

**THE EFFECT OF INSTITUTIONAL MERIT-BASED AID ON  
STUDENT ASPIRATIONS, CHOICE AND PARTICIPATION:  
A MIXED METHODS APPROACH**

**by**  
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## Abstract

This study sought to determine the effect of institutional merit-based aid on student aspirations, choice, and participation at a large Canadian comprehensive urban university. The present research combined two theoretical frameworks: Hossler and Gallagher's (1987) college choice and Perna's (2006) situated context. Drawing on these frameworks an on-line web survey, including both forced-choice and open-ended questions, was developed for this study. The survey was distributed to all domestic direct-entry students at Simon Fraser University who received an offer of merit-based aid for the Fall 2009 term. Using parallel mixed methods analysis this study used descriptive and inferential statistics and thematic analysis.

Nearly 80% of the respondents indicated their parents encouraged them to do well academically in hopes of receiving a scholarship offer. Respondents that came from families where at least one parent was a non-immigrant were more likely to accept the scholarship offer. This finding indicates that while the institution has a strong prestige reputation locally, there may be a greater preference amongst the immigrant population to choose an institution that is perceived to have a greater reputation.

There were multiple combinations of factors, which affected who accepted or did not accept a scholarship offer. The leading indicator of acceptance of offer was admission to first choice institution. Other significant aspects were: program, proximity, cost of attendance, amount, and institutional reputation. The type (automatic/applied) and level (amount) of the scholarship were typically secondary factors in shaping the decision of where to attend.

Forty three percent of respondents who accepted the scholarship offer were first generation university students and 15% of those who accepted were also first generation post-secondary (college or university) students. Neighbourhood before-tax median

family income was \$64,000 for all respondents; 51% of those who accepted the scholarship offer had incomes at or below the median. While in Canada and the US, merit-based student financial aid is often criticized as a regressive policy that amplifies disparities in wealth and education, further research should examine the potential underlying causes of the contrary findings in this study

**Keywords:** institutional merit-based aid; scholarships; mixed methods; aspirations, college choice, access to post-secondary

*To Jay Lawrence Phipps,  
beloved brother-in-law,  
who led the way to this level of education  
but, due to his untimely passing,  
never received this honour.  
  
You are forever in my heart.*

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## Abbreviations & Glossary

BFA	Bachelor of Fine Arts
CESP	Canadian Education Savings Program
CLB	Canada Learning Bond
CMA	Census Metropolitan Area
CMSF	Canadian Millennium Scholarship Foundation
College choice	The three-stage process of predisposition, search and choice to determine whether a student chooses to participate and, if they decide to participate, where a student chooses to attend (Hossler & Gallagher, 1987).
CSLP	Canada Student Loan Program
CUSC	Canadian University Survey Consortium
Domestic student	A student who is Canadian by birth, Canadian by immigration or who holds permanent resident status and as a result pays domestic tuition fees.
First generation Canadian	The first generation born in Canada whose parents are immigrants.
First generation post-secondary	A student whose parents did not attend post-secondary (Terenzini, Rendon, Upcraft, Millar, Allison, Gregg et al., 1994).
First generation university	A student whose parents never attended university or never completed university.
GPA	Grade point average
Immigrant	A person who was born outside Canada who has immigrated to Canada and become a citizen.
Merit-based aid	For the purposes of this study, merit-based aid refers to institutional scholarships automatically provided with an offer of admission for applicants with admission averages of 80% or greater and selective scholarships that have academic plus additional criteria of leadership ability and community service awarded through an adjudication process.
NALL	New Approaches to Lifelong Learning
Non-immigrant	A person who is born in Canada whose parents were also born in Canada.

OECD	Organisation for Economic Co-operation and Development
Parental aspirations	The desire and motivation for their children to attend post-secondary education and the proactivity of preparing by saving and/or accessing resources (Cabrera & La Nasa, 2000).
Permanent resident	A person who was born outside Canada who has immigrated to Canada but has not yet become a citizen.
Planning 10	A grade 10 course in British Columbia that addresses setting goals and plans for students' present and future life.
PSE	Post-secondary education
SAS	Statistical Analysis Software
SES	Socio-economic status
SFU	Simon Fraser University
SLID	Survey of Labour and Income Dynamics
SPSS	Statistical Package for the Social Sciences
UBC	University of British Columbia
UVic	University of Victoria
VF	Validation framework
VMI	Visible minority immigrants
YITS	Youth in Transition Survey

# CHAPTER 1.

## Introduction

Access to post-secondary education (PSE) is the key to the future of the Canadian people to improve and sustain employability, to enhance Canada's competitiveness in the world, and to sustain the quality of life enjoyed in Canada (Canadian Council on Learning, 2006). Berger and Parkin (2009) demonstrated the continuing value of a post-secondary education by analyzing the long-term benefits of sustained employability and higher lifetime earnings for college and university graduates over a 25-year-period (1971 – 2005). These benefits, in turn, result in improved health outcomes and quality of life, providing positive inter-generational effects. It is for these reasons that access to post-secondary education is important as it has the potential to improve individual, family, and societal circumstances.

According to the literature on post-secondary access, many factors, such as aspirations, preparation, socio-economic status (SES), parental education, academic performance, and family income, affect participation. However, there is still a lack of understanding of the best and most appropriate interventions to overcome any barriers within these factors.

One of the critical barriers to access to post-secondary is the cost involved. In *The Price of Knowledge 2006-07*, Berger, Motte, and Parkin (2007) identified three financial barriers to PSE: price constraints, students think the costs outweigh the benefits, cash constraints, students are unable to afford it, and debt aversion, students

are unwilling to go into debt. These *cost of access* barriers form part of an individual's decision-making process about the returns expected from pursuing post-secondary education.

If the cost of post-secondary attendance creates a barrier, there are currently three ways a student in Canada can directly or indirectly reduce their *cost of access* and hence, minimize future post-secondary debt. Two of these directly reduce the cost of attendance, needs-based aid, such as grants and bursaries, and merit-based aid, such as scholarships. The third way results from federal and provincial government tax credits; although these tax credits do not reduce the direct costs of post-secondary education, they alter students' taxable income. In Canada, post-secondary institutions play an important part in providing non-repayable financial aid, with bursaries seen as the means to support students with financial need, and scholarships as a means to attract the best and the brightest.

In Canada, post-secondary institutional merit-based aid typically forms part of an admission offer. Merit-based aid is broken into two categories: automatic entrance scholarships based on academic performance only; or based on academic performance plus additional attributes such as leadership capability and community service. The available evidence suggests that these attributes (and consequently their corresponding rewards) correlate with higher socio-economic status (Cabrera & La Nasa, 2000; Ehrenberg, Zhang, & Levin, 2006; Frenette, 2007; Looker & Lowe, 2001). This raises the question of whether institutional merit-based aid enables access and participation to students of all backgrounds, or primarily supports the participation of middle and upper income students who could participate independent of aid.

From a social policy point of view, there is evidence that merit-aid supports those who already have access (Cornwell & Mustard, 2002; Heller, 1999) and therefore bypasses students who are academically capable but do not have the social or cultural capital to navigate the post-secondary system or overcome the financial barriers to access. Given the potential of post-secondary education to change human circumstances and provide long-term inter-generational societal benefits, post-secondary institutions need to determine if they are putting their financial aid dollars to the best use possible.

## **1.1. Statement of the Problem**

This study examined one institution's use of merit-based aid—both automatic and selective entrance scholarships. Automatic entrance scholarships are awarded on academic performance and are coupled with an offer of admission at this institution, whereas selective scholarships are applied for and awarded based on a combination of academic performance, leadership, and community service. As the institution in question had little evidence about the impact of its merit-based aid programs on achieving its enrolment goals, this research developed an understanding of merit-based aid recipients' motivations, intentions, demographics, and decision-making processes. It also further evaluated whether institutional merit-based aid impacted the choice to participate. Specifically, was merit-based aid a significant factor in determining whether to attend university at all and/or where to attend? It also explored whether there were differences among recipients of different backgrounds and between the two kinds of scholarships.

This research was carried out at Simon Fraser University (SFU), a Canadian comprehensive research university offering undergraduate and graduate level education.

In just over 40 years, this university has grown from 2,500 to over 25,000 undergraduate students. It presently awards over \$5 million annually in merit-based entrance scholarships. Since the university's inception in 1965, it has continued to pride itself on being an institution that provides access and increased participation to post-secondary education. One of the defining characteristics of this university is that it is located in one of the major immigrant settlement centres in Canada (Crompton, 2008). This has resulted in an increasingly diverse and growing visible minority student population. In 2008, the Canadian University Survey Consortium (CUSC) undergraduate survey results indicated that 53% of respondents at Simon Fraser University identified themselves as a visible minority. A 28% increase in self-reported visible minority status from the last survey results conducted in 2005. In light of the diversity of this university's student population and the concomitant lack of understanding the consequences of the impact of the institution's merit-based aid, it is important to understand the nature of institutional merit-based aid beyond its roles as a competitive recruitment tool, and as an alternative to needs-based aid.

## **1.2. Purpose of this Research**

The purpose of this study was to understand how different forms of entrance scholarships affect student aspirations, choice to attend, and the effect the scholarship had on the student's decision to participate in post-secondary education. It sought to determine the characteristics of direct-entry domestic recipients of institutional merit-based financial aid. Specifically, the recipient's characteristics relevant to this research focused on the differences among students of different backgrounds. These differences included whether the student was the first generation in their family to attend post-secondary, and/or whether the student's family of origin immigrated to Canada was first

generation Canadian or was Canadian for more than one generation. In order to understand recipient motivations, this study examined the effect of receiving the aid on the choice of whether to attend, where to attend, how much this type of aid was a motivating factor in their high school academic performance, and how much parental/student aspirations contributed to a student's motivation to achieve a merit-based scholarship.

### **1.3. Significance of the Study**

As few studies on institutional merit-based aid have been conducted in Canada, this study will directly contribute to knowledge about the impact of this form of financial aid, which will, in turn, inform institutional financial aid policies and practices. This inquiry will also be useful to other post-secondary institutions that are interested in whether and how institutional merit-based aid may make a difference to student access, create a diverse student population, and attract the best and the brightest. It will also provide insight into whether merit-based aid motivates students to strive for academic excellence.

While there are some examples of recent work using qualitative methods in examining financial aid policies (see Venegas, 2006), the bulk of the research in financial aid has been quantitative in nature. Perna (2008) and St. John (2006) also employed qualitative approaches stating that it may help provide new insights into key issues such as equality of access and the role financial aid plays in a student's college choice. The use of qualitative methods is a recent development in financial aid research and thus will need time to gain legitimacy. Therefore, a study that utilized both quantitative and qualitative approaches in a mixed method design provides a way to bridge the two traditional research paradigms and utilize the necessary tools from each

approach to understand the substantive issues (Johnson, Onwuegbuzie, & Turner, 2007).

## **1.4. Research Questions**

The overarching research question was: What was the effect of merit-based institutional financial aid on student aspirations, choice, and participation at a large comprehensive university? Five research sub-questions were developed in an effort to more deeply understand and answer the overarching question. The five sub-questions were:

1. What were the similarities and differences in the student population using the following variables:
  - a. merit-aid type (automatic versus applied),
  - b. merit-aid level (small, medium, large),
  - c. citizenship for student and parents (non-immigrant, immigrant or permanent resident),
  - d. parent/guardian level of education, and
  - e. socio-economic status (estimated on parents' postal code)?
2. What were the aspiration effects of institutional merit-based aid on students' high school academic performance?
3. What role did the aspiration of parents/guardians play in affecting the academic performance of children in receiving merit-based financial aid?
4. What role did the different types of institutional merit-based aid play in students' decision to attend university?
5. What did it mean to the students' and their family to receive institutional merit-based aid?

These questions shaped the design, data collection, and analysis of the data.



## **1.5. Delimitations and Limitations of this Study**

This study conducted at one Canadian comprehensive urban university describes domestic scholarship recipients directly out of high school, who received either an automatic academic scholarship, or a selective scholarship that used a combination of academic performance, leadership, and community service. This study also examined the motivations and the effect of receiving institutional merit-based aid on a student's decisions to enrol at this or another institution. As the study described domestic recipients of institutional merit-aid at one Canadian comprehensive urban university at one point in time, the findings are not necessarily generalizable to other universities, to different types of institutional merit-based aid, to other types of students such as college or university transfer students, or to students' decisions to enrol at other institutions.

The specific limitations of the methods utilized in this study were that the data was self-reported and family income was estimated from Statistics Canada before tax median family income based on parental postal codes.

## **CHAPTER 2. Literature Review**

This chapter provides a review of the literature on student financial aid. Although its particular focus is on merit-based aid, no discussion would be complete without also understanding merit-based aid in relation to the other types of student financial aid—needs-based aid and student loans. Nor is it possible to discuss merit-based financial aid without discussing the public policy issues of access to and participation in PSE and framing those issues within a theoretical framework.

The review of the literature begins by describing the literature that pertains to access and participation in PSE, and the role that financial aid plays. This review provides a context for understanding the issues of access, which include the emerging literature on aspirations as well as participation that dominate the literature and research in this area. To put these in a Canadian context, a brief history of student financial aid in Canada will follow. Then, an overview of the theoretical frameworks important to financial aid research provides a means to understand the complexity and interplay of human, social, and cultural capital on access to, and participation in PSE, and the role of financial aid. Finally, these theoretical frameworks are used to draw out the unaddressed questions and gaps in the literature on institutional merit-based student financial aid.

### **2.1. Access, Participation, and Student Financial Aid**

Canada has one of the highest post-secondary participation rates in the world, with six in ten adults, aged 25 to 64, having completed some form of post-secondary education (Statistics Canada, 2006). As of 2007, 25% of Canadian adults between the

ages of 25 and 64 hold a university bachelor degree or a certificate above a bachelor degree, ranking Canada sixth amongst Organisation of Economic Co-operation and Development OECD nations (Statistics Canada, 2009).

According to Trow's (2007) typology of elite, mass, and universal models of tertiary education, Canada can be placed in the universal model, with a post-secondary education participation rate consistently over 50%. One attribute of universal education is that the public views access as a societal obligation. As stated by Trow (2007), "the higher the proportion of the relevant age group going on to higher education, the more the democratic and egalitarian concerns for equality of opportunity come to center on the increasingly important sector of tertiary education" (p. 246). Kirby (2009) stated that to achieve true equity requires measuring the social backgrounds of participants in addition to measures of overall participation. This is of particular importance at universities where participation continues to be greater for individuals from more affluent backgrounds compared to individuals from a lower income background (Frenette, 2007). Where university participation of first-generation students is affected by their parental level of education (Andres & Krahn, 1999). Where proximity to university education affects participation and cost of attendance and where under-represented populations' participation (such as Aboriginal Canadians) is negatively affected by low rates of high school completion (Hull, 2005). This requires a better understanding of the effects of social policies to determine whether they are promoting equity, or reinforcing barriers to access and participation.

### **2.1.1. Defining Access, Participation, and Financial Aid**

This section defines what is meant in the context of this review by *access*, *participation*, and *financial aid*. While there is no single definition of access, it is widely

described as the way to ensure that anyone with the requisite ability, regardless of SES, can achieve his or her greatest potential. In a white paper for the C. D. Howe Institute, Pakravan (2006) described access through the principle of equity, which “is achieved when students of the same ability enjoy the same access to colleges and universities” (p. 5). Hearn (2001) provided what appears to be a more precise definition—“whether or not disadvantaged students enter post-secondary education” (p. 439). Pakravan’s definition was about having the opportunity to attend, while Hearn’s went beyond opportunity to defining who we need to be concerned about in achieving equity in participation in post-secondary education. In a New Approaches to Lifelong Learning (NALL) working paper, Livingstone and Stowe (2001) agreed with Pakravan that the principle of equity is fundamental to the concept of access adding to the discussion by describing three types of equality that broadens the concept of access. The first is “equality of initial opportunity” (Livingstone & Stowe, 2001, ¶2), giving all children a comparable chance at school; the second, “equality of continuing opportunity” (Livingstone & Stowe, 2001, ¶2), children from all social backgrounds are proportionally represented in the student body at different levels of schooling; and the third, “equality of outcome” (Livingstone & Stowe, 2001, ¶2), those completing school come from all social backgrounds and are proportionally represented. This provides a way to differentiate access from participation and incorporates the concept of persistence. While the third component of Livingstone and Stowe’s (2001) definition is important as it relates to persistence, thus providing a complete picture of the student post-secondary life cycle, it is beyond the scope of this study. It is the combination of access (having the opportunity) and participation (deciding to attend and where) that are the underlying themes of this literature review. This creates a distinction between access and participation. Overcoming the barriers to access is necessary, but is not sufficient, to create the choice

to participate in post-secondary education. Therefore, a definition of equality of access and participation framed within a college choice decision-making model of whether to attend—and if so, where to attend—creates part of the context for this literature review (Cabrera & La Nasa, 2000; Chapman, 1981; Hossler & Gallagher, 1987). Finally, it is important to note that in the context of this study, the term *college* specifically refers to 2-year institutions in Canada, the term *university* refers to 4-year institutions, and the term *post-secondary education* includes both 2-year and 4-year institutions.

Across the variety of ways that governments and post-secondary institutions have to influence access and participation, student financial aid stands out as the most widely used policy lever. Student financial aid is financial assistance made available to students by governments, post-secondary institutions, or private sources to support student access to, and participation in, post-secondary education. Typically, it falls into three categories: needs-based aid (bursaries, grants, and work-study programs); merit-based aid (scholarships and awards); and loans (government or privately funded). The first two categories are non-repayable, while the latter requires repayment. As governments and institutions commit significant financial resources to supporting post-secondary access and participation, it is important to know who benefits from these programs.

