major because of institution's quality	0.97	0.22	0.32	4.51	0.00
	Chose major because they felt prepared	1.19	0.26	0.33	4.63	0.00
	Gender	-1.05	0.95	-0.08	-1.11	0.27
	Job prospect	0.61	0.27	0.16	2.26	0.03

a. Dependent Variable: Satisfaction

The final model for predicting *satisfaction* among science, technology, and engineering students contained only what I have termed the intrinsic factors (student's academic ability, and institution's quality) and the social mobility factor (job search ease) as can be seen in Table 7.6.

**Table 7.6 Final Linear Regression for Satisfaction**

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.22	1.70		6.62	0.00
	Chose major because of institution's quality	1.03	0.21	0.34	4.99	0.00
	Chose major because they felt prepared	1.31	0.24	0.36	5.35	0.00
	Job prospect	0.61	0.26	0.16	2.33	0.02

a. Dependent Variable: Satisfaction

The relationship had an  $R^2$  of .32, indicating that this set of predictors is able to explain 32% of the variance in *satisfaction*. When each other variable is held constant, all variables have a positive relationship with *satisfaction*. For every unit increase in the students' perception that they chose their field of study because of their *academic preparation*, their *satisfaction* is predicted to increase by 1.31 points, all other variables

held constantly. Similarly, every unit increase in their perception of choosing their field of study because of the quality of the institution results in a predicted increase of 1.03 points in *satisfaction*, all other variables held constant. Finally, a unit increase in the perception of a more favorable job prospect because of the student's field of study is predicted to yield a .61-point increase in *satisfaction*.

The standardized coefficients in the output table indicated that students' perception that they chose their field of study because of their academic preparation is comparatively the strongest predictor of *satisfaction*. For every unit increase in students' score for this variable, their *satisfaction* is predicted to increase by .36 standard deviations, all other variables held constant. The standard deviation for *satisfaction* is 4.43. Every unit increase in this variable is predicted to result in a 1.6-point increase in the *satisfaction* scale.

The mathematical expression of the relationship is:

$$\text{Predicted satisfaction score} = 11.23 + 1.31 \text{ Preparation} + 1.03 \text{ Quality} + .61 \text{ Job prospect}$$

Where:

*Satisfaction* indicates the level of the students' satisfaction with their field of study

*Preparation* is the extent to which the students chose their major because they felt prepared in the area

*Quality* expresses the extent to which students chose their current field of study because of the quality of the institution.

*Job prospect* is the extent to which students believe that their field of study will make it easier for them to find a job.

In sum, I can predict ST&E students' *satisfaction with their academic situation* if I know (a) the extent to which students' chose their field of study because they feel academically prepared for engaging in this field of study (b) the extent to which they chose their field of study because of the quality of the institution, and (c) the extent to which students feel that it will be easy for them to obtain a job after graduating. The first variable is comparatively the strongest predictor of students' satisfaction.

### **3. Relationship between SES and *access***

Is there a similar way to predict ST&E students' ability to access their preferred field of study? As per this study's primary question, I began with *socio-economic status*. There was no significant relationship between *socioeconomic status* and *access* in the larger sample. Is this still the case with the reduced sample of ST&E students only? To answer this question, I needed to test for the null hypothesis that the relationship in the following equation does not exist:

$$\text{Predicted ACCESS\_Scl}_{\text{STE}} = \beta_0 + \beta_1 \text{SES\_Scale}_{\text{STE}}$$

I set an alternative hypothesis that it does. A linear regression allowed me to perform this statistical test. Its output is in Table 7.7. The significance of .71 indicated that the probability of observing this relationship by chance if there is no such relationship in the population, is greater than .05. The null hypothesis was accepted and I concluded that, as



was the case in the general population, there is no significant relationship between STE students' *socio-economic status* and their *access to a preferred field of study* ( $p = .71$ ).

**Table 7. 7 Linear Regression for Access with SES as Variable**

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	7.98	0.65		12.24	0.00
Socio-economic status	-0.01	0.03	-0.04	-0.38	0.71

a. Dependent Variable: Access

What then are the factors that influence *access* among STE students? We may remember that when I attempted to predict *access* among the 742 survey participants, four variables were identified as being associated with *access*. Their combined contribution to predict *access* accounted for 14.3% of the variation in *access* scores, which means that there was still a large amount of “error” in the prediction model. The effort to predict *access* for ST&E students only was not much more successful. The variables “social network,” “ranking of finances,” and “chose major because of academic preparation” continued to have a statistically significant relationship with *access* individually. When each other variable is held constant, the first two have a negative relationship: *access to a preferred field of study* is predicted to decrease with every unit increase in these variables. By contrast, when other variables are held constant, “choosing a major because of academic preparation” continued to have a positive relationship with *access*. Every unit increase is predicted to result in a higher level of *access to a preferred field of study*, all other variables held constant.

When the three variables were combined into a model to predict *access*, the relative contributions of “social network” ( $p = .17$ ) and “ranking of finances” ( $p = .09$ ) were no longer significant as seen in Table 7.8.

**Table 7.8 Linear Regression for Access with Three Variables**

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	5.81	1.17		4.97	0.00
Chose_fr_Prep	0.80	0.22	0.32	3.63	0.00
Finces_score	-0.51	0.30	-0.16	-1.71	0.09
Social_Network	-0.09	0.07	-0.12	-1.39	0.17

a. Dependent Variable: Access

When either variable was removed from the model, the remaining two variables’ contributions were significant. Table 7.9 shows the various models for predicting *access* among ST&E students. The model (with all significant coefficients) which explains the most variability in *access* is the third model, with an  $R^2$  of .13

**Table 7.9 Summary of the Four Models for Predicting Access**

Variables	B	t	Sig	$R^2$
<b>Model 1</b>				
Chose major because they felt prepared	0.76	3.93	0.00	0.09
<b>Model 2</b>				
Chose major because they felt prepared	0.77	3.95	0.00	0.12
Social network	-0.15	-2.52	0.01	
<b>Model 3</b>				
Chose major because they felt prepared	0.84	3.90	0.00	0.13
Ranking of finances	-0.70	-2.45	0.02	
<b>Model 4</b>				
Chose major because they felt prepared	0.80	3.63	0.00	
Ranking of finances	-0.51	-1.71	0.09	0.13
Social network	-0.09	-1.39	0.17	

The two variables in this model which have a statistically significant relationship with *access* are the extent to which students feel that they chose their field because they are academically prepared and the extent to which they feel that finances are an important factor in major selection. The former variable has a positive relationship with *access*: for every unit increase in a student's perception that they chose their field of study because of their academic preparation, their ability to access their preferred field of study is predicted to increase by .84 points, all other variables held constant. The latter variable shows a negative relationship with *access*, which means that for every unit increase in the students' ranking of finances as an important factor in major selection, their ability to enroll in their preferred field of study is predicted to decrease by .70 points, all other variables held constant. The standardized coefficients from the output table showed that the relative contribution of "academic preparation" to the prediction of *access* (.33 standard deviations) is stronger than that of "ranking of finances" (-.21 standard deviations). With an  $R^2$  of .13, these two variables are combining to explain only 13% of the variation in *access*. There is still a great deal of "error" in the prediction model. The mathematical expression of the relationship between the three variables is as follows:

$$\text{Predicted Access score} = 5.08 + .84 \text{ Preparation} - .70 \text{ Rank of finance}$$

Where:

*Access* is the extent to which the students wanted their current major while in high school

*Preparation* is the extent to which the students chose their major because they felt prepared in the area

*Rank of finance* expresses how the student ranks finances as an important factor in major selection, relative to academic aptitude, interest, and the country's needs.

Students' ability to access their preferred field of study seems therefore to be associated with only perception items. It is associated with the students' perception of the role of academic preparation in their major selection, but it does not seem to be related to the actual role of academics. Indeed, there was no significant relationship between students' ability to access their preferred field of study and their actual scores in national exams, or their high school class ranking, or the reputation of their high school for quality.

With regards to the predictors of *access*, ST&E students seem to be fairly similar to students in the overall sample. The only difference is that the extent to which students feel that they chose their major because of the institution that accepted them was a predictor of students' ability to access their preferred field of study in the overall sample but not among ST&E students.

### **3. Are there differences between STE students and all other students?**

Do STE students have the same level of *socio-economic status*, *satisfaction*, *access*, and *academic preparation* as the other students? To answer this question, in the overall sample of 742 students, I set a new category that I called ST&E-Only. In that category, STE students were coded as 1 and all other students as 0. This provided a "dummy" variable that allowed me to compare the means between the two groups that formed the new category.

*Socio-economic status*

The first test with this new category was to determine whether ST&E students (those coded as 1 in the new variable) have the same mean *socio-economic status* score as the rest of the students (those coded as 0). I set as a null hypothesis that the two groups have the same mean *socio-economic status* score. The alternative hypothesis is that their mean SES scores are different. This set of hypotheses is expressed statistically as follows:

$$H_0: \mu_{SES\ STE} = \mu_{SES\ OTHERS}$$

$$H_1: \mu_{SES\ STE} \neq \mu_{SES\ OTHERS}$$

The independent sample t-test output (Table 7.10) showed that equality of variances can be assumed ( $p = .29$ ). Consequently, the probability of having mean differences as large as 4.49 by chance if the null hypothesis is true is less than .01. The null hypothesis was rejected and I concluded that the mean SES scores of ST&E students (19.73) is significantly lower than that of the other students (24.22),  $t(474) = 3.72, p < .001$

Table 7.10 Independent Samples Test Mean SES

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
SES	Equal variances assumed	1.10	0.29	3.72	474.00	0.00	4.49	1.21
	Equal variances not assumed			3.79	182.36	0.00	4.49	1.18

*Satisfaction*

Do the ST&E students also have the same level of *satisfaction* as the rest of the students?

The null hypothesis for the *satisfaction* test is that the mean *satisfaction* for the STE

students is the same as that of the other students. The alternative hypothesis is that they are different.

$$H_0: \mu_{\text{SAT STE}} = \mu_{\text{SAT OTHERS}}$$

$$H_1: \mu_{\text{SAT STE}} \neq \mu_{\text{SAT OTHERS}}$$

Once again, the result indicated that there is a significant difference between the mean *satisfaction* scores in the 2 groups. The probability of having mean differences of .896 if the null hypothesis is true is .03, less than .05. I concluded that the ST&E students' mean *satisfaction* score (24.82) is higher than that of other students (23.92),  $t(692) = -2.24$ ,  $p = .03$ .

Table 7.11. Independent Samples Test Mean Satisfaction

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
SAT2_SCALE	Equal variances assumed	0.03	0.85	-2.24	692.00	0.03	-0.90	0.40
	Equal variances not assumed			-2.25	268.03	0.03	-0.90	0.40

### Access

Science, engineering, and technology majors are typically more difficult fields to enter, given the level of math that they require and the fact that students often begin preparing for entering such fields since high school (National Academy of Sciences, 2006). One would expect as a result that, given their level of preparation and their early focus, ST&E students are able to access their preferred field of study at a higher rate than other students. Does the data show such a difference between ST&E and other students and is there a statistically significant difference between the two group means for *access*? To verify whether there are significant differences between the ability of STE students

and other students to access their preferred field of study, I am testing for the following null and alternative hypotheses:

$$H_0: \mu_{\text{ACCESS STE}} = \mu_{\text{ACCESS OTHERS}}$$

$$H_1: \mu_{\text{ACCESS STE}} \neq \mu_{\text{ACCESS OTHERS}}$$

The null hypothesis is that the mean *access* scores for the two groups are the same. The alternative hypothesis is that they are different. From the independent sample t-test, I found out that there is a statistically significant difference between the mean *access* score of ST&E students (7.58) and that of the other students (6.60). The probability of having a mean difference as large as .98 if the null hypothesis is true is less than .01 (equality of variances being assumed). STE students are better able to access a preferred field of study than other students,  $t(742) = -3.37, p < .01$ .

Table 7.12 Independent Samples Test Mean ACCESS

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
ACCESS SC	Equal variances assumed	1.42	0.23	-3.39	742.00	0.00	-0.98	0.29
	Equal variances not assumed			-3.45	295.09	0.00	-0.98	0.29

### *Academic preparation*

ST&E fields usually attract students with stronger academic aptitude, at least in math and science. Are STE students better or less well prepared academically than their other counterparts? To answer this question, I set the following null and alternative hypotheses:

$$H_0: \mu_{ACAD\_PREP\ STE} = \mu_{ACAD\_PREP\ OTHERS}$$

$$H_1: \mu_{ACAD\_PREP\ STE} \neq \mu_{ACAD\_PREP\ OTHERS}$$

The null hypothesis is that the mean *academic preparation* score for the two groups is the same. The alternative hypothesis is that they are different. Once again, an independent sample t-test allowed me to test for significance. According to the SPSS output, the equality of variances cannot be assumed ( $p = .02$ ). The probability of having differences in mean *academic preparation* score between STE students and other students as large as .04 if the null hypothesis is true is .77. I accepted the null hypothesis and concluded that the mean *academic preparation* of STE students is not significantly different from that of other students,  $t(312) = -.29, p = .77$ .

Table 7.13 Independent Samples Test Mean Academic Preparation

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
ACAD_PREP	Equal variances assumed	5.30	0.02	-0.28	711	0.78	-0.04	0.15
	Equal variances not assumed			-0.29	312	0.77	-0.04	0.14

It is surprising that the two groups have no significant difference in their mean scores for *academic preparation*, given the assumption that ST&E fields usually attract and select students with higher levels of academic preparation. This leads to the question as to whether students with different levels of *academic preparation* in the overall sample have differentiated levels of *access* to their preferred field of study. To answer this question, I performed a one-way ANOVA setting *access* as the dependent variable and



*academic preparation* as the factor. The null hypothesis is that the mean *access* for students with various levels of *academic preparation* is the same. The alternative hypothesis is that at least one level of *academic preparation* has a mean *access* different from the others.

The result for the one-way ANOVA is that the probability of having an F statistic as large as 1.26 if the null hypothesis is true is .26, greater than .05. I concluded therefore that there is no statistically significant difference between the means. Students who have different levels of *academic preparation* in the overall sample have the same *access to their preferred field of study*,  $F(8, 704) = 1.26, p = .26$ .

**Table 7.14 ANOVA for Access by Academic Preparation**

Access	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	114.19	8.00	14.27	1.26	0.26
Within Groups	7969.53	704.00	11.32		
Total	8083.72	712.00			

Is this result also true for ST&E students only? In other words, do ST&E students with different levels of *academic preparation* have the same level of *access to their preferred field of study*? To answer this modified question, I repeated the one-way ANOVA using *access* as the independent variable and *academic preparation* as the factor. The result is the same. The probability of having an F statistic as large as .89 if students with different levels of *academic preparation* have the same average *access to their preferred major* is .52. The null hypothesis is therefore accepted. Among STE

students, there is no difference in their ability to access their preferred field of study, regardless of their academic ability,  $F(8, 156) = .89, p = .52$ .

**Table 7.15 ANOVA for Access by Academic Preparation (STE Students)**

Access	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	72.55	8.00	9.07	0.89	0.52
Within Groups	1582.69	156.00	10.15		
Total	1655.24	164.00			

ST&E students do not have higher levels of academic ability than other students. Moreover, there does not seem to be any difference among students of various academic abilities in their opportunity to access their preferred field of study. Those results are puzzling and put into question the selectivity of the admission process at the various schools in Haiti.

#### *Job prospect*

We discussed earlier that the prospect of social mobility plays a statistically significant role in students' overall satisfaction with their academic situation. If I want to evaluate the attractiveness of STE careers to students in our sample, it is relevant to test whether there is a difference in the perception of job prospects between STE students and their counterparts. To do this, I set the following null and alternative hypotheses.

$$H_0: \mu_{\text{JOB\_PRSPCT STE}} = \mu_{\text{JOB\_PRSPCT OTHERS}}$$

$$H_1: \mu_{\text{JOB\_PRSPCT STE}} \neq \mu_{\text{JOB\_PRSPCT OTHERS}}$$

The probability of having mean job prospect differences as large as .06 if null hypothesis is true is .59. The null hypothesis was therefore accepted: there is no statistically

significant difference between the mean job prospect of STE students (4.82) and that of their counterparts (4.77),  $t(724) = -.05, p = .59$ .

Table 7.16 Independent Samples Test Mean Job Prospect

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Job prospect	Equal variances assumed	2.94	0.09	-0.54	724.00	0.59	-0.06	0.11
	Equal variances not assumed			-0.56	304.77	0.58	-0.06	0.10

Why then would students be attracted to a field of study that is traditionally harder to enter, academically more rigorous, yet which does not offer them a better job prospect upon graduation? That is a troubling but important question for Haitian policymakers and higher education officials to ponder.

#### 4. Discussion

The analysis of the data leads to conclusions and questions about the state of science, technology, and engineering education in Haiti in three main areas: the adequacy of offerings, gender parity, and differentiation with other fields with regards to academic preparation.

##### *Adequacy of offerings*

Access to electricity and clean drinking water, the ability to stem the ravages of deforestation and soil erosion, and the know-how to preserve surplus food are all poverty issues that the right access to science and technology can help alleviate (Watkins & Ehst,

2008). Those are very much the problems that Haiti faces in 2009. Creating local resources in science, technology, and innovation are an essential element of poverty reduction according to the United Nation's Millennium Development Goals. Capacity building, according to Watkins and Ehst (2008) must take place on two levels: the capacity (1) to acquire and use existing knowledge and (2) to produce and use new knowledge. That latter goal, creating new scientific and technological knowledge, is the work of scientists and researchers. In the chapter on Haitian higher education, I addressed the lack of capacity and investment in research throughout Haitian tertiary education. The focus of this analysis is therefore on the former level of capacity building: acquire and use existing knowledge.

Strong college programs in science, engineering, and technology impart onto students existing technical and scientific knowledge and prepare them to be lifelong consumers and adapters of science and technology. Such graduates can use their skills to help solve the poverty issues mentioned above. The data and statistical analyses provided some insights into the effectiveness of Haitian science, engineering, and technology education policy. Let us begin first with addressing the adequacy of program offerings in ST&E?

The unfortunate outcome of the analysis is that ST&E offerings in Haitian higher education do not compare favorably with those in similar countries. This is not derived from hypothesis testing, but just from the descriptive statistics. Among the 20 majors encountered in the survey, only one –chemistry- is in the physical sciences. Moreover, only 8 students out of 742 or 1% of the sample are matriculated in the physical sciences.

This result from the survey sample is fairly generalizable throughout Haitian higher education. Physical sciences are not prevalent in private institutions and the only *faculté* which offers a major in physical sciences at University Pétion, the main public university, was included in the overall sample.

Comparisons with other countries help to determine whether a country's effort and investment in STE are adequate. Unfortunately, such benchmarks are not readily available for the poorest countries. In the United States, the National Science Board (2004) indicates that the number of American graduates in physical and geosciences in 2000 (20,000) was approximately one third that of graduate engineers. In China, natural science degree recipients increased more than six-fold between 1985 and 2005 from approximately 25,000 to over 150,000 (National Science Board, 2008).

African countries' goal for overall STE graduates offers a more pertinent point of comparison for Haiti. Teferra (2002) in an unpublished dissertation refers to the African nations' pledge in 1964 to attain a ratio of 200 university trained scientists and engineers per million. This is equivalent to graduating .02% of the population in STE fields. The overall percentage enrollment of students in the survey in STE fields is 23%. If we extrapolate from that number to the approximately 4,000 Haitian students matriculating in higher education in Haiti annually, we can estimate (assuming a 100% completion rate) that 920 young Haitians graduate in STE annually. That represents graduating approximately .01% of the population in STE fields. I concluded from this analysis that the program offerings and the number of Haitian students attracted in STE lag behind even the modest goals of African nations more than 40 years ago.

### *Gender parity*

Gender parity in Haitian STE fields of study is also an area in need of improvement. The lack of access for women that was noted in the general population is magnified among STE students, with women representing only 5% of STE students. In the general population, I found that access to college in general was an issue for women. But once enrolled in college, women and men did not show significant differences for such matters as *satisfaction, access, and academic preparation*. However in the STE fields only, significant differences are found between men and women in their *satisfaction with their academic situation*. A linear regression using gender as a variable showed that STE women's satisfaction scores are predicted to lag behind that of men by 2.597 points. To be clear, a gender gap in the access to STE fields is not unique to Haiti. Briggs (2007) reported gender disparity in engineering in Scottish higher education. Enman & Lupart (2000) indicated that STE occupations are filled in majority by males in the United States.

If gender disparity in science, technology, and engineering is not a new issue, why is it of note in the context of Haitian higher education? Beside its social justice implication, the integration of women into a country's efforts in science, technology, and innovation is essential for it to achieve economic progress, according to the World Bank's report. "The centrality of women to poverty reduction means that STI capacity building should target gender disparities in strategies to achieve the MDGs" (Watkins & Ehst, 2008). Haitian higher education has a long way to go to expand access to underrepresented groups, especially women. This is true in all areas, but especially so in

science, technology, and engineering for both the extent of the disparity and the importance of the matter for social and economic progress.

*Differentiation with other fields with regards to academic preparation*

The third issue facing Haitian ST&E education that the data analysis revealed is a lack of differentiation with other fields of study with regards to academic preparation. STE students differed from the other students in three notable ways. First, they have a significantly lower *socio-economic status*. That is not surprising, given that agronomy students who form a large proportion of the group have a significantly lower *socio-economic status*. Second, they reported a higher level of *satisfaction*. That is also attributable to the large proportion of agronomy students in the sub-sample, given that agronomy students also had higher *satisfaction* scores in the overall sample. Finally, STE students had a greater ability to access their preferred field of study.

That does not mean that *access* is not an issue for this group. Indeed, out of the sample of 174 students, 135 (78%) reported that they wanted to pursue a different field of study when they were in high school. That is slightly less than in the overall sample (84%) but still a large number. Out of those 135 who did not get to study what they wanted, only 26 wanted to major in a different ST&E field. Forty-eight of them wanted to study medicine. Therefore, *access to a preferred field of study* is a problem for ST&E just as for the overall sample. But more troubling is that the majority of ST&E students did not want to study ST&E in the first place.

Moreover, when it comes to academic aspects, there are no significant differences between the two groups. Academics seems to play little role in differentiating ST&E students from others. There is no significant difference between the mean *academic preparation* scores of STE students and the rest of the sample. Additionally, among STE students, there is no significant difference in their ability to access a preferred field of study based on academic ability. This signifies that among ST&E students as in the overall sample, scores in the national exams have no significant relationship with the ability of students to enter their chosen field of study.

The lack of differentiation between ST&E students and the rest of the students in the study sample with regards to academic preparation is somewhat disconcerting. It raises questions about the current ST&E programs' selection process and their ability to create the culture of innovation that is needed for economic development.

First, the inability to find significant differences between ST&E students and other students makes one wonder what makes branches of study different from one another. The culture in various academic disciplines is formed by the type of students that they attract, their relative rigor, the extent to which they are directed towards the liberal arts or the professions. How can there be no significant difference in academic preparation between ST&E students and accounting or philosophy majors?