### **2.1.2. Who Attends Post-Secondary Education in Canada**

Since the 1960s, the significant expansion of the post-secondary system in Canada has been influenced by the principle of equality of access (Andres & Krahn, 1999). While participation rates in colleges and universities have grown since then, studies from the 1980s onward point to persistent lower participation rates for students from families with low to middle incomes as an area of concern, particularly for those

attending university (Andres & Krahn, 1999). Bouchard and Zhao (2000), in their analysis of trends in accessibility, participation, and returns on university education, found that participation levelled off during the 1990s, and that the gap has since widened between the participation of low and middle income Canadians. Usher (2004) using data from Statistics Canada's 2001 Survey of Labour and Income Dynamics (SLID), provided post-secondary participation rates by income quartile for 18- to 21-year-olds which showed that there was a participation gap of 12% between the lowest and highest income quartiles. When only university participation was examined, the gap was more pronounced (17.7%). These participation gaps from the lowest to the highest income quartile have persisted and are at the heart of efforts to determine the factors affecting access and participation and the role of financial aid (Bell & Anisef, 2005; Finnie, Lascelles, & Sweetman, 2005).

### **2.1.3. Factors Affecting Access**

No single factor is a clear predictor for who will consider accessing post-secondary education; however, there are several factors that have been found to influence access. These factors include: encouragement from parents (Barr-Telford, Cartwright, Parsil, & Shimmons, 2003; Kim & Schneider, 2005; Krahn & Taylor, 2005; Perna & Titus, 2005), SES (Andres & Krahn, 1999; Barr-Telford et al., 2003; Drolet, 2005; Finnie et al., 2005; Finnie & Mueller, 2008; Hango & de Brouker, 2007; Hearn, 2001; Livingstone & Stowe, 2001; Tomkowicz & Bushnik, 2003), ethnicity (Finnie et al., 2005; Krahn & Taylor, 2005; Lambert, Zeman, Allen, & Bussière, 2004, Looker & Lowe, 2001; Shaienks & Gluszynski, 2007), academic performance (Cabrera & La Nasa, 2000; Frenette, 2007; Hango & de Brouker, 2007; Long & Riley, 2007; Looker & Lowe, 2001; Zeidner, 2006), gender (Andres & Krahn, 1999; Looker & Lowe, 2001), proximity to post-

secondary institutions (Frenette, 2002; Kirby & Conlon, 2005; Shaienks & Gluszynski, 2007), and information (Côté, Skinkle, & Motte, 2008; Cabrera & La Nasa, 2000; Looker & Lowe, 2001; Hossler & Gallagher, 1987; Zeidner, 2006). The five factors that received the most attention in the literature, and that are the most central to this literature review, are parental encouragement, SES, academic performance, information, and ethnicity.

#### 2.1.3.1. **Parental Encouragement**

Encouragement has two components—motivation or aspiration, and proactivity (i.e., saving and searching out resources) (Cabrera & La Nasa, 2000). Krahn and Taylor (2005) compared educational aspirations of 15-year-olds and their parents with a particular view to discerning the difference for those who are visible minorities. They found that parental and student aspirations were highest for visible minority immigrants (VMI), even though 30% of the immigrant children lived in families in the lowest income quartile. They found the factors that contributed to VMI students' aspirations were higher grades in school, school engagement, higher parental education, and parental aspirations. One of the challenges in Krahn and Taylor's (2005) study was that the "mixed" category of participants lumped non-immigrant visible-minority (including Aboriginals) and non-visible minority immigrants together. This posed challenges to the results, but the authors describe further areas of study that would help explain their findings, suggesting qualitative studies to understand the "meritocratic discourse" (p. 429), "how opportunity structures are understood within VMI families" (p. 429), and the interplay between social capital and bicultural competence.

As early as Grade 9, students tended to categorize themselves into "whiches"—never considered not going; "whethers"—considered the options and applied; and "nots"—never considered attending (Hossler & Gallagher, 1987). Using data from the

Youth in Transition Survey (YITS), Tomkowicz and Bushnik (2003) identified three pathways, similar to Hossler and Gallagher (1987), that high school graduates have taken by the age of 20—“right-awayers, delayers, and no-goers” (p. 5). The difference between right-awayers and delayers included “province of residence, identification and involvement in the social and academic aspects of school, overall grade average, participation in part-time work during high school, and scholarships received for funding post-secondary education” (p. 5). The difference between no-goers and the other two categories was that their parents, on average, had lower levels of education and the students’ had lower levels of academic performance. This study confirmed the findings of other researchers’ (Andres & Krahn, 1999; Berger et al., 2007; Finnie et al., 2005; Finnie & Mueller, 2008; Frenette, 2007), who all indicated that the structural barriers of SES, especially parental education and student academic performance, were the underlying factors that affected access. Parental income played a more significant role in university participation with higher levels of income increasing participation (Drolet, 2005).

Parental aspirations in combination with parental education seem to overcome the influence of SES for immigrant youth in Canada (Krahn & Taylor, 2005). Controlling for household income, the aspiration of students and parents, even from the lowest incomes, were higher for visible-minority immigrants. Finnie and Mueller (2008) also described the effect of immigrant parental aspirations as an important factor in post-secondary attendance, stating that “the desired level of PSE completion on the part of parents had, by far, the most important influence” (p. 17). The question arises, however, as to how immigrant families fund their children’s participation in post-secondary education. Looker and Lowe (2001) pointed to the need for further research in Canada



to learn how SES interacts with parental aspirations and ethnicity, and how to shape plans for post-secondary attendance.

In determining whether to attend university, the interplay between parental encouragement in the form of aspirations, parents' education, the student's academic performance, perceptions of costs and benefits, and ethnicity affect who considers the opportunity.

#### 2.1.3.2. **Socio-economic Status**

SES effects include family income, parental occupation, and parental education levels. Canadian studies from the 1980s and 1990s demonstrate that there is a persistent difference in attendance by social class (as measured by parental education and income levels) with those from middle and upper incomes attending post-secondary education, and in particular university, at higher rates than those with lower incomes (Andres & Krahn, 1999). Dorlet's (2005) study, spanning 1993 - 2001, found there was no change in the effect of parental income on participation. There was little change over the period in question with respect to the participation rates of those from lower or modest incomes. The more important variable on participation was parental education.

Andres and Krahn's (1999) longitudinal study examining the influence of family background on post-secondary participation used parental education to "operationalize family socio-economic background" (p. 59). This was done for two reasons. First, high school students have a better sense of parental education than other indicators such as family income or occupation. Second, parental education, as an indicator of cultural capital (Bourdieu, 1986), played "a more direct role in determining ... children's educational choices" (Andres & Krahn, 1999, p. 59). The findings indicated that students whose parents were university-educated were more likely to attend university. Parental

education did not have the same effect on 2-year college participation. Andres and Krahn (1999) also examined the effect of academic program and surmised that the joint effect of parental education and high school program affected post-secondary participation and completion rates.

#### 2.1.3.3. **Academic Performance**

Measures of academic performance include high school grades, results on standardized tests, and academic ability. Students from higher SES backgrounds tend to perform better on standardized tests and achieve higher academic performance (Frenette, 2007). Hearn (1991) found that academic performance was the dominating factor in determining college destination. Post-secondary institutions predominately use academic performance for admission, thus it affects student options and choices (Looker & Lowe, 2001). The more academically able the student, the greater number of post-secondary options the student was likely to consider. Such SES effects can be countered by the “opportunity to learn”, with students taking advantage of the academic opportunities provided within their school (Zeidner, 2006). However, students with lower SES did not know how to access these opportunities, as they were not aware of what was required academically to be successful in a post-secondary program. They also perceived the costs of post-secondary education to be unaffordable. Thus, access was affected by the intersection of academic preparation and the ability to pay (Zeidner, 2006). Both of these pointed to the need for access to timely information for both students and parents.

#### 2.1.3.4. **Information**

Information refers to the importance of having accurate details about the costs and benefits, plus options for financing. Research examining the role of information and

its affect on access has found that parents and students misjudge the costs and benefits of post-secondary education (Côté et al., 2008; Cabrera & La Nasa, 2000; Looker & Lowe, 2001; Usher, 2004). While Usher (2004) found that most families have inadequate savings for post-secondary, this was particularly true for low-income families as they misjudge the costs and the benefits of post-secondary education to a greater extent.

At the “whether” stage, this resulted in not being aware of all post-secondary options available, and the means to finance one’s education. Perna (2006) examined the question of why parent and student misperceptions existed, and how the lack of accurate financial information influenced the decision to access post-secondary education. She stated that providing information alone was not sufficient. Tailored information that was both accessible and relevant to students of different backgrounds would help to eliminate the information barrier. Students and their parents cannot be viewed as a homogeneous group with the same information needs as this does not take into consideration the different social, cultural, and economic circumstances of students.

Côté et al. (2008) found that students who were male or first-generation students were more likely to have “inflated estimates of financial costs and lower estimates of benefits that are not counteracted by seeking out knowledge” (p. 88). This study found that the two most significant predictors of non-participation were the student’s degree of debt aversion and identity anxiety—“a non-monetary “personal cost” of higher education” (Côté et al., 2008, p. 78).

#### 2.1.3.5. **Ethnicity**

Looker and Lowe (2001) suggested that studies are needed to understand the differences between minority and non-minority groups in Canada, especially given the

growth in immigration. Perna and Titus' (2005) research provided insight into the ways in which the racial/ethnic group differences affected enrolment in post-secondary education. By examining parental involvement and its effect on enrolment, they found that parental involvement in decision-making resulted in higher levels of enrolment, but the effect and type of involvement differed by race/ethnic group. In the case of African American students, parent-initiated interaction with the school on academic matters increased the likelihood of post-secondary education enrolment, compared to other ethnic groups where student-parent discussions placed a higher premium on college enrolment. Similarly, Finnie et al. (2005) analyzed Statistics Canada's School Leavers and Follow-up surveys and found that those of Asian and South/East Europe ethnicity were more likely to attend any type of post-secondary, and that university participation was particularly significant for Asian males. Finnie and Mueller (2008) found that children of immigrants, both first and second generation, were more likely to participate in post-secondary education than their non-immigrant counterparts. Moreover, they were more likely to participate in university. While this is a positive benefit of immigration, and not surprising given that Canada's immigration rules favour those with higher education, other factors such as family income do not necessarily guarantee access and participation.

#### 2.1.3.6. **First Generation Learners**

In Canada, first-generation learners, defined as "students from families where neither parent had more than a high school education" (Pascarella, Pierson, Wolnaik, & Terenzini, 2004, p. 249), have not received as much attention in the access and financial aid literature. Research has shown that first generation learners differ in family income, academic preparation, and information about post-secondary information (Hossler,

Schmit, & Vesper, 1999; Pascarella et al., 2004; Perna, 2005). Looker and Lowe (2001) did not mention this as an area for further research when discussing research gaps in Canada. Nor is it discussed in terms of ethnic minorities or immigrant students.

#### **2.1.4. Factors Influencing Participation**

The access literature downplayed the role that income and cost play, regarding them as an indirect factor instead (Finnie & Mueller; 2008; Frenette, 2007; St. John, 2006). It was for this reason that the distinction was made between access and participation earlier in this literature review. The cost factor and the effect of financial aid changed from a perception to a reality in the course of the decision to attend post-secondary and the eventual choice of where to attend. The financial factors that influenced the ability to participate in post-secondary education include cost of attendance (Berger et al., 2007; Cabrera & La Nasa, 2000, Frenette, 2007; Hearn, 2001; Kirby & Conlon, 2005; Long & Riley, 2007; Patiniotis & Holdsworth, 2005; Perna, 2005), price sensitivity (Heller, 1997; Hossler et al., 1999; Jackson, 1978; St. John, 1994), and an offer of financial aid (Cabrera & La Nasa, 2000; Chapman & Jackson, 1987; Jackson, 1978; Lang, 2005; St. John, 2001; Thistlewaite, 1958).

##### **2.1.4.1. Cost of Attendance**

The burden of financing one's education seemed to narrow options for lower-income students, keeping them closer to home so as not to weigh their family down with debt (Cabrera & La Nasa, 2000). This, in essence, was a form of debt aversion, which influenced their choices. Berger et al. (2007) also found that issues of debt aversion and fiscal constraints can affect the decision to participate, and that this may be a factor in the growing incidence of part-time attendance (Hearn, 2001; Mueller, 2008). Students chose to go to an institution close to home to minimize living expenses (Long & Riley,

2007; Patiniotis & Holdsworth, 2005) while some students who do not live close to a campus chose not to attend, as the living expenses made the cost of attendance unaffordable (Frenette, 2002; Kirby & Conlon, 2005). Students also made choices on the type of institution to attend— such as 2-year versus 4-year, or public versus private—in order to manage the cost of attendance (Long & Riley, 2007; Perna, 2000; Perna, 2005).

#### 2.1.4.2. **Price Sensitivity**

Studies in this area determined students' sensitivity to the price of tuition and the likelihood of enrolment. A decrease in net-price, tuition minus financial aid, was positively associated with an increased likelihood to enrol (Dynarski, 2002; Heller, 1997; Leslie & Brinkman, 1987; Singell & Stater 2004; St. John, 2000). These studies also found that lower income students were more price-sensitive to a change in net-price of attendance, compared to their middle and higher-income counterparts (Heller, 1999; Leslie & Brinkman, 1998). Mueller (2008) indicated that American findings in this area may not apply to Canada given the greater variation in tuition pricing in the U.S.

Frenette (2007) described this effect on middle-income students in Canada during the period of significant tuition fee increases in Ontario in the late 1990s. As a result, there was a decrease in the probability of student participation in professional degree programs. Mueller's (2008) summary of the literature in this area indicated that price sensitivity in Canada shows up in the type of institution attended, with more students from low-income families opting for college where tuition and costs were less. Amongst low-income families, university attendance may be more sensitive to tuition and the increased costs of attendance, and may help to explain the greater gap in participation between those from low- to high-income backgrounds.

#### 2.1.4.3. Offer of Financial Aid

Thistlewaite's (1958) seminal work on student finances examined whether there was a relationship between attracting the best and the brightest students and the number and value of institutional scholarships. It determined that a relationship exists between the enrolment of high ability students, the number of offers of aid, and the value of the scholarships. While this study did not define the cause of this effect, it did provide a number of institutional factors (i.e., size of library, advanced degree offerings, geographical location, and student expenses) that are most associated with the choice of institution by the best and the brightest. Jackson's (1978) findings also showed that an offer of financial aid to an applicant by his or her college of choice increased the likelihood of the student choosing that college, compared to similar applicants applying to similar colleges but not offered aid.

However, one potential caveat identified by Chapman and Jackson (1987) was that it took large amounts of aid to move a second choice institution to a first-choice institution, as the perceived quality of institution was the more critical determinate in making a choice. Lang's (2005) more recent discussion on how students' assessment of quality and reputation has changed suggests that perceived reputation has emerged as the most important factor in attracting the best and the brightest. This fits with Thistlethwaite's (1958) conclusion that the image of the institution affected choice. Unfortunately, there have been no studies to quantify how a given amount of financial aid funding offsets a unit of reputation.

In Cabrera and La Nasa's (2000) evaluation of the literature regarding the saliency of an institution in the search phase, the perception of the availability of financial aid positively predisposed students to select a particular college or university. Berkner and Chavez (1997) found that if a lower SES student was academically prepared,

financial aid removed ability to pay as a deterrent to participation. St. John (2006) suggested that the role of family income should be reconsidered as it relates to access and participation. At present, research downplays the effect of financial constraints and financial aid. St. John (2006) argued for the use of qualitative research methods to understand and provide insight into the indirect effect of family income and financial assistance on academic preparation and post-secondary enrolment choice. With this perspective, the research focus turns to what effect does the concern about finances have on the preparation, aspirations, and choice of post-secondary institution on students. His hope was that renewed research focused on financial barriers would inform “the debates about educational equality in ways that relate more to educational policy” (St. John, 2006, p. 1605).

These studies point to the importance of the cost of attendance, price sensitivity, and the offer of financial aid to attract the best and the brightest and mitigate the costs of participation as factors on whether and where to attend. Access and participation to post-secondary education are affected by a combination of factors and the social, cultural, economic, and political context that students and their families live in. It is for this reason that St. John (2006) and Perna (2006) proposed new theoretical models to understand the complex nature of access and participation in relation to financial aid. Prior to describing these frameworks, an overview of the history of financial aid in Canada is provided to shed light on the present social and political context within Canada at national and provincial levels.

## **2.2. The History of Financial Aid in Canada**

Since education is an area of provincial responsibility, as specified in the Constitution Act, 1867, Canada is “the only industrialized country without a federal office



or department of education” (Shanahan & Jones, 2007, p. 32). As a result, there is no clear mechanism for national policy development in the area of post-secondary education. However, the federal government has found ways within its constitutional authority to intersect with the provincial post-secondary education mandate through shared-cost programmes where the federal share is dependent on provincial government acceptance of program goals and criteria. One of these areas is student financial assistance.

### **2.2.1. Canada Student Loan Program**

The Canada Student Loan Program (CSLP) is the cornerstone of student financial aid in Canada. Since its inception, in 1964, the federal government, in partnership with provincial governments, has provided this student loan program in accordance with provincial needs-based assessment (Fisher, Rubensen, Bernatchez, Clift, Jones, Lee, et al., 2005; Shanahan & Jones, 2007; Usher, 2004). For over 30 years, the program remained relatively unchanged. As a result of rising cost of tuition and the rising cost of living in the 1980s and 1990s, and an increased focus on improving post-secondary participation rates, the federal government implemented major reforms in 1994. In conjunction with the reforms to the loan program, a system of needs-based grants was introduced to support students with disabilities, women in some doctoral programs, and high need part-time students (Meloshe, as cited in Fisher et al., 2005).

### **2.2.2. Federal Policy Initiatives**

The introduction of needs-based grants also coincided with a shift in federal fiscal and social policy to include universal post-secondary education tax credits and parental incentives like the Canadian Education Savings Program (CESP) to support student

participation in post-secondary education (Finnie, 2002; Fisher et al., 2005; Usher, 2004). Provincial governments followed suit, introducing their own education tax credits as well as tax incentives (see, for instance, New Brunswick) for working in the province after graduation (Junor & Usher, 2007).