This lack of differentiation added to the fact that most students (in ST&E or otherwise) wanted to study something else indicates that students are not "attracted into" ST&E but fall into it as a result of a lack of options. This conclusion is consequential if



policy makers want to encourage more students to enroll in ST&E fields of study. In the next chapter, I will examine the policy ramifications for these conclusions.

Higher education's third mission is the promotion of economic development. It accomplishes a lot of that role by supporting science, technology, and innovation. ST&E education in Haiti therefore has a large role to play in building capacity in the country for the use and adaptation of technical knowledge. That sector, however, requires some improvement. Its offerings do not compare favorably with similar countries. The data and its analysis illustrate a gender disparity in students' access to -and satisfaction within- ST&E fields. Moreover, science, technology, and engineering students do not show a significant difference from other students in academic preparation. One wonders what the criteria are that institutions and *facultés* in the field use to attract and recruit ST&E students.

## **Chapter 8. Conclusion and recommendations**

This study collected data on Haitian college students, analyzed whether *socio-economic status* and other variables were associated with their level of *satisfaction with their academic situation*, and examined the extent to which they were able to access their preferred field of study. Comparisons were made between different groups and a particular attention was paid to science, engineering, and technology students. The relevance of the study was based on its contribution to the literature and its potential policy outcomes with regards to Haitian higher education, social justice, and Haiti's economic development. This chapter concludes the dissertation by reviewing the major findings in the context of the higher education literature, evaluating their potential contribution to each of the three policy outcomes, and reflecting on the study's limitations.

### **1. Review of the findings**

To participate in the knowledge economy, all countries must have a strong and sustainable higher education system. This is especially true for the poorest countries which must endeavor to close the knowledge gap with the developing world. Haiti is one of the least developed nations and the status of many of its institutions has deteriorated during the late 1980s and 1990s. Higher education has been no exception to that state of affairs. Given the lack of funding and the general dearth of options, I hypothesized that most Haitian college students are not able to make true choices about the school that they

attend or the field of study that they pursue and that this inability leads to dissatisfaction with their academic situation. I further posited that the lack of satisfaction is correlated with socio-economic status, assuming that wealthier students have a greater ability to select -and a better opportunity to pursue- their desired field of study. To examine these hypotheses, I traveled to Haiti and surveyed 742 students engaged in 20 different disciplines out of 5 different institutions. The analysis of the data yielded five main findings.

The first finding relates to Haitian students' satisfaction with their academic situation. As I hypothesized, there is a relationship between students' socio-economic status and their level of satisfaction. However, that relationship does not go in the direction that I posited. Contrary to my assumption, satisfaction is predicted to decrease as socio-economic status increases, indicating that wealthier students are less (not more) satisfied with their academic situation. Indeed, students in the most sought-after field of study in Haiti, medicine, who also have a significantly higher *socio-economic status* than their colleagues in many other fields, including agronomy, have a significantly lower level of *satisfaction*. But the relationship between students' *socio-economic status* and their *satisfaction* was not very strong. Another noteworthy finding with regard to *satisfaction* is that Haitian students in general have a high level of *satisfaction with their academic situation*. Men and women, students from various cities, and those from all the five institutions responded somewhere between "I agree" and "I strongly agree" to the item "I am satisfied with my field of study." They had responses nearly as high to the item "I am satisfied with my institution." Finally, it was found that satisfaction can be

predicted by knowing the extent to which students chose their field of study because they felt academically prepared, the extent to which they made this choice because of the quality of the institution, their perception of their job prospects, and their level of *access to a preferred field of study*.

The second finding concerns students' lack of ability to access their preferred field of study. Nearly 80% of the students surveyed indicated that they wanted to study something other than their current field while they were in high school. It is important to remember that I surveyed these students in their first weeks of college for the most part. It is not the case that they tried their first choice and then switched. They never had an opportunity to pursue their desired field of study in the first place. Contrary to my hypothesis, *socio-economic status* had no significant relationship with students' ability to access their preferred field of study, perhaps due to the fact that the lack of access to a preferred field is so wide-spread. Moreover, this lack of opportunity was similar across a variety of groups: between men and women and across most fields of study except for medicine and agronomy, and among students from various cities. There is some difference in access between the institutions, however. In general, students at public institutions have a better ability to access their preferred field than students at private institutions. Specifically, students at the large, public University Pétiion had a significantly higher access score than their counterparts in other institutions. The predictors of students' *access to a preferred field of study* were identified to be the extent to which students chose their major because of their academic preparation, the extent to which they chose their field of study because of the institution that accepted them, their

ranking of financial matters among factors that affect academic decision, and the influence of their social network.

Aspects of the previous two observations combine to form the third main finding of this study, which is this paradox of students' high level of *satisfaction with their academic situation* coexisting with their low level of *access to a preferred field of study*. Indeed, the majority of students exhibited this seemingly conflicting set of characteristics: they scored high on their current level of *satisfaction* even though they indicated that they wanted to study something else while in high school. I noted that the reason for their *satisfaction* cannot at all originate from their "customer experience" given the uncomfortable classroom conditions that I described in the methodology section. The explanation for this paradox is found in expanding the notion of access and examining the variables that predict *satisfaction*. First, with the low level of access to higher education that is documented in Haiti, access to a preferred field of study becomes a secondary issue for the survey respondents. They are satisfied that they are among some of the few Haitians that made it into higher education in general. Moreover, the institutions that participated in the study represent the best options for higher education in Haiti. Therefore, these students are members of a true elite group and in a sense feel fortunate for their academic situation.

Second, the other three predictors of *satisfaction*, beside *access*, help to explain this paradox of students' high *satisfaction with their academic situation* coexisting with a low *access to their preferred field of study*. Students' perception of their job prospect was found to have a significant relationship with their satisfaction. That is quite

understandable in the Haitian context. With chronic low employment, a college degree offers students better odds at landing a decent job. The prospect for social mobility is even higher for students in agronomy, a group with low socio-economic status in average but who are in a preferred field of study with particularly good employment opportunities. This may explain why they have significantly higher satisfaction levels than many other groups. That finding is also consistent with the literature and with human capital theory. Finally, the two variables that were found to contribute the most in predicting students' satisfaction are intrinsic factors associated with academic merit: whether students chose their field of study because they feel academically prepared and whether they chose their field of study because of the quality of the institution. Intrinsic factors were found in the literature to have a positive relationship with students' academic decisions. It is quite understandable that students' positive view of their own academic merit may reinforce the sentiment of belonging to an academic elite and contribute to their sense of satisfaction.

The fourth main finding of this study is the disparity in access to higher education between the genders. While girls' participation in primary and secondary education is about even with that of boys, women represent only 25% of the participants in this study. This low level of women's enrollment in higher education can be generalized to the wider tertiary education system in Haiti, given the large size of the sample relative to the population of first-year students and the high participation rate. Women's enrollment is even more reduced in science, engineering, and technology, where they represent only 15% of all ST&E students. Some fields, like chemical engineering did not have any

women in the sample at all. One illustration of the higher hurdle for women to enter college is that women in the survey in general have higher socio-economic status than men. This seems to indicate that only a few young women from wealthier families can access tertiary education. If there is a difference in access, does it persist once students are in college? Whereas in the general population, there is no significant difference between men and women once they enter college, in ST&E, the difference persists. Indeed, gender was found to have a statistically significant relationship with *satisfaction* and ST&E female students' *satisfaction* score was predicted to be lower than that of male students.

The final main finding of this study is about the state of science, technology, and engineering in Haiti. Beside the gender disparity underscored above, two additional issues are noted in Haitian ST&E education. First, the program offerings do not compare favorably with that of other nations. Only two institutions in the survey offered the five fields of study in an ST&E area. Only eight students out of the 742 are in a physical science program. Assuming a 100% completion rate of the 23% of students who are in these fields of study, we can predict that the Haitian higher education system would produce 920 young ST&E graduates annually. This represents .01% of the population. This number encompasses all the students in life, physical, or natural sciences, all the engineers, all the computer scientists, and all the agronomists. In a country with significant needs in food production, water production and conservation, environmental protection, road and bridge installations or repair, telecommunication, information technology, and many other areas, it is fair to conclude that this output is inadequate.

Benchmarking against the number of science graduates in the Dominican Republic 10 years ago and against the African continent goals for ST&E graduates four decades ago, confirmed this inadequacy in offerings.

The second issue goes to the heart of the strategy for attracting ST&E students and fostering a culture of innovation among them. The data analysis found no significant difference between ST&E students and other students in their ability to access their preferred field of study. Generally, ST&E is a difficult field to enter and students start orienting towards it since high school. Higher math scores are usually the characteristics of students admitted in ST&E. Indeed, I did find that ST&E students have higher academic preparation scores than their counterparts. However, in spite of these higher academic dispositions, the ST&E students in the survey did not have a better ability to select their preferred field of study. In fact, just as for the rest of the student body, a majority (75%) reported that they wanted to study something else prior to entering college. This leads to the question as to how Haitian students are selected for admission in an ST&E field and how these fields are able to differentiate themselves and create an innovative culture.

How do these findings fit within the existing higher education literature? Are they confirming or rejecting existing knowledge, or are they contributing something new? This study departs from previous similar works in subtle but important ways. One example is that it did not seek to examine access to higher education in general. To do that, it would have had to consider the population of those who were able to enter college as well as those who wished to do so but could not. Instead, it focused on access to a



preferred field of study, narrowing its scope to current college students only. Another example is that this research project did not set out to measure students' satisfaction with their customer experience. To the contrary, implicit in the deliberate decision to measure students' satisfaction with their academic situation is the assumption that students lack that customer empowerment as they may not have had the opportunity to "choose" their academic situation.

Notwithstanding these important differences between the orientation of this dissertation and the focus of previous works, some findings were similar. The strongest commonality is in the role of economic factors such as career opportunities and social mobility in students' motivation. Malgwi, Howe, and Burnaby (2005) reported the availability of jobs and earning potential as strong motivators for students to pursue careers in business. Arcidiacono (2004) also documented the role of monetary returns in students' academic decisions. Similarly, LaBarbera and Smirnoff (1999) noted the importance of career opportunities and salaries on such choices. In that same vein, the findings in this study confirmed the importance of such economic variables. Their influence here is not so much on academic choices. This is not surprising, given that the premise of the study is that students do not really get to engage in such decision-making. Rather, job and salary prospects were found to play a significant role in determining Haitian students' satisfaction with their academic situation. Similarly, the importance of intrinsic factors on academic decisions and, by extension, on academic satisfaction constitutes another area of congruence between the findings in this study and previous

ones. For example, Enman and Lupart (2000) had documented the relative importance of intrinsic factors over utility values on academic choices.

If the importance of career prospect and intrinsic factors constitutes points of convergence between this study and previous ones, the findings on other variables present some differences. First, students in previous studies readily view the role of financial considerations as important in academic decision-making (Ashburn, 2007; Grodsky & Jones, 2006; Kelsay, 2007; Perna & Titus, 2004; Somers et al., 2006; St. John, Paulsen, & Carter, 2005). By contrast, students generally had a negative view of the role of financial considerations in academic opportunities in this study.

Another difference is that in previous studies, socio-economic status has been found to have an influence on access. St. John and Noell (1996) made this determination for American higher education. Moreover, this phenomenon has been widely studied and reported in Latin America (Warden, 1998; Bonal, 2004). In this dissertation, however, a relationship could not be established between *socio-economic status* and *access to a preferred field of study*. Upon close examination, this divergence is not so noteworthy for two reasons. First, the relationship that was studied in previous studies is with access in general whereas in this project, socio-economic status was examined for its impact on access to a preferred field of study, specifically. Second, given the widespread lack of access to a preferred field of study in Haiti, it is not all that surprising that *socio-economic status* is not a significant predictor. Everybody, from the privileged to the less fortunate, seems to be in the same predicament when it comes to pursuing a desired field of study.

Finally beside the similarity and differences, one of the findings in this study has not been documented in the literature. It is the paradox of students expressing a high level of satisfaction with their academic situation although they report simultaneously that they were not able to pursue their desired field of study. The current literature on academic experiences, academic choice, and satisfaction revolves mainly around students in the United States, Britain, and other developed countries. Students in those well diversified systems, who are accustomed to exerting their freedom of choice and asserting their customer rights, would most likely not express high levels of satisfaction in the absence of these elements. The literature has not focused much on the experiences of students in poorer countries where students may show a higher degree of flexibility and adaptability between their expectations and the reality. In those countries, the high satisfaction-low access paradox would probably not be such an original phenomenon. This suggests that similar studies in countries that still have a low higher education penetration would be highly relevant.

These main findings and others are important to advance higher education knowledge globally and particularly for Haiti. But they are especially important for their policy implications. In the next section, I will evaluate those results for possible contributions to policy analysis and formulation. I will make specific recommendations for Haitian higher education in general, social justice, and economic development.

Policy analysis is oriented toward the application of information for dealing with a current problem (Anderson, 1984). It includes the identification of actors, options, feasibility, and consequences for a particular line of action in the public domain. This

section will therefore have a more practical and less theoretical approach. As I address the policy issues raised by the research study for Haitian higher education, the quantitative analysis will be my principal guide and I will strive to make recommendations only for problems identified through the empirical data or through findings that derived from the analysis of the data. The policy solutions that I offer, however, may not all be based on evidence derived from this study only but may draw from relevant previous findings. Moreover, in the final section, I will move beyond the quantitative data and will offer further thoughts on Haitian higher education that were garnered qualitatively through observations, conversations, or the literature review.

## **2. Policy implications for Haitian higher education**

The two policy recommendations for Haitian higher education address how to expand access and towards what type of higher education policymakers should strive. The basis for the former policy suggestion is found in the paradox of high satisfaction coexisting with low access to a preferred field of study and for that latter it is in the importance of job prospect in predicting student satisfaction.

### *How to expand access*

One of the main problems for Haitian students identified in this study is their inability to access their preferred field of study. I interpreted one of the main study findings to mean that access in general is more important to Haitian college students than access to a preferred field of study. Students adjust their previous preferences based on

the field in which they obtain access, ranking the latter higher than other fields. This underscores the problem of access in general and presents opportunities for decision-makers.

The inability of willing students to enroll in higher education is a well-known problem in Haitian higher education as evidenced by the few seats available for the scores of thousands of high school graduates. Moreover, one does not need to go far for a comparison that illustrates the problem. Whereas the population of Haiti is slightly less than that of the Dominican Republic (8.9 million versus 9.5 million people) (CIA, 2008), the 174,621 students enrolled in higher education in the Dominican Republic in 1997 (Mejia-Ricart, 1999) represented at least five times the number of Haitian college participants. That comparison is hard to establish because of a lack of accurate statistics for Haitian higher education. Nonetheless, Haiti trails the Dominican Republic and many other Caribbean nations in offering its young people an opportunity to attend college. How can access be expanded?

Countries that have achieved universal access have schools with open admissions policies. Such an example was found in the City University of New York in 1970 which guaranteed a place to all eligible high school graduates (Forest & Kinser, 2002). Other countries, like France and many Latin American nations, which have something similar to an open access, have also experienced a great deal of pressure on the quality of these institutions. Indeed, when the mandate of the institution is to welcome any citizen who wishes to pursue a degree or audit a course while its resources are limited, it is not hard to imagine how it is a challenge to maintain quality.

Even if there was no concern for quality, one cannot imagine how the public Haitian higher education system could admit any more students with its current structure. Indeed, as it stands, it is not uncommon to find 100 or more students in small classrooms. How could they accommodate more? The optimization of course offerings could allow *facultés* to receive a few more students at the margins. But it would not permit to achieve the level of growth that Haitian higher education needs.

Certainly the advent of private institutions has helped to increase access to college without massive governmental investments in the sector. A handful of these institutions are of acceptable quality and they have contributed to expanding opportunity. But these institutions are not free. Some economists would argue that indeed, they should not be free because it is not the role of government to pay for higher education which is a private good (Johnstone, 2005; Lemelin, 2006). One can debate this question either way. However, even if we concede that the individual has the ultimate responsibility for shouldering the cost of higher education, governments have both a role and a stake in making it happen because the state loses when its workforce is not educated (Lemelin, 2006). Haiti is experiencing that loss everyday, as factory owners import managers from the Philippines and as non-governmental organizations, completing development work in the country, have to bring their technicians and specialists from overseas. The government must therefore play a role in helping to expand access, even if ultimately it devises a way to make students pay back.

Lemelin (2006) cites two main forms of government intervention in financing public higher education. The first one, preferred by economists, is the provision of a

subvention to individual students that can be used at any institution. This system stays away from any monopoly –even from the state- in the provision of higher education and reinforces competition and quality. The second one, of course, is the direct financing of institutions so that the latter can offer free or discounted tuition. Economists argue that “price” plays an important economic role. It indicates scarcity, it modifies behavior, and it distributes buying power (Lemelin, 2006). The absence of this important rationing element in “free” public higher education creates sub-optimal economic conditions (Psacharopoulos & Papakonstantinou, 2005).

For these reasons, I would not recommend that the Haitian government aims to increase access to higher education through massive expansion of the public sector. Instead, the creation of a governmental loan and grant program that provides the means for students to select the institution of their choice, public or private, would level the playing field in Haitian higher education in more ways than one. It would provide students with more opportunities to truly make a choice; something that we have noted is sorely missing in Haitian higher education. It would also reduce the monopoly that the *Université d’Etat d’Haiti* has on program offerings as it would provide the resources for good private institutions to expand.

*What type of higher education?*

As they consider investing in expanding access to higher education, Haitian policymakers should ask themselves what type of higher education they should promote. Is a liberal arts or a professional higher education better for the Haitian youth? Should the

country focus its scarce resources in establishing two-year technical colleges, as was recommended by Rameau (2007) or should it set its eyes on four-year colleges and even higher? Some of the findings in this study can help in that decision-making process.

The tension and polemic between a liberal and professional education is not new and seems to always favor the former. There is not a universal consensus on the value and importance of a liberal education. Some philosophers see a liberal education as the only educational means to create true democratic citizens and the only way for these citizens to achieve the good life (Gutmann, 1982). Others see liberal education as one ingredient in a mix which, when associated with vocational education, provides citizens with the means to both participate in society and to earn a living (Hook, 1974). However, implicit in those tensions is the understanding that, of the two, a liberal education is superior. It prepares for the use of the mind and the soul whereas a professional education readies the individual for the use of the hands<sup>15</sup>.

This inferred inferiority of a vocational education further manifests itself in that, unlike a liberal arts education, it has not been equated with acquiring true knowledge. Even philosophers who defend the need for vocational education do so on the basis that the economic benefits to be derived from it allow individuals to achieve freedom or happiness, but do not pretend that a vocational education will bring to the truth. As Rorty (1999) and Guttmann (1982) conclude vocational higher education has been a compromise.

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<sup>15</sup> As stated by Lee Shulman, the President of Carnegie Institute, in a talk at Brandeis University on “The Tension between Vocational and Liberal Education,” February 27, 2006.



Is that liberal-professional education dichotomy passé in the knowledge economy where science, engineering, and technology are at a premium? The question has not been settled. In the context of Haiti, however, the data is revealing. The utilitarian aspect of higher education takes center stage as one of the few variables that predict students' level of satisfaction is their job prospect. Moreover, with the needed emphasis on country-building, graduates with specific skills are needed. From its origin, Haitian higher education has placed emphasis on practical education geared for development. That is why many of the *facultés* were initially attached to a ministry of tutelage and those *facultés* were considered an extension of the government in its efforts to bring about social and economic progress (Alexis et al., 1991). Thus a professional higher education is in the tradition of the country and is what resonates with students. However, current curricula could tend to place too much emphasis on a professional degree and not spend enough time preparing students for critical thinking. A professionally oriented higher education that also prepares students for independent reasoning is the combination that Haitian higher education must strive to achieve.

What about this question of a two-year versus a four-year degree? To a certain extent, it makes sense that countries with universal access and a differentiated system (Trow, 2006) offer some form of college education to everyone. In such a system, a technical or two-year college is one item in a menu of choices out of which students select based on their goals, ambitions, or life circumstances. But to have the whole menu consist of this stunted option, under the pretext that this is what a country can afford, would be highly detrimental to a nation. It would deprive its citizens of the ability to

compete at the most fundamental level. It would be counterproductive to the nation's effort to participate in the knowledge economy. Far from looking lower towards a two-year college system, Haitian officials should be looking to slowly but surely establish graduate programs in which research is conducted and the next generation of professors is formed.

The two policy recommendations that I discussed above relate to the research findings. First, access to higher education and to a desired field of study, the most important problem highlighted by this research, can be best improved not by expansion of the public sector but by providing individual students with choice through grant or loan programs. Second, given that Haitian students are clearly motivated by social mobility, a professional education at the four-year college level remains the optimal type of higher education in which Haitian officials should invest. *Facultés* should make sure that the professional education curriculum is broad enough that it prepares students for critical thinking. At the same time, officials should be planning for graduate education and expanding it slowly but surely.

### **3. Policy implications for social justice**

Notwithstanding the fact that access to higher education is a problem for everyone in Haiti, the data analysis revealed that two groups are particularly under-represented. Women and young people from the provinces have a distinct disadvantage in enrolling in college. Before I engage in offering policy solutions for this inequality, it is relevant to

pose and answer the question: is there something morally wrong with a system that offers various groups different educational, and therefore, life options?

John Rawls offers a lot of insight into the issue of fairness in social organizations. According to Rawls, a sense of community can be maintained only when there is equal citizenship and when no one is favored (Freeman 1999). The aim of Haitian policy makers to foster a higher education that supports socio-economic development will therefore fail in an unequal system for two reasons. First, a cohesive citizenry is not formed when there are privileged and under-privileged groups. Moreover, according to Rawls, systemic inequality does not make economic sense. Indeed, when the Pareto optimality principle is used and “careers are open to talent” (Freeman 1999, p.159), efficiency and just distribution ensue, as the most capable compete for and obtain the positions for which they are well suited. Inequality can be allowed according to the fundamental principles of justice enunciated by Rawls (1971, p.302), but under specific conditions. “Social and economic inequalities are to meet two conditions: they must be (a) to the greatest expected benefit of the least advantaged; and (b) attached to offices and positions open to all under conditions of fair opportunity.”

How do we ensure that women and young people from the provinces have an equal opportunity to college in Haiti? The policy options are different for the two groups.

### *Gender disparity*

For women, one must try to understand the reasons why there is such a disparity in the first place. The statistics indicate that the net rate of secondary school attendance is

the same between boys and girls (Ministère de la Planification et de la Cooperation Externe, 2004). What happens between high school and college to account for such a big disparity? It is hard to find a reason for this discrepancy through comparisons with other Caribbean and Latin American nations. Roberts (2003) and Quamina-Aiyejina (2007) reported that there are more women than men enrolled in higher education in the Caribbean. In that same vein, Ahuja and Filmer (1995) indicated in a World Bank policy research paper that in all regions women's enrollment in tertiary education is supposed to lag behind that of men, except for Latin America and the Caribbean. Similarly, Mejia-Ricart (1999) pointed that women represented 57% of enrollment in the Dominican Republic in 1997. Moreover, even among Haitians in the United States, there are actually more women than men in college. Lopez (2002) attributed that disparity to the high drop out rate of black and Latino men due to the discouraging experiences that they face in American high schools. Thus, the low attendance by women in Haitian higher education stands out.