The national CESP encourages parents to save for their children's future education by not taxing the interest on registered education savings, and by providing a top-up of up to 20% on contributions (depending on income, this can be as high as 40%) to a maximum of \$400 per child annually (Shanahan & Jones, 2007). Through a comparison of government expenditures on the Canadian Millennium Scholarship Foundation (CMSF) and the CESP, Fisher et al. (2005) noted a shift in federal social policy toward "programs to encourage Canadians to pay their own way" (p. 72) through the promotion of planned saving for post-secondary education. The available data indicate that it is mainly parents with middle and upper incomes who have saved for their children's future (Frenette, 2007) resulting in CESP savings increasing by over \$9 billion from 1998 to 2003 (Fisher et al., 2005).

In response to lower-income families not investing in the CESP, the federal government introduced the Canada Learning Bond (CLB) in 2004. This initiative "provides up to \$2000 for children born after 2003 to families entitled to the National Child Benefit supplement" (Junor & Usher, 2007, p. 35). The effect of this policy will not be felt until 2020, when the first of these children becomes eligible (of age) to attend post-secondary education. This initiative does nothing for the student who was born before 2003, or who has financial need and has reached the age to attend post-secondary education. This was why in this same year, a low-income grant providing up to half of the cost of tuition to a maximum of \$3,000 per year was introduced to assist dependent and independent students born before 2003 (Junor & Usher, 2007).

While 1998 was a significant year for financial aid initiatives, the most significant change was the creation of the CMSF, which introduced merit-based aid at the federal level in Canada. The not-for-profit foundation was endowed with \$2.5 billion, to be spent over ten years to support over 100,000 students per year. It issued its last awards in the 2009-2010 academic year. Initially, the CMSF focused on merit-based aid, but in 2001, needs-based bursaries were introduced due to pressure from stakeholders, such as the Canadian Federation of Students (Fisher et al., 2005). However, as noted by Fisher et al., the needs-based bursaries like the federal and provincial designated grants were only accessible after students applied for a student loan at the provincial level.

Even with the targeted grant programs and tax credits, the CSLP is a key source of student financial aid in Canada. With the demise of the CMSF in 2010, the CSLP is again at centre stage, as it remains the major source of funding for students. Federally, the CSLP program is under review (Junor & Usher, 2007). Within the province of British Columbia, a review of the provincial loan program was recommended in the Campus 2020 report (Plant, 2007). These reviews have called for a renewed commitment to needs-based aid, with targeted initiatives for specific under-represented groups, and have pointed to the continuing need for parental contributions for dependent children. To maintain the highest post-secondary participation rates in the world (Looker & Lowe, 2001; Plant, 2007), and to continue to improve access and participation, policy makers reviewing these programs need to take into consideration research conducted to date on these programs.

### **2.2.3. Research Findings on the CSLP and Other Initiatives**

Usher (2004) debunked the long held assumption that the CSLP needs assessment process ensures that students with the greatest need receive priority for

support. Using data from the CMSF panel survey in 2003; “the study estimate[d] the distribution of student loans and grants by family income quartile” (p. iii) and whether the student was dependent or independent from his/her parents. The significant finding was that the “independent” category (i.e., the age at which a student was independent of their parents four years after graduating from high school—typically 23) provided greater benefit to students from families with higher income. Usher (2004) estimated that over “40 percent of loans and grants go to students from families with above median income” (p. iii).

In their analysis of financial aid expenditure in Canada from 1993-1994 to 2003-2004, Junor and Usher (2007) estimated that over 60% of expenditures went to non-needs-based aid, although student loans are included in this amount. While the present direction provides financial benefits to those who make the choice to attend, it may not encourage increased participation amongst groups who have not traditionally participated in higher education, or it may disadvantage different groups. Of the 30% of expenditures that are directed toward needs-based aid, a portion goes to grants and loans remission for independent students.

Junor and Usher (2007), stated in their Educational Policy Institute report prepared for the Canadian Association of Student Financial Aid Administrators, that the trend towards the use of tax credits and incentives for saving signals “a decreased desire on the part of governments to use need-based assistance to distribute aid to those who need it most” (p. 5). Kirby (2008) provided a different view, describing it more accurately as a policy approach that values the economic-utilitarianism and privatization of post-secondary education. Given the investment in these programs, it appears that the government’s long-term strategy is to partner with parents to be able to support their children’s higher education costs (i.e., to plan, save, and pay one’s own way to post-

secondary education) while decreasing direct funding per capita to higher education institutions.

#### **2.2.4. British Columbia**

Junor and Usher's (2007) analysis was conducted province-by-province and provides a source of information on provincial initiatives and policy changes from 1993 to 2004. For the purpose of this literature review, only information on British Columbia was provided as it is most applicable to this study.

In British Columbia, the increase in post-secondary education participation from 1993 to 2004 resulted in student financial assistance "more than doubl[ing] over the decade" (Junor & Usher, 2007, p. 10). From the mid-1990s to 2002, a tuition freeze was in place and its removal resulted in a subsequent doubling of tuition fees. Then, to curb tuition growth, the mid-2000s tuition fee increases were capped at the rate of inflation. This cap is still in place. A significant change to financial assistance was introduced in 2004 with the replacement of the B.C. Grant program with the B.C. Loan Reduction program. This change resulted in decreased expenditures on loan reduction measures, and redirected funding to the expansion of the number of post-secondary spaces in the province (Junor & Usher, 2007). In 2005, the harmonization of the required parental contribution and computer costs was instituted to align with changes made by the Government of Canada. The major changes introduced in 2007 were non-needs based in nature. They included an endowment for Aboriginal student scholarships, the Pacific Leaders program "designed to entice individuals into a career in the British Columbia public service" (Junor & Usher, 2007, p. 39), and an Children's Education Fund providing \$1,000 for each child born (or adopted) from 2007 onward. None of these new initiatives identified need as a criterion for eligibility.

The lack of coherent policy, both federally and within British Columbia, has created a system that is piece-meal and causes misalignment of articulated policy goals. In proposing a new financial aid system, it is critical that the federal and provincial governments be clear about its purpose. In their analysis of different financial aid policies in the world, Finnie, Usher, and Vossensteyn (2004) identified the present Canadian system as a combination of student-centric and parent-centric models. Characteristics of the former are that “students pay considerable tuition fees and are the prime unit for measuring financial need and receiving assistance” (p. 513), while the introduction of more substantial tax credits and savings programs represent the latter. Even with participation rates for all youth hovering around 60%, the gap between participation of students from low-income and high-income backgrounds has not changed. This persistent gap in participation suggests that, the present patchwork of policy initiatives has not been able to effectively address the structural barriers to post-secondary participation.

### **2.2.5. Institutional Student Aid**

What is missing in the literature about the present financial aid policies in Canada is the role and effect of institutional financial aid (Looker & Lowe, 2001). Perna (2008) indicated that, in the United States, “little is known about scholarships from colleges and universities” (p. 4), as most research is focused on loans and grants at the federal and state levels. Looker and Lowe (2001) support this view, indicating that sources of information and research are also lacking at the institutional level in Canada. This makes it difficult to have a complete picture to better inform policy at all levels. Gucciardi (2004) also noted the lack of research on merit scholarships indicating that information is either incomplete or nonexistent.

Typically, most post-secondary institutions have both needs-based aid in the form of bursaries, and work-study and merit-based aid in the form of scholarships and awards. Each institution establishes its own policies based on its recruitment and retention goals with the exception of bursaries. It is normal practice to link eligibility for bursaries with eligibility for the federal/provincial loan programs. Students can receive non-repayable grants for the portion of their expenses that are not met through the federal and provincial loan programs. This creates a problem comparable to the instances in which “independent” students receive financial assistance from the CLSP (Usher, 2004). As in that case, institutional needs-based aid is disbursed to those who may have the least need.

Institutional scholarship and award monies reward academic performance, leadership, and/or community service. This financial aid mechanism has been primarily the purview of institutions, which determine the make-up of their student population rewarding students' high school academic performance, leadership, and community service excellence. As noted earlier, these factors are correlated with students who come from families with higher incomes and parental levels of education.

Given that there are policy issues federally, provincially, and institutionally, what are the best policy levers to make the best use of the dollars allocated to financial aid to improve access and participation in post-secondary education in Canada? The current view is that public policy has shifted away from needs-based aid to merit-based financial aid (Hearn, 2001; Heller & Schwartz, 2002; Junor & Usher, 2007; Longanecker, 2002), and toward individual funding and ability to pay. In this context, student financial aid is viewed as a binary outcome—an either/or—pitting merit-based aid against need-based aid. The American federal report *Access Denied: Restoring the Nation's Commitment to Equal Educational Opportunity*, prepared by the Advisory Committee on Student

Financial Assistance (2001), stated that, “The substitution of middle-income affordability and merit for access as policy goals has seriously undermined access” (p. 9).

McPherson and Shapario (1998), while recognizing the perceived challenges with merit-based aid in relation to needs-based aid, pointed to the changes in policy such as greater emphasis on student loans and the use of tax credits as shifting a larger portion of the responsibility of paying for post-secondary to the individual and their family. This indeed may be the more significant shift, resulting in an increased incidence of student loan borrowing, increased indebtedness, and repayment problems (Bell & Anisef, 2005; Kim, 2007; Long & Riley, 2007; Looker & Lowe, 2001). Longanecker (2002) stressed the importance of recognizing the public policy purposes of each type of aid and determining whether each type meets its purposes. He asserted that it is important to re-frame research questions to understand who receives each type of student financial aid, what the effect is, and what happens to needy students.

While much of the research in the United States has primarily examined federal and state level merit-aid, these studies do have implications for institutional merit aid in Canada. At the state level, most of the research has stemmed from the introduction of state-level broad-based merit scholarship programs. This research asked: What is the effect of merit-based aid on enrolment; how does it differ by type of school, and how does it differ by race? This new style of merit aid program provided aid “more broadly to students with solid though not necessarily exemplary academic records” (Dynarski, 2002, p. 3). Research has found that these programs increased enrolment but, more significantly, affected the choice of institution (i.e., more students of differing races attending 4-year institutions), encouraged increased student academic performance, and reduced the migration of the best students to out-of-state schools (Cornwell, Mustard, & Sridhar, 2006; Dynarski, 2002). Dynarski (2002) found that some of the state merit-aid



programs had a greater effect on the participation of students from certain races and ethnicities given the criteria for eligibility and depending on how other sources of aid were treated. In discussing the policy of merit aid, Dynarski (2002) indicated that “merit aid is a politically astute way to build support for spending on post-secondary education” (p. 21) as it has both a high profile and is earned rather than an unconditional entitlement. With these different styles of merit aid programs, areas for further research include what do families who do not need the aid do with the money, do graduates stay in state upon graduation, what is the effect of earning aid, does it increase tuition, and does it cause grade inflation?

As noted by Perna (2008) and Rapp (2005), little research has been conducted on institutional merit-based aid. Thistlethwaite’s (1958) seminal work, as discussed earlier, provided some insight on the effect of scholarship offers and the enrolment of talented students. He determined that a relationship exists between the enrolment of high ability students and the number and value of scholarships. Unanswered questions persist today, such as: Did the offer determine where they attended and would they have attended without the offer? What is the role of institutional reputation in the student’s decision-making process of where to attend?

Ehrenberg et al. (2006) found that as the number of institutionally based privately funded National Merit Scholarship recipients increased at the top 100 rated schools, the number of U.S. Pell Grant recipients decreased. While this study did not indicate whether any of the merit scholarship recipients had reduced need or no longer required needs-based aid, the authors advised that selective public institution’s financial aid goals need to “achieve both socio-economic diversity and student selectivity” (Ehrenberg et al., 2006, p. 208).

Singell and Stater (2006) examined the effect of institutional merit-based aid and needs-based aid on completion rates at three large public universities in the United States and found that students with merit-based aid had higher completion rates as these students tend to be more academically prepared. While it did not appear that needs-based aid had a direct effect on completion, its value was in allowing a student to choose the right institution for that individual.

Using descriptive case studies, Perna (2008) examined student and parent perceptions of local, national, and institutional scholarships. Some parents and students had sophisticated knowledge, and planned to go to the best school with the best aid offer. For others, the concern over ability to pay for college expenses was the motivation. While counsellors were disappointed in the number of students who took the time to apply, issues of time and effort, low value amounts, and locating appropriate scholarships deterred students. How this differed among groups and the effect on college outcomes were questions left unanswered. Rapp's (2005) research, also about perceptions, compared high school counsellors' perceptions with university scholarship personnel's scholarship awarding practices. While both groups ranked academic performance the highest, a misalignment was noted on the more significant weighting given by counsellors to personal qualities and extracurricular activities. This study, like Perna's (2008), opened new possibilities to examine how to support students' access to merit-based aid.

### **2.3. Theoretical Frameworks**

St. John (2006) suggested that the problem with research on access, participation, and the role of financial aid in post-secondary education is that it takes place in theory silos. He argued for a more integrated approach, as each theory has

limitations. Perna and Thomas (2006) indicated that research that has drawn on multiple theoretical perspectives has shown new insights into the issues of access and participation. An overview of each of the dominant theories used in the research—college choice, human, social, and cultural capital—follows. Then, a theoretical framework proposed by Perna (2006) is outlined that “integrates aspects of the economic theory of human capital and sociological notions of social and cultural capital and recognizes that multiple layers of context influence an individual’s college-related decision making” (p. 1621).

### **2.3.1. College Choice**

Hossler and Gallagher (1987) described college choice as an attempt to understand how three phases—predisposition, search, and choice—“interact to influence students’ attitudes toward college attendance and shape the selection of a specific institution” (p. 207). Research on each phase provided insights about what effects a student’s decision to pursue higher education. Cabrera and La Nasa (2000), in their review of the literature in this area, indicated that each stage is associated with a particular set of grade levels; the predisposition phase begins as early as Grade 7, the search stage in Grade 10, and the choice stage in Grade 11. These stages are not distinct and separate, but overlap depending on student background. The key factors identified were “saliency of institutions; parental encouragement; financial considerations; the student’s high school academic resources; the student’s educational and occupational aspirations; and of course, the student’s academic abilities” (Cabrera & La Nasa, 2000, p. 6).

At the predisposition phase, which Hossler and Gallagher (1987) described as the developmental phase, students decided whether they would continue their education

beyond secondary school. The most significant factor at this stage that predicted early planning was parental encouragement—motivational expectations and proactivity in the form of involvement in school matters, saving for post-secondary education, and planning with their child (Cabrera & La Nasa, 2000).

The search phase was a time of gathering and assimilating information on institutions to create a *choice set* (Hossler & Gallagher, 1987). The depth and sophistication of the choice set was affected by SES. The higher the SES, the more wide ranging the search geographically, the higher the perceived quality and reputation of institution considered, and the more sources of information consulted (Cabrera & La Nasa, 2000; Hossler & Gallagher, 1987). One factor of note in Cabrera and La Nasa's (2000) review of the literature evaluating the saliency of an institution in the search phase was that the perception of the availability of financial aid positively predisposed students to select a particular college or university. The other critical area was the source of information, as lower income parents tend not to be university educated; they were not a credible or knowledgeable source of information for their children and hence there was a greater reliance on a single source, high school counsellors. Finally, the burden of financing one's choice seemed to narrow options for lower-income students, keeping them closer to home so as not to weigh their family down with debt (Cabrera & La Nasa, 2000). At the search phase, it was likely that a combination of factors—information, the timing of the information, SES, academic preparedness, and the burden of debt—affected what kind of institution a student choose to include in their choice set.

In the final phase, the student decided on a choice by evaluating their choice set. Cabrera and La Nasa (2000) described the two lenses that a student uses to weigh their final decision as the economic—the cost versus the benefits—and the sociological—whether their academic preparation and socio-economic characteristics fit with a

particular type of institution and level of credential sought. In their review of the literature in this area, Hossler and Gallagher (1987) suggested that the interplay “between choice, quality, and price is sensitive to a number of variables” (p. 217) and as a result may not be easily generalized among various types of institutions and students.

Freeman (as cited in Hossler & Gallagher, 1987) found that other activities in the recruitment process were potentially as important as financial aid. Students wanted a personalized experience, which included correspondence, visits, and interaction with faculty within their area of study. While it was important to recognize the economic and sociological factors affecting choice, this also pointed to the importance of how the student interacted with the institution, and how the institution interacted with the student as they moved through the final choice process. Attention to service and caring about students as individuals, paired with a thoughtful institutional student-aid policy, had a positive effect on the choice of whether to participate and where they choose to enrol.

### **2.3.2. Human Capital**

Much of the quantitative research in student financial aid is framed in the theoretical construct of human capital. Human capital theory is the idea that education is an investment that produces future economic returns and benefits for both the public and individuals (Lang, 2005; Little, 2003). Financial aid studies in this area examined the costs and benefits of attending post-secondary education and the decision to persist (Paulsen & St. John, 1997; Singell & Stater, 2006). Zeidner (2006) noted that researchers in this area have assumed that cost is the key driver, with both choice and persistence seen through the student lens of whether the benefits outweighed the costs. Saha (2005) contended that human capital theory did not sufficiently explain the differences in post-secondary education participation rates, particularly for immigrant

and minority groups. St. John (2006) clarified that research using human capital theory was limited by the “use of social and educational variables to examine outcomes and the failure to consider the indirect effects of student aid (i.e., the effect of concern about finances on preparation, aspirations, and applications for college and student aid)” (p. 1607). Perna and Thomas (2006) described the limitation that economic approaches offered as “a framework for understanding decision-making but are limited by their failure to examine the nature of information that is available to decision makers” (p. 9).

### **2.3.3. Cultural Capital**

Bourdieu (1986) used the theory of cultural capital to account for the differences in how middle- and upper-income level parents transmitted their preference for continued schooling beyond high school. Students gained the attitudes, habits and the knowledge of how to attain the status that post-secondary education affords, thus providing access to better jobs. This then converted into economic or human capital that supported the attainment of cultural and social capital (Saha, 2005). St. John (2006) indicated cultural capital research identified the role of family background—parental education, income, and occupation but it “does not consider the role of policy variables—such as education reforms and student aid” (p. 1607). Nor does it marry cultural capital with newer concepts such as ethnic capital—“an individual’s degree of ethnic connectedness and internalization of ethnic cultural values that provide the impetus for achieving academic excellence” (Chow, 2004, p. 321).