Perhaps, the explanation for the gender disparity in Haiti cannot be found in regional trends but rather in the sexist and patriarchal structure of Haitian society. Strongman (2003, p.55) describes Haitian women as people who, "in male-dominated contexts, derive their social status from the men they marry." He finds a similarity between the inferior status given to Creole languages and the expression of female subjectivity relegated to the private sphere of the home. Suarez (2003, p.114) denounces "the Haitian tradition in which women are considered inferior to men." No formal study

has been conducted to explain the reasons why Haitian girls do not continue to college at the same rate as boys, however.

Such a systemic problem will not solve itself, if given enough time. An active role must be taken by policy makers to seek to redress this imbalance. They can take two possible initial steps. The first one is acknowledgement and awareness of the problem. More in-depth studies are needed to point to the true facts about gender disparity in Haitian higher education enrollment. These studies must be publicized and policymakers must call attention to them. Second, affirmative actions are needed to ensure that more women access college. Such acts could include requiring equal treatment for all participants. They could even involve encouraging women through scholarships and favorable admission policies. An unequal treatment in this instance is justified given that, according to Rawls' principle, it provides the greatest benefit to the least advantaged.

### *Geographic disparity*

It is less complicated to understand the reason for the disparity in access between young people from Port-au-Prince and those from the provinces. This inequality is brought about by three factors. First, the extreme centralization of economic and social activities in Haiti has been well documented, with the great majority of these activities revolving around Port-au-Prince. This extreme concentration of activities manifests itself also in the educational system. Fifty-five percent of all secondary schools in the country are in the Port-au-Prince area (Salmi, 2000). Second, Haiti has a somewhat unique system in which the great majority of primary and secondary education is carried out by the

private sector. Indeed, 82% of secondary schools are private-owned (Salmi, 2000). As the data collected in this study indicated, students from the provinces have a significantly lower socio-economic status in average than their counterparts from Port-au-Prince. As a result, those less economically privileged students are less able to afford the private secondary education and drop out at a higher rate than their peers from Port-au-Prince.

Finally, if 55% of secondary schools are in Port-au-Prince, the proportion of higher education institutions in the capital is even much higher. In fact, only recently has there been the emergence of branches of Port-au-Prince universities in the provinces. As a result, for the best higher education, Haitian students must move from their home town to Port-au-Prince. This carries a whole new set of problems with it. Colleges are not residential and do not have dormitories. Property rental for college students is not practical in a city where rent is exorbitant and lodging scarce. Students who have relatives in Port-au-Prince stay with those family members. Others make arrangements to stay in a few private boarding places or are out of luck. It is possible that the logistic and financial difficulties for these arrangements keep tertiary education out of the reach of many bright young people.

What policies can be implemented to increase access to young people from the provinces? One can think of two types of actions. First, policymakers must think of policies that move activities away from Port-au-Prince, if only to alleviate the over-population and congestion in that metropolitan area. Institutions should be encouraged to establish themselves in the North and South of Haiti to serve the populations in these two poles. But some would not be in favor of the mushrooming of small institutions of low

quality. The considerable expenses that it takes to create a higher education institution would dictate that one takes advantage of economies of scale and consolidates existing institutions into larger ones, rather than creating many small and inefficient colleges. Hence, the second recommendation. If colleges and universities must remain in the Port-au-Prince metropolitan area, policymakers may think of setting up small residential campuses to house students from the provinces. Beside the practical aspects of providing students a place to stay, a residential college may have various benefits for the young person's psychosocial development as indicated by Reason, Terenzini, and Domingo (2007).

According to Rawls, whenever there is equal aptitude and motivation, there is no reason why individuals would have different levels of preparation to compete in society. An educational system should be the tool for eliminating not creating or exacerbating social inequalities. Unfortunately, Haitian higher education is currently set to systematically maintain inequalities between men and women, between young people from Port-au-Prince and those from the provinces. For young women, an affirmative action policy is needed to redress the unequal structures laid out by a sexist society. For young people from the provinces, thought needs to be given to either decentralize activities away from Port-au-Prince or create welcoming conditions in Port-au-Prince institutions.

#### **4. Policy implications for economic development**

One of the theoretical underpinnings for this study has been that higher education is important even for the poorest countries in order to develop the human capital that will bring about economic development and poverty reduction. Leading development economists such as Schumpeter (1934) and Solow (1957) have established that non-equilibrium and non-incremental growth- the kind of rapid economic expansion that poor countries need in order to leap out of poverty- can only be achieved through the promotion of science, technology, and innovation (STI). The United Nations repeated that same assertion in its Millennium Development Goals. The World Bank, the most important source of international financing for developing and poor countries, values the role of STI for economic development and poverty reduction to such an extent that it commissioned a report and organized a global forum on the topic in 2007 (Watkins & Ehst, 2008). One of the four policy mechanisms through which the Bank promotes its STI initiative is through education, training, research, and development. It uses a two-pronged approach: an educational system, especially at the tertiary level and a network of research and development institutes that produce new knowledge and train the next generation of scientists (Watkins & Ehst, 2008).

As acknowledged by the World Bank's policies, higher education especially in the areas of science, technology, and engineering (ST&E) along with research inside or outside the university represents one of the essential elements in the blueprint for economic progress. The university plays its role of economic development catalyst best when it works in partnership with government and the private sector according to the



*triple helix model* (Almeida, 2008; Etzkowitz & Leydesdorff, 2000; Razak & Saad, 2007; Saad, 2004). Within this framework and mindful of the findings from this study, I will make a general recommendation for increasing ST&E program offerings in Haitian higher education. However, this recommendation has implications for research and the training of scientists.

### *ST&E Program offerings*

The research data point to the inadequacy of ST&E program offerings. Efforts of Haitian policymakers should be oriented towards increasing the number of students matriculating and graduating in the physical and life sciences, the information and communication technologies (ICT), and engineering.

From the survey results, only 8 students were enrolled in chemistry, the only physical science program that was reported. University Pétiion is the only institution that offers this field of study. I can extrapolate from the sample size (which represented approximately one third of the first year students in the Faculty of Sciences) that a low number of students are majoring in the pure sciences in Haiti in 2009. That can be compared with approximately 300 students in pure sciences in the neighboring Dominican Republic in 1997 (Mejia-Ricart, 1999). The Dominican Republic's higher education system can hardly be hailed as the model to follow for the sciences. But, in addition to chemistry, its universities offer biology, physics, and geology (Mejia-Ricart, 1999). The *Université d'Etat d'Haïti* is the institution that is better positioned to offer programs in pure sciences. Such programs are expensive. In addition, they may not be

attractive to a large number of students because of their rigor. As a result, private institutions in Haiti, which are either for profit or with fewer resources, may not be eager to boost their offering in physical sciences. Efforts to increase enrollment in physical and life sciences should probably focus on the *Université d'Etat d'Haiti*.

Haitian policymakers should also strive to increase offerings in the area of information and communication technologies. Let us begin with some benchmarks. In 1997, 17,697 Dominican students were enrolled in the area of “computer and systems” in addition to the 1,765 who were enrolled in electronic engineering (Mejia-Ricart, 1999). By comparison, a few computer science students were enrolled in this research study. Those students, we may recall had significantly lower satisfaction and SES scores. But some stride has been made in Haitian ICT education by the private sector. One private school that was not included in this study, *Ecole Supérieure d'Infotronique d'Haiti* (ESIH), specializes in electronics and computer science programs. Its rapid growth denotes the great interest of Haitian students in ICT. Indeed, starting with just 295 students in 1995, it reports having a freshman enrollment of 1,200 students in 2008 (Ecole Supérieure d'Infotronique d'Haiti, 2008). However, attending this private institution is not cheap. Haitian policymakers can increase the number of ICT students by offering targeted scholarships for ICT concentrators. That would allow students who cannot afford it to attend ESIH. It would also encourage other private institutions to offer similar programs.

Finally, offerings in engineering should be increased and strengthened. The freshman class at the Faculty of Sciences had approximately 140 students. In Chapter 3, I

reported that 528 students were enrolled at the Faculty of Sciences during academic year 2005, 490 of whom were engineering majors. If we assume that in private institutions there is another thousand students in engineering, one can estimate a total of 1,500 engineering concentrators throughout the country. The number was, once again, more than ten times higher in the Dominican Republic with 20,372 students concentrating in industrial (6799), mechanical (533), electrical (939), electronic (1765), civil (3415), electromechanical (6584), and chemical (337) engineering (Mejia-Ricart, 1999). The same policy initiatives that I suggested to increase the number of students in ICT can also be used for engineering.

Related to the need to increase ST&E program offerings are the problems of expanding research and the training of scientists. Programs in pure science generally need to have faculty members dedicated to research. The literature review on Haitian higher education indicated that the overwhelming majority of faculty members work part-time and do not devote any time to research. My encounters with faculty member during the data collection experience confirmed that reality. In fact, most faculty members do not have a dedicated room or office at the institutions where they teach. The literature review also pointed to the absence of adequate laboratories in which research can be conducted in all faculties, with the exception of the Faculty of Agronomy at the State University of Haiti. How can one foster an atmosphere of research in such conditions?

The World Bank's solution is to have a network of research institutes outside of the university. In fact, in several African countries research is conducted at regional

research centers. Should research be outside of the university in Haiti? That approach may not be practical because of the lack of human resources.

This leads to the need to train a new generation of scientists and researchers that will provide the critical mass necessary to establish programs and conduct research. Efforts begun today to establish such a group will most likely not bear fruit for a generation. It is nonetheless a necessary investment that policymakers must make. The returns on such an investment are not guaranteed and are fraught with all kinds of risks, the most important of which is brain drain. Indeed, young people will have to be sent outside of the country for training. It will be very tempting for them both economically and professionally to use their skills in a country other than Haiti where they will be better remunerated and where the infrastructure exists for them to exercise their profession. Policymakers will have to create employment and infrastructure incentives to attract the newly trained scientists back to Haiti.

For a cold dose of realism, I must acknowledge that all of these recommendations are costly and international funding is not readily available. Indeed for all the emphasis that it places on the development of STI, the World Bank's recent record at funding higher education is less than stellar. Throughout the world, it only financed 17 higher education projects in 15 countries in 2005 (The World Bank, 2008). Some help is available from bi-lateral donors. The United States through its Agency for International Development, the European Union, Canada, the Agency for Francophony, all provide financial aid to Haitian higher education. This assistance is generally not well coordinated and sometimes spent on the wrong set of priorities. Haitian policymakers

will have to prioritize, coordinate the spending of the scarce resources available to the country, and establish a pace at which it can accomplish its objectives.

## **5. Limitations and areas for further studies**

There were several limitations in the design and conduct of this research, some of which I have previously acknowledged. It is relevant, however to review systematically the five main weaknesses of this study: the lack of a randomized sampling method, the imbalance in the group sizes, the lack of uniformity among respondents, the lack of privacy in the response settings, and flaws in the survey instruments.

A random sampling method was not utilized to select the participating institutions. Random sampling is preferred in statistical research because through that method, “each member of the population or universe has an equal chance of being selected” (Kerlinger, 1992, p. 110). The results found through a random sample are therefore more easily generalizable. I selected the institutions using my judgment and knowledge of these institutions in a deliberate effort to obtain as representative a sample as possible. That method is called a purposive sampling method (Kerlinger, 1992). A purposive sampling is accepted in statistical practices but is considered a weaker method than random sampling (Kerlinger, 1992).

Another weakness in the study comes from the imbalance in the group sizes. There were, for example, 108 students in agronomy and 8 students in chemistry. The relative weight of each group is not a problem when group means are used. However, the

number of students in a field of study may have influenced the relative ranking of that field of study, especially given that all students ranked their own field very high, as the data revealed. This problem was difficult to counter. Indeed, despite my best efforts at trying to structure my visits to each institution months in advance, each site visit was almost always an improvisation act. This was due to the fact that many of my contacts at these sites either did not receive any information about me or about my objectives prior to my visit.

That same lack of structure in the data collection process resulted in the fact that not all the groups were first-year students. At the Faculty of Medicine at University Pétion, I could not access any first-year student because they had not started the school year yet. Moreover, students who were recruited to participate in the survey as a result of attending the talks that I presented at two institutions were also in various years. That is relevant to the research question. When comparing satisfaction levels, it would be best for me to be sure that I am comparing apples to apples. It becomes harder to have such assurance when students are in different years because after freshman year, students' sense of satisfaction may have been influenced one way or the other by many environmental factors (Mavondo, Tsarenko, & Gabbott; 2004).

Another limitation in the data collection to which I referred before is the lack of privacy among respondents. At the institution where all students were not allowed to participate, some hovered on the shoulders of respondents while they were completing the survey. In most other settings, respondents were so close to one another that they could read clearly one another's response by just glancing next to them. Some

participants were talking to one another while completing the survey, despite the requests for privacy and honest answers.

The final limitation in the study stems from flaws in the survey instrument. The items aiming to measure the influence of students' social network may have generated an unintended negative response in the respondents by asking whether parents, friends, or a teacher "influenced" their selection of a major. Students may have associated the word "influenced" more with a suggestion that they were losing their independent judgment than with an enquiry into whether they received advice and support from important people in their lives. Also, open-ended items in the survey provided valuable information. An open-ended item that allowed the students to indicate their class year would have been helpful.

Because of these limitations and also because the survey findings raised many more interesting questions, there are several possible areas for further studies. Any future study should try to prevent the limitations that I highlighted above. Moreover, several potential research questions have been raised. Possible topics of future investigation could include:

- A longitudinal study of final year high school students that follows up with them one year after to determine the factors that influenced their accessing or not accessing college
- A longitudinal study of final year high school students that follows up one year after with those who made it into college to find out whether they changed their desired field of study and why

- A qualitative study that attempts to find out the reasons for students' high level of satisfaction through thick descriptions of their lived experiences in college and of their post-college expectations
- A qualitative study of the lived experiences of Haitian female college students
- A comparative study of the post high school plans of male and female students and of the factors that influence those plans
- A case study of the college admission process at several Haitian institutions, public and private, to examine the experiences and attitudes of Haitian college admission officers
- An ethnographic study of students in science, engineering, and technology to determine whether there is a specific ST&E student culture
- A qualitative study of Haitian (public and private) college officials' attitude towards student satisfaction. Such a study would seek to understand (a) whether there is a difference among the various institutions and (b) to what extent institutions regard (i) students' academic experience or (ii) students' overall customer-experience as important.
- A qualitative study of the lived experiences of students from the provinces in Port-au-Prince institutions.
- A comparative study of the post high school plans of students from Port-au-Prince and students from the provinces and of the factors that influence those plans



- A comparative study of Haitian students that attend college in Haiti and the Dominican Republic for socio-economic status, access, satisfaction, and academic preparation.

## **6. Further thoughts on Haitian higher education**

This research project has sought to update the literature and understanding on Haitian higher education. The updated picture that it paints is complex. In some areas, it is better than expected. For example, some of the recent reports on Haitian higher education seem oriented towards sensationalism and present a much bleaker tableau than the reality. In none of the many campuses that I visited, did the atmosphere look like “an untended farmyard” and it was hard to picture “chickens roam[ing] freely” on any of them as reported by Lloyd (2005 p. A6) in the Chronicle for Higher Education. Moreover, space in the physical plants of the *Université d’Etat d’Haiti*, the main public institution, is in the aggregate much less constrained than reported by even some officials of that institution. Six of the seven faculties that I visited were on a compound that contained two or three buildings. As a comparison, the Faculty of Education has two mid-size (approximately 50,000 square feet) buildings. That square footage is comparable with that of many American schools of education. The problem lies more in the configuration and the use of the space. Finally, as seen through the survey results, satisfaction is very high among Haitian college students. The student body represents a

group of very optimistic young people, despite all the odds that they are facing. They are very desirous to learn and to improve their living conditions.

However, there is also another side to the picture on Haitian higher education that I obtained qualitatively through the research. The very engaged and activist group of students, especially at the public university, tends to be manipulated by other students and even faculty members, channeling their protests towards the wrong aims, such as reducing academic rigor. This is one of the reasons for the protest activities in at least two of the public faculties during the two-week time frame of this research. This also caused a Dean at University Pétiion to state in a private conversation that “this is a generation that refuses to take its responsibilities.”

A great deal of this incessant turmoil is due to the structure of the *Université d’Etat d’Haiti*. Indeed, as Deshommes (2003) explained, the rector, vice-rector, and deans of the *facultés* of the university are all elected officials. The rector and vice-rectors are elected by the council of deans and directors who are, in turn, selected by faculty members. There are student representatives on all the electing boards. These elected officials tend to act more as politicians than administrators and academics. Many deans for example feel less accountable to the rector than to the faculty and students who elected them. This provides the wrong set of leverage and creates a climate of inefficiency and unaccountability, especially at the public institutions. Indeed, in several faculties of the public university, I was able to survey students because they had been sitting in class, idle, waiting for their instructor. This did not happen at any of the private institutions. If we add to the inefficiency and lack of accountability, the fact that most

faculty members are part-timers who teach their courses and leave campus, we will complete the picture of low quality in Haitian higher education.

This study was interested in examining Haitian higher education from the perspective and experience of the student, unlike the few others that preceded it. Even though students reported a high level of satisfaction, the quality issues that I just mentioned along with classroom conditions that I observed in the data collection may constitute very preliminary steps that higher education officials can take to improve students' conditions. Closed classrooms with fans or air conditioning constitute one such step. Another one would consist of a better coordinated course schedule in which not all *facultés* -which are within walking distance of one another- offer the same general education courses.

The students' high level of satisfaction is both a blessing and a curse. On the one hand they are enthusiastic and dedicated to their learning. On the other hand, they put little pressure on university officials so that the latter can offer real improvement to their learning conditions.

## **Conclusion**

This study sought to illuminate some of the circumstances surrounding Haitian college students' selection of their academic paths. Its primary question was based on three assumptions. First, I assumed that most students did not get a chance to truly make an academic choice, given the limited access to higher education in Haiti. This postulation was found to be right. A majority of the students reported that they wanted to

study something other than their current field when they were in high school. Second, I presumed that college students who ended up having to concentrate in an area of study that they did not truly desire would be dissatisfied. That second supposition was determined to be wrong. In fact, despite their lack of opportunity to choose, the survey participants reported a high degree of satisfaction with their academic situation. Finally, I hypothesized that wealthier students who are better academically prepared would have a greater likelihood of being admitted in the academic area that they truly wanted. As a result, they would be more satisfied. The data analysis did not support that theory. Although a relationship, albeit one that is not very strong, was found between socio-economic status and satisfaction with academic situation, it went in the opposite direction than what I predicted.

Another purpose of this research project was to contribute to the dated and sparse literature on Haitian higher education. The quantitative analysis as well as qualitative information obtained from the respondents and through observations provided some interesting insights. Most noteworthy is the disparity in access to college between Haitian men and women and between young people from Port-au-Prince and those from the provinces. Moreover, the state of Haitian higher education is not as stark as some recent sensational reports would suggest. Nonetheless, the prevalence of part-time faculty and the absence of research -even more so than in other poor Latin American countries- make it difficult to compare Haitian institutions with colleges and universities in more advanced nations.

Finally, the underlying premise of this study is that higher education is an agent for economic development, especially through the promotion of science, technology, and innovation. The analysis revealed that science, engineering, and technology education in Haiti is under-developed and undifferentiated from other fields, at least in terms of ST&E students' level of academic preparation.

Bridging the knowledge gap and bringing Haitian higher education up to par, especially in the ST&E area, seem like daunting if not impossible tasks. At the very least, they will take a long time. But one should keep in perspective that the modern research university is really not that old and did not begin with a whole lot of financial resources. Arguably the best university on earth was started less than four hundred years ago with a donation of no more than 10,000 British pounds.

**Appendix A- Addendum to Chapter 2**

## **Addendum to Chapter 2. The data collection experience**

Even though this dissertation is primarily of a quantitative nature, some of the contextual aspects of the study may yield a better understanding of its questions and findings. To provide such context, this addendum reports the data collection experience through a brief narrative of the encounters with students at each of the institutions. The physical environment in which the data was collected and the process that was involved can both help the reader to put the data analysis in its proper frame of reference.

The field trip is narrated chronologically. The first visits are described with greater details to provide a more vivid sense of the experience. The common thread to all the site visits is that none went as planned but in general institution officials exhibited a great deal of flexibility and assisted me in meeting students in a manner that compromised neither the research plan nor the students' rights.

The addendum is divided in six uneven sections. In the first part, I describe briefly my targeted institutions. To maintain the schools' anonymity, I have provided them with pseudonyms after the first five presidents of Haiti. In the next five sections, I report my visit at each of the institutions.

### *The institutions*

The week prior to my field trip in Haiti, I confirmed with various officials that I would visit six institutions. University Pétiion is a public university with 11 to 12 sites. My plan was to spend the first week going through the faculties of this institution, visiting one in the morning and one in the afternoon.

The Christophe School of Law is a public faculty affiliated with University Pétion. It is located in one of Haiti's secondary cities. I planned to make an extended weekend trip to that city to be able to meet with students on a Monday. The plan was to access a course attended by all first-year students.

University Guerrier is a faculty of a private Haitian university headquartered in Port-au-Prince. The faculty that I was planning to visit is in Cap-Haitien, the second largest city in Haiti. As Cap-Haitien is in the same part of the country as the city in which Christophe School of Law is located, I planned to visit both on the same day. I would solicit students' participation in one of the courses attended by all first-year students. However, while I was in Haiti the Dean of University Guerrier informed me that the day that I had planned my visit would conflict with the day of an official mass which all students were expected to attend. Therefore class would not be in session. As a result, I did not end up visiting University Guerrier.

Dessalines College is a private college in Haiti with several faculties. I was also asked by Dessalines College to deliver a talk to students. Therefore, my plan was to meet students in a first-year course attended by most students and also to solicit further participation in the survey after I finished the talk.

University Hérard is also a private university with several faculties. Just like in Dessalines College, I was also asked to give a talk to the University Hérard community. I was not sure whether I would meet students in a classroom setting. My plan was at least to solicit participation in the survey from students who attended the talk.



Finally, Boyer College is also a private college. Up until my visit in Haiti, it was not sure whether I would be allowed in a classroom or whether I would have access to a group of students as they were exiting a course to go on break. I planned to clarify with officials of the Institution on the ground.

### *University Pétion*

University Pétion has an Office for Research headed by the equivalent of a Vice-Provost. This institutional official had been my contact person while preparing for the research trip. He asked a Director of Research to take charge of coordinating my visit with the various faculties. The Director of Research forwarded an email to various contacts within the faculties (Associate Deans for Academic Affairs, Research Coordinators, Deans) informing them of my visit and asking for their cooperation. He also telephoned many of these contact points. I was copied on the email so that I would know who my contact person is at each faculty. Throughout my visit, I coordinated faculty visits at University Pétion with the Director of Research.