### **2.3.4. Social Capital**

Social Capital has similarities to cultural capital but is about the resources obtained through social relationships and connections with other people that facilitate action—family, friends, work, and school (Coleman, 1988). Financial aid research using

this theoretical framework identified how accurate and reliable information can align parental aspirations and actions to improve post-secondary education options (Kim & Schneider, 2005; Perna, 2006; Perna & Titus, 2005). It raised similar issues to cultural capital needing to take into account policy variables and the “role of financial inequality in discouraging preparation” (St. John, 2006, p. 1608) and therefore accessing information to support access and the decision-making process to determine participation (Perna & Thomas, 2006).

### **2.3.5. Combined Theoretical Frameworks**

St. John (2006) challenged researchers to re-theorize access to and participation in post-secondary education and the role of financial aid to provide new insights. Perna and Titus (2005) combined Bourdieu’s (1986) concept of habitus and cultural capital, Coleman’s (1988) concept of social capital, and the concept of human capital to create a new theoretical framework to situate access and participation in post-secondary education. Central to Perna and Titus’ (2005) model was Bourdieu’s (1986) concept of habitus. Habitus is defined as “the internalized set of dispositions and preferences that subconsciously define an individual’s reasonable actions” (Perna & Titus, 2005, p. 490). In essence, it is the internalized sense of identity that determines an individual’s possibilities. Perna (2006) further refined the model based on the overarching concept of an individual’s “situated context” (p. 1623) moving outward through four nested layers: habitus or internal context (Layer 1), family context (Layer 2), school context (Layer 3), and the broader social, economic, and policy context (Layer 4). Applying this conceptual model to access and participation; Layer 1 focuses on the student’s attitudes and behaviours that influence the decision to access and participate in post-secondary education. Layer 2 speaks to a family’s ability to shape attitudes and provide

experiences inside and outside the home that promote access to and participation in post-secondary education. Layer 3 examines the effects of educational resources and academic preparation on student access and participation conceptualizing school as a seamless continuum from primary to post-secondary. Layer 4 recognizes the external forces that indirectly influence participation and access such as social conditions, economic conditions, and public policies.

The assumption in the framework is “that student behaviour cannot be fully understood without attention to the context in which the student lives” (Perna & Thomas, 2006, p. 9). In this way, the model recognizes that the path to participating in post-secondary education is not universal and can vary for ethnic/minority and SES groupings “based on differences in culture, family resources, local school and community structures and supports, economic and social conditions, and public policies” (Perna & Thomas, 2006, p. 11).

While Perna (2006) indicated, “that no one study can examine all of the potential relationships” (p. 1623), as such, the framework provides a means to re-examine the issues and may explain variations across different groups. She also pointed out that:

a variety of research methodologies, both quantitative and qualitative, that consider multiple units of analysis (e.g., student, school, state) are required to develop a comprehensive understanding of the acquisition and use of information about college costs and financial aid among different groups. (p. 1631)

While Perna and Titus’ (2005) and St. John’s (2006) research that outlined these concepts were focused on over-coming the inequalities that exist in access and participation, they provide a strong and integrated theoretical base to examine merit-based financial aid.



With the over \$946 million allocated to scholarships, bursaries, and prizes by 102 universities and colleges in Canada in 2004-2005 (Draper, 2007), research on institutional merit aid to understand its influence on access and participation can address gaps in the literature and identify important policy and practice implications. Research can provide insight into learning whether and how institutional merit-based aid motivates and affects behaviours of students of different backgrounds—the internal context. It can help us understand the role of parents in encouraging their students to achieve merit-based aid awards and the effect on the family—the family context. It can provide insight into whether merit-based aid opportunities were known to students, how they knew, and whether it influenced their decision to participate and where—the school context. Finally, research on institutional merit-based aid can shape institutional policy decisions within a climate of competition for students and a changing labour market—the social, economic, and policy context.

## **CHAPTER 3.**

### **Methodology**

This chapter begins by explaining the methodology for this study including knowledge claims, the strategy for inquiry, the research methods, and the strengths and weaknesses of this approach. The research questions are provided next, followed by a section on the research design and sampling procedure for the study. The analysis of the data section includes descriptions of the data operationalization, the data analysis conducted for each question, and how the data were integrated for this research. The final section discusses the threats to validity.

#### **3.1. Methodology**

As indicated in Chapter 1, most financial aid research is quantitative in nature, with some researchers (Perna, 2008; St. John, 2006) suggesting that qualitative research may provide new insights. As a result, it was determined that a mixed methods approach would provide a means to bridge the methodological approaches and provide greater insight into the effect of merit-based aid on student aspirations, choice, and participation. This section describes the knowledge claims, strategy of inquiry, research methods, and the strengths and weaknesses of this methodology.

##### **3.1.1. Knowledge Claims**

Knowledge claims identify the ontological and epistemological foundations for research and are important in helping to construct a research design (Creswell, 2003).

As such, it is important for researchers to understand what they believe to be the nature of knowledge and how meaning is made from this knowledge; their epistemological view shapes how they see the world and their approach to research. Using Morgan and Smircich's (1980) characterization of research paradigms, this study represents two orientations. The dominant one is "reality as a social construction" (Morgan & Smircich, 1980, p. 497), which sees the world as evolving, with meaning being constructed through an ever changing negotiation of social reality. The other orientation, "reality as a concrete process" (p. 493), reflects the researcher's professional reality with a need for empirical data—a concrete measure to inform judgments and decisions about the social world. Combining these two research orientations suggested a mixed methods approach for this study. Johnson et al. (2007) described the philosophical underpinning of mixed methods as pragmatism, a bringing together of theory and practice. It is "an approach to knowledge that attempts to consider multiple viewpoints, perspectives, positions, and standpoints" (p. 113). It is what Johnson et al. (2007) referred to as the "*pragmatism of the middle*" (p. 125) where this work is situated.

### **3.1.2. Strategy of Inquiry**

While strategies for research typically follow either a quantitative or a qualitative approach, Johnson et al. (2007) proposed that mixed methods can provide a third approach. In their mixed method study of preeminent mixed methods researchers, Johnson et al. asked each researcher to define mixed methods. Conducting a cross case analysis of 19 definitions, they proposed the following definition for this approach:

Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration. (p. 123)

Johnson et al. (2007) further described that this research approach needs to be viewed on a continuum of quantitative dominant to qualitative dominant approaches. The continuum defines the degree of mixing, from just collecting different types of data to mixing at all stages of the research including mixing “*language or discourse* (e.g., in one’s methodological worldviews, in forming interpretations, and in writing and communicating research findings)” (p. 122); and a continuum of conceptualizing the research where the research question drives the research design—“bottom-up” (p. 122)—or where the research is driven by the researcher’s interest in a particular group or phenomenon— “top-down” (p. 123).

Mixed methods researchers have also identified a number of rationales and purposes for using this approach to research. The most common rationale is that a mixed methods approach provides a more complete picture of the social phenomenon under study as the richer and thicker data improve the interpretation and usefulness of the findings (Collins, Onwuegbuzie, & Jiao, 2007; Creswell, 2003). Following Newman, Ridenour, Newman, and DeMarco’s (2003) typology of nine purposes for mixed methods research, the dominant purposes include: to understand complex phenomena; to have a personal, social, institutional, and/or organizational impact, and to add to the knowledge base.

With this rationale and these purposes in mind, this research sought to understand not only who the students are but what motivated them, and to what extent their own and/or their parents’ aspirations played a part in receiving a scholarship offer. First, this required collecting data of both a quantitative nature (information about who they are and their choices) and a qualitative nature (perceptions and behaviours). Second, this study has the potential to effect organizational policy and practice for awarding merit-based entrance scholarships as the researcher is well placed

organizationally at the university to bring forward recommendations based on the findings. Third, as there is debate on the use of merit-based aid and scant research in this area exists in Canada, this study will add to the knowledge-base on merit-based aid.

As with any research approach, the method to collect the data was an important consideration in the research design. This is discussed in the next section.

### **3.1.3. Research Methods**

This study employed an on-line survey of the recipients of scholarship offers using both forced-choice and open-ended questions. Given the nature of the research objectives and the research design, this was an appropriate technique. The on-line survey provided a low-cost method and speedy collection of data given the window of opportunity for reaching the population (Sue & Ritter, 2007). The population under study, given their age, was also very comfortable with the use of the internet. More detail will be provided on this later when discussing the design and sampling techniques for this study.

Having examined the knowledge claims, method of inquiry, and research method, the framework is laid for exploring next the strengths and weaknesses of the methodology and the research method.

### **3.1.4. Strengths and Weaknesses**

Teddlie and Tashakkori (2003) identified three strengths that mixed methods research can provide. The first is that it can answer questions that one methodological approach alone cannot. It is the ability of mixed methods to both explore and confirm a social phenomenon in one study that adds uniquely to the development of knowledge. A second strength is that it provides for stronger inferences to be made by offsetting the

disadvantages of one approach with the advantages of the other. No matter how strong the research, complex social phenomena cannot be fully understood using one way of knowing (Teddlie & Tashakkori, 2003). A third strength is that mixed methods research better accommodates divergent views. Mixed methods researchers view divergent data as a source of strength as it provided a means to further question the assumptions and frameworks of the quantitative and qualitative components.

One weakness of a mixed methods approach is that it is more complex and, as such, the study may take longer to conduct. While important to the foundation of any research, issues of design, including sampling and validity, must be well thought out in mixed methods research (Bryman, 2007; Collins et al., 2007; Creswell, 2008). Bryman (2007) examined the barriers to integrating quantitative and qualitative research conducted with 20 United Kingdom social scientists and classified three types of barriers or weaknesses. The first is what he described as the “intrinsic aspects of quantitative and qualitative research and their constituent methods” (Bryman, 2007, p. 19). Here the researcher must understand the ontological issues and take the time to conceptualize the design in an integrative way being aware of the timelines of the different components of the research. The second barrier is the “wider institutional context of mixed methods” (Bryman, 2007, p. 19), meaning the researcher needs to be aware that certain audiences or research journals have preferences or biases toward one type of data. Collins et al. (2007) described this challenge in a slightly different way, referring to the politics of research and the willingness of audiences to accept both components of the study. The third barrier Bryman (2007) described as the “skills and preferences of researchers” (p. 13). The researcher needs to be aware of his or her “methodological predilections” (Bryman, 2007, p. 13), such as being more capable in one type of research over the other, and/or finding one type of data more interesting than another. A

fourth weakness that he added from his own experience, and that other researchers have agreed with (Creswell, 2008; Teddlie & Tashakkori, 2003), is that it is an emerging field of research and as such lacks exemplars, training and development in mixed methods research.

Collins et al. (2007) examined the most prevalent sampling designs (sampling scheme and sample size) in mixed methods research, identifying four challenges in “mixed methods research: representation, legitimation, integration, and politics” (p. 268). While the authors proposed that good sampling design can overcome all four challenges, representation, legitimation, and integration can be directly affected through the decisions of selecting the sampling scheme and the sample size.

Representation speaks to the fact that sampling problems exist in both quantitative and qualitative research. The researcher’s challenge is to ensure that the sampling is representative so that the lived experience of the participants can be generalizable through text and numbers. Legitimation or validity “refers to the difficulty in obtaining findings and/or making inferences that are credible, trustworthy, dependable, transferable, and/or confirmable” (Collins et al., 2007, p. 269). Integration means finding the appropriate interrelationship between the different kinds of data. The major finding in the Collins et al. (2007) study, and the overarching challenge for the researcher, is the creation of a design that allows for generalizable analytical and statistical data. If this is not possible, the researcher needs to ensure that any meta-inferences are stated in such a way as to not create interpretive inconsistency thus creating a threat to validity. Care must be taken to use language that fits with whether the findings are generalizable or not.

While these weaknesses may provide a challenge for a novice researcher, Bryman (2007) reminded the mixed methods researcher that it is “not just an exercise in testing findings against each other” (p. 21). It is about thinking through each of the elements and stages of the research, recognizing that, at each point in the research, there are inherent strengths and weaknesses, and that there must be openness to exploring and understanding these weaknesses to conduct quality research. It is this awareness and inquiry that must form part of the mixed methods researcher’s methodological attitude as they work through each of the steps in the mixed methods research process.

A critical element that required thinking through by the researcher was the method employed to collect the data. For this research, a cross-sectional on-line survey using both forced-choice and open-ended questions was designed to separate those who accepted a scholarship offer from those who did not. The strengths of on-line survey research are reduced cost, efficiency, and the speed at which the research can be conducted (Creswell, 2003; Sue & Ritter, 2007). These strengths are countered by criticisms of low response rates leading to response bias (Creswell, 2003; Sue & Ritter, 2007). While mail surveys typically have response rates above 50%, on-line surveys are more typically in the 30% range. However, they tended to have higher word counts for open-ended questions (Sue & Ritter, 2007). To improve response rates, Creswell (2003) recommended using wave analysis to monitor the returns as a means to check for response bias. If the response rate was low, the researcher cannot make claims about the generalizability of the results to the rest of the population. Sue and Ritter (2007) also encouraged the use of saturation sampling with closed populations—in essence a population sample—using email addresses of every member of the target population. As



a result, coverage error is eliminated and the response rate can be monitored while the survey is conducted and steps taken to improve participant response.

Keeping these strengths and weaknesses in mind for the methodology and method, the next section of this chapter describes the research design and the sampling scheme.

### **3.2. Research Design and Sampling Scheme**

Creswell (2008) described four types of mix-method designs: triangulation, embedded, explanatory, and exploratory. Mixed methods research has developed distinct designs and visual representations of the designs including a notation system developed by Morse (1991). Collins et al. (2007) provided a two-dimensional model for determining mixed methods design that incorporates both sampling schemes and sample size. This model provides a way to think through the design of the research based on the time orientation (concurrent or sequential), relationship of the sample to different components of the research (identical, parallel, nested, or multilevel), and finally selecting the sampling scheme and the sample size.

The design for this research was concurrent triangulation (Creswell, 2003) using an identical sample (both qualitative and quantitative data came from the same sample). For this design, the collection of data was concurrent and the quantitative and qualitative data were given equal priority. The participants completed an on-line survey instrument including forced-choice and open-ended questions. This is an increasingly common data collection method in mixed methods research referred to as “intermethod mixing” (Johnson & Turner, 2003, p. 298). This design took advantage of the strength of quantitative data—generalizability to the population under study—and qualitative data—

to understand the context of the phenomenon under study. Figure 3.1 depicts the design for the study.

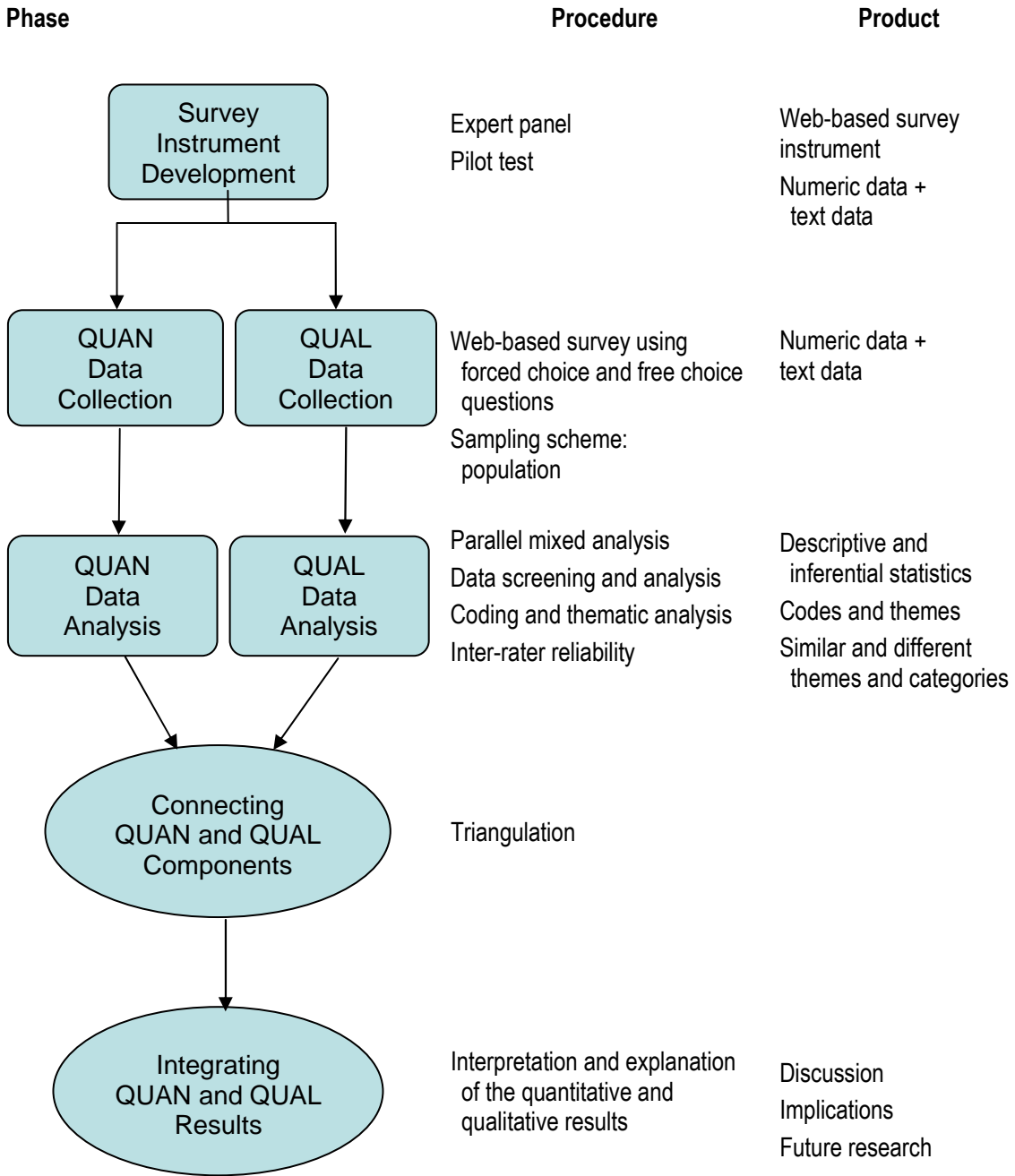
**Figure 3.1. Concurrent Research Design for Study**



### 3.2.1. Visual Model of Research Design

A visual model of the research design and procedures helps the researcher and the reader “visualize the sequence of the data collection, the priority of either method, and the connecting and mixing points of the approaches in the study” (Ivankova, Creswell, & Stick, 2006). Using Ivankova et al.’s (2006) 10 rules for drawing visual models for mixed methods research, Figure 3.2 provides a visual model for this study.