The Faculty of Sciences (FoS) within University Pétion was my first visit. The Director of Research indicated to me that my contact person at the FoS would be Professor L. J. The Faculty's physical plant is a narrow compound of two long rectangular buildings sandwiched between other buildings on a busy street near the center of Port-au-Prince. When I entered the compound, I asked the security guard for the office of Prof. L.J. The security guard pointed to a building with multiple front steps which turned out to be where the administrative offices were. I climbed two flights of stairs to the administrative floor of the Faculty. A first receptionist pointed me to the back offices

to Prof. L. J's secretary. I was early and the secretary offered me a seat to wait. Right on time, Prof. L. J. took me to a well-appointed conference room where I explained to him the purpose of my visit. Prof. L.J. was expecting me but was not sure what I was there to do. After I explained to him, he offered me to come back another day to meet with students. I told him that I was there for a limited time only and that I was hoping that I would be able to meet with FoS students this very morning. He went to find out whether that was possible. He came back with Prof. E who was about to give a probability test to the freshman class. Prof. E. agreed that I could stop in the classroom after the exam, in approximately 40 minutes.

As students were still finishing their exams when I walked over to the classroom, I had a chance to observe the classroom from the outside — a very long rectangular room filled of student chairs with tablet arms. An elevated platform at the front of the room held the teacher's desk. There were approximately 120-130 students in the room. The packed room was not air conditioned despite the fact that the temperature was well above 80°.

Prof. E. welcomed me in the classroom when all students had completed their exams, introduced me briefly so that I could address the students. I introduced myself to the students, explained why I was there, went over the consent form and asked whether there were volunteers to participate in the survey. I had not planned for such a large classroom, therefore I told the students that I would not have enough instruments for all students, and that I would distribute the surveys randomly to 40 volunteers. I also distributed the survey incentive, which was a pen with the imprint "Research on Haitian

higher education,” along with the questionnaire to the 40 randomly selected volunteers. Almost all the students were interested in participating. It was somewhat hard to explain that I did not have a survey for everyone. It was even harder to explain that I did not have a “thank-you” pen for all.

I walked through the seats, answering questions for students as needed. A disconcerting fact is that some of the students who did not have a survey were hovering over those who did while the latter were completing it. I wondered, given that lack of privacy, whether students would answer sensitive socio-economic questions truthfully.

Students left the room as they completed their surveys. Many stuck around to talk to me and ask me questions. Following that first experience, I decided that I would always have enough surveys for all students to complete and that I would not limit my number of participants.

My next visit was at the Faculty of Medicine (FoM). The Associate Dean for Academic Affairs was my contact person at the FoM. I met with him in his office. Two main buildings form the enclosed paved-yard compound of the FoM. The front building is an old, very official looking construction with stately columns that can be seen from the street behind its high walls. The Associate Dean’s Office is located towards the rear of the front building. His assistant led me into a vast air-conditioned office with a large desk on one side and a rectangular conference table on the other side. The Dean explained to me that he would not be able to introduce me to students that day because the students had a “general assembly” meeting, which usually is a step towards a strike. I had noticed,

indeed, a sense of agitation among the students who were scattered about on the courtyard. He asked me to call later that week to enquire whether it would be possible for me to meet with students then.

The following week, towards the end of my stay in Haiti, I called the Academic Dean who indicated that there would indeed be a group of students with whom I could meet. When I got to the faculty, in the early afternoon, the Academic Dean forwarded me to the Office of the Secretary General. The latter thought that I wanted to meet with a handful of students and was taken aback when I indicated that a group of at least 30 first-year students would be best for the purpose of my research study. She indicated that the first-year students had not even begun their program. She asked me to wait for a while and sent for a student council leader.

The student leader reported that there was a group of third year students who were available because they were waiting for their professors and that the student council was in fact planning to take advantage of their idle time to hold elections. He agreed to accompany me to the classroom and introduce me to the students to find out whether they were willing to participate in my survey. We climbed two flights of stairs in the adjacent building. I entered a large room with about 100 students who had squeezed their chair-desks in very tight rows near the small teacher stage in front of the room, while much of the space at the back of the room was empty. This classroom also had no air conditioning.

I explained the purpose of my visit, went over the consent form, and asked students whether they were willing to participate in the survey. Almost all students were interested in participating. I distributed the form to them and collected their responses. At

that point, I was out of incentives pens. Therefore this group did not receive any. I thanked them, took some final questions, and left the classroom.

As I left the FoM the day of the “general assembly,” I walked over to the Faculty of Dental Medicine (FoDM), which was nearby. My contact at the FoDM was Dr. P. He reviewed my survey instrument and noted the lack of an appropriate IRB process at University Pétion.

Dr. P. then took me to a classroom, in which first-year students were waiting for their instructor. We met the professor in the hallway and Dr. P explained the reason for my visit. The professor needed some convincing to grant me access to the students during her class, but accepted graciously afterwards to do so. Approximately 35 students sat in very close proximity, in single chairs with tablet arms. I explained the reason for my presence, went over the consent form, and asked for volunteers. A great majority of the students volunteered and completed the survey without asking questions. I gave them the usual pen-incentive, thanked them for their time, and left.

The next day, I visited the Faculty of Education (FoE). The FoE’s compound is a long, narrow, all-enclosed land with a set of three buildings set one behind another, through a partly paved, yard. In an open area on the first floor of the rear building, students were playing ping-pong. The secretary pointed me to the Dean’s Office, located on the second floor of that same building. The Dean shared an approximately 150 square-foot office with another administrator. He listened to the reason for my visit intently

without saying much. It seemed that it was vaguely aware of the reason for my visit. He then took me to a classroom where the first-year students were attending a course. The instructor indicated that class would be over at 11:00 and that I would be welcome to return then.

I returned at 11:00 as the course was ending. Approximately 65 students were packed in an approximately 20 by 20 non air-conditioned room. Some students were standing at the door and listening through the hallway window. I explained to the students the reason for my visit, distributed the instrument along with the consent form. As the students asked questions, it was impossible to reach those in the rear row. The students returned the questionnaire to me and I gave the customary pen-incentive.

While I was waiting for the 11:00 course to finish, I went to the nearby Faculty of Law (FoL) to try to meet my contact person and set up my visit. As I was parking outside the FoL, I noticed that the Dean was getting out of his car to enter the gated compound of two large rectangular buildings set one in front of the other. Students sitting in the lobby of the front building pointed me to the staircase that led to the Office of the Dean. When I got there, the Dean's assistant asked me to wait for a few minutes while the Dean was talking on the phone. He received me after about 15 minutes and asked me for the purpose of my visit. The Director of Research from University Pétiön had emailed but not talked to the Dean about my visit. It seemed that he had not read the email. He listened to me and then asked me to document my request by bringing back a letter. He indicated that if I brought the letter the same day, he would forward it to the Secretary

General so that the latter could arrange for my accessing a classroom the next day. I brought the letter back to the Dean's Assistant in the afternoon.

Early the next day, I called the Dean's Assistant to enquire whether the Dean had received my letter. She indicated that he had and that he had forwarded the file to the Secretary General, as promised. She asked me to come in to meet with the Secretary General. When I came in around 10:30, the Secretary General had just received the file that morning and was not aware of its content. After I explained to him why I was there, he took me on the spot to a classroom where there was an on-going lecture. He introduced me and told the class that I intended to talk to them for a few minutes and left. I whispered to the teacher that I would be there more like 20-30 minutes. The latter said that it was fine. I re-introduced myself to the students, explained the purpose of my visit, and went over the consent form. I asked them whether they consented to my distributing the instrument. I was about to proceed when one student raised his hand and asked whether I could wait for the end of class. I asked the teacher when I should come back, he said in 25 minutes. I removed myself to a nearby empty classroom to wait. When I came back at the end of class, all students remained in their seat. I distributed the survey and almost everyone participated.

My next visit was supposed to be at the Faculty of Ethnology (FoEth). I was not sure whether I was going to be able to meet students at the FoEth because for the two days prior to my visit, it had been announced on the news that the Faculty was in general strike and that protesters had burned tires in its vicinity. Indeed, as I drove to other

faculties, I noticed the remnants of burnt tires in the middle of the street in the vicinity of the FoEth. However, the Director of Research at University Pétion confirmed for me that morning that my contact would be there waiting for me. As I parked on the street across the Faculty, I noticed that police vehicles with policemen in riot gear had just pulled away from the surrounding of the Faculty- I interpreted it as an indication that all was calm. Nevertheless, it is not without some apprehension that I approached the gated compound where a security guard asked me for an ID before letting me in. There was an atmosphere of loud, excited young men conversing with one another in the front partly paved yard. None of it was threatening but one could envision how this reservoir of latent energy could be easily ignited.

I made my way quietly through the crowd to the front building where I asked a secretary for my contact person. She led me to a large, mainly deserted building in the back, which seemed to be an administrative building and showed me to a waiting area. After we waited for a while, she asked me whether I was sure my contact was going to be there. I told her that I was asked to meet him this morning. As she did not have any means to get in touch with him, she asked me to borrow my mobile phone to call him. When she reached him, he indicated that he thought that we were supposed to meet at University Pétion's main offices in another part of town. We concluded that there was no point in us meeting, given that students were not available and my research protocol did not call for interviewing administrators but for surveying students.



In the afternoon, I visited the Faculty of Linguistics (FoL). Unlike the other faculties that I had visited thus far, which were all in their dedicated gated compound, the FoL is located right on the street in a medium-size building, which was probably initially a large residence or business construction. I asked the secretary for my contact person. After I waited for a few minutes, my contact person arrived and introduced himself. He seemed to be clearly aware of the reason for my visit. He took me up a flight of stairs to a large classroom where approximately 50 students seemed to be waiting for their instructor. He introduced me to the classroom and excused himself, as he had to teach another class.

I explained the reason for my presence, went over the consent form, and asked for volunteers. A great majority of the students volunteered and completed the survey. I circulated among students and answered questions. I distributed the usual pen-incentive as students completed the survey. When they were done, given that they were still waiting and that their instructor was still not present, I spend approximately 20 minutes answering their questions about the purpose of the survey and higher education in the United States.

I had gone to the Faculty of Administration (FoA) before for another project, so I was familiar with it. It is in an enclosed, gated compound on a busy street. Behind the large iron gate, which a security guard rolls aside for the cars of incoming visitors, is a small 15-car parking lot which also serves as a student yard. Surrounding the parking

area to the left and rear is an L-shape two- and three-story structure and, to the right, an adjacent one-story administrative building topped by a terrace.

I made my way to the first-floor office of an administrator at the FoA. She led me up a flight of stairs to a freshman classroom where the instructor was wrapping up a course. The Administrator introduced me to the instructor and to the students.

Approximately 120 students had moved their chairs with tablet arms in very close proximity to each other, in tight rows towards the front of the room, leaving the faculty member a very narrow space to move. Based on the noise coming from other classrooms, I suspected that students arranged themselves in that fashion, despite the hot temperature in the room, so that they could hear the teacher.

I explained the reason for my presence, went over the consent form, and asked for volunteers. A great majority of the students volunteered and completed the survey. I distributed the customary incentive pen.

My last site visit at University Pétiou was at the Faculty of Agronomy (FoA). The Faculty is the furthest away from all the other faculties of University Pétiou, located on the outskirts of the city. It shares a vast, enclosed campus with the ministry of tutelage. Located behind the ministry, it is composed of two long two-story buildings. My contact person, an administrator, was expecting me. As usual, I explained to him the purpose of my visit. At it happened, once again, there was a classroom full of first-year students who were waiting for their instructor. My contact person walked me to the building, up one flight of stairs to the classroom. Approximately 100 hundred students were sitting in

chairs with tablet arms in a very large room. Floor-to ceiling glass pane windows on the left side of the room provided it with abundant natural light. Ceiling ventilators, which helped to create a breeze in the room, did not do much to abate the heat however. Nonetheless, this was one of the most comfortable rooms that I visited due to its spaciousness and to the natural lighting. After I was introduced to the students, I went through the usual introductory speech, explaining the purpose of my visit and going over the consent form. Almost all the students volunteered to participate in the survey and completed the questionnaire. I thanked them and gave each the incentive pen.

### *Christophe School of Law*

The Christophe School of Law is the only institution that I ended up visiting outside of Port-au-Prince. My contact person had volunteered to let me use the first half of his course to distribute the survey. Not having a building of its own, the nightly program of CSL uses the facilities of a high school. Prof. J. welcomed me into the dimly lit classroom where approximately 40 students were waiting. It was possible to hear distinctly the lecture from the adjacent room. Prof J. introduced me and I explained to the students the purpose of my visit. I went over the consent form, and asked for volunteers. Almost everyone volunteered to complete a survey. As a night program, it was clear that CSL attracts a more mature group, most likely of individuals who work during the day. It took this group longer than the 20-25 minute average to complete the survey, such that the survey completion took the whole one-hour class session. I distributed T-shirts as a thank you to that group, took some questions, and left.

### *Dessalines College*

My visit at Dessalines College had been coordinated weeks prior to my arrival in Haiti. I had been in correspondence with two contact people about the survey distribution and also about the logistics of delivering a lecture to students. Dessalines College is composed of two 4 or 5-story buildings separated by a long and narrow yard. The first building is right on the street, but the entry door is manned by a security guard. The guard let me in and pointed me to the office of my main contact person, Prof. A. The latter indicated to me that there was a group of first-year students that had been alerted of my visit. He led me to a vast, empty room where four or five students were reviewing some material. He asked me to wait there for the first year students. After a few minutes a handful of students had come to the room, one at a time. I explained to them who I was and what I was doing at the College. Some of them were aware that I would be giving a talk in the afternoon. I went over the consent form and asked for volunteers to complete the survey. The majority agreed to participate. As more students entered the room, I went over the information with them and asked them if they wanted to complete the survey.

Meanwhile, the English teacher from the nearby classroom came out in the hallway, curious about what I was doing. I explained my research project to her and asked her if I could address her students at the end of her lecture. She agreed and when her course was over, she introduced me to the students. It was a smaller classroom that fit comfortably approximately 25 students on chairs with tablet arms. Unlike the majority of students that I had surveyed thus far, these were not first-year students. However, given

the small sample size that I was obtaining for first-year students, I decided to include them in the survey anyway. I went over the reason for my visit and the consent form and asked for volunteers. Almost everyone volunteered to participate in the survey. To both groups (and to the teacher), I distributed the “thank you” pen.

Early afternoon, I guest lectured to close to a hundred students in a long room on the top floor of the back building. The left wall did not reach the ceiling, leaving a two-foot gap through which air and light entered the room. Chairs had been set for the occasion. At the end of the lecture, I talked to students about my survey project, informed them about the consent, and asked for volunteers. Some of the students in the room had already completed the survey in the morning. An additional forty to fifty students completed the survey.

#### *University Hérard*

I had also been in touch with University Hérard weeks before my field trip. The lecture that I was supposed to deliver to students was well coordinated. What was less well coordinated was my access to first-year students to deliver the survey. It still was not clear how I would do so when I set to meet my contact person, Prof. R the morning of my visit.

The security guard allowed me in the gates of the vast campus. I parked my car in the lot opposite to a number of one-story buildings. The main campus area is a long quadrangle surrounded by those one-story buildings. On the narrow sides of the quadrangle were the conference room on one end and the offices of the Rector and his

staff on the other end. Prof R. explained to me that there was not a real best way to meet first-year students only. By contrast, my talk had been well publicized and I would most likely have a diverse group of students from several majors. I anticipated, however, that business, economics, and finance students would probably be predominant given that the topic for my talk was on the global financial crisis.

Between 80 and 100 students filled the spacious, air conditioned conference hall. At the end of the talk, I explained my research project to students, went over the consent form, and asked for volunteers. The majority of students volunteered to complete the survey. Some lingered afterwards to ask me questions about the global financial crisis, higher education, and my research project.

### *Boyer College*

I had met with my contact person at Boyer College, Ms. V., during my first week in Haiti and coordinated my visit. Ms. V. had explained to me that enrollment at Boyer had exceeded expectations and that some courses were held at a nearby high school. The campus for Boyer College is a narrow, fenced lot of two buildings on the other side of a 10-car driveway. The leftmost two-story building houses administrative offices. Classes are held in the rightmost three-story gingerbread-type building.

Mrs. V. was unfortunately out of the office the day of my visit. I reached her on her mobile phone and she told me that she would ask the Secretary General to coordinate my visit. The latter asked me to wait for a few minutes, as a first-year course was about to finish. Towards the end of the course, we walked to the classroom. He introduced me to

the instructor and to the students. There were approximately 50 students in the classroom and they were comfortably settled. I could circulate freely in the front and the middle of the classroom. I explained the reason for my visit to the students, went over the consent information, and asked for volunteers. Almost all students completed a survey and received an incentive pen. After I answered a few questions, I thanked the group and the instructor and left.

The visits at the various classrooms of these institutions presented mainly commonalities. Most of the classrooms are crowded and students were uncomfortably packed next to one another in non air-conditioned rooms. For the purpose of the data collection, all sites presented the same major inconvenience. The students were so close to one another that it was easy for students to read the next person's response. With their fellow classmates so close to them and sometimes, even hovering over them, one constant worry I had during the data collection was whether they would feel comfortable responding truthfully.

## **Appendix B- Tables**



**Table B.1 Participants by School, Faculty, and Major**

School	Faculte	Major	Participants
Dessalines	Agronomy	Agronomy	23
	Education	Education	9
	Engineering and Sciences	Civil Engineering	9
	Administrative Sciences	Accounting	20
		Management	11
	Computer Science	Computer Science	8
Christophe	Law	Law	35
Petion	Agronomy	Agronomy	81
		Rural Engineering	12
	Law	Law	63
	Education	Literature	16
		Philosophy	19
		Social Sciences	22
	Admin. Mgmt. & Intl Studies	Public Administration	16
		Accounting	58
		Management	21
		Politial Sciences	13
		Linguistics	Linguistics
	Medicine	Medicine	81
	Dental Medicine	Dental Medicine	22
	Engineering & Sciences	Chemistry	8
Civil Engineering		21	
Electromechanical Eng.		11	
Boyer	Administrative Sciences	Accounting	20
		Management	26
Herard	Education	Education	19
		Accounting	10
	Economics & Admin. Sciences	Economics	17
		Finance	12
		Management	14

**Table B.2 Gender breakdown of participants per institution**

	Women	%	Men	%
Dessalines College	22	27.5%	57	71.3%
Christophe Sch .of Law	5	14.3%	30	85.7%
University Petion	122	24.0%	384	75.4%
Boyer College	26	56.5%	20	43.5%
University Herard	15	20.8%	57	79.2%
<b>Total</b>	<b>190</b>		<b>548</b>	

**Table B.3 Gender breakdown of participants by major**

<b>Major</b>	<b>Women</b>	<b>%</b>	<b>Men</b>	<b>%</b>	<b>Total</b>
Accounting	33	30.6%	75	69.4%	108
Agronomy	13	12.6%	90	87.4%	103
Chemistry	1	12.5%	7	87.5%	8
Civil Engineering	5	16.7%	25	83.3%	30
Computer Science	2	25.0%	6	75.0%	8
Dental Medicine	10	47.6%	11	52.4%	21
Economics	4	23.5%	13	76.5%	17
Education	4	14.8%	23	85.2%	27
Electromechanical Eng.	1	9.1%	10	90.9%	11
Finance	4	33.3%	8	66.7%	12
Law	35	35.7%	63	64.3%	98
Linguistics	9	20.0%	36	80.0%	45
Literature	3	18.8%	13	81.3%	16
Management	25	34.7%	47	65.3%	72
Medicine	29	36.3%	51	63.8%	80
Philosophy	0	0.0%	19	100.0%	19
Politial Sciences	3	23.1%	10	76.9%	13
Public Administration	8	50.0%	8	50.0%	16
Rural Engineering	0	0.0%	12	100.0%	12
Social Sciences	1	4.5%	21	95.5%	22
	<b>190</b>		<b>548</b>		<b>738</b>

**Table B.4 Gender Breakdown by Major and Institution**

School	Major	Participants	Men	Women
Dessalines	Agronomy	23	18	5
	Education	9	4	4
	Civil Engineering	9	9	0
	Accounting	20	10	10
	Management	11	10	1
	Computer Science	8	6	2
Christophe	Law	35	30	5
Petion	Agronomy	81	72	8
	Rural Engineering	12	12	0
	Law	63	33	30
	Literature	16	13	3
	Philosophy	19	19	0
	Social Sciences	22	21	1
	Public Administration	16	8	8
	Accounting	58	50	8
	Management	21	15	6
	Politial Sciences	13	10	3
	Linguistics	45	36	9
	Medicine	81	51	29
	Dental Medicine	22	11	10
	Chemistry	8	7	1
	Civil Engineering	21	16	5
Electromechanical Eng.	11	10	1	
Boyer	Accounting	20	8	12
	Management	26	12	14
Herard	Education	19	19	0
	Accounting	10	7	3
	Economics	17	13	4
	Finance	12	8	4
	Management	14	10	4

**Table B.5 Age Breakdown by Major and Institution**

School	Major	Average Age	Oldest Participant	Youngest Participant
Dessalines	Agronomy	26	35	20
	Education	24	29	18
	Civil Engineering	26	32	21
	Accounting	26	35	20
	Management	27	33	20
	Computer Science	25	31	20
Christophe	Law	31	43	21
Petion	Agronomy	21	28	18
	Rural Engineering	22	26	19
	Law	21	30	18
	Literature	22	34	18
	Philosophy	23	31	19
	Social Sciences	23	28	18
	Public Administration	21	37	18
	Accounting	21	31	18
	Management	21	30	18
	Political Sciences	22	29	18
	Linguistics	24	39	18
	Medicine	23	31	19
	Dental Medicine	21	25	18
	Chemistry	23	31	20
Civil Engineering	21	26	19	
Electromechanical Eng.	21	25	19	
Boyer	Accounting	23	30	19
	Management	23	31	18
Herard	Education	24	30	19
	Accounting	24	27	19
	Economics	22	28	18
	Finance	24	36	20
	Management	24	32	20

**Table B.6 Average Age for Men  
and Women Across All Majors**

<b>Major</b>	<b>Women</b>	<b>Men</b>
Accounting	23	23
Agronomy	21	22
Chemistry	21	23
Civil Engineering	25	24
Computer Science	20	21
Dental Medicine	22	24
Economics	22	22
Education	26	24
Electromech. Eng.	19	21
Finance	21	25
Law	21	26
Linguistics	22	24
Literature	20	22
Management	22	24
Medicine	22	23
Philosophy		22
Political Science	23	24
Public Administration	20	28
Rural Engineering		22
Social Sciences	27	23