**Figure 3.2. Visual Model for Concurrent Triangulation Design Procedures**



Note. Adapted from Ivankova et al. (2006).

### 3.2.2. Sampling Scheme

The sampling scheme for this study was a population, also referred to as a census study, of all domestic direct-entry students who received a merit-based

scholarship (automatic or applied) as part of their offer of admission for the fall of 2009, regardless of whether they accepted or did not accept. The researcher received only email addresses for all domestic students who received an offer of merit-based aid for the 2009 fall term. This was to ensure confidentiality of the students given the researcher's role at the university. In addition to, but separate from email addresses, the numbers of students who received the different types of scholarships and a breakdown of their gender were also provided in order to allow for a comparison of the population to the survey respondents. Table 3.1 provides a breakdown of the population according to these characteristics. The Student Enrolment Division, Strategic Enrolment Analysis Department at SFU provided the email addresses and demographic data for the population.

**Table 3.1. Demographic Information of Population Sample**

Characteristics of Merit-Aid Recipients	Survey Population	
	N	P
Merit-aid Level		
Small	1607	75.34%
Medium	467	21.89%
Large	59	2.76%
Total	2133	
Merit-aid Type		
Applied	152	7.13%
Automatic	1981	92.87%
Total	2133	
Gender		
Male	859	40.65%
Female	1254	59.35%
Total	2113 <sup>a</sup>	

<sup>a</sup> 20 students received two offers of scholarship, but only received the higher offer of the two.

As the distinction in the level and type of aid were key variables for analyzing the quantitative data, further description of these characteristics are provided.

### **3.2.2.1. Merit-Aid Level and Type**

There are two types of merit-based aid at SFU: automatic, which is awarded, based on a student's admission average; and applied, which is adjudicated and awarded based on a combination of the student's admission average, leadership, and community service. The other distinction that is important to this study was the level of merit-aid, which was classified as small, medium, or large. The scholarships ranged in value from a small one-time amount of \$500 provided in the first semester, to a 4-year total amount of \$34,000, provided over eight semesters. In all cases, students needed to enrol in a minimum of 12 units of credit to receive the first disbursement, and maintain a grade point average (GPA) in the first year ranging from 2.00 to 3.00 out of 4.33, based on their admission average. Multi-year scholarships required students to achieve a GPA of 3.5 after the first year to continue to receive the scholarship. For the purposes of describing the scholarships, the small, medium, or large categories were used.

#### **3.2.2.1.1. Small**

Scholarships in this category ranged in size from a one-time amount of \$500, to a two-semester amount of \$3,500. Scholarships were automatically awarded for admission averages (typically calculated based on four provincially examinable Grade 12 courses) of 85 to 89.99% (\$500) and 90 to 94.99% (\$3,500). Within the small category there were also scholarships that students applied for valued at \$2,000, which were provided over two semesters in the first year of study. Students who applied for these scholarships required a minimum admission average of 80% and community and/or school leadership.

### **3.2.2.1.2. Medium**

Scholarships in this category ranged in size from a two-semester amount of \$5,000, to \$10,000 provided over four-semesters. Scholarships were automatically awarded for admission averages of 95% and above (\$5,000). Applied for scholarships with values of \$7,000 and \$10,000 were awarded over four semesters.

### **3.2.2.1.3. Large**

Scholarships in this category ranged in size from \$20,000 to \$34,000. The value of this scholarship was distributed over eight semesters and recipients were required to have a minimum admission average of 90% and a combination of community and/or school leadership.

The type (automatic or applied) and level (small, medium, or large) of scholarships provided two ways of examining the effect of merit-based aid. Type of aid provided for a distinct categorization while the level of aid mixed the type and the value of the aid. Both were important to determine if there were any effects on the recipient's aspirations, choice, and participation.

## **3.2.3. Instrument Design and Data Collection**

The study used an on-line survey with both forced-choice and open-ended questions to collect quantitative and qualitative data from the participants. See Appendix A for the final version of the survey instrument. Creswell (2008) encouraged researchers to investigate the use or adaptation of existing surveys. In keeping with this, the following surveys informed the development of the on-line survey used for this research: the Canadian University Survey Consortium (CUSC), Statistics Canada's Youth in Transitions (YITS), the Canadian Census, and the Perceptions of the Impact of Merit-based Aid Questionnaire (Orefice, 2007).

A panel of experts provided face and content validity. Face validity measures the degree to which, on its face, the instrument is measuring what it says it will measure (Hunter & Brewer, 2003). Content validity examines “the objectives of the instrument, the content areas, and the level of difficulty of the questions” (Creswell, 2008, p. 172). The panel of experts were the three faculty committee members and two members of the Department of Statistics and Actuarial Science at SFU, who reviewed the instrument as a whole, and each question individually, to ensure clarity and appropriateness of wording, content, and ease of use.

The survey was piloted using a convenience sample of present scholarship recipients who were in their first, second, or third year at the university in 2008. Appendix B provides a summary of the process and questions asked for the pilot test. Notes from this session formed the source of the revisions to the survey instrument.

Overall, the pilot participants found it easy to fill out the survey and felt interested and invested at the end of the survey to fill in the demographic questions. They also agreed as a group on wording changes to ensure clarity and the deletion or addition of questions to align with the purpose of the survey. The most animated discussion took place regarding the word “achieve” in some of the questions. Some of the pilot testers did not set out to achieve a scholarship but received the scholarship as a consequence of their interest in leadership and community service and someone then encouraging them to apply. As a result, the word “achieve” was replaced throughout the survey with more neutral language, such as “receive” or “offer”.

The revised survey was sent to the panel of experts for a final review. As a final check, two more students completed the revised survey electronically to test access to the survey tool, provided feedback on the length of time to complete the survey, and

reviewed the questions for clarity prior to distributing the survey to potential research participants. See Appendix C for a copy of the email correspondence to the final two pilot test students.

On June 28, 2009, all new entrants for Fall 2009 who received both an offer of admission and an offer of a merit-aid scholarship were sent an email using a listserv via the web survey tool developed at SFU. This provided each scholarship recipient a confidential email with an individual link using opt-in consent via a secure encrypted web site hosted by the university. See Appendix D for a copy of the email sent to the participants. A three week period was provided to fill in the survey and two follow up emails encouraging participation were sent at the end of week one and week two. A daily tabulation charted the total responses to determine the best time to send the reminders. See Appendix E for copies of the reminder emails. An incentive in the form of two \$250 bookstore gift certificates was raffled for those who completed the survey. Each respondent received a number in order of their response to the survey and random numbers were generated within the range of the total responses to select the incentive recipients. The email reminders and the incentive were formulated using behavioural theory techniques for on-line surveys (Sue & Ritter, 2007).

At the completion of the survey, 634 responses were received (30.00% response rate) and the data imported into Excel 2007<sup>®</sup> and prepared for analysis. This required data cleaning, data transformation, and identification of missing data (Sue & Ritter, 2007).

The research questions are provided in the next section prior to discussing how the data were analyzed.



### **3.3. The Research Questions**

The overarching research question was:

What was the effect of merit-based institutional financial aid on student aspirations, choice, and participation at a large urban comprehensive university?

Sub-questions included the following:

1. What were the similarities and differences in the student population using the following variables:
  - a. merit-aid type (automatic versus applied),
  - b. merit-aid level (small, medium, large),
  - c. citizenship for student and parents (non-immigrant, immigrant or permanent resident),
  - d. Parent/Guardian level of education, and
  - e. Socio-economic status (estimated on parents' postal code)?
2. What were the aspiration effects of institutional merit-based aid on students' high school academic performance?
3. What role did the aspiration of parents/guardians play in affecting the academic performance of children in receiving merit-based financial aid?
4. What role did the different types of institutional merit-based aid play in students' decision to attend university?
5. What did it mean to the students' and their family to receive institutional merit-based aid?

The research sub-questions were answered through the analysis of the data in Chapter 4. Some questions used both quantitative and qualitative analysis while others only used one form of analysis. The detail for each sub-question is provided in the next section describing the analysis of the data.

### **3.4. Analysis of the Data**

Onwuegbuzie and Teddlie (2003) provided a definition and a framework for analyzing data in mixed methods research. The definition of mixed methods data

analysis was “the use of quantitative and qualitative analytical techniques, either concurrently or sequentially, at some stage beginning with the data collection process, from which interpretations are made in either a parallel, an integrated, or an iterative manner” (p. 352). In this study, the quantitative and qualitative data were analyzed separately, neither building on the other during the analysis stage, nor comparing or consolidating the data until the analysis of each was complete. This is referred to as a parallel mixed analysis (Onwuegbuzie & Teddlie, 2003).

This section outlines how the data were analyzed, including how the data were operationalized, what analysis was conducted for each question, and how the data were integrated.

#### **3.4.1. Operationalizing the Data**

Micorsoft Excel 2007<sup>®</sup>, the Statistical Package for the Social Sciences (SPSS) version 17.0, and Statistical Analysis Software (SAS) version 9 were used to analyze the quantitative data. Excel 2007<sup>®</sup> was also utilized for the qualitative analysis as the data lent themselves to its use (Meyer & Avery, 2009).

The first step in the process was to download the data from the web survey tool into Excel 2007<sup>®</sup>. A total of 634 responses were reviewed and inspected for missing data, and for responses that were outside the range of data (Creswell, 2008). After review of the data, three records were removed: one was determined to have been provided by an international student, another was provided by a domestic student who indicated that they received a scholarship for international students, and a third student indicated that they had not received a scholarship from SFU. Removing these three records brought the total number of respondents to 631, for a population response rate of 29.86%. Once this work was completed, separate workbooks were created in Excel<sup>®</sup>

for the quantitative and qualitative data. This allowed the data to be separated for analysis and made it possible to export it as required into SPSS or SAS.

Five variables were constructed from the data provided in the survey. The first two variables constructed were the type and level of scholarship. Each respondent indicated which scholarship they received, and their responses were then categorized into type—applied or automatic—and level—small, medium, or large. The three other variables constructed were in relation to family characteristics—parent citizenship, parent education, and SES.

Parent citizenship was constructed by combining mother's citizenship and father's citizenship. A total of six combinations of citizenship were identified for parents of the respondents—both Canada, by birth; Canada, one parent by birth and second parent by immigration; Canada, by birth and permanent resident; both Canada, by immigration; Canada, by immigration and permanent resident; and both permanent residents. In order to make this comparable to the respondents' three citizenship categories, these six categories were re-grouped into three categories:

- a. both parents, non-immigrant;
- b. both parents, immigrant (includes, parents who are both immigrants, both permanent residents, or a combination of either);  
and
- c. one parent, non-immigrant.

Parent education was constructed by combining mother's and father's highest level of education, creating a variable that was parent with highest level of education. Using the 10 choices—less than high school, high school or equivalent, some college, college or technical graduate, some university, bachelor's degree, professional certification, master's degree, professional degree, doctorate degree, or don't know—the parent with the highest education was identified and then grouped into four categories to

provide an analysis of the data according to high school or less (first generation post-secondary), some college to some university (first generation university), bachelor's degree (university background), and post-graduate (advanced credentials).

The final variable constructed was a measure of SES. Using parents' postal codes, before tax median family income was estimated from Statistics Canada's Census Tract or Community Profile data. Forty-nine respondents did not provide their parents' postal code; as a result, data were only provided for 582 respondents.

Once these variables were constructed, the analysis could be conducted for each sub-question. The next section states each sub-research question and provides a description of the data analysis conducted for each question.

### **3.4.2. Sub-Research Question Data Analysis**

Appendix F provides a table with each sub-research question, the survey questions used for analysis, and the data analysis technique for each question. This section states each research sub-question and provides a description of the data analysis conducted for the question.

#### **3.4.2.1. Research Sub-Question 1**

The first sub-research question was: "What were the similarities and differences in the student population using the following variables:

- a. merit-aid type (automatic versus applied),
- b. merit-aid level (small, medium, large),
- c. citizenship for student and parents (non-immigrant, immigrant or permanent resident),
- d. parent/guardian level of education, and
- e. socio-economic status (estimated based on parents' postal code)?"

For this question, the type (a) and level (b) of merit-aid was categorized from the respondents' answers. Constructed variables were created for (c) combined parent citizenship, (d) parent with highest education, and (e) before tax median family income estimated from parent's postal code and Statistics Canada Census Tracts data. Descriptive statistics were "used to organize and describe the characteristics of the collection of data" (Salkind, 2004, p. 8). This was done as a first step in understanding the nature of the data, to determine the representativeness of sample, and to provide a preliminary answer to the research question based on whether the respondents accepted or did not accept SFU's offer of admission and scholarship.

Next, inferential statistics provided the means to infer from the sample to the larger population and determine any statistically significant differences based on the sample characteristics (Salkind, 2004). SAS was used for the inferential statistics. Given the nature of the data, nonparametric tests were utilized.

$\chi^2$  was performed where the research questions were comparing up to two dimensions, for example did or did not accept the scholarship offer versus the level of the scholarship offer.

The null hypothesis for this research question was "that there is no difference in the frequency or the proportions of occurrences in each category" (Salkind, 2004) and was as follows:

$$H_0: P_1 = P_2 = P_3$$

The alternate hypothesis was that at least one of the proportions was different.

Logistic regression was then performed to determine the probability of group membership to accept or not accept SFU's scholarship offer based on merit-aid type and/or level, citizenship status of the respondents and their parents, parents' highest

level of education, and SES. The dependent variable in this case was dichotomous—having two values—acceptance or non-acceptance of the scholarship offer (Wright, 2008). Logistic regression was also a logical choice as only one variable is continuous (before tax family median family income), the variables were not linearly related, nor were the variables of equal variance within each grouping (Tabachnick & Fidell, 2007).

#### 3.4.2.2. **Research Sub-Questions 2 and 3**

The second and third research sub-questions were: “What were the aspiration effect of institutional merit-based aid on a student’s academic performance?”; and “What role did the aspiration of parents/guardians play in affecting the academic performance of children receiving merit-based financial aid?”

To answer the first question, descriptive statistics were calculated for two questions in the survey (23e and 23f). Using a 5-point Likert scale, the respondents indicated whether knowing they could receive a scholarship pushed them to receive higher grades and/or caused them to work harder in high school. This entailed determining the aggregate percentages, sample mean, and standard deviation for each question.

To answer the second question, descriptive statistics were calculated for two questions in the survey (23g and 23h). Using a 5-point Likert scale, the respondents indicated their perception of their parents’ encouragement for being admitted to university and to receive a scholarship. This entailed determining the aggregate percentages, sample mean, and standard deviation for each question.

Descriptive statistics were also calculated for the question asking whom their greatest motivator was, plus a qualitative analysis was conducted on the answer as to why this person provided the greatest motivation. This entailed determining the

aggregate percentage for each response. Further analysis was conducted on the “other” response to ascertain any consistently recurring response within this category. The qualitative data for why this person was the greatest motivation was prepared into codable units on a separate worksheet in an Excel® workbook. The data from each question were printed and read in their entirety, noting general impressions, credibility, and the use of the information (Creswell, 2003). Then, responses were coded identifying key words to describe categories, looking for repetitions and using a comparative method of searching for similarities and differences to find themes in the data (Ryan & Bernard, 2003). Once the data were coded, pivot tables were created to quantify the codes to assist with identifying themes and meta-themes (Ryan & Bernard, 2003).

The final component of analysis for the two sub-questions addressing the effect of student and parental aspirations on academic performance examined the use of a tutor in the last two years of high school. A paid tutor in this study was a proxy for parental aspirations, specifically parental proactivity in providing resources to support their child academically. Descriptive statistics were calculated to determine the aggregate percentage of respondents who had a paid tutor and in what subjects.

Then descriptive statistics were calculated for respondents who hired a tutor by acceptance of the scholarship and merit-aid type and level, parent citizenship, estimated before tax median income, and parental highest education level. Inferential statistics using  $\chi^2$  were also performed as outlined in 3.4.2.1 above. To examine the effect of the use of a tutor, estimated before tax median income, and parents’ citizenship, a two-way ANOVA was used to test for interaction between parents’ citizenship and use of tutors.

The two-way ANOVA was used as the researcher was interested in how two independent variables affected a dependent variable (Hinkle, Wiersma, & Jurs, 2003).

Given that there was more than one treatment factor; factor analysis of variance was best as the factorial design “can test the influence of more than one factor at a time as well as a combination of factors” (Salkind, 2004, p. 197). The factorial design for this question was Parents’ Citizenship (Table 3.2).

**Table 3.2. Parents’ Citizenship Factorial Design**

Tutor	Non-immigrant	Immigrant	One, non-immigrant
Yes	Income	Income	Income
No	Income	Income	Income

The first step was a statement of the null hypotheses.

For rows:  
 $H_0: \mu_1 = \mu_2$

The null hypothesis was, in the population, the mean for those who used a tutor equals the mean for those who did not use a tutor.

For columns:  
 $H_0: \mu_1 = \mu_2 = \mu_3$

The null hypothesis stated that in the population, the means for parents’ citizenship are equal.

For interaction:  
 $H_0: \text{all } (\mu_{jk} - \mu_j - \mu_k + \mu) = 0$

The null hypothesis stated that in the population, there was no interaction between use of tutor and parent citizenship.