**Table B.7 Mean Scores on Satisfaction Items by Gender, Institution Type, and City of Origin**

	Gender		Inst. Type		City of Origin		
	Women	Men	Public	Private	Other	Regional	PaP
satisfied with major	5.0	5.1	5.0	5.1	4.9	5.2	5.1
satisfied with institution	4.4	4.6	4.6	4.5	4.5	4.7	4.5
major matches aspirations	5.0	5.0	5.0	5.0	4.8	5.0	5.0
would recoomend instition	4.8	4.8	4.8	4.8	4.8	4.9	4.8
would recommend major	4.8	4.8	4.9	4.8	4.8	5.0	4.7

**Table B.8. Mean Scores on Social Capital Items by Gender, Institution Type, and City of Origin**

	Gender		Inst. Type		City of Origin		
	Women	Men	Public	Private	Other	Regional	PaP
Parental influence (secondary)	5.5	5.1	5.2	5.2	5.0	5.2	5.3
Parental influence (tertiary)	3.3	3.1	3.5	3.0	3.4	3.2	3.1
Friend's influence	2.7	2.9	3.1	2.7	3.0	2.8	2.7
Teacher's influence	2.4	2.7	2.7	2.6	2.9	2.6	2.5

**Table B.9 Mean Scores of Respondents on Satisfaction Items by Group**

<b>Group</b>	<b>School</b>	<b>Major</b>	<b>Wanted Major</b>	<b>Wanted Othr Major</b>	<b>Satfd_w Major</b>	<b>Satfd_w Inst.</b>	<b>Match Aspir.</b>	<b>Recmnd Inst.</b>	<b>Recomd_ Major</b>	<b>Composite</b>
1	Dessalines	Agronomy	5.17	2.87	5.35	4.70	5.13	5.22	5.17	<b>33.61</b>
2	Dessalines	Education	4.11	3.33	5.33	4.44	5.33	4.67	5.56	<b>32.78</b>
3	Dessalines	Civil Eng.	4.13	3.25	5.22	4.00	4.67	4.56	5.67	<b>31.49</b>
4	Dessalines	Accounting	4.10	2.35	5.30	4.70	5.10	4.32	5.20	<b>31.07</b>
5	Dessalines	Managemt	3.45	2.73	5.45	4.09	5.55	3.91	5.30	<b>30.48</b>
6	Dessalines	Compt. Sc.	3.00	2.00	4.13	3.88	4.13	3.75	4.00	<b>24.88</b>
7	Christophe	Law	3.41	2.21	4.94	4.68	4.38	5.26	5.00	<b>29.89</b>
8	Petion	Agronomy	4.58	3.46	5.25	5.14	5.01	5.26	5.11	<b>33.81</b>
9	Petion	Rural eng.	4.25	2.83	5.42	5.45	5.25	5.58	5.64	<b>34.42</b>
10	Petion	Law	4.22	2.54	5.19	5.15	5.08	4.95	4.61	<b>31.74</b>
11	Petion	Literature	4.19	2.44	5.13	4.56	4.94	4.87	4.43	<b>30.55</b>
12	Petion	Philosophy	4.26	2.95	5.11	4.58	5.00	4.79	4.39	<b>31.07</b>
13	Petion	Soc. Sciences	4.55	3.41	4.70	4.59	4.50	4.09	3.71	<b>29.55</b>
14	Petion	Publ. Adm.	3.00	1.93	4.50	4.40	4.81	4.94	4.80	<b>28.38</b>
15	Petion	Accounting	3.31	2.32	5.12	4.59	5.00	4.72	5.09	<b>30.15</b>
16	Petion	Managemt	3.19	2.71	5.15	3.95	5.35	4.50	4.15	<b>29.00</b>
17	Petion	Political Scienc	3.00	1.50	5.15	4.77	4.62	5.00	4.69	<b>28.73</b>
18	Petion	Linguistics	3.75	2.84	5.09	4.82	4.98	4.86	4.69	<b>31.03</b>
19	Petion	Medicine	4.85	3.95	4.78	3.16	4.91	4.12	4.63	<b>30.41</b>
20	Petion	Detl medicine	4.18	3.52	5.50	5.09	5.23	5.55	5.27	<b>34.34</b>
21	Petion	Chemistry	4.38	4.13	5.13	3.75	5.13	5.25	5.38	<b>33.13</b>
22	Petion	Civil Eng.	4.52	3.20	4.33	3.71	4.95	4.60	4.80	<b>30.12</b>
23	Petion	Electrom. Eng	3.82	3.60	5.40	4.27	4.82	4.82	4.45	<b>31.18</b>
24	Boyer	Accounting	3.40	2.40	4.30	4.70	4.95	5.10	4.25	<b>29.10</b>
25	Boyer	Managemt	3.23	2.27	4.96	4.92	5.15	4.85	4.19	<b>29.58</b>
26	Herard	Education	4.37	3.05	5.22	4.83	4.95	4.95	4.67	<b>32.04</b>
27	Herard	Accounting	2.90	2.00	4.90	5.00	4.50	4.40	4.60	<b>28.30</b>
28	Herard	Economics	3.71	2.82	5.06	4.65	5.35	5.12	4.59	<b>31.29</b>
29	Herard	Finance	3.00	3.33	5.64	4.67	5.42	5.08	5.92	<b>33.05</b>
30	Herard	Managemt	2.86	2.50	4.62	4.38	5.00	4.92	5.15	<b>29.43</b>

**Table B.10 Mean Scores on SES Items by Gender, Institution Type, and City of Origin**

	<b>Gender</b>		<b>Inst. Type</b>		<b>City of Origin</b>		
	<b>Women</b>	<b>Men</b>	<b>Public</b>	<b>Private</b>	<b>Other</b>	<b>Regional</b>	<b>PaP</b>
Parents' income	3.6	2.7	3.1	2.8	2.4	3.0	3.3
Father's education	4.4	3.4	3.5	3.7	3.0	3.2	4.3
Mother's education	3.7	2.7	2.8	3.0	2.3	2.7	3.4
Father's employment	4.6	4.2	4.0	4.4	3.8	4.1	4.7
Mother's employment	3.6	3.2	3.1	3.4	2.8	3.4	3.6
No. of items at home	6.4	5.0	5.6	5.3	4.2	4.8	6.4



**Table B.11 Mean Scores of Respondents on SES Items by Group**

<b>Group</b>	<b>School</b>	<b>Major</b>	<b>Parents' Income</b>	<b>Father's Education</b>	<b>Mother's Education</b>	<b>Father's Job</b>	<b>Mother's Job</b>	<b>No of items at home</b>	<b>Composite</b>	<b>Avg per Institution</b>
1	Dessalines	Agronomy	2.11	2.20	1.85	3.04	2.17	3.77	<b>15.15</b>	17.83
2	Dessalines	Education	3.57	2.78	3.50	5.11	4.89	6.44	<b>26.29</b>	
3	Dessalines	Civil Eng.	1.83	3.50	2.86	3.50	1.78	3.44	<b>16.91</b>	
4	Dessalines	Accounting	2.58	2.06	1.72	2.25	1.89	5.45	<b>15.95</b>	
5	Dessalines	Managemt	2.25	2.70	1.80	3.40	3.33	5.70	<b>19.18</b>	
6	Dessalines	Compt. Sc.	2.14	2.25	2.00	1.57	2.63	2.88	<b>13.46</b>	
7	Christophe	Law	2.38	2.19	1.97	2.76	2.22	2.19	<b>13.70</b>	13.70
8	Petion	Agronomy	2.33	3.11	2.31	3.55	2.81	4.28	<b>18.40</b>	22.43
9	Petion	Rural eng.	2.30	3.58	3.36	3.00	2.40	4.00	<b>18.65</b>	
10	Petion	Law	3.37	4.39	3.18	4.75	3.52	6.20	<b>25.41</b>	
11	Petion	Literature	2.58	3.29	1.62	4.42	2.54	3.93	<b>18.37</b>	
12	Petion	Philosophy	1.80	2.44	1.93	3.00	2.67	3.81	<b>15.66</b>	
13	Petion	Soc. Sciences	2.94	3.16	2.11	3.59	3.44	3.58	<b>18.82</b>	
14	Petion	Publ. Adm.	3.00	4.69	4.08	5.42	3.43	6.54	<b>27.16</b>	
15	Petion	Accounting	2.62	3.64	2.75	4.13	2.98	5.13	<b>21.25</b>	
16	Petion	Managemt	3.00	3.55	2.76	4.67	3.72	6.10	<b>23.80</b>	
17	Petion	Political Scienc	3.45	3.18	3.18	4.08	3.69	6.69	<b>24.29</b>	
18	Petion	Linguistics	2.67	2.68	2.10	4.67	3.25	4.93	<b>20.29</b>	
19	Petion	Medicine	3.26	4.90	4.21	5.44	4.37	6.79	<b>28.99</b>	
20	Petion	Detl medicine	3.33	4.42	3.60	5.29	3.70	6.00	<b>26.34</b>	
21	Petion	Chemistry	1.80	4.57	2.67	3.83	2.57	4.00	<b>19.44</b>	
22	Petion	Civil Eng.	3.24	4.78	4.18	6.44	4.63	6.14	<b>29.41</b>	
23	Petion	Electrom. Eng	2.56	4.00	3.60	3.56	4.13	4.80	<b>22.64</b>	
24	Boyer	Accounting	3.59	3.28	2.41	4.88	3.94	4.21	<b>22.31</b>	21.36
25	Boyer	Managemt	3.40	3.27	2.31	3.36	3.08	5.00	<b>20.41</b>	
26	Herard	Education	3.33	3.93	3.56	4.75	3.71	6.32	<b>25.60</b>	30.72
27	Herard	Accounting	3.50	4.30	3.20	4.33	3.67	7.50	<b>26.50</b>	
28	Herard	Economics	4.13	5.75	4.47	6.07	4.33	8.93	<b>33.68</b>	
29	Herard	Finance	4.00	5.82	4.55	5.67	4.44	9.67	<b>34.14</b>	
30	Herard	Managemt	3.92	5.71	4.36	6.36	4.31	9.00	<b>33.66</b>	

**Table B.12 Mean Scores of Respondents on Social Capital Items by Group**

<b>Group</b>	<b>Major</b>	<b>Parntl_infl Secondary</b>	<b>Parntl_infl Tertiary</b>	<b>Friend's influence</b>	<b>Teacher's influence</b>	<b>Composite</b>	<b>Avg per Institution</b>
1	Agronomy	5.13	3.87	3.30	3.68	<b>15.99</b>	15.20
2	Education	6.00	4.50	3.22	3.25	<b>16.97</b>	
3	Civil Eng.	5.22	4.11	3.56	2.56	<b>15.44</b>	
4	Accounting	5.40	3.55	2.80	2.25	<b>14.00</b>	
5	Managemt	5.09	2.91	3.09	2.82	<b>13.91</b>	
6	Compt. Sc.	5.38	2.75	3.50	3.29	<b>14.91</b>	
7	Law	5.06	4.26	3.65	3.26	<b>16.24</b>	16.24
8	Agronomy	5.05	3.25	3.06	2.57	<b>13.94</b>	13.33
9	Rural eng.	5.33	3.00	3.33	3.17	<b>14.83</b>	
10	Law	5.41	3.29	2.70	2.77	<b>14.17</b>	
11	Literature	5.13	3.25	3.13	3.69	<b>15.19</b>	
12	Philosophy	4.84	2.89	2.53	3.05	<b>13.32</b>	
13	Soc. Sciences	4.68	3.23	2.76	3.18	<b>13.85</b>	
14	Publ. Adm.	5.63	2.44	2.88	2.25	<b>13.19</b>	
15	Accounting	5.35	3.43	2.88	2.74	<b>14.40</b>	
16	Managemt	5.52	3.05	2.95	2.33	<b>13.86</b>	
17	Political Scienc	5.23	3.15	2.31	1.92	<b>12.62</b>	
18	Linguistics	4.76	2.51	2.84	2.66	<b>12.77</b>	
19	Medicine	5.48	2.99	2.09	2.04	<b>12.59</b>	
20	Detl medicine	5.27	2.91	1.95	2.23	<b>12.36</b>	
21	Chemistry	4.75	2.25	1.57	1.88	<b>10.45</b>	
22	Civil Eng.	5.14	2.10	2.19	2.81	<b>12.24</b>	
23	Electrom. Eng	4.90	3.40	2.73	2.45	<b>13.48</b>	
24	Accounting	5.15	4.10	3.30	3.50	<b>16.05</b>	15.77
25	Managemt	5.36	3.68	3.65	2.80	<b>15.49</b>	
26	Education	4.63	2.21	2.79	2.00	<b>11.63</b>	12.84
27	Accounting	5.00	2.90	3.40	2.70	<b>14.00</b>	
28	Economics	5.59	3.13	2.59	2.59	<b>13.89</b>	
29	Finance	5.42	1.92	2.00	2.42	<b>11.75</b>	
30	Managemt	5.14	3.50	2.43	1.86	<b>12.93</b>	

**Table B.13 Mean Scores on Academic Preparation Items by Gender, Institution Type, City of Origin**

	<b>Gender</b>		<b>Inst. Type</b>		<b>City of Origin</b>		
	<b>Women</b>	<b>Men</b>	<b>Public</b>	<b>Private</b>	<b>Other</b>	<b>Regional</b>	<b>PaP</b>
Rank in philosophy	4.0	4.2	3.9	4.3	4.2	4.2	4.1
Average in Bacc. I	2.9	3.1	2.6	2.7	2.6	2.7	2.7
Average in Bacc. II	3.1	2.8	2.9	2.9	2.8	2.9	3.0
High school reputation	5.6	5.3	5.4	5.3	5.2	5.4	5.4
HS preparation for major	5.0	5.3	4.9	4.7	4.6	4.7	4.9

**Table B.14 Mean Scores of Respondents on Academic Preparation Items by Group**

<b>Group</b>	<b>Major</b>	<b>Rank in Philosophy</b>	<b>Average Bacc. I</b>	<b>Average Bacc. II</b>	<b>HS Reputation</b>	<b>HS Preparation</b>	<b>Composite</b>	<b>Avg per Institution</b>
1	Agronomy	4.10	2.40	2.60	5.20	4.80	<b>19.10</b>	19.85
2	Education	3.71	2.64	2.64	5.36	4.86	<b>19.21</b>	
3	Civil Eng.	3.92	2.62	3.12	4.96	4.56	<b>19.18</b>	
4	Accounting	4.29	2.67	2.98	5.63	4.78	<b>20.35</b>	
5	Managemt	4.20	2.68	2.70	5.25	4.60	<b>19.43</b>	
6	Compt. Sc.	4.91	3.09	3.36	5.73	4.73	<b>21.82</b>	
7	Law	3.50	2.50	2.50	5.58	5.17	<b>19.25</b>	19.25
8	Agronomy	4.46	2.77	3.08	5.38	4.77	<b>20.46</b>	19.66
9	Rural eng.	4.57	3.19	3.05	5.14	3.81	<b>19.76</b>	
10	Law	4.33	3.05	3.14	5.36	4.91	<b>20.79</b>	
11	Literature	3.78	2.67	3.16	5.68	4.84	<b>20.13</b>	
12	Philosophy	4.33	2.14	2.73	5.60	5.67	<b>20.48</b>	
13	Soc. Sciences	3.95	2.38	2.67	5.23	4.55	<b>18.77</b>	
14	Publ. Adm.	3.79	2.56	2.94	5.63	5.05	<b>19.97</b>	
15	Accounting	4.75	2.75	2.63	4.00	3.38	<b>17.50</b>	
16	Managemt	4.25	2.60	3.13	5.56	5.31	<b>20.85</b>	
17	Political Scienc	3.63	2.97	2.82	5.42	4.62	<b>19.46</b>	
18	Linguistics	4.49	2.50	2.76	4.99	4.51	<b>19.24</b>	
19	Medicine	3.88	2.63	3.38	5.50	4.63	<b>20.00</b>	
20	Detl medicine	3.73	2.55	3.00	5.27	4.64	<b>19.18</b>	
21	Chemistry	3.83	2.87	3.00	5.65	5.27	<b>20.62</b>	
22	Civil Eng.	3.68	2.72	2.58	5.35	5.05	<b>19.39</b>	
23	Electrom. Eng	3.84	2.32	2.53	5.00	4.21	<b>17.89</b>	
24	Accounting	4.29	2.47	2.88	5.29	5.00	<b>19.94</b>	20.05
25	Managemt	4.11	2.44	2.94	5.56	5.11	<b>20.17</b>	
26	Education	4.25	2.25	2.75	5.38	4.63	<b>19.25</b>	19.63
27	Accounting	4.43	3.10	3.18	5.43	4.68	<b>20.81</b>	
28	Economics	4.20	2.39	2.69	5.29	4.82	<b>19.39</b>	
29	Finance	3.88	2.13	2.38	4.78	4.78	<b>17.93</b>	
30	Managemt	4.75	2.92	3.00	5.50	4.58	<b>20.75</b>	

**Table B.15 Mean Scores on Motivation for choosing a major items  
by Gender, Institution Type, and City of Origin**

	<b>Gender</b>		<b>Inst. Type</b>		<b>City of Origin</b>		
	<b>Women</b>	<b>Men</b>	<b>Public</b>	<b>Private</b>	<b>Other</b>	<b>Regional</b>	<b>PaP</b>
Chose for prestige	4.7	4.6	4.9	4.5	4.7	4.6	4.6
Chose for acad. preparation	4.3	4.5	4.4	4.5	4.5	4.5	4.4
Chose for quality	4.4	4.6	4.4	4.6	4.7	4.5	4.5
Chose for access	4.2	4.4	4.6	4.2	4.2	4.5	4.3
Chose for finances	3.9	3.7	3.6	3.8	3.4	3.8	3.9
Role of interest	5.7	5.5	5.5	5.5	5.5	5.4	5.6
Role of acad. Preparation	5.4	5.5	5.3	5.5	5.6	5.4	5.4
Role of finances	3.1	3.4	4.0	3.0	3.6	3.4	3.2

**Table 16. Mean Scores of Respondents  
on Motivation for Major Selection Items**

<b>Group</b>	<b>Major</b>	<b>Chose for prestige</b>	<b>Chose for acad. prep.</b>	<b>Chose for quality</b>	<b>Chose for access</b>	<b>Chose for finances</b>
1	Agronomy	5.22	4.91	4.52	4.48	3.00
2	Education	5.56	4.67	3.22	5.00	4.78
3	Civil Eng.	3.67	5.00	3.75	5.33	4.22
4	Accounting	4.75	4.75	4.50	4.70	3.10
5	Managemt	4.90	4.56	2.64	4.80	3.70
6	Compt. Sc.	4.00	4.13	4.13	3.88	1.63
7	Law	5.00	4.09	4.61	4.33	2.45
8	Agronomy	4.51	4.32	4.98	4.29	3.67
9	Rural eng.	4.75	4.25	5.00	4.75	3.75
10	Law	4.70	4.54	4.81	4.02	3.93
11	Literature	4.25	5.00	4.80	4.40	3.25
12	Philosophy	4.00	4.32	4.11	4.32	3.82
13	Soc. Sciences	3.95	4.55	4.91	4.48	3.48
14	Publ. Adm.	4.63	4.06	4.50	3.81	4.07
15	Accounting	4.67	4.75	4.93	3.46	3.35
16	Managemt	4.57	4.33	4.81	3.90	3.70
17	Political Scienc	4.42	3.67	4.33	3.00	2.38
18	Linguistics	4.74	4.48	4.74	4.25	4.02
19	Medicine	4.35	4.69	3.88	4.84	4.04
20	Detl medicine	5.05	4.82	4.95	2.86	4.25
21	Chemistry	4.13	4.63	4.88	5.13	5.25
22	Civil Eng.	4.26	4.25	4.48	4.95	4.85
23	Electrom. Eng	4.73	4.18	4.27	4.80	4.78
24	Accounting	5.05	4.50	5.11	3.74	2.63
25	Managemt	5.54	4.28	4.68	4.80	3.38
26	Education	4.26	4.53	4.37	5.16	4.42
27	Accounting	4.30	4.50	4.10	5.00	3.70
28	Economics	4.88	4.35	4.59	4.53	4.19
29	Finance	5.25	4.00	4.42	5.33	5.17
30	Managemt	4.14	4.00	4.43	4.79	4.71

**Table B.17 Mean Scores on Ranking of the Most and Least Preferred Majors  
by Gender, Institution Type, and City of Origin**

	<b>Gender</b>		<b>Inst. Type</b>		<b>City of Origin</b>		
	<b>Women</b>	<b>Men</b>	<b>Public</b>	<b>Private</b>	<b>Other</b>	<b>Regional</b>	<b>PaP</b>
Medicine	12.5	11.4	11.2	11.9	11.4	11.9	11.8
Law	10.9	10.4	10.5	10.5	10.6	10.7	10.5
Agronomy	9.2	10.9	10.8	10.4	11.4	11.0	9.7
Engineering	8.8	10.7	10.3	10.2	10.5	10.1	10.2
Dental medicine	8.8	7.2	7.2	7.8	6.8	7.5	8.2
Anthropology	7.3	7.6	7.6	7.5	7.7	7.6	7.4
Nursing	8.6	7.0	7.9	7.2	6.9	7.7	7.5

**Table B.18 Mean Scores of Respondents on the Ranking of Various Majors**

Group	Major	Dental						
		Medicine	Law	Agronomy	Engineering	Medicine	Anthropology	Nursing
1	Agronomy	11.67	10.38	13.75	8.92	7.45	8.00	8.50
2	Education	11.67	10.60	9.60	9.80	7.60	7.40	5.40
3	Civil Eng.	10.14	10.17	8.86	12.89	5.83	7.60	7.17
4	Accounting	12.00	11.63	11.71	10.17	8.25	7.83	12.00
5	Managemt	10.00	10.67	7.00	9.67	6.33	4.00	6.67
6	Compt. Sc.	13.00	9.00	12.00	14.00	6.00	5.00	11.00
7	Law	12.07	12.28	11.50	9.31	7.50	7.50	9.25
8	Agronomy	12.23	9.27	13.30	10.75	6.81	7.22	6.18
9	Rural eng.	11.00	8.00	13.50	11.11	6.00	7.17	5.17
10	Law	11.77	12.69	8.29	8.00	8.85	8.27	8.56
11	Literature	10.73	12.00	9.25	7.78	5.57	9.00	7.14
12	Philosophy	11.56	13.10	11.89	9.75	8.57	11.11	9.38
13	Soc. Sciences	11.83	11.63	9.71	9.20	7.50	9.60	6.50
14	Publ. Adm.	10.60	10.00	9.90	9.00	5.29	5.29	5.43
15	Accounting	11.53	9.83	8.97	10.67	7.25	6.33	6.17
16	Managemt	11.87	10.50	9.92	11.20	8.92	8.27	7.82
17	Political Scienc	10.83	11.86	11.38	12.17	6.80	6.83	6.75
18	Linguistics	9.25	11.04	9.24	8.05	6.35	8.00	5.42
19	Medicine	13.67	9.82	9.48	10.07	8.18	6.51	7.71
20	Detl medicine	12.33	9.00	9.38	6.42	12.56	7.75	9.33
21	Chemistry	10.14	8.14	8.00	12.75	6.86	6.86	6.33
22	Civil Eng.	10.62	10.08	10.00	13.28	6.73	7.82	7.00
23	Electrom. Eng	10.43	8.17	7.67	13.22	5.50	7.00	6.40
24	Accounting	13.43	13.00	13.00	13.20	12.00	12.00	12.67
25	Managemt	12.17	10.33	10.38	9.25	9.29	8.86	9.20
26	Education	11.91	10.25	11.92	12.69	8.60	8.92	7.11
27	Accounting	9.14	10.57	10.50	11.88	6.67	9.00	8.17
28	Economics	11.14	9.31	10.00	10.29	6.62	8.00	7.50
29	Finance	9.33	9.30	6.67	7.67	6.56	6.33	6.89
30	Managemt	9.86	11.00	7.29	9.38	6.33	6.57	8.17



**Appendix C. Survey Instrument- English Translation**

Dear student,

Thank you for taking the time to read this text. This survey instrument was developed for a research project on Haitian higher education. Instead of examining Haitian post-secondary education looking at institutions, like all previous studies, this study wants to look at it from a student's perspective. I hope to be able to count on your help with this project. This is why I am asking you to complete this survey and to answer as honestly as possible.

Of course, you do not have to fill this questionnaire and you will not receive any financial gain by completing it. If a question makes you uncomfortable, you do not have to answer it. You can also quit the survey any time if you no longer want to participate. I hope, however, that you will be able to take the 10 to 15 minutes that it takes you to complete the survey and that you will be able to answer all questions.

To ensure that your responses remain anonymous, please do not write your name or any other identification on this form. When you have completed the form, please place it in the indicated envelope. All measures will be taken to ensure your anonymity. This research study does not involve any risk that I can foresee but it may include risks that are unknown at this time. Do not hesitate to contact me if you need any additional information at [dumay@bc.edu](mailto:dumay@bc.edu).

This copy of the form is for you to keep. If you have questions regarding your rights as a research subject, please call the Boston College Office of Human Research Participant Protection at (617) 552-4778.

If you accept to participate in this survey, please check the box for "yes" below this text on the first page of the survey.

**1. In what year were you born?**

19\_\_\_\_\_

**2. Please check the box that best represents your gender.**

Woman

Man

**3. Please check the box that best describes your institution.**

Public

Private

**4. In what field of study are you currently enrolled?**

\_\_\_\_\_

**5. Please check the box that best describes your city of origin.**

Port-au-Prince

One of the other 8 regional capitals

Another city or town

---

*For the following questions, please check the box that best reflects how you feel.*

**6. My parents were very involved in my secondary school education.**

strongly agree

slightly disagree

moderately agree

moderately disagree

slightly agree

strongly disagree

**7. When I was choosing the faculté to which I should apply, I was influenced by my parents.**

strongly agree

slightly disagree

moderately agree

moderately disagree

slightly agree

strongly disagree

**8. When I was choosing the faculté to which I should apply, I was influenced by my friends**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**9. When I was choosing the faculté to which I should apply, I was influenced by a former teacher.**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**10. I wanted study what I am studying while I was in high school.**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**11. I was interested in a different field of study than what I am studying while I was in high school.**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**12. If you were interested in a different field of study, what was it? \_\_\_\_\_**

**13. I applied to the following number of schools/ “facultés” after high school**

- Only one – the one in which I am currently enrolled
- Two
- Three
- Four

**14. The faculté/ school in which I am currently enrolled was my\_\_\_\_\_ choice**

- first*
- second*
- third*
- fourth*

**15. If your current faculté/institution was not your first choice, please indicate the faculté/institution that was your first choice.**

---

**16. I am satisfied with my field of study.**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**17. I am satisfied with my faculté/ university.**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**18. This field of study is a good match with my aspirations**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**19. I would recommend this faculté/university to a close friend**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**20. I would recommend this field of study to a close friend**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**21. I chose my field of study because of the prestige associated with it.**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**22. I chose my field of study because of my academic strength in the area.**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |
|   | <input type="checkbox"/>                     |

**23. I chose my field of study because of the quality of this school/ faculté.**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**24. I chose my field of study because this is the school/ faculté that accepted me.**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**25. I chose my field of study because this is the school/ faculté that I could afford.**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**26. Please check the box that best represents your class ranking during your last year in high school.**

- Among the top 5 best students*
- Among the top 10 best students*
- Among the middle of the class*
- Among the last 10 students*
- Among the last 5 students*

**27. Please check the box that best estimates the score that you obtained in Baccalauréat I.**

- Above 90%*
- Between 80% and 90%*
- Between 70% and 79%*
- Between 60% and 69%*
- Between 50% and 59%*

**28. Please check the box that best estimates your Baccalauréat II score.**

- Above 90%*
- Between 80% and 90%*
- Between 70% and 79%*
- Between 60% and 69%*
- Between 50% and 59%*

**29. My high school has an excellent academic reputation.**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**30. The education that I received in high school prepared me well for this program.**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**31. I think that it will be easier for me to find a job because of my field of study**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**32. After I graduate, I expect to find a job with this starting monthly salary:**

- 1,000 Gourdes or less
- Between 1,001 Gourdes and 20,000 Gourdes
- Between 20,001 Gourdes and 40,000 Gourdes
- Between 40,001 Gourdes and 60,000 Gourdes
- Between 60,001 Gourdes and 80,000 Gourdes
- Between 80,001 Gourdes and 100,000 Gourdes
- Over 100,001 Gourdes

**33. Please check the box that best estimates your parents' combined monthly income.**

- 1,000 Gourdes or less
- Between 1,001 Gourdes and 20,000 Gourdes
- Between 20,001 Gourdes and 40,000 Gourdes
- Between 40,001 Gourdes and 60,000 Gourdes
- Between 60,001 Gourdes and 80,000 Gourdes
- Between 80,001 Gourdes and 100,000 Gourdes
- Over 100,001 Gourdes

**34. Please check the box that best estimates your father's highest level of schooling**

- Less than certificat
- Certificat
- 8th grade
- 9<sup>th</sup> grade or Brevet
- Baccalauréat I
- Baccalauréat II
- Some college
- A college or university degree



**35. Please check the box that best estimates your mother's highest level of schooling**

- Less than certificate
- Certificat
- 8th grade
- 9<sup>th</sup> grade or Brevet
- Baccalauréat I
- Baccalauréat II
- Some college
- A college or university degree

**36. Please check the box that best estimates your father's type of employment**

- Self-employed (larger-size business more than 10 employees)
- Professional government/NGO job
- Professional private sector job
- Self-employed (medium-size business up to 10 employees)
- Clerical government/NGO job
- Clerical private sector job
- Self employed (small business single employee)
- Vendor, laborer, craftsperson (his own business)
- Vendor, laborer, craftsperson (someone else's business)
- Other. Please specify \_\_\_\_\_

**37. Please check the box that best estimates your mother's type of employment.**

- Self-employed (larger-size business more than 10 employees)
- Professional government/NGO job
- Professional private sector job
- Self-employed (medium-size business up to 10 employees)
- Clerical government/NGO job
- Clerical private sector job
- Self employed (small business single employee)
- Vendor, laborer, craftsperson (her own business)

- Vendor, laborer, craftsman (someone else's business)
- Other. Please specify \_\_\_\_\_

**38. Indicate which of the following items can be found in your parents' home. Check all that apply.**

- car
- refrigerator
- oven
- generator/inverter
- water pump
- computer
- washing machine
- microwave oven
- electric fan
- telephone- land line
- telephone- mobile
- CD player
- Television

**39. Students should choose their field of study based on their individual interests and preferences.**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**40. Students should be allowed to study what they want based on their on academic ability.**

- |   |  |
|---|--|
| <input type="checkbox"/> strongly agree   | <input type="checkbox"/> slightly disagree   |
| <input type="checkbox"/> moderately agree | <input type="checkbox"/> moderately disagree |
| <input type="checkbox"/> slightly agree   | <input type="checkbox"/> strongly disagree   |

**41. Students should be allowed to study what they want based on their ability to pay.**

- strongly agree
- moderately agree
- slightly agree
- slightly disagree
- moderately disagree
- strongly disagree

**42. Please rank the following criteria by which students should be allowed to choose their field of study by writing 1, 2, 3, or 4 next to it (with 1 being the most important criterion).**

- individual interest \_\_\_\_\_
- academic ability \_\_\_\_\_
- ability to pay \_\_\_\_\_
- country's need \_\_\_\_\_

**43. Please rank the following fields of study by placing 1, 2, 3, etc next to it (with 1 being the field of study which you think is the best).**

- Agronomy \_\_\_\_\_
- Anthropology \_\_\_\_\_
- Accounting \_\_\_\_\_
- Law \_\_\_\_\_
- Economics \_\_\_\_\_
- Education \_\_\_\_\_
- Engineering \_\_\_\_\_
- Management \_\_\_\_\_
- Nursing \_\_\_\_\_
- Medicine \_\_\_\_\_
- Dental Medicine \_\_\_\_\_
- Human Sciences \_\_\_\_\_
- Computer Sciences \_\_\_\_\_
- \_\_\_\_\_ \_\_\_\_\_

**Appendix D. Survey Instrument (French/Creole Version)**

Cher étudiant,

Merci de prendre le temps pour lire ce texte. Ce questionnaire a été développé dans le cadre d'une recherche sur l'enseignement supérieur en Haïti. Au lieu d'examiner l'éducation supérieure en Haïti du point de vue des institutions comme les études antérieures, cette recherche l'étudie du point de vue de l'étudiant. J'espère pouvoir compter sur votre aide ; c'est pourquoi je vous prie de remplir ce questionnaire et d'y répondre aussi honnêtement que vous le pouvez.

Bien sûr, il n'y a aucune obligation pour vous de remplir ce questionnaire et aucun avantage financier à gagner en le faisant. De plus, si une question vous rend inconfortable, vous pouvez ne pas y répondre. Vous pouvez aussi abandonner le questionnaire à tout moment si vous ne voulez plus participer. J'espère cependant que vous pourrez accorder les 10 ou 15 minutes qu'il prendra pour remplir le questionnaire et que vous pourrez répondre à toutes les questions.

Pour assurer votre anonymat, je vous prie de ne pas écrire votre nom ou votre identification sur la forme. Lorsque vous avez fini de remplir le formulaire, s'il vous plaît, placez-le dans l'enveloppe que j'ai indiquée. Toutes les mesures nécessaires seront prises pour assurer votre anonymat. Ce projet de recherches ne comprend aucun risque que je peux prévoir, mais il se pourrait qu'il contienne des risques inconnus en ce moment. N'hésitez pas à me contacter si vous avez besoin de plus amples informations à [dumay@bc.edu](mailto:dumay@bc.edu).

Si vous avez des questions concernant vos droits, comme participant dans un projet de recherches, vous pouvez appeler le Bureau de Protection des Participants Humains à la Recherche à Boston College (617) 552-4778.

Si vous acceptez de participer à ce questionnaire, s'il vous plaît choisissez « oui » à la question qui suit ce texte.

---

Chè etidyan,

Mwen di ou mesi dèske ou pran tan ou pou li mesaj sila. Mwen devlope kèksyonè sa pou yon rechèch m'ap fè sou inivèsite an Ayiti. Lòt rechèch ki fèt sou inivèsite yo te enterese nan enstitisyon yo. Rechèch sa a enterese na èksperyans etidyan yo. Mwen èspere ke mwen kap konte sou ou ; se pou sa m'ap mande ou pou ou ranpli kèksyonè sa e pou ou reponn ak tout senserite.

Ou pa gen okenn obligasyon pou ou patisipe e ou pap gen ankenn avantaj lajan si ou patisipe. Anplis, si yon kèksyon fè ou santi ou malalèz, ou pa oblije reponn ni. Ou kapab anbadone kèksyonè a tou, nenpòt kilè si ou pa enterese patisipe ankò. Mwen espere sepandan ke ou ap ban mwen 10 a 15 minit pou ou kab ranpli kèksyonè a e ke ou ap ka reponn tout kèksyon yo.

Pou mwen kap garanti ke pèsonn pa konnen ki moun ki bay ki repons, pa ekri non ou ou byen nimewo idantite ou so fòm nan. Le ou fini ranpli kèksyonè a, tanpri depoze l' nan anvlòp ke mwen endike a. M'a p pran tout mezi posib pou pyès moun pa konnen ki repons ke ou te bay. Pwojè sa pa genyen okenn risk ke mwen kapab prevwa, men se toujou posib ke li genyen risk ke pyès moun pa konnen. Pa ezite kontakte m' si ou genyen nenpòt ki kèksyon. Adrès entènèt mwen se [dumay@bc.edu](mailto:dumay@bc.edu)

Si ou genyen nenpòt ki kèksyon osijè dwa ou kòm moun k'ap patisipe nan rechèch, ou kapab rele Biwo pou Pwotèksyon Moun ki Patisipe nan Rechèch nan Boston College -(617) 552-4778.

Si ou aksepte patisipe, tanpri reponn « wi » pou kèksyon ke ou ap jwenn apre lèt sa nan premye paj keksyonè a.

**Voulez-vous continuer avec le questionnaire ?/Eske ou vle kontinye avèk kèksyonè a ?**

Oui /Wi

Non

1. **Quelle est votre année de naissance?/ Ki ane ou te fèt ?**  
19\_\_\_\_\_

2. **Choisissez le bouton qui représente votre sexe /Chwazi bouton ki represante sèx ou**  
 Femme/ Fi  Homme/ Gason

3. **Choisissez le bouton qui décrit votre institution/ Chwazi bouton ki dekri lekòl ou an**  
 Public/ Piblik  Prive/ Prive

4. **Quel est votre champ d'étude?**  
**Kisa ou ap etidye ?**  
\_\_\_\_\_

5. **Choisissez le bouton qui décrit mieux votre ville d'origine/ Chwazi bouton ki dekri vil kote ou sòti a**

- Port-au-Prince/ Pòtoprens
- Un des 8 chefs d'arrondissement/ Youn nan 8 chèf awondisman yo
- Une autre ville ou un autre village/ Yon lòt vil ou byen vilaj

---

*Indiquez pour les questions suivantes la boîte qui reflète le mieux votre sentiment*

*Pou kèksyon kap vini yo, Chwazi bouton ki dekri sa ou panse.*

6. **Mes parents ont suivi de très près mon éducation secondaire.**

**Paran m' yo te voye je yo anpil sou edikasyon sekondè mwen.**

- Tout à fait/ Trè dakò
- D'accord/ Dakò
- Plus ou moins/ On ti jan dakò
- Pas tellement/ On jan pa dakò
- Non/ Pa dakò
- Pas du tout/ Pa dakò menm

7. **Quand je choisissais une faculté, j'ai été influencé par mes parents.**

**Lè m' tap chwazi yon fakilte, paran m' yo te enflyanse chwa mwen.**

- Tout à fait/ Trè dakò
- D'accord/ Dakò
- Plus ou moins/ On ti jan dakò
- Pas tellement/ On jan pa dakò
- Non/ Pa dakò
- Pas du tout/ Pa dakò menm

8. **Quand je choisissais une faculté, j'ai été influencé par mes amis.**

**Lè m' tap chwazi yon fakilte, zanmi te inflyanse chwa mwen.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**9. Quand je choisissais une faculté, j'ai été influencé par un ancien professeur.**

**Lè m' tap chwazi yon fakilte, yon ansyen pwofesè te inflyanse chwa mwen.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**10. Quand j'étais au secondaire, je voulais étudier ce que j'étudie maintenant.**

**Le m' te nan sekondè, mwen te vle etidye sa m'ap etidye kounyè a.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**11. Quand j'étais au secondaire, je voulais étudier quelque chose d'autre que ce j'étudie maintenant.**

**Le m' te nan sekondè, mwen te vle etidye on lòt bagay ke sa m'ap etidye kounyè a.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**12. Si vous vouliez étudier quelque chose d'autre, indiquez quoi**

**Si ou te te vle etidye on lòt bagay, di kisa li ye \_\_\_\_\_**

**13. J'ai appliqué à \_\_\_\_\_ faculté(s) et université(s)**

**Mwen te aplike nan \_\_\_\_\_ fakilte ak inivèsite**

- |  |                         |
|--|-------------------------|
| <input type="checkbox"/> Une seule- celle ci | Yon sèl- kote mwen ye a |
| <input type="checkbox"/> Deux                | De                      |
| <input type="checkbox"/> Trois               | Twa                     |
| <input type="checkbox"/> Quatre              | Kat                     |

**14. La faculté ou l'université où je suis était mon \_\_\_\_\_ choix**

Fakilte ou byen inivèsite kote mwen ye a sete \_\_\_\_\_ chwa mwen.

- |                                    |                |
|------------------------------------|----------------|
| <input type="checkbox"/> Seul      | <i>Sel</i>     |
| <input type="checkbox"/> Deuxième  | <i>Dezièm</i>  |
| <input type="checkbox"/> Troisième | <i>Twazyèm</i> |
| <input type="checkbox"/> Quatrième | <i>Katryèm</i> |

15. Si la faculté ou l'université ou vous êtes n'est pas votre premier choix, indiquez votre premier choix

Si fakilte ou byen inivèsite kote ou ye a pa te premye chwa ou, di kilès ki te premye chwa ou \_\_\_\_\_

16. Je suis satisfait ( e) avec mon champ d'étude.

Mwen satisfè avèk sa m'ap etidye a.

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò           | <input type="checkbox"/> Pas d'accord un peu/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                  | <input type="checkbox"/> Pas d'accord/ Pa dakò               |
| <input type="checkbox"/> Un peu d'accord/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm           |

17. Je suis satisfait (e) avec ma faculté ou mon université.

Mwen satisfè avèk fakilte ou byen inivèsite mewn an

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

18. Mon champ d'étude va bien avec mes aspirations.

Sa m'ap etidye a matche avèk sa mwen vle fè avèk vi mwen.

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

19. Je recommanderais cette faculté ou université à un bon ami.

Mwen ta konseye yon bon zanmi vini nan fakilte ou byen inivèsite sila.

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |



**20. Je recommanderais ce champ d'étude à un bon ami.**

**Mwen ta konseye yon bon zanmi etidye sa m'ap etidye a.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**21. J'ai choisi mon champ d'étude parce qu'il est prestigieux**

**Mwen chwazi sa m'ap etidye a paske li bay prestij.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**22. J'ai choisi mon champ d'étude parce que je suis bien préparé dans le domaine.**

**Mwen chwazi sa m'ap etidye a paske mwen byen prepare nan domèn sa.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**23. J'ai choisi mon champ d'étude à cause de la qualité de cette université ou faculté.**

**Mwen chwazi sa m'ap etidye a paske fakilte ou byen inivèsite sa fò nan domèn sa.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**24. J'ai choisi mon champ d'étude parce que c'est la faculté ou l'université qui m'a accepté(e).**

**Mwen chwazi sa m'ap etidye a paske se fakilte ou byen inivèsite sa ki aksèpte m'.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**25. J'ai choisi mon champ d'étude parce que c'est la faculté/ l'université que je peux payer.**

**Mwen chwazi sa m'ap etidye a paske se fakilte ou byen inivèsite sa ki mezi pòch mwen.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**26. Choisissez le bouton qui décrit mieux votre place dans votre promotion de philo.**

**Chwazi bouton ki dekri pi byen plas ou nan klas filo.**

- |  |                                     |
|--|-------------------------------------|
| <input type="checkbox"/> Parmi les cinq meilleurs élèves | <i>Pami senk elev ki pi fò yo</i>   |
| <input type="checkbox"/> Parmi les dix meilleurs élèves  | <i>Pami dis elev ki pi fò yo</i>    |
| <input type="checkbox"/> Dans le milieu de la classe     | <i>Nan mitan klas la</i>            |
| <input type="checkbox"/> Parmi les dix derniers élevés   | <i>Pami dis elev ki mwen fò yo</i>  |
| <input type="checkbox"/> Parmi les cinq derniers élèves  | <i>Pami senk elev ki mwen fò yo</i> |

**27. Choisissez le bouton qui décrit mieux votre moyenne de passage en Baccalauréat I.**

**Chwazi bouton ki dekri pi byen ak ki mwayèn ou pase nan Reto.**

- |   |                         |
|---|-------------------------|
| <input type="checkbox"/> Au dessus de 90% | <i>Plis ke 90%</i>      |
| <input type="checkbox"/> Entre 80% et 90% | <i>Ant 80% avek 90%</i> |
| <input type="checkbox"/> Entre 70% et 79% | <i>Ant 70% avek 79%</i> |
| <input type="checkbox"/> Entre 60% et 69% | <i>Ant 60% avek 69%</i> |
| <input type="checkbox"/> Entre 50% et 59% | <i>Ant 50% avek 59%</i> |

**28. Choisissez le bouton qui décrit mieux votre moyenne de passage en Baccalauréat II**

**Chwazi bouton ki dekri pi byen ak ki mwayèn ou pase nan Filo**

- |   |                         |
|---|-------------------------|
| <input type="checkbox"/> Au dessus de 90% | <i>Plis ke 90%</i>      |
| <input type="checkbox"/> Entre 80% et 90% | <i>Ant 80% avèk 90%</i> |
| <input type="checkbox"/> Entre 70% et 79% | <i>Ant 70% avèk 79%</i> |
| <input type="checkbox"/> Entre 60% et 69% | <i>Ant 60% avèk 69%</i> |
| <input type="checkbox"/> Entre 50% et 59% | <i>Ant 50% avèk 59%</i> |

**29. Mon école secondaire a une réputation académique excellente.**

**Lekòl sekondè mwen an genyen yon trè bon repitasyon pou zafè akademik**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**30. L'éducation que j'ai reçue au secondaire m'a bien préparé(e) pour ce champ d'étude.**

**Edikasyon ke mwen resevwa nan lekòl sekondè te byen prepare m' pou sa m'ap etidye a.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**31. Je pense qu'il me sera plus facile de trouver du travail à cause de mon champ d'étude.**

**Mwen panse ke l'ap pi fasil pou mwen jwenn travay a koz de sa m'ap etidye a.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**32. Apres ma graduation, je compte trouver une position avec ce salaire mensuel :**

**Le m' fini lekòl, mwen konte jwenn on travay ki peye mwen kòb sa pa mwa :**

- 1,000 Gourdes ou moins/ Mil Goud ou byen pi piti pase mil Goud
- Entre 1,001 Gourdes et 20,000 Gourdes/ Ant 1,001 Goud avèk 20,000 Goud
- Entre 20,001 Gourdes et 40,000 Gourdes/ Ant 20,001 Goud avèk 40,000 Goud
- Entre 40,001 Gourdes et 60,000 Gourdes/ Ant 40,001 Goud avèk 60,000 Goud
- Entre 60,001 Gourdes et 80,000 Gourdes/ Ant 60,001 Goud avèk 80,000 Goud
- Entre 80,001 Gourdes et 100,000 Gourdes/ Ant 80,001 Goud avèk 100,000 Goud
- Over 100,001 Gourdes / Plis pase 100,001 Goud