The researcher also set the level of the significance or Type 1 error (.05) before running the computation of the test statistical value. The *F* test computed the mean sum of the squares by dividing each sum of squares by the degrees of freedom (*df*) (Salkind,



2004). There were two sets of degrees of freedom for ANOVA—between group estimate—which is  $k - 1$ , where  $k$  equals the number of groups and  $N - k$ , where  $N$  equals the total sample size. The  $F$  ratio “is simply a ratio of the mean sums of squares due to between-group differences over the mean sums of squares due to within-group differences” (Salkind, 2004, p. 202).

If the  $F$  ratio was significantly large, the null hypothesis was rejected. This was determined by comparing the obtained values to the critical values in the  $F$  distribution tables. If the obtained value did not exceed the critical value then the null hypothesis was the best explanation. If the obtained value exceeded the critical value, the difference between groups is not due to chance (Salkind, 2004). It is important to note that the  $F$  ratio “does not look at pair wise differences, such as the difference between Group 1 and Group 2” (Salkind, 2004, p. 199). Post-hoc comparisons were required to determine where the difference lay between groups.

#### 3.4.2.3. **Research Sub-Question 4**

The fourth research sub-question was: “What role did the different types of institutional merit-based aid play in a students’ decision to attend university?”

To provide context for the answers to this question, first descriptive statistics were calculated to determine the number of applications the respondents made to institutions. This entailed determining the aggregate percentages, sample mean, and standard deviation for the number of applications. These data were then analyzed based on acceptance of the scholarship offer. Both descriptive statistics using aggregate percentages and inferential statistics using  $\chi^2$  to test the null hypothesis were performed. Second, descriptive statistics were calculated on the number of other offers of scholarship by acceptance of offer and  $\chi^2$  conducted to test the null hypothesis. Third,

descriptive statistics were calculated on the top offer and next highest offer of scholarship. This entailed determining the aggregate percentages, sample mean, and standard deviation for the top offer and next highest offer. Fourth, descriptive statistics were calculated for the number of scholarship offers and the type and level of scholarship using aggregate percentages. Then, inferential statistics using logistic regression tested the probability of group membership to accept or not accept SFU's scholarship offer based on the number of scholarships and merit-aid type and/or level.

Next, descriptive statistics were calculated for the questions in the survey, providing information on the respondents' perception of the offer of scholarship. This involved providing aggregate percentages, sample means, and standard deviations for Questions 22, 23a, 23b, and 23c. These questions provided information on the effect of the scholarship offer and scholarship amount on their decision to attend SFU.

Finally, qualitative analysis of Questions 18 and 19, regarding why the respondents' did or did not accept the offer of admission and scholarship was conducted as described in 3.4.2.2 above.

#### 3.4.2.4. **Research Sub-Question 5**

The fifth research sub-question was: "What did it mean to the student and their family to receive institutional merit-based aid?"

To answer this question, descriptive statistics were calculated for Questions 24 and 26 describing the respondents own and their parents' characterization of the amount of scholarship offer. This entailed determining the aggregate percentages, sample mean, and standard deviation for each question.

Qualitative analysis of Questions 25 and 27 describing what it meant to the respondent and their parents to receive a scholarship offer was conducted as described in 3.4.2.2.

### **3.4.3. Integrating the Quantitative and Qualitative Data**

As this study used both quantitative and qualitative data for analysis, it was important to think about the relationship between the two types of data. Given the study's concurrent triangulation design and decision to provide equal priority to both kinds of data using parallel mixed analysis, the standard practice was to integrate "the results of the two methods during the interpretation phase" (Creswell, 2003, p. 217). As a means to do this, Chapter 4 provides the findings within the theoretical framework of both college choice theory and situated context. This provides a narrative that is both qualitative and quantitative in nature that begins with the respondents' first thoughts of attending university through to the decision to accept an admission and a scholarship offer and the influences, motivations, and effects along the way. Characteristics that are outliers are also described to provide insight into those respondents who represent a minority but have potential implications for decisions about the scholarship program and policy at the university.

The first section of Chapter 4 provides background data to shed light on the respondents' individual context as it related to predisposition and search phases of the college choice process. The second section describes each respondent's individual and family context as it relates to the decision to accept or not accept SFU's scholarship offer based on the type and level of aid received and family characteristics (i.e., citizenship, parental education, and SES). The third section examines the individual and family context as it related to the motivation of merit-based aid on academic performance.

Finally, the fourth section describes the respondents' choice set and the effect of offers of scholarship on their decision to attend or not attend SFU. It describes the individual, family, and school context and the effect of merit-based aid on their choice and participation.

This provides a means to view the data as a whole while being able to examine component parts or aspects to answer the main research question: "What was the effect of merit-based institutional financial aid on student aspirations, choice, and participation at a large urban comprehensive university?" Before any conclusions were drawn, "threats to internal and external validity were assessed for inferences that emerge from" (Onwuegbuzie & Teddlie, 2003, p. 372) the types of data analysis. Mixed methods require a thorough understanding of the threats to validity to assess the legitimacy of the findings and are considered in the next section.

### **3.5. Threats to Validity**

Dellinger and Leech's (2007) validation framework (VF) assisted the researcher to navigate the numerous forms and definitions of validity. The VF provided a conceptual, holistic, and comprehensive approach to addressing threats to validity for the whole study, as well as specific techniques for the component parts. It incorporates "traditions of both qualitative and quantitative research as well as emerging validity terminology from mixed methods research" (Dellinger & Leech, 2007, p. 310). To address the threats to validity for this study, the researcher identified the threats to validity for each component of the research and for the study as a whole.

For the quantitative survey component of the research, the researcher accounted for issues of validity that were design-related, measurement-related, and inference-related (Dellinger & Leech, 2007). In designing the survey, the researcher utilized an

expert panel to minimize design-related error to “*a good instrument, with clear, unambiguous questions and response options*” (Creswell, 2008, p. 394). The survey was pilot tested, asked sensitive questions late in the survey, limited the use of jargon, kept the questions clear, short, and specific, and eliminated the use of negatives (Creswell, 2008; Johnson & Turner, 2003). To address measurement-related errors, adequate scales of measurement (i.e., nominal, ordinal and/or interval/ratio) were identified. A 5-point Likert scale was used for a number of questions, as the middle option of “no effect” was important in discerning all potential effects on the choice of the scholarship offer. Another consideration was to reduce non-response error by conducting “*rigorous administration procedures to achieve as large a return as possible*” (Creswell, 2008, p. 394). To ensure a high response rate, each potential participant received an email inviting them to participate just after they had finished the high school year and prior to the typical registration period for the Fall 2009 semester. A follow-up plan was devised and an incentive of a bookstore gift certificate was provided. To address inference-related errors, the researcher needed to first address response bias by using a procedure such as “wave analysis” (Creswell, 2008). Over the three weeks of the survey, response rates were plotted daily and responses to Questions 22, 23, 24, and 26 were reviewed at the end of each week to determine if there was any difference in early responses versus those who completed the survey in either the second or third week. This procedure provided a systematic way to check returns using intervals (week-by-week) on key questions to monitor response bias. There was no discernible difference in responses noted over the course of the survey period.

There was also consideration of the potential for measurement-related and inference-related errors in the analysis of the data. Three respondents' data were eliminated: one who was an international student; one who did not receive a scholarship

offer, and one whose scholarship offer was not appropriate to the study. Forty-nine respondents did not provide the postal code of their parent/guardian. As a result, only 582 records were used for any analysis including an estimate of before tax median family income. Any other missing data for questions with text answers, such as name of high school attended, were left blank. A period was inserted for numeric questions with missing data so the analysis software recognized the data was missing.

While validity in qualitative research is interpreted and defined in numerous ways, depending on the researcher's epistemological stance (Dellinger & Leech, 2007), it is important to address how the study validated the qualitative findings. In Lincoln and Guba's (1985) seminal work, the test was how trustworthy and credible were the findings. Merriam and Simpson (2000) addressed trustworthiness and credibility by examining internal validity, external validity or generalizability, and reliability as it related to qualitative research. Internal validity answered the question: "Are we observing or measuring what we think we are observing or measuring?" (Merriam & Simpson, 2000, p. 101). The techniques used in this study to answer this question were inter-rater reliability (De Wever, Schellens, Valcke, & Van Keer, 2006), triangulation, and saturation of the data (Creswell, 2008; Merriam & Simpson, 2000).

Inter-rater reliability involves two or more coders, coding the qualitative data separately and then running reliability testing such as percent agreement, Scott's *pi*, Cohen's *kappa*, or Krippendorf's *alpha* (De Wever et al., 2006). In this study, all of the noted indices were calculated, as percent agreement does not account for chance and there are tools readily available to help calculate these indexes. This was recommended as a means to address the variability in the indices providing the reader of the study with more information by which to judge the reliability (De Wever et al., 2006). The standard set to indicate excellent agreement is 75% or 0.75 using two coders coding

approximately 12% of the responses for all six qualitative questions. The researcher trained the second coder. Documentation was provided which included the codes and their application in the data. This required four hours of discussion, comparing and verifying codes, and then coding individually. Once the coding by each rater was completed, the data was prepared for analysis using ReCal (Freelon, 2009). The coefficients for each test are found in Appendix G and indicate the strength of the agreement between the coders.

Triangulation involves the use of multiple sources of data to support the accuracy of the research findings. In the case of this study, quantitative and qualitative data along with a review of the literature provided the basis for triangulation. Saturation of the data required allowing enough time to sit with the data that no new themes emerged to ensure an in-depth understanding of the phenomenon. This required time and reflection.

External validity poses the question: are the findings generalizable to another situation? While this is a challenge in qualitative research, given the typically small sample size, the test is "*reader or user generalizability*" (Merriam & Simpson, 2000, p. 103). Given that the sample size was large, the strategy that was most appropriate for this study was to ensure that the descriptions of the data were thick, "providing enough information/description so that readers will be able to determine how closely their situations match the research situation" (Merriam & Simpson, 2000, p. 103).

Reliability poses the question: Can the findings be found again? This concept is problematic for qualitative research if it is only viewed in the quantitative sense of the word. For qualitative research, Lincoln and Guba (1985) provided the idea of reliability as the consistency or dependability of the results with the data collected. Again, triangulation was the strategy to address reliability.

Another consideration for the study that needed addressing, as a potential threat to validity, was the researcher's power relationship to the participants (Creswell, 2008). In order to mitigate the effects of the researcher's administrative role, the researcher removed herself from all adjudication and decision processes for the Fall 2009 domestic entrance scholarship recipients.

Drawing on Messick's (1995) concept of construct validity, Dellinger and Leech (2007) proposed that construct validation "is the continuous process of negotiation of meaning" (p. 320) and provided an overarching concept of validity for mixed methods research. This required a mindfulness or an attitude that went beyond just employing the validity techniques for each type of research (qualitative and quantitative) but a recognition that the research started with different suppositions and the ways of knowing or interpreting meaning were derived differently. It required the researcher to see the research as "an open, continuous system in which construct meaning is the product of convergent and divergent evidence, results, consequences, and arguments from all research related to the construct, whether qualitative or quantitative" (Dellinger & Leech, 2007, p. 321). This required examining the findings as a whole once the qualitative and quantitative analysis was complete and staying open to new possibilities of interpreting the findings.

To ensure overall design quality, legitimation, and interpretative rigour of the study, three concepts that underpin construct validation were addressed, the foundational element, inferential consistency, and the consequential element (Dellinger & Leech, 2007). The foundational element was addressed by conducting a review of the literature describing and analyzing the theoretical and empirical evidence for this study. Inferential consistency required interpreting the findings to past research and theory plus using appropriate language to describe the findings of this study so as not to create



inferential inconsistency. The final concept addressed was the consequential element. Given the pragmatic philosophy of mixed-methods, the construct validity test for this element was “determined by judging the social acceptability of the consequences that occur as a result of using the study’s findings, measures, or inferences” (p. 325). While this cannot be tested until the study is shared with others, it provides a final check of external validity that is grounded in a community of practice be they researchers or practitioners.

### **3.6. Summary**

This chapter described the methodological considerations, the research design, method, and analysis used to conduct this study. A mixed-method concurrent triangulation design using a cross-sectional on-line survey to collect the data and then a parallel mixed analysis was utilized.

Chapter 4 lays out the findings using a combination of the stages of college choice theory and the differences and similarities in the respondents’ situated context. It intersperses the quantitative and qualitative findings throughout the chapter, creating a narrative of the respondents. The findings describe who they are, the effects of their background on their aspirations, choices, and participation to attend a particular post-secondary institution.

## **CHAPTER 4.**

### **Findings**

This chapter provides the key findings for this study. It is organized into four sections. The first section describes the characteristics of the domestic scholarship population for Fall 2009 compared to the survey respondents to provide an indication of the representativeness to the population of the respondents. Then, both descriptive statistics and a qualitative analysis of open-ended survey questions present an overview of respondents' backgrounds and key influences in preparing and planning for university. It sheds light on the respondents' individual context as it relates to their aspirations in the predisposition and search stage of the choice process.

The second section compares and contrasts the survey respondents' similarities and differences by the acceptance or non-acceptance of SFU's admission and scholarship offer. It sheds light on the respondents' individual and family contexts as they relate to the decision to accept or not accept SFU's offer of admission and scholarship. It answers the first research sub-question: "What are the similarities and differences in the student population using the following variables: merit-aid type (automatic versus applied), merit-aid level (small, medium, or large), citizenship (Canada, by birth, Canada, by immigration, and Permanent Resident), parent/guardian highest level of education, and socio-economic status (based on estimated before tax median family income from parent's postal code)?"

The third section examines the effect of respondent and parental aspirations on the student's academic performance with a particular focus on the use of a paid tutor. It sheds light on the respondent's individual and family context as it relates to the motivation of merit-based aid on academic performance. It answers the second and third research sub-questions: "What were the aspiration effect of institutional merit-based aid on student's high school academic performance?" and "What role did the aspiration of parents/guardians play in affecting the academic performance of children receiving merit-based financial aid?"

The fourth and final section reports on the role of merit-based aid in a student's decision to attend university, where to attend, and when to attend, as well as what it meant to the respondent and their family to receive a scholarship. It sheds light on both the choice and participation factors for the individual, the family, and school contexts. It answers the fourth and fifth research sub-questions: "What role did the different types of institutional merit-based aid play in a students' decision to attend university?" and "What did it mean to the student and their family to receive institutional merit-based aid?"

As outlined in Chapter 3, the quantitative analysis was completed using a combination of Microsoft Excel<sup>®</sup> 2007 and the Statistical Package for the Social Sciences (SPSS 17.0 for Windows<sup>®</sup>) and Statistical Analysis Software (SAS) to produce descriptive and inferential statistics. The qualitative analysis also used Excel<sup>®</sup> 2007 and was conducted using a process of looking for repetitions plus a comparative method of searching for similarities and differences to find themes in the data (Ryan & Bernard, 2003). Then the data were coded and pivot tables were run to identify themes and meta-themes (Ryan & Bernard, 2003).

## **4.1. The Population, Predisposition, and Search**

The population for this study consisted of all domestic applicants for Fall 2009 admission who received an offer of scholarship from SFU. A total of 2,113 domestic direct entry applicants received an offer of merit-based aid along with their offer of admission. This represents 34% of those who received an offer of admission for the Fall 2009 term. Almost 93% of the scholarship offers were automatic, meaning that given the student's admission GPA, they automatically received a scholarship with their offer of admission. A much smaller group applied for scholarships and, through adjudication, received a scholarship offer. Scholarships are arrayed in three levels, small medium and large. Small ranges from a 1-time amount of \$500 to a 1-year amount of \$3,500 (provided over two semesters), medium ranges from a 1-year amount of \$5,000 (provided over two semesters) to a multi-year amount of \$10,000, and large 4-year scholarships are valued from \$20,000 to \$34,000. The level (small, medium, or large) plus the type (applied or automatic) were used as major units of analysis in this chapter.

The survey was administered using a web survey tool developed at SFU and was opened on June 28, 2009 and closed on July 17, 2009. A total of 634 students (30%) responded to the survey. After a review of the data, three records were removed: one respondent was determined to be an international student, another was a domestic student who indicated that they received a scholarship for international students, and a third indicated that they did not receive a scholarship from SFU. Removing these three records brought the total to 631, for a response rate of 29.86%.

### **4.1.1. Survey Population and Survey Respondents**

Table 4.1 provides the demographic data of the survey population compared to that of the survey respondents. The sample was generally representative across all

categories, with the exception of the male/female category. Female respondents represented a greater proportion of the survey respondents compared to the population.

**Table 4.1. Demographics of the Sample Population versus Respondents**

Characteristics of Merit-Aid Recipients	Survey Population		Survey Respondents	
	N	P	N	P
Merit-aid Level				
Small	1607	75.34%	424	67.19%
Medium	467	21.89%	165	26.15%
Large	59	2.77%	41	6.50%
Unknown	0		1	0.16%
Total	2133		631	
Merit-aid Type				
Applied	152	7.13%	106	16.64%
Automatic	1981	92.87%	524	83.20%
Unknown	0		1	0.16%
Total	2133		631	
Gender				
Male	859	40.65%	178	28.32%
Female	1254	59.35%	452	71.52%
Other	0		1	0.16%
Total	2113 <sup>a</sup>		631	

<sup>a</sup> 20 students received two offers of scholarship, but only received the higher offer of the two.

#### 4.1.2. Predisposition and Search

In this section, qualitative analysis describes when the respondents first thought about and planned for university, what other post-secondary options they considered, and how they learned about the scholarships. This provides a sense of a student's predisposition toward post-secondary education and the search process for post-secondary options in making the choice to attend university. This section concludes by indicating who accepted or did not accept the offer of admission and scholarship. This is a major unit of analysis for subsequent sections of the findings chapter.