**33. Choisissez le bouton qui estime le mieux le salaire mensuel combiné de vos parents.**

**Chwazi bouton ki èstime pi byen konbyen kòb tou lè de paran ou yo touche ansanm**

- 1,000 Gourdes ou moins/ Mil Goud ou byen pi piti pase mil Goud
- Entre 1,001 Gourdes et 20,000 Gourdes/ Ant 1,001 Goud avèk 20,000 Goud
- Entre 20,001 Gourdes et 40,000 Gourdes/ Ant 20,001 Goud avèk 40,000 Goud
- Entre 40,001 Gourdes et 60,000 Gourdes/ Ant 40,001 Goud avèk 60,000 Goud
- Entre 60,001 Gourdes et 80,000 Gourdes/ Ant 60,001 Goud avèk 80,000 Goud
- Entre 80,001 Gourdes et 100,000 Gourdes/ Ant 80,001 Goud avèk 100,000 Goud
- Over 100,001 Gourdes / Plis pase 100,001 Goud

**34. Choisissez le bouton qui estime le plus haut niveau scolaire atteint par votre père.**

**Chwazi bouton ki èstime nan pi gwo klas papa ou te rive.**

- Primaire/ Primè
- Certificat (sixième année fondamentale) / Sètifika (sizyèm ane fondamantal)
- Quatrième secondaire (neuvième année fondamentale)/ Katryèm sekondè (nevyèm ane fondamental)
- Troisième (ou brevet)/ Twazyèm (o sinon brevè)
- Baccalauréat I/ Reto
- Baccalauréat II/ Filo

- Un peu d'université/ Li pase nan inivèsite
- Un diplôme universitaire/ Diplome nan inivèsite

**35. Choisissez le bouton qui estime le plus haut niveau scolaire atteint par votre mère.**

**Chwazi bouton ki èstime nan pi gwo klas manman ou te rive.**

- Primaire/ Primè
- Certificat (sixième année fondamentale) / Sètifika (sizyèm ane fondamantal)
- Quatrième secondaire (neuvième année fondamentale)/ Katryèm sekondè (nevyèm ane fondamantal)
- Troisième (ou brevet)/ Twazyèm (o sinon brevè)
- Baccalauréat I/ Reto
- Baccalauréat II/ Filo
- Un peu d'université/ Li pase nan inivèsite
- Un diplôme universitaire/ Diplome nan inivèsite

**36. Choisissez le bouton qui décrit le mieux le type d'emploi de votre père**

**Chwazi bouton ki dekri pi byen kalite djòb papa ou ap fè.**

- Propriétaire (plus de 10 employés)/ Mèt on biznis ki gen plis pase dis anplwaye
- Employé cadre de l'état ou d'un ONG/ Pwofèsyonèl pou leta ou byen pou yon ONG
- Employé cadre du secteur privé/ Pwofèsyonèl nan sèktè prive
- Propriétaire (jusqu'à 10 employés)/ Mèt on biznis ki gen jiska dis anplwaye
- Employé clérical de l'état ou d'un ONG / Sekretè ak lòt anplwaye pou leta ou pou yon ONG
- Employé clérical du secteur privé / Sekretè ak lòt anplwaye nan sèktè prive
- Propriétaire (pas d'employés)/ Pwopriyetè on biznis ki pa gen lòt anplwaye
- Petit commerçant, artisan, couturier (propriétaire)/ Ti komèsan, atisan, tayè (biznis pa li)
- Petit commerçant, artisan, couturier (employé)/ Ti komèsan, atisan, tayè (biznis pa yon lòt moun)
- Autre. Précisez. / Yon lòt kalite djòb. Di ki sa li ye \_\_\_\_\_

**37. Choisissez le bouton qui décrit le mieux le type d'emploi de votre mère**

**Chwazi bouton ki dekri pi byen kalite djòb manman ou ap fè.**

- Propriétaire (plus de 10 employés)/ Mèt on biznis ki gen plis pase dis anplwaye
- Employé cadre de l'état ou d'un ONG/ Pwofèsyonèl pou leta ou byen pou yon ONG
- Employé cadre du secteur privé/ Pwofèsyonèl nan sèktè prive
- Propriétaire (jusqu'à 10 employés)/ Mèt on biznis ki gen jiska dis anplwaye
- Employé clérical de l'état ou d'un ONG / Sekretè ak lòt anplwaye pou leta ou pou yon ONG
- Employé clérical du secteur privé / Sekretè ak lòt anplwaye nan sèktè prive

- Propriétaire (pas d'employés)/ Pwopriyetè on biznis ki pa gen lòt anplwaye
- Petit commerçant, artisan, couturier (propriétaire)/ Ti komèsan, atisan, tayè (biznis pa li)
- Petit commerçant, artisan, couturier (employé)/ Ti komèsan, atisan, tayè (biznis pa yon lòt moun)
- Autre. Précisez. / Yon lòt kalite djòb. Di ki sa li ye \_\_\_\_\_

**38. Indiquez lequel de ces choses se trouve chez vos parents. Marquez tout ce qui s'applique.**

**Di kilès nan bagay sa yo genyen lakay paran ou yo. Make tout sa ki aplike.**

- voiture / machin
- réfrigérateur / frijidè
- four / fou
- générateur- inverter / dèlko -invètè
- pompe a eau / pomp dlo
- ordinateur / kompitè
- machine à laver / machin a lave
- four micro-onde / maykwowev
- ventilateur / vantilatè
- téléphone ligne normale / telefòn nan kay
- téléphone cellulaire / telefòn selilè
- joueur de disques compacts/ Aparèy pou jwe CD
- télévision/ televizyon

**39. Les étudiants doivent choisir leur champ d'étude selon leur disposition et intérêt.**

**Etidyan dwe chwazi sa yo vle etidye selon sa ki interese yo.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**40. On devrait permettre aux étudiants de poursuivre leur champ d'étude selon leur aptitude académique.**

**Yo dwe kite etidyan etidye sa yo vle selon kapabilite akademik yo.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**41. On devrait permettre aux étudiants de poursuivre leur champ d'étude selon leur moyen financier.**

**Yo dwe kite etidyan etidye sa yo vle selon mezi pòch yo.**

- |  |  |
|--|--|
| <input type="checkbox"/> Tout à fait/ Trè dakò         | <input type="checkbox"/> Pas tellement/ On jan pa dakò |
| <input type="checkbox"/> D'accord/ Dakò                | <input type="checkbox"/> Non/ Pa dakò                  |
| <input type="checkbox"/> Plus ou moins/ On ti jan dakò | <input type="checkbox"/> Pas du tout/ Pa dakò menm     |

**42. Indiquez l'importance des critères suivant lesquels les étudiants devraient choisir leur champ d'étude en écrivant 1, 2, 3, ou 4 à coté du critère (1 étant le critère le plus important).**

**Pou ou ka di ki kritè ki pi enpotan pou yo pèmèt etidyan etidye sa yo vle, ekri 1, 2, 3, ou byen 4 bò kote kritè a (1 egal kritè ki pi enpòtan an).**

- Intérêt individuel/ sa k' enterese chak etidyan \_\_\_\_\_
- Aptitude académique/ kapabilite akademik \_\_\_\_\_
- Moyen financier/ mezi pòch yo \_\_\_\_\_
- Les besoins du pays/ sa peyi a bezwen \_\_\_\_\_

**43. Indiquez votre préférence pour les champs d'étude qui suivent en écrivant 1, 2, 3, etc. à coté (1 désignant le champ d'étude que vous aimez le mieux).**

**Ekri 1, 2, 3, etc bò kote disiplin sa yo pou ka dekri kilès ou panse ki pi bon (ekri 1 pou disiplin ke ou pi renmen an).**

- Agronomie \_\_\_\_\_
- Anthropologie \_\_\_\_\_
- Comptabilité \_\_\_\_\_
- Droit \_\_\_\_\_
- Economie \_\_\_\_\_
- Education \_\_\_\_\_
- Génie \_\_\_\_\_
- Gestion \_\_\_\_\_
- Infirmier(e) \_\_\_\_\_
- Médecine \_\_\_\_\_
- Odontologie \_\_\_\_\_
- Sciences humaines \_\_\_\_\_
- Sciences de l'informatique \_\_\_\_\_
- \_\_\_\_\_ \_\_\_\_\_

## References

- ACHFE, 2008. Member institutions. Retrieved March 03, 2008 from:  
[http://www.acfhe.org/member\\_institutions.html](http://www.acfhe.org/member_institutions.html) 03/08/08.
- Agence Universitaire de la Francophonie (2008). Enseignement supérieur dans la Caraïbe.  
Retrieved Mars 8, 2008 from <http://www.caraibe.auf.org/article46.html>.
- Ahuja, V. & Filmer, D. (1995). Educational Attainment in Developing Countries: New Estimates and Projections Disaggregated by Gender. World Bank Policy Research Working Paper No. 1489. Retrieved February 11, 2009 from SSRN: <http://ssrn.com/abstract=614964>.
- Aitken, N. D. (1982). College student performance, satisfaction, and retention: Specification and estimation of a structural model. The Journal of Higher Education, 53, 1, 32-50.
- Aldridge, S., & Rowley, J. (1998). Measuring customer satisfaction in higher education. Quality Assurance in Education, 6, 4, 197-204.
- Alexis, J. E. ; Larose, S ; Morin, C.; Pierre-Jacques, C.; & Roy, L. (1991). Université et développement en Haiti. Port-au-Prince, Haiti : Editions Henri Deschamps.
- Almeida, M. (2008). Innovation and entrepreneurship in Brazilian universities. International Journal of Technology Management and Sustainable Development, 7, 1, 39-58.
- Altbach, P. G. (1999). The logic of mass higher education. Tertiary Education Management, 5, 107-124.
- Altbach, P. G. (1999). Harsh realities: The professoriate faces a new century. In P. G. Altbach, R. O. Berdahl & P. J. Gumport (Eds.), American higher education in the twenty-first century: Social, political, and economic challenges. Baltimore: Johns Hopkins UP.
- Altbach, P. G. (2000). The deterioration of the academic estate: International patterns of academic work. Chestnut Hill, MA: Center for International Higher Education

- Altbach, P. G. (2001). The rise of the pseudouniversity. International Higher Education, 25, 1.
- Altbach, P. G. (2004). Globalisation and the university: Myths and realities in an unequal world. Tertiary Education and Management, 2004, 10, 3-25.
- Altbach, P. G. (2006). International higher education: Reflections on policy and practice. Chestnut Hill, MA: Boston College Center for International Higher Education.
- Alter Presse (2008, April 8). Haïti-société-vie chère: Les ingrédients d'une crise en générale perspective. Retrieved April 8, 2008 from:  
<http://www.alterpresse.org/spip.php?article7101>.
- Anderson, J. E. (1994). Public policymaking. An Introduction. [Second Edition]. Boston: Houghton Mifflin Company.
- Anglade, G. (1981). L'espace haitien. Montréal: Editions des Alizés.
- Anglade, G. (1982). Atlas critique d'Haiti. Montréal: Université du Québec a Montreal.
- Appleton, K., House, A., & Dowell, A. (1998). A survey of job satisfaction, source of stress and psychological symptoms among general practitioners in Leeds. British Journal of General Practice, 48, 1059-1063.
- Arbelaez , A. (1993). Cuanto vale estudiar un postgrado en America Latina? Bogota, Columbia: Panamerican Association of Educational Credit.
- Arcidiacono, P. (2004). Ability sorting and the returns to college major. Journal of Econometrics, 121, 1-2, 343-375
- Ardouin, B. (2005). Etudes sur l'histoire d'Haiti. Volume 3. [troisième édition]. Port-au-Prince, Haiti: Fardin.



- Arzy, M. R., Davies, T. G., & Harbour, C. P. (2006). Low income students: Their lived university campus experiences pursuing baccalaureate degrees with private foundation scholarship assistance. College Student Journal, 40, 4, 750-766
- Ashburn, E. (2007). Why Hispanic students choose Hispanic colleges. Chronicle of Higher Education, 54, 3, A25-A25.
- Aycan, Z. & Fikret-Pasa, S. (2003). Career choices, job selection criteria, and leadership preferences in a transitional nation: The case of Turkey. Journal of Career Development, 30, 2, 129-144.
- Banque de la République d'Haïti. (2007). Rapport annuel 2005.
- Banya, K., & Elu, J. (2001). The World Bank and financing higher education in Sub-Saharan Africa. Higher Education, 42, 1-34.
- Baptiste, I. (2001). Educating lone wolves: Pedagogical implications of human capital theory. Adult Education Quarterly 51, 3, 184-201.
- Baykal, U., Sokmen, S., Korkmaz, S., Akgun, E. (2005). Determining student satisfaction in a nursing school. Nurse Education Today, 25, 255-262.
- Ben-David, J., & Zlockzower, A. (1962). Universities and academic systems in modern societies. European Journal of Sociology, 3, 1, 45-84.
- Bernasconi, A. (2005). University entrepreneurship in a developing country: The case of the P. Universidad Catolica de Chile, 1985-2000. Higher Education, 50.
- Bickel, R. (2007). Multilevel analysis for applied research. It's just regression. New York: The Guilford Press.

- Bonal, X. (2004). Is the World Bank education policy adequate for fighting poverty? Some evidence from Latin America. International Journal of Educational Development, 24, 6, 649-666.
- Bourne, C., & Dass, A. (2003). Private and social rates of return to higher education in science and technology in a Caribbean economy. Education Economics, 11,1, 1-10.
- Bowen, H. R. (1980). What determines the cost of higher education? In D. W. Breneman, L. L. Leslie & R. E. Anderson (Eds.), ASHE Reader on Finance in higher education. Needham: Ginn Press.
- Briggs, S. (2006). An exploratory study of the factors influencing undergraduate student choice: The case of higher education in Scotland. Studies in Higher Education, 31, 6, 705-722.
- Brist, L. E. & Caplan, A. J. (1999). More evidence on the role of secondary education in the development of lower-income countries: wishful thinking or useful knowledge. Economic Development and Cultural Change 48, 1, 155-175.
- Brooks, H. (1980). Technology, innovation, and purpose. Daedalus, Proceedings of the American Academy of Arts and Sciences, 109, 1, 65-81.
- Brown, M. (1992). Caribbean first-year teachers' reasons for choosing teaching as a career. Journal of Education for Teaching ,18 ,2, 15.
- Brunner, J. (1997). From state to market coordination: the Chilean case. Higher Education Policy 10, 3/4, 225-237
- Bryant, J. L. (2006). Assessing expectations and perceptions of the campus experience: The Noel-Levitz student satisfaction inventory. New Directions for Community Colleges, 134, 25-35.

- Bunn, H. & Gut, E. (1946). The universities of Cuba, the Dominican Republic, and Haiti.  
Washington, DC: Division of Intellectual Cooperation, Pan American Union.
- Buss, C., Parker, J., & Rivenburg, J. (2004). Cost, quality and enrollment demand at liberal arts colleges. Economics of Education Review, 23, 57-65.
- Cabrera, A. F., Vries, W., & Anderson, S. (2008). Job satisfaction among Mexican alumni: a case of incongruence between hunch-based policies and labor market demands. Higher Education, 56, 6 699-722.
- Cabrera, A. F. & La Nasa, S. (2000). Understanding the college-choice process. New directions for institutional research, 107, Fall.
- Cadeau, R. (2007, May 17). Dure, dure, la vie de l'étudiant haïtien en République Dominicaine. Le Nouvelliste, May 17 2007. Retrieved on July 22nd 2008 from :  
<http://www.lenouvelliste.com/article.php?PubID=1&ArticleID=43527>
- Central Intelligence Agency (2007). Central Intelligence Agency. The World Factbook. Retrieved December 31, 2007. <https://www.cia.gov/library/publications/the-world-factbook/geos/ha.html>.
- Central Intelligence Agency. (2008). The world factbook. Haiti. Retrieved on July 11, 2008 from: <https://www.cia.gov/library/publications/the-world-factbook/geos/ha.html#People>.
- Chapper, A., Campani, S. A., Paiva, V., Assis, C., Garcia, E., & Silva, F. A. A. (2007). Comparison of student satisfaction in public versus private dental schools in Brazil. Journal of Dental Education, 71, 10, 1363-1369.
- Chartrand, J. M., Robbins, S. B., Morrill, W. H., & Boggs, K. (1990). Development and validation of the career factors inventory. Journal of Counseling Psychology 37, 4, 491-501.

- Conlon, J. & Humphreys, J. (2007). Universities, poverty and technology management: Developing export markets for West African micro-enterprises. International Journal of Technology Management and Sustainable Development, 6, 2, 123-133.
- Crocker, L. & Algina, J. (2006). Introduction to classical and modern test theory. Mason, OH: Thomson Wadsworth.
- Crossley, M. & Louisy, P. (1994). The changing role of the small state in higher education: A comparison of national and regional initiatives in the Caribbean and South Pacific. Compare: A Journal of Comparative Education, 24, 2, 109.
- Curran, V. R., Sharpe, D., Forristall, J., & Flynn, K. (2008). Student satisfaction and perceptions of small process in case-based interprofessional learning. Medical Teacher, 30, 4, 431-433.
- Daire, A. P., LaMothe, S., & Fuller, D. P. (2007). Differences between black/African American and white college students regarding influences on high school completion, and career choice. The Career Development Quarterly, 55, 275-279.
- Davis, K. (2000). College by the numbers. Forget the formulas. Here's how schools really determine financial aid. . Kiplinger's Personal Finance, 55, 11, 86-86.
- Deshommes, F. (2002). Université et luttes démocratiques en Haïti. Port-au-Prince, Haïti: Editions Cahiers Universitaires.
- DeVellis, R. F. (2003). Scale development: Theory and applications [Second edition]. Thousand Oaks: CA. Sage Publications, Inc.
- Dickinson, J. & Tokar, D. (2004). Structural and discriminant validity of the career factors inventory. Journal of Vocational Behavior, 65, 239-254.

- Dillman, D. A. (2007). Mail and internet surveys. The tailored design method. [Second Edition]. Hoboken, New Jersey : John Wiley & Sons.
- Dorsainville, J.C. (2005). Histoire d'Haïti [35eme édition]. Port-au-Prince, Haïti : Deschamps.
- Douglas, J., McClelland, R., & Davis, J. (2008). The development of a conceptual model of student satisfaction with their experience in higher education. Quality Assurance in Education, 16, 1, 19-35.
- Ecole Supérieure d'Infotronique d'Haïti. (2008). Formation universitaire. Retrieved March 20, 2008 from: <http://www.esih.edu/FormationUniversitaire.html>
- Ecole Supérieure d'Infotronique d'Haïti. (2007). Statement of capacity and needs. Retrieved February 19, 2008 from : <http://www.hedprogram.org/DesktopModules/EngagePublish/printerfriendly.aspx?itemId=124&PortalId=0>
- Economist (2006, October, 28). Lessons from the campus. Economist 381, 8501, 7-9.
- Eicher, J.-C. & Chevaillier, T. (2002). Rethinking the Financing of Post-Compulsory Education. Higher education in Europe, XXVII, 1-2, 69-88.
- Etzkowitz, H. & Leydesdorff, L. (2000). The dynamics of innovation: From national systems and “mode 2” to a triple helix of university-industry-government relations. Research Policy, 29, 2, 109-123.
- Etzkowitz, H. & Leydesdorff, L. (2000). The rise of a triple helix culture: Innovation in a Brazilian economic and social development. International Journal of Technology Management and Sustainable Development 2, 3, 159-171.

- Etzkowitz, H., Webster, A., Gebhart C., & Terra, B. (2000). The future of the university and the university of the future: The evolution of the ivory tower to entrepreneurial paradigm. Research Policy 29, 2, 313-330.
- Elliott, K. M. & Shin, D. (2002). Student satisfaction: an alternative approach to assessing this important concept. Journal of Higher Education Policy and Management, 24, 2, 197-209.
- Enman, M. & Lupart, J. (2000). Talented female students' resistance to science: an exploratory study of post-secondary achievement motivation, persistence and epistemological characteristics. High Abilities Studies 11, 2, 161-178.
- Faculté de Droit et des Sciences Economiques. (2008). Section juridique. Retrieved May 8, 2008 from <http://membres.lycos.fr/fakiltedwayiti/>
- Faculté d'Agronomie et de Médecine Vétérinaire. (2008). L'établissement La FAMV en chiffres. Retrieved May, 8 2008 from <http://www.famv.ueh.edu.ht/public/etablissement.php?code=5>
- Faculté d'Ethnologie. (2008). Faculté d'Ethnologie. Retrieved May 9, 2008 from : <http://www.ueh.edu.ht/facultés/fe.php>
- Farmer, P. (2004). Pathologies of power: Health, human rights, and the new war on the poor. Los Angeles: University of California Press.
- Forest, J. & Kinser, K. eds. (2002). Higher education in the United States: An encyclopedia. Santa Barbara: CA, ABC-CLIO
- Forrester, S. (2006). An examination of the factors contributing to student satisfaction with their overall academic experience. Shchole: A Journal of Leisure Studies and Recreation Education, 21, 21-33.

- Forste, R., Heaton, T. B., & Haas, D. W. (2004). Adolescents' expectations for higher education in Bogota, Colombia and La Paz, Bolivia. Youth Society, 36, 1, 56-76.
- Freeman, S. (Ed.) (1999). John Rawls: Collected papers. Cambridge, MA. Harvard University Press
- Gallien, T. & Oomen-Early, J. (2008). Personalized versus collective instructor feedback in the online courseroom: Does type of feedback affect student satisfaction, academic performance, and perceived connectedness with the instructor? International Journal on E-Learning, 7, 3, 463-476.
- Grodsky, E. & Jones, M. T. (2007). Real and imagined barriers to college entry: Perceptions of cost. Social Science Research, 36, 2, 745-766.
- Gutmann, A. (1982). What's the use of going to school? The problem of education in utilitarianism and rights theories. In A. Sen & B. Williams (Eds.), Utilitarianism and beyond (pp.261-277). Cambridge, NY: Cambridge University Press
- Haïti Référence (2008). Guide de référence sur Haïti. Retrieved March 08, 2008 from :  
  
<http://www.haiti-reference.com/education/superieur/universités.html> 03/08/08
- Hauptman, A. M. (2006). Higher education finance: Trends and issues. In J. J. Forest & P. G. Altbach (Eds.), International handbook of higher education (pp. 83-106). Netherland: Springer.
- Hawkins, J. G., Bradley, R. W., & White, G. W. (1977). Anxiety and the process of deciding about a major and vocation. Journal of Counseling Psychology 24, 5, 398-403.
- Higher Education Research Institute (2008). 2008 CIRP Freshman Survey. Retrieved April 24, 2008 from: <http://www.gseis.ucla.edu/heri/PDFs/surveyAdmin/tfs/tfs08.Instrument.pdf>.

- Hirst, P. (1965). Liberal education and the nature of knowledge. Philosophical analysis & education. London: Routledge & Kegan Paul Ltd.
- Hlavna, D. (1992). Economic development, human capital theory, and the community college. Community College Review 19, 4, 47.
- Hook, S. (1974). The idea of a modern university. Buffalo, NY: Prometheus Books.
- Howell, D. C. (2007). Statistical methods for psychology [sixth edition]. Belmont, CA: Thomson Wardworth.
- Hudson, R; Towey, J.; & Shinar, O. (2008). Depression, and racial/ethnic variations within a diverse nontraditional college sample. College Student Journal, 42, 1, 103-114
- INAGHEI (2008). Statement of capacity and needs. Retrieved February 19, 2008 from :  
<http://www.hedprogram.org/DesktopModules/EngagePublish/printerfriendly.aspx?itemId=124&PortalId=0>
- International Monetary Fund (2008). Haiti: Poverty reduction strategy paper. (IMF Country Report No. 08/115). Washington, DC: International Monetary Fund.
- Jerome, J. P. (2007, February 8). Les boursiers réclament leur allocation. Le Nouvelliste February 8, 2007. Retrieved on July 22nd from:  
<http://www.lenouvelliste.com/article.php?PubID=1&ArticleID=40078>
- Jobbins, D. (2005). Moving to a global state: A media view. Higher education in Europe, 30, 2, 137-145.
- Johnstone, D. B. (2004). The economics and politics of cost sharing in higher education: comparative perspectives. Economics of Education Review, 23, 403-410.



- Johnstone, D. B. (2005). Financing of higher education: Who should pay? In P. G. Altbach, R. O. Berdhal, & P. J. Gumport (Eds.), American higher education in the twenty-first century. Baltimore: John Hopkins University Press.
- Johnstone, D. B. (2006). Financing higher education. Cost-sharing in international perspective. Róterdam, the Netherlands: Sense Publishers.
- Jones, A. C. (2008). The effects of out-of-class support on student satisfaction and motivation to learn. Communication Education, 57, 3, 373-388.
- Juma, C & Yee-Cheong, L. (2005). Reinventing global health: The role of science, technology, and innovation. The Lancet, 365, 9464, 1105-1107
- Juma, C & Yee-Cheong, L. (2005). Innovation. Applying knowledge in development. UN Millennium Project. Task force on science, innovation, and technology. London: Earthscan.
- Juste, J. (2005, November7). La plupart des étudiants haïtiens ont un statut d'illégal. Le Nouvelliste, November 7, 2005. Retrieved on July 22nd 2008 from : <http://www.lenouvelliste.com/article.php?PubID=1&ArticleID=22304>.
- Karpiak, C. P. & Buchanan, J. P. (2007). University students from single-sex and coeducational high schools; Differences in majors and attitudes at a Catholic university. Psychology of Women Quarterly, 31, 282-289.
- Karrison, C. & Zhang, W. (2001). The role of universities in regional development. Endogenous human capital and growth in a two-region model. The Annals of Regional Science, 35, 2, 20-29
- Kelsay, L. S. (2007 Fall). Aftermath of a crisis: How colleges respond to prospective students. Journal of College Admission, 197, 6-13

- Kempner, K., & Jurema, A. L. (2002). The global politics of education: Brazil and the World Bank. Higher Education, 43, 331-354.
- Kerlinger, F. N. (1992). Foundations of behavioral research. [Third Edition]. Orlando, Florida: Harcourt Brace College Publishers.
- Kerr, C. (2001). The uses of the university [fifth edition]. Cambridge, MA: Harvard University Press.
- Kim, D. (2004). The effect of financial aid on students' college choice: Differences by racial groups. Research in Higher Education, 45, 1, 43-70.
- King, D. A. (2006). Governing technology and economic growth. International journal of technology and globalization, 2, 3-4, 311-322.
- Kmett, C. M., Arkes, H. R., & Jones, S. K. (1999). The influence of decision aid on high school students' satisfaction with their college choice decision. Personality and Social Psychology Bulletin, 25, 10, 1293-1301.
- Knight, J. (2004). Internationalization remodeled: Definition, approaches, and rationales. Journal of Studies in International Education, 8, 1, 5-31.
- Kolker, C. (1993, November 17). Haiti's shattered campus. The Chronicle for Higher Education. Retrieved January 10, 2008 from <http://chronicle.com/che-data/articles.dir/articles-40.dir/issue-13.dir/13a04701.htm>
- Kolker, C. (1994, November 9). Haiti's Universities Dream of Resurrection. The Chronicle for Higher Education. Retrieved January 10, 2008 from <http://chronicle.com/che-data/articles.dir/articles-41.dir/issue-11.dir/11a04001.htm>
- Kumar, R. & Usunier, J.-C. (2001). Management education in a globalizing World. Management Learning, 32, 2, 363-392.

- Kyriacou, C. & Coulthard, M. (2000). Undergraduates' views of teaching as a career choice. Journal of Education for Teaching, 26, 2, 117-126.
- LaBarbera, P. & Simonoff, J. S. (1999). Towards enhancing the quality and quantity of marketing majors. Journal of Marketing Education, 2, 1, 4-13.
- Le Nouvelliste (2007, 22 février). Régler le système d'enseignement supérieur. Le Nouvelliste. Retrieved February 23, 2007 from:  
<http://www.lenouvelliste.com/article.php?PubID=1&ArticleID=40474&PubDate=2007-02-22>.
- Le Nouvelliste, (2008, July 22). 62,19% de réussite. Retrieved on July 22nd 2008 from:  
<http://www.lenouvelliste.com/article.php?PubID=1&ArticleID=60154>.
- Le Nouvelliste (2008, April 7). Le bac permanent? Cela va sans dire. Retrieved on July 22nd 2008 from :  
<http://www.lenouvelliste.com/article.php?PubID=1&ArticleID=56283&PubDate=2008-04-12>
- Levy, D. C. (2006). The private fit in the higher education landscape. In J. J. Forest & P. G. Atlbach (Eds.), International Handbook of Higher Education (pp. 281-291). Netherlands: Springer.
- Lemelin, C. (2006). L'accessibilité aux études supérieures. Levis, Canada: Les Presses de l'Université Laval.
- Little, A. (2000). Development studies and comparative education: Context, content, comparison and contributors. Comparative Education 36, 3, 279-296.
- Lin, Q. (2008). Student satisfaction in four mixed courses in elementary teacher education program. Internet & Higher Education, 11, 1, 53-59.

- Lloyd, M. (2005, July 22). College in a country that struggles to survive: Haiti's main university faces poverty, violence, and a long line of students eager to attend. Chronicle of Higher Education, *LI*, 26-28
- Lobb, J. (1946). Caste and class in Haiti. The American Journal of Sociology, *46*, 1, 23-34.
- Lopez, N. (2002). Race-gender experiences in schooling : second-generation Dominican, West-Indian, and Haitian youth in New York City. Race Ethnicity and Education, *5*, 1, 67-89
- Lulat, Y. G.-M. (2005). A history of African higher education from antiquity to the present: a critical synthesis. Westport, CT: Praeger Publishers.
- Malgwi, C. A., Howe, M. A., & Burnaby, P.A. (2005 May-June). Influences on students' choice of college major. Journal of Education for Business, 275-282.
- Manochehri, N. (2008). Individual learning style effects on student satisfaction in a web-based environment. International Journal of Instructional Media, *35*, 2, 221-228.
- Marquis, C. (2004, July 21). \$1 billion is pledged to help Haiti rebuild, topping request. The New York Times. Retrieved March 3, 2008 from:  
<http://query.nytimes.com/gst/fullpage.html?res=9C07E2DB113AF932A15754C0A9629C8B63&scp=6&sq=International+aid+Haiti&st=nyt>
- Martinez Aleman, A. M. (2001). The ethics of democracy: Individuality and educational policy. Educational Policy, *15*, 3, 379-403.
- Matear, M. (2006). Barriers to equitable access: Higher education policy and practice in Chile since 1990. Higher Education Policy, *19*, 31-49
- Mavondo, F. T., Tsarenko, Y., & Gabbott, M. (2004). Journal of Marketing Education, *14*, 1, 41-60.

- McBurnie, G. (2001). Globalization: A new paradigm for higher education policy. Higher Education in Europe, XXVI,1, 11-26.
- Mejia-Ricart, T. (1999). Historia de la Universidad Dominicana. [Segunda Edición]. Santo Domingo, Republica Dominicana: Editora Universitaria-UASD.
- Menon, M. (1997). Perceived economic benefits of higher education. Education Economics 5, 1, 53.
- Ministère de la Planification et de la Coopération Externe (2004). Carte de Pauvreté d'Haïti. Version 2004. Port-au-Prince Haiti.
- Mixon Jr., F. & Hsing, Y. (1994). College student migration and human capital theory. Education Economics 2, 1, 65.
- Moller, O. (2006). Student satisfaction survey: the Utrecht University approach. Tertiary Education Management, 12, 323-328.
- Mungaray, A., & Lopez, R. (1996). Introduction to the Latin American challenges and perspectives in the nineties. Higher Education Policy, 9, 1, 3-9.
- National Science Board (2004). Science and engineering indicators 2004. NSB 04-1. Arlington, VA: National Science Foundation.
- National Science Board (2008). Science and engineering indicators 2008. NSB 08-1; NSB 08-1A. Arlington, VA: National Science Foundation
- Norusis, M. J. (2002). SPSS 11.0 Guide to data analysis. Upper Saddle River, NJ: Prentice Hall.
- Ogiegbaen, S. E. A. & Uwameiye, R. (2005). Analysis of factors influencing negative attitude toward teacher education in Nigeria. Education, 126, 2, 292-303
- Pean, L. J. R. (2000). Economie politique de la corruption: De Saint-Domingue a Haiti 1791-1870. Port-au-Prince, Haiti: Editions Mémoire.

- Perkin, H. (2006). History of universities. In J. J. Forest & P. G. Altbach (Eds.), International Handbook of Higher Education (pp. 159-205). Netherlands: Springer.
- Perna, L. W. & Titus, M. A. (2004). Understanding differences in the choice of college attended: The role of state public policies. Review of Higher Education, 27, 4, 501-525
- Phinney, J. S., Dennis, J., & Osario, S. (2006). Reasons to attend college among ethnically diverse college students. Cultural Diversity and Ethnic Minority Psychology 12, 2, 347-366.
- 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
- Polgreen, L. (2004, March 1). The Aristide resignation: exile; Haiti president forced out; marines sent to keep order. The New York Times. Retrieved March 3, 2008 from:  
<http://query.nytimes.com/gst/fullpage.html?res=9504E6DF173FF932A35750C0A9629C8B63&sec=&spon=&pagewanted=2>
- Porter, S. R. & Umbach, P. D. (2006). College major choice: An analysis of person-environment fit. Research in higher education, 47, 4, 429-449.
- Psacharopoulos, G. (1994). Earnings and education in Latin America. Education Economics, 2, 2, 21.
- Psacharopoulos, G., & Papakonstantinou, G. (2005). The Real University Cost in a "Free" Higher Education Country. Economics of Education Review, 24, 1, 103-108.
- Quamina-Aiyejina, L. (2007) Gender and education in the Commonwealth Caribbean: An annotated bibliography. Kingston: Jamaica. Institute of Education the University of the West Indies.

- Quaraeen, K. A., Al-Omari, A., Abu-Tineh, A. M. (2007). Students' satisfaction at Jordanian universities and its relation to some variables. Mediterranean Journal of Educational Studies, 12, 1, 67-92.
- Raudenbush, S. W. & Bryk, A. S. (2002). Hierarchical linear models. Applications and data analysis methods. [Second Edition]. London: Sage Publications.
- Rameau, P. (2001). A plan for a community college system in Haiti. (Doctoral dissertation, University of Florida, 2001). Retrieved January 28, 2009, from Dissertations & Theses @ Boston College database. (Publication No. AAT 3009956).
- Rameau, P. (2007). A plan for the creation of a community college system in developing countries: Case study Haiti. European Journal of Social Sciences, 5, 2, 104-120.
- Rawls, J. (1971). A theory of justice. Cambridge, MA: Harvard University Press
- Razak, A. A. & Saad, M. (2007). The role of universities in the evolution of the Triple Helix culture of innovation network: The case of Malaysia. International Journal of Technology Management and Sustainable Development, 6, 3, 211-225.
- Readings, B. (1996). The university in ruins. Cambridge, MA: Harvard University Press.
- Reason, R. D., Terenzini, P. T., & Domingo, R. J. (2007). Developing social and personal competence in the first year of college. The Review of Higher Education, 30, 3, 271-299.
- Roane, W. (1999). The "failure" of private universities in Uruguay: A tale of three institutions. ASHE annual meeting paper. , Annual Meeting of the Association for the Study of Higher Education. San Antonio, TX.
- Robert, R. & Mosher-Ashley, P. M. (2000). Factors influencing college students to choose careers working with elderly persons. Educational Gerontology, 26, 25-736.

- Robst, J. (2001). Cost Efficiency in Public Higher Education Institutions. Journal of Higher Education, 72, 6, 730-750.
- Rodriguez, P. & Herasme, M. (2002). El futuro de la economia dominicana y la demanda de empleo a nivel de educacion superior. Santo Domingo: Editora Centenario S. A.
- Rodriguez-Gomez, R. (1999). The modernisation of higher education in Mexico. Higher Education Policy, 12, 53-67.
- Rodriguez-Gomez, R., & Alcantara, A. (2001). Multilateral Agencies and Higher Education Reform in Latin America. Journal of Education Policy, 16, 6, 507-525.
- Romain, J. B. (1987). Situation de l'enseignement supérieur en Haïti. Port-au-Prince, Haïti: Imprimerie des Antilles.
- Rorty, R. (1999). Philosophy and social hope. New York: Penguin Books.
- Ryan, J. H. & Heim, A. A. (1997 Spring). Promoting economic development through university and industry partnerships. New Directions for Higher Education, 97, 42-50.
- Saad, M. (2004). Issues and challenges arising from the application of innovation strategies based on the triple helix culture. Experience of the incubation system in Algeria. International Journal of Technology Management and Sustainable Development, 3, 1, 17-34.
- Sachs, J. (2005). The end of poverty: Economic possibilities for our time. New York: Penguin Press.
- Salmi, J. (2000). Equity and quality in private education: the Haitian paradox. Compare, 30, 2, 163-178.



- Sanders, S. & Hirschbuhl, J. J. (2008). Effect of learner attributes, dialogue, and course structure on students' satisfaction and performance in online allied health courses. Journal of International Instruction Development, 20, 1, 17-27.
- Schertzer, C. B. & Schertzer, S. M. B. (2004). Student satisfaction and retention: A conceptual model. Journal of Marketing for Higher Education, 14, 1, 79-81.
- Schumpeter, J. (1934). The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle. Cambridge, MA
- Schwartz, A. E., & Scafidi, B. (2004). What's Happened to the Price of College? Quality-Adjusted Net Price Indexes for Four Year Colleges. Journal of Human Resources, 39, 3, 723.
- Schwartzman, S. (1999). Latin America: National response to world challenges in higher education. In P. G. Altbach & P. M. Peterson (Eds.), Higher education in the 21st century: Global challenge and national response. IIE research report No. 29. Annapolis Junction, MD: Institute of International Education/Boston College Center for International Higher Education.
- Schweizer, H., Hayslett, C., & Chaplock, S. (2008). Student satisfaction and performance in an online teacher certification program. Journal of Continuing Higher Education, 56, 2, 12-25.
- Scott, P. (2000). Globalisation and higher education: Challenges for the 21st century. Journal of Studies in International Education, Spring, 3-10.
- Shu-Hui, H. C. & Smith, R. A. (2008). Effectiveness of personal interaction in an learner-centered paradigm distance education class based on student satisfaction. Journal of Research on Technology in Education, 40, 4, 407-426.

- Silva, L. E. (1996). Transformation dynamics for higher education in Latin America and the Caribbean. Higher Education Policy, 9, 1, 67-74.
- Simpson, E. & Wendling, K. (2005). Equality and merit: A merit-based argument for equity policies in higher education. Educational Theory, 55, 4, 385-398.
- Sohail, M. S. & Saeed, M. (2003). Journal of Higher Education Management, 25, 2, 173-181.
- Solow, R. (1957). Technical change and the aggregate production function. Review of Economics and Statistics, 39, 3, 312-320.
- Somers, P, Haines, K., Keene, B., Bauer, J, Pfeiffer, M. McCluskey, J. Settle, J., & Sparks, B. (2006). Towards a theory of choice for community college students. Community College Journal of Research and Practice, 30, 1, 53-67.
- Spybrook, J., Raudenbush, S. W., Liu, X., Congdon, R., & Martinez, A. (2008). Optimal design for longitudinal and multilevel research: Documentation for the "Optimal Design" software. Retrieved August 9, 2008 from: <http://sitemaker.umich.edu/group-based/files/od-manual-20080312-v176.pdf>.
- St. John, E. P., & Noel, J. (1996). The effects of student financial aid on access to higher education: An analysis of progress with special consideration of minority enrollment. In C. T. e. al. (Ed.), ASHE Reader Series. New York: Simon & Schuster.
- St. John. E. P., Paulsen, M. B., & Carter, D. F. (2005). Diversity, college costs, and postsecondary opportunity: An examination of the financial nexus between college choice and persistence for African Americans and Whites. Journal of Higher Education, 76, 5, 545-569

- Standfird S. S., Pons, F., & Moshavi, D. (2008). Influence tactics in the classroom and their relationship to student satisfaction. Decision Sciences Journal of Innovative Education, 6,1, 135-152.
- Stokes, A. (2007). Factors influencing the decisions of university students to become high school teachers. Issues in Educational Research 17, 1, 127-145.
- Stromquist, N. P. (2002). Education in a globalized world: The connectivity of economic power, technology, and knowledge. Lanham MD: Rowman & Littlefield Publishing Group.
- Strongman, R. (2003). Women writing creole: Deyita's Esperans Dezire, Sistren's lionheart gal, and Mamita Fox's identifikashon. Journal of Haitian Studies, 9, 2, 42-57.
- Studenmond, A. H. (2006). Using econometrics. A practical guide [fifth edition]. Boston: Pearson Addison Wesley.
- Suarez, L. M. (2003). Breath, eyes, and memory: Rape, memory, and denunciation. Journal of Haitian Studies, 9, 2, 111-125.
- Sweetland, S. (1996). Human capital theory: Foundations of a field of inquiry. Review of Educational Research, 66, 3, 341-359.
- Tefera, D. (2002). Scientific communication in African universities: External assistance and national needs. (Doctoral dissertation, Boston College, 2002). Retrieved January 28, 2009, from Dissertations & Theses @ Boston College database. (Publication No. AAT 3077361).
- Teven, J. J. & Herring, J. E. (2005). Teacher influence in the classroom: A preliminary investigation of perceived instructor power, credibility, and student satisfaction. Communication Research Reports, 22, 2, 235-246.

- Trouillot, M.R. (1990). Haiti: State against nation. The origins and legacy of Duvalierism. NY: Monthly Review Press.
- Trouillot, M. R. (1995). Silencing the past. Power and the production of history. Boston: Beacon Press
- Trow, M. (2006). Reflections on the transition from elite to mass to universal access: Forms and phases of higher education in modern societies since WWII. In J. J. Forest and P. G. Altbach (eds.), International handbook of higher education. Netherlands: Springer.
- Umbach, P. D. & Porter, S. R. (2002). How do academic departments impact student satisfaction? Understanding the contextual effects of departments. Research in Higher Education, 43, 2, 209-234.
- UNEPH (2008). Université Episcopale d'Haiti. Retrieved July 15, 2008. <http://www.uneph.org/>
- UNESCO. (2005). UIS statistics in brief. Education in Haiti. Retrieved October 9 2007. [http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=121&IF\\_Language=eng&BR\\_Country=3320&BR\\_Region=40520](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=121&IF_Language=eng&BR_Country=3320&BR_Region=40520)
- UNICA. (1977). Series on university structure and organization. Vers une politique structurelle pour l'enseignement supérieur en Haïti. San Juan, P.R.: Cooperativa de Artes Graficas Romualdo Real.
- United Nations Conference on Trade and Development (2007). The least developed countries report 2007. Knowledge, technological learning, and innovation for development. United Nations, New York.
- United Nations Development Program (2007). Human Development Reports. Retrieved December 30, 2007. [http://hdrstats.United Nations Development Program.org/countries/country\\_fact\\_sheets/cty\\_fs\\_HTI.html](http://hdrstats.United Nations Development Program.org/countries/country_fact_sheets/cty_fs_HTI.html)

- United Nations Millennium Project (2005). Investing in development. A practical plan to achieve the millennium development goals. Retrieved, December 30, 2007 from <http://www.unmillenniumproject.org/documents/overviewEngLowRes.pdf>
- Université Caraïbe (2008). Université Caraïbe. Retrieved February 10, 2008 from : <http://www.universitécaraibe.com/>
- Université d'Etat d'Haïti. (2008). Les unités d'enseignement de l'Université d'Etat d'Haïti. Retrieved May 1, 2008 from : <http://www.ueh.edu.ht/index.php#>
- Université Notre Dame d'Haïti (2007). A propos de l'UNDH. Retrieved January 6, 2007 from <http://www.undh.org/>
- University of Quisqueya. (2007). University of Quisqueya. Statement of capacities and needs. Retrieved, February 19, 2008 from: <http://www.hedprogram.org/DesktopModules/EngagePublish/printerfriendly.aspx?itemId=124&PortalId=0>
- Walker, C. & Kelly, E. (2007). Online instruction: Student satisfaction, kudos and pet peeves. Quarterly Review of Distance Education, 8, 4, 309-319.
- Warden, R. (1998, September 4). Modern melting pots. Times Higher Education Supplement, 1348, 10.
- Ware, N. C. & Lee, V. E. (1988). Sex differences in choice of college science majors. American Educational Research Journal, 25, 4, 593-614.
- Walshok, M.L. (1997, Spring). Expanding roles for research universities in regional economic development. New Directions for Higher Education, 97, 17-27.
- Watkins, A. & Ehst, M. eds. (2008). Science, technology, and innovation. Capacity building for sustainable growth and poverty reduction. Washington, D.C.: The World Bank.

The World Bank. (2000). Higher education in developing countries: Peril and promise.

Washington D.C.: The International Bank for Reconstruction and Development/ The World Bank.

The World Bank (2002). Constructing knowledge societies: New challenges for tertiary education. Washington D.C., The International Bank for Reconstruction and Development/ The World Bank.

The World Bank (2008). Global challenges: Knowledge and learning. Retrieved on December 9, 2008 from:

<http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTUS/0,,contentMDK:21709046~menuPK:4851994~pagePK:51123644~piPK:329829~theSitePK:29708,00.html>

Wyman, S. (1997, Spring). A new vision for continuing higher education: Creating economic wellness. New Directions for Higher Education, 97, 5-17.

Zaglul, J., Sherrard, D., & Juma, C. (2006). Higher education in economic transformation. International journal of technology and globalization, 2, 3-4, 241-251.