#### 4.1.2.1. **First Thought about and Started Planning for University**

The respondents were asked an open-ended question about when they first thought about attending university and when they started planning for it. Responses were first segmented into codable units as predisposition (thought) and/or search/choice stage (planning). Then within each stage each codable unit was identified as either early, on time, or late according to college choice theory (Hossler & Gallagher, 1987). Some respondents' answers could not to be coded in this manner so these were coded as unknown because the comment did not answer the question asked. From the 631 total responses, 140 received an unknown coding, leaving 491 responses coded for predisposition.

##### 4.1.2.1.1. **First Thought about University**

Over three quarters of the 491 respondents were predisposed to university either early or on time according to college choice theory. Early predisposition was the norm in this group, with respondents typically describing knowing they would be attending university during their primary grades in elementary school.

I started thinking about attending university since early on in elementary school (seriously). I started thinking about what I wanted to major in during that time as well. (Received Medium Automatic Scholarship)

Of those who were predisposed to university in the typical time frame of Grades 7 to 9 (on time as per college choice theory), the transition to high school was the trigger for thinking about their future.

I always had the idea of attending university in the back of my mind when I first started high school, because I wanted to plan out which courses I was going to take during high school to be accepted to university. (Received Medium Applied Scholarship)

About a quarter of the respondents' coded comments could be described as indicating late predisposition. Late predisposition was characterized by these respondents as lacking clarity about their career direction, and uncertainty about making their post-secondary decision at this time.

I was more or less against the idea of university because I don't know what I wanted to do and it seemed quite expensive if I've no direction. I ignored most post-secondary information provided by counsellors. In January of 2009 a teacher whom I am quite fond of asked me what I was doing in the fall. I said I had no plans. He couldn't believe that and said I was too smart not to go to university. He suggested SFU. That weekend, I applied online. (Received medium applied scholarship)

What is important to note is that, like the above respondent, no late predisposition respondents indicated that they felt academically unprepared. It was the lack of direction, coupled sometimes with fear of not being ready for this transition, which resulted in not only late predisposition, but late planning.

Petrified, felt like high school ended too fast, no sense of direction, didn't know where and what I wanted to do, started planning near the beginning of the Grade 12 year. (Received small automatic scholarship)

But late planning was not just the purview of respondents who had a late predisposition; some respondent's who had an early disposition were late planners. These late planners always knew they were going to university so they could wait till Grade 12 to plan.

I thought about attending university as early as sixth grade, although I had no specific plans other than not wanting to stay in town to attend school. I started planning it last September. (Received large applied scholarship)

The above groups of late planners included less than one-third of the respondents whose answers were coded.

#### **4.1.2.1.2. First Thought of Planning**

For the search/choice stage of the college choice process, 547 responses of the 631 total responses were coded, leaving 84 respondents coded as unknown. Over two-thirds of the respondents were either early or on-time planners. Early planners, who were also predisposed early, although a small group, used the time in high school to confirm their program direction and ready themselves to be competitive for the admission process.

I have always expected that I would be going to university. Having that in mind, I have been working towards university for my entire high school career. For example, I joined student government early so I would have volunteer hours so I could have a stronger scholarship application.  
(Received medium automatic scholarship)

On time planners were the majority, with planning most often beginning in Grades 10 and 11. A significant contributor to planning at these grade levels may be attributed to the Planning 10 curriculum in B.C. high schools as it was commonly mentioned by respondents.

I started to truly plan it once I entered Grade 10 in high school. Going through the mandatory graduation requirements program, including a year's worth of planning 10 courses, got me to focus on the future.  
(Received large applied scholarship)

As a group, the respondents generally mirrored the college choice theory decision categories of predisposition, search, and choice. While they covered the continuum from early to late predisposition and early to late planning and the array of combinations, there were no discernible differences between those who accepted or did not accept the offer of scholarship. Their predisposition was also focused on university, which is clearly articulated in the next section.



#### 4.1.2.2. **Other Post-Secondary Options Considered**

The respondents were asked an open-ended question about what options they considered for post-secondary other than university. Each answer was reviewed and coded according to whether they considered no other options, considered college, technical school, taking a gap year, or working. From the 631 respondents, 610 answers were able to be coded, leaving 21 responses unknown due to lack of response or the answer not relating to the question.

Over 55% of the respondents mentioned that university was their first and only option, with many indicating “none” or “nothing” to describe other options. Others described it more clearly stating their confidence in their decision.

I never looked at anything other than university. I love school and am an avid learner so I knew that university was most likely the best option for me. (Received small automatic scholarship)

Other students spoke to the influence of family expectations on their choice to attend university as demonstrated by this statement:

My only option was to get into University. Going straight to work, or into college is disapproved [of] in my family. (Received small automatic scholarship)

Of those students who did consider other options, attending college was the first most mentioned option. However, college was viewed as a backup plan.

I considered college, but never applied for it, since I was certain that I would be accepted in either SFU or UBC. I always had a backup plan for college just in case; however, I received early acceptance from both universities. (Received small automatic scholarship)

Alternatively, college was also mentioned as a way to save money and commuting time prior to transferring to university:

I was thinking of perhaps attending a community college, then switching to a University [in] the second year, because it would save me a long commute, not to mention a few thousand dollars that I could keep and use for university in the future. (Received medium applied scholarship)

The second most mentioned option was not a post-secondary option but one that would provide a year's break for work, travel, volunteering, or some combination of these things. The *gap year* is primarily a break, an opportunity to explore the world, or save money with the intent after the year to attend university.

I considered either taking a year off[f] working or travelling overseas. Travelling would have given me the opportunity to see the world as well as get to know and understand different cultures/communities better. Work would have given me more experience in the work force, as well as more money for schooling and other future plans. However, I believe that the best time to transition into post-secondary education is right after high school, which is why I plan on attending SFU. (Received small automatic scholarship)

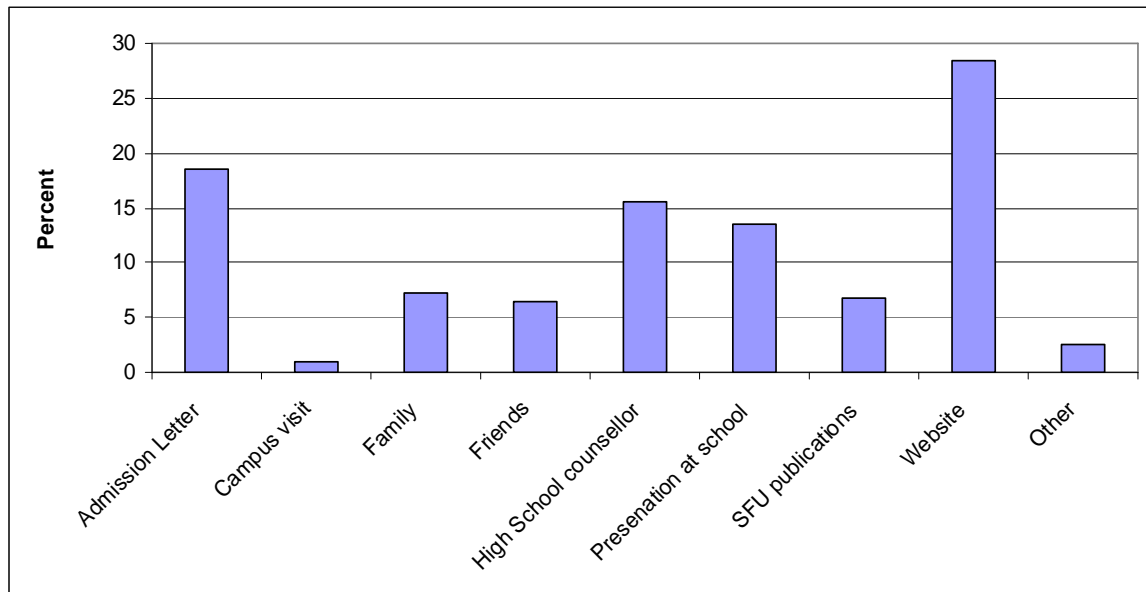
Finally, the third most common option was to pursue a completely different post-secondary path via technical training or a technical institute. The responses were dominated by indicating one institute—British Columbia Institute of Technology—with no explanations as to why and the training ranged from trades training to make-up artist to becoming a pilot. As a result, it is not clear why this was a choice.

As a whole, the respondents appear to have made university their first choice. The decision for the respondents was not whether to attend but where and when to attend.

#### 4.1.2.3. **Learned about Scholarships**

Figure 4.1 depicts how the respondents first learned about scholarships at SFU. Respondents were allowed to choose only one option.

**Figure 4.1. How Respondents Learned about Scholarship**



The greatest number of respondents (28.37%) learned about scholarships at SFU via SFU's website. The next most common way respondents learned about scholarships was when they received their admission letter (18.54%). Information provided at the respondents' high schools by school counsellors (15.53%), or an in-school presentation from SFU staff (13.47%), demonstrates the importance of school outreach as 29% of respondents learned about the scholarship at school. Family and friends are also an important information source (13.79%).

#### **4.1.3. Acceptance of Offer**

To describe the similarities and differences amongst the respondents, Table 4.2 provides the breakdown of the percentage of the respondents who did or did not accept SFU's offer of admission.

**Table 4.2. Respondents' Acceptance of Offer of Scholarship**

Respondents' Acceptance	N	P
Accepted Offer	379	60.06%
Did Not Accept Offer	252	39.94%
Total	631	100.00%

Sixty percent of the respondents accepted SFU's offer while 40% declined the offer. This dependent variable was utilized in the remaining sections of the findings chapter in order to answer the research sub-questions and the primary question: "What were the effect of merit-based aid on student aspirations, choice, and participation at a large urban comprehensive university?"

## **4.2. Similarities and Differences**

This section describes the similarities and the differences amongst the respondents who accepted or did not accept the scholarship offer by answering the first sub-research question: "What were the similarities and differences in the student population using the following variables:

- a. merit-aid type (automatic versus applied),
- b. merit-aid level (small, medium, large),
- c. respondent and parent citizenship (non-immigrant, immigrant, or permanent resident),
- d. parent/guardian highest level of education, and
- e. socio-economic status (estimated from parents' postal codes)?"

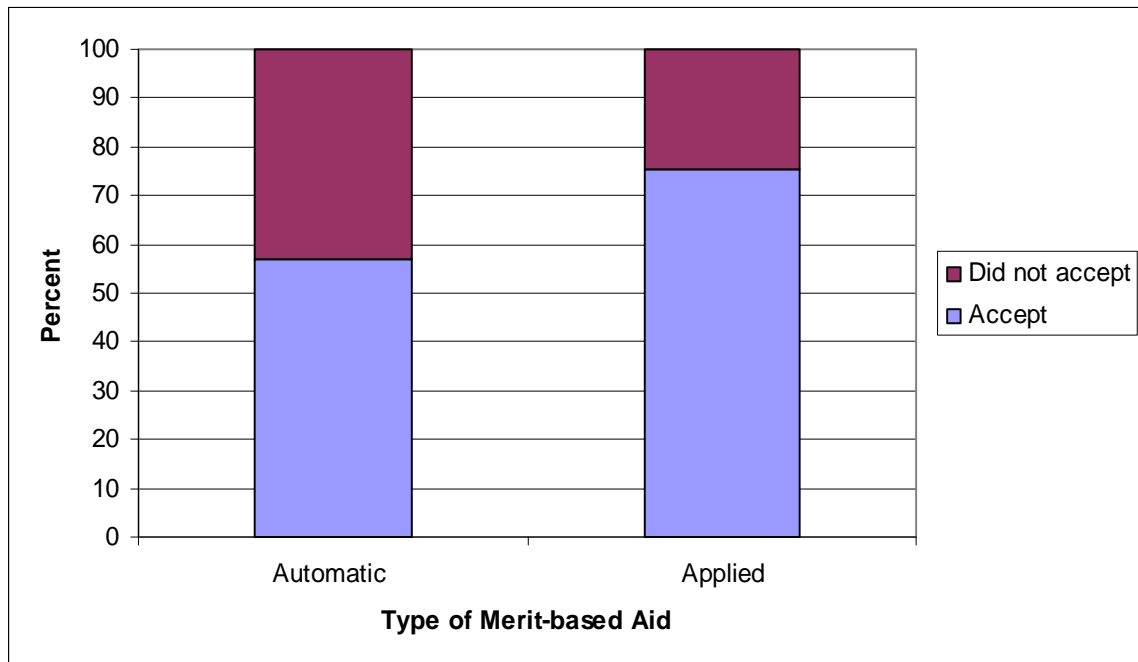
Descriptive statistics are provided for each variable and *accept* or *did not accept* the offer of admission and scholarship were used as the major unit of analysis. Where appropriate, inferential statistics tested the significance of each variable using accepted or did not accept the scholarship offer as the major unit of analysis. This provided a

sense of any effect of the different scholarship types and levels with who the respondents were, describing key characteristics while comparing and contrasting those who accepted with those who did not accept SFU's scholarship offer. The types of inferential statistics used for each question are dependent on the nature of the data.

#### 4.2.1. Merit-Aid Type

Figure 4.2 describes the acceptance of an offer of admission and scholarship based on the type of merit-based aid.

**Figure 4.2. Acceptance of Offer of Scholarship by Type of Merit-Based Aid**



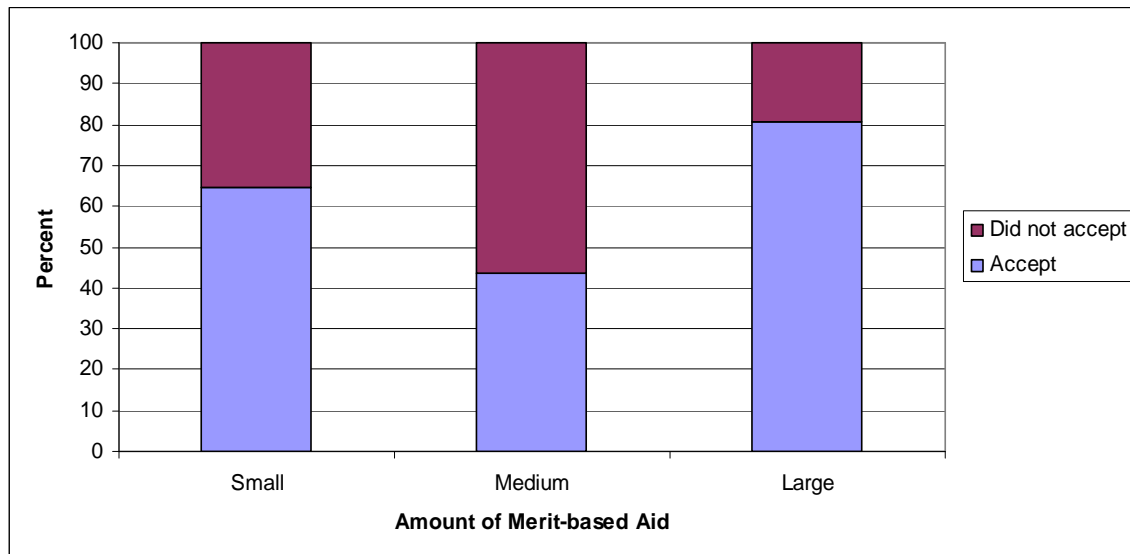
The two types of merit-based aid are automatic and applied scholarships. Automatic scholarships were provided with an offer of admission based on the applicant's admission average. Applied for scholarships were awarded based on the combination of the applicant's admission average, leadership, and community service.

Automatic scholarships had a lower yield rate of 57.06%, compared to 75.47% for applied scholarships. A  $\chi^2$  was conducted to test for a difference between the two proportions ( $p < .001$ ). Therefore, a significantly higher proportion of students accepted the offer when the scholarship was applied for versus those that were automatically awarded.

#### 4.2.2. Merit-Aid Level

Figure 4.3 provides the yield rate of the acceptance of offers for the three different levels of merit-based aid—small, medium, or large. Small scholarships range from a one-time amount of \$500 to a 1-year amount of \$3,500 (over two semesters), medium scholarships range from a 1-year amount of \$5,000 (over two semesters) to a 4-year amount of \$10,000 (over eight semesters), and large 4-year scholarships range from total amounts of \$20,000 to \$34,000 (over eight semesters).

**Figure 4.3. Acceptance of Offer of Scholarship by Level of Merit-Based Aid**



Large scholarships had the highest rate of scholarship acceptance (80.49%). The small scholarship had the next highest rate of scholarship acceptance (64.62%). The

medium level of scholarships had the lowest rate of scholarship acceptance (43.64%). More respondents declined the medium level scholarship offer than accepted the offer of admission and scholarship. A logistic regression using binomial distribution was used to determine whether there was a statistically significant difference in the proportions of scholarship acceptances by level of scholarship. There was a statistically significant difference for both large versus medium scholarships ( $p < .001$ ) and medium versus small scholarships ( $p < .0001$ ), adjusting for multiple comparisons using Tukey-Kramer, but no difference was found between large and small scholarships.

### **4.2.3. Citizenship**

In order to answer the research questions in this study, it is important to know each respondent's and their parent's/guardian's Canadian citizenship status, as research has shown that individual and family background can influence aspirations, choice, and participation. Canadian citizenship includes Canada, by birth; Canada, by immigration; and permanent resident status, as these are required to receive domestic student status in Canada. To determine whether there are similarities and/or differences between groups, each respondent was asked the question taken from the Statistics Canada Census on citizenship for themselves and their parents/guardians.

#### **4.2.3.1. Respondents' Canadian Citizenship and First Language**

Table 4.3 provides the breakdown of the respondents' Canadian citizenship status. The majority of the respondents were born in Canada. Compared to those who gained citizenship status by immigration, a higher percentage of the respondents who were born in Canada or who are permanent residents accepted SFU's scholarship offer. A  $\chi^2$  test conducted to determine whether there was a statistically significant difference between the acceptances of scholarship offer by respondents' citizenship indicated that

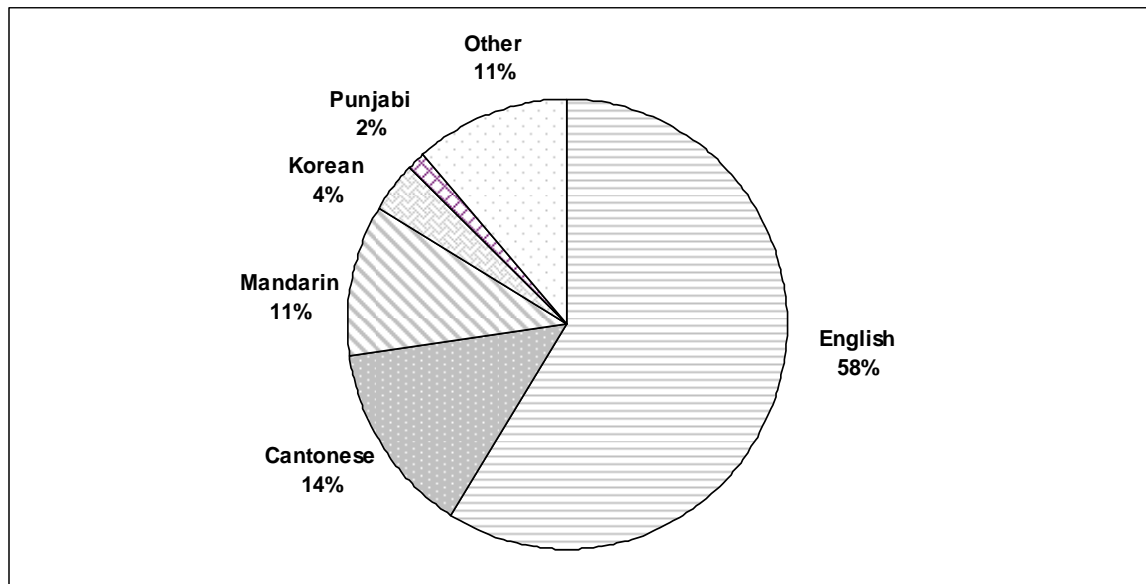
there was a statistically significant difference ( $p = .0432$ ) in the acceptance of offer for respondents who are immigrants.

**Table 4.3. Respondents' Canadian Citizenship Status**

Respondents' Citizenship	All		Accepted		Did Not Accept	
	N	P	N	P	N	P
Canada, by Birth	387	61.33%	244	63.05%	143	36.95%
Canada, by Immigration	211	33.44%	115	54.50%	96	45.50%
Permanent Resident	33	5.23%	20	60.61%	3	39.39%
Total	631	100.00%	379	60.06%	252	39.94%

To gain an understanding of where these students are from, each respondent was asked what their first language was. In total, the respondents spoke over 34 languages. However, for the purposes of this study, only the top five languages are shown. Figure 4.4 provides the respondents' first spoken language.

**Figure 4.4. Respondents' First Language**





#### 4.2.3.2. Mothers' Canadian Citizenship and First Language

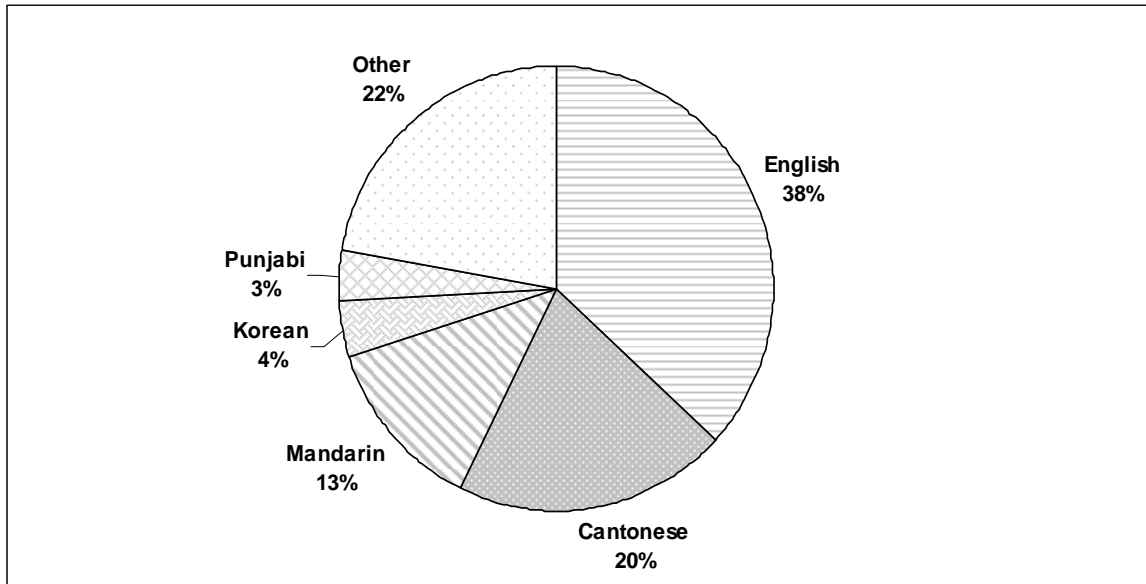
Table 4.4 provides the breakdown of the citizenship status of respondents' mothers. A greater percentage of the mothers were immigrant (57%) than the students themselves (33%). Again, the acceptance rate for the offer of scholarship was higher when the mother was Canada, by birth and lower for Canada, by immigration and permanent resident status. A  $\chi^2$  test was conducted to determine whether there was a statistically significant difference between the acceptances of scholarship offer by mother's citizenship,  $p < .001$  and mothers who are immigrants ( $p = .0046$ ). While both are statistically significant, scholarship acceptance for respondents whose mother were non-immigrant was more highly significant.

**Table 4.4. Mothers' Canadian Citizenship Status**

Mother's Citizenship	All		Accepted		Did Not Accept	
	N	P	N	P	N	P
Canada, by Birth	205	32.49%	145	70.73%	60	29.27%
Canada, by Immigration	365	57.84%	202	55.34%	163	44.66%
Permanent Resident	61	9.67%	32	52.46%	29	47.54%
Total	631	100.00%	379	60.06%	252	39.94%

To gain an understanding of how respondents' first language may differ from their mothers, respondents answered what was their mothers' first language. For the purposes of this study, only the top five languages are shown. Figure 4.5 provides the respondents' mothers' first language.

**Figure 4.5. Mothers' First Language**



English was the largest proportion of first language for the respondents' mothers (38%), but Cantonese and Mandarin were a greater percentage of mothers' first language, at 20% and 13%, respectively. The "other" category doubled in size, illuminating the diversity of the first language background of the respondents and their countries of origin. In total, over 47 languages were represented by the mothers of the respondents.

#### 4.2.3.3. Fathers' Canadian Citizenship and First Language

Table 4.5 provides the breakdown of the respondents' fathers' Canadian citizenship status. Similar to mother's citizenship, over 58% of respondents have a father who was foreign born. The acceptance of the scholarship offer shows a similar acceptance pattern to that of the mothers, with higher acceptance for Canada, by birth and lower for Canada, by immigration and permanent resident status. A  $\chi^2$  test was conducted to determine whether there was a statistically significant difference between the acceptances of scholarship offer by fathers' citizenship,  $p < .01$ . The  $p$  value was

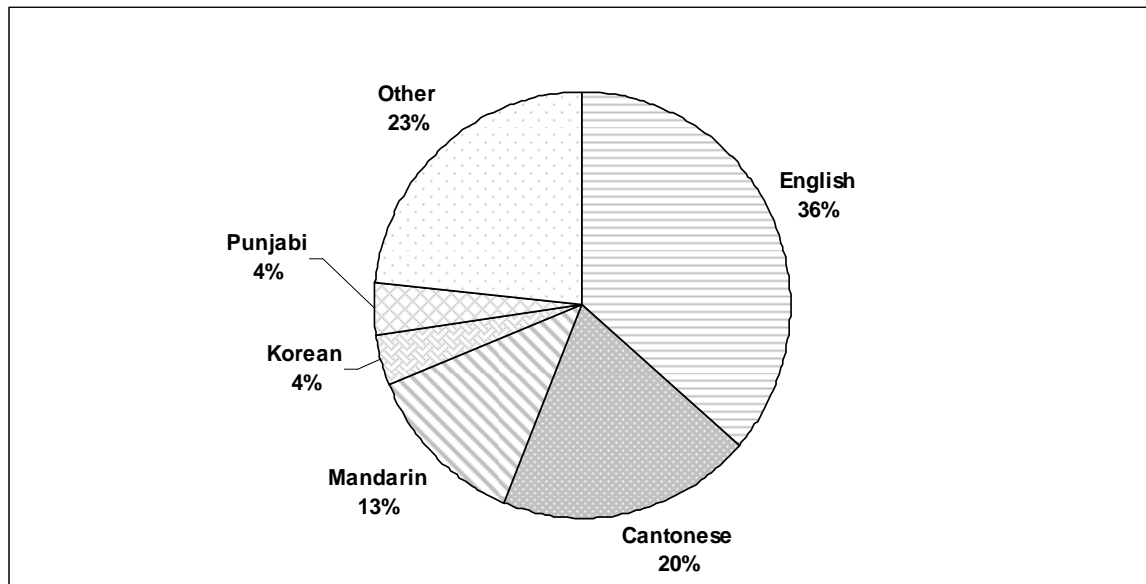
less than .01 for both fathers who are non-immigrants ( $p = .0003$ ) and fathers who are immigrants ( $p = .0014$ ). Again, while both were statistically significant, the acceptance rate for respondents whose fathers who were non-immigrant was more highly significant.

**Table 4.5. Fathers' Canadian Citizenship Status**

Father's Citizenship	All		Accepted		Did Not Accept	
	N	P	N	P	N	P
Canada, by Birth	191	30.27%	135	70.68%	56	29.32%
Canada, by Immigration	367	58.16%	201	54.77%	163	45.23%
Permanent Resident	73	11.57%	43	58.90%	30	41.10%
Total	631	100.00%	379	58.90%	252	41.10%

To gain an understanding of how respondents' first language may differ from their fathers, respondents answered what was their fathers' first language. For the purposes of this study, only the top five languages are shown. Figure 4.6 provides the respondents' fathers' first language.

**Figure 4.6. Respondents Father's First Language**



The respondents' fathers' first language background was almost identical to mothers. English was still the largest proportion of the first language of the respondents' fathers, at 36%, but Cantonese and Mandarin were a greater percentage of fathers' first language, at 20% and 13%, respectively. The "other" category again doubled in size, illuminating the diversity of the first language background of the respondents and countries of origin. In total, over 46 languages are represented by the fathers of the respondents.

#### 4.2.3.4. **Parents Citizenship**

As the research questions asked about parents of the respondents, a variable combining mothers' and fathers' citizenship was constructed in order to conduct the analysis for this study. A total of six combinations of citizenship were identified for parents of the respondents—both Canada, by birth; Canada, one parent by birth and second parent by immigration; Canada, by birth and permanent resident; both Canada, by immigration; Canada, by immigration and permanent resident; and both permanent residents. In order to make this comparable to the respondents three citizenship categories, these six categories were re-grouped into three categories:

- a. both parents, non-immigrant;
- b. both parents, immigrant (includes, parents who are both immigrants, both permanent residents, or a combination of either);
- c. one parent, non-immigrant.

This provided the most distinct categories and though not identical to the citizenship categories for respondents, it reflected who their parents are. These categories also provided a means to infer the effect of parental social and cultural capital on respondents' decisions. Table 4.6 provides the parents' citizenship, and will be used as a major unit of analysis for the remainder of the findings in this study.

**Table 4.6. Parents' Citizenship**

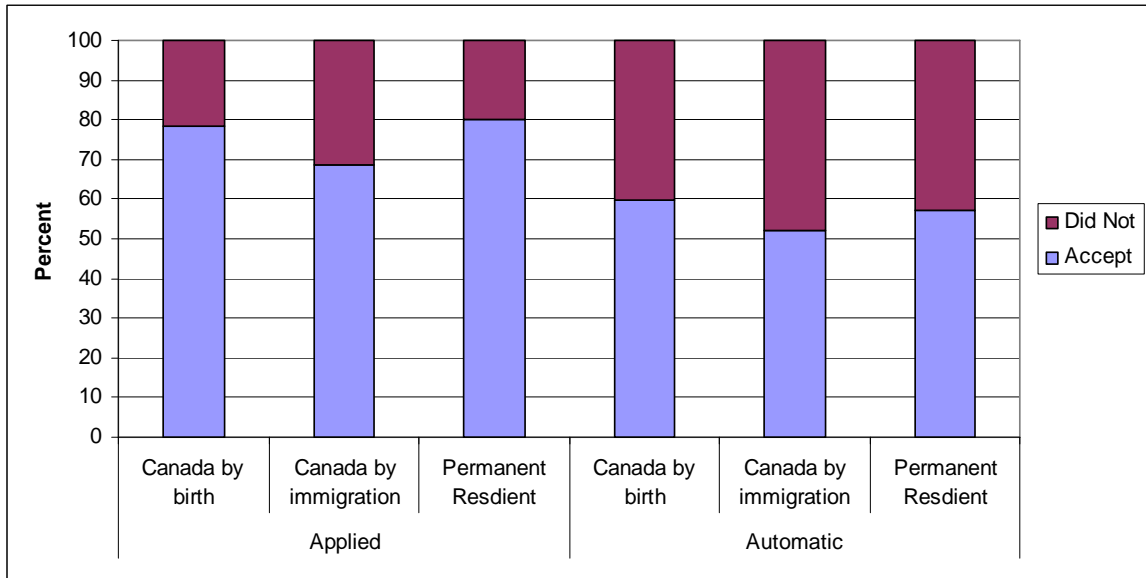
Parents' Citizenship	All		Accepted		Did Not Accept	
	N	P	N	P	N	P
Both, Non-Immigrant	163	25.83%	116	71.17%	47	28.83%
Both, Immigrant	309	63.07%	215	54.02%	163	45.97%
One, Non-Immigrant	70	11.10%	48	68.57%	22	31.43%
Total	631	100.00%	379	60.06%	252	39.94%

With 63.07% of the respondents' parents both immigrants, almost two thirds of the respondents were either an immigrant themselves or were first-generation Canadian. These data also show that if either both a respondents' parents were non-immigrant, or if one parent was non-immigrant, there was a greater likelihood they would accept SFU's scholarship offer, compared to respondent's whose parents were both immigrants. However, of those respondents who accepted SFU's scholarship offer, 12.66% had at least one parent who was an immigrant, and 56.72% had both parents as immigrants.

A logistic regression using binomial distribution was used to determine whether there was a statistically significant difference in the scholarship offer acceptance by the constructed variable of parents' citizenship,  $p < .01$  for both parents non-immigrant ( $p = .0007$ ), adjusting for multiple comparisons using Tukey-Kramer (See Appendix H)

The respondents' citizenship was analyzed by the type and level of merit-based aid received, and whether they accepted or did not accept SFU's offer of admission and scholarship. Figure 4.7 provides the respondents' citizenship by merit-aid type and acceptance of offer.

**Figure 4.7. Respondents' Citizenship by Merit-Aid Type and Acceptance of Offer**

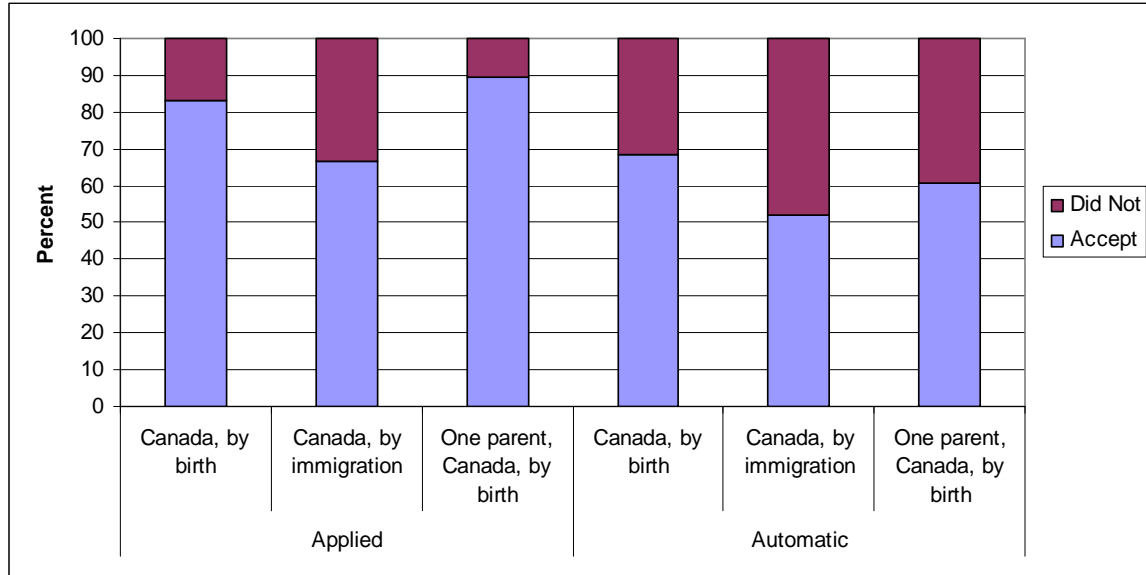


The yield rate on the acceptance of offer was lower for automatic scholarships than for applied for scholarships for all categories of citizenship. Respondents who are immigrants had the lowest yield for both types of scholarships. For applied scholarships, this was almost 10% lower for immigrants (68.75%), compared to non-immigrants (78.26%), and permanent resident (80.00%). For automatic scholarships, this was almost 8% lower for immigrants (51.96%), compared to non-immigrants (59.94%), and 5% lower for permanent residents (57.14%).

A logistic regression using binomial distribution was conducted to determine whether there was a statistically significant difference between the proportions of the acceptance of scholarship offer by respondent's citizenship and the type of scholarship. There was a statistically significant difference for the acceptance of offer by type of scholarship ( $p < .001$ ) but not for respondent's citizenship. The  $p$  value for applied versus automatic scholarships was adjusted using the Tukey-Kramer adjustment for multiple comparisons.

Figure 4.8 provides the difference in yield rates for merit-aid level by parents' citizenship.

**Figure 4.8. Parents' Citizenship by Merit-Aid Type and Acceptance of Offer**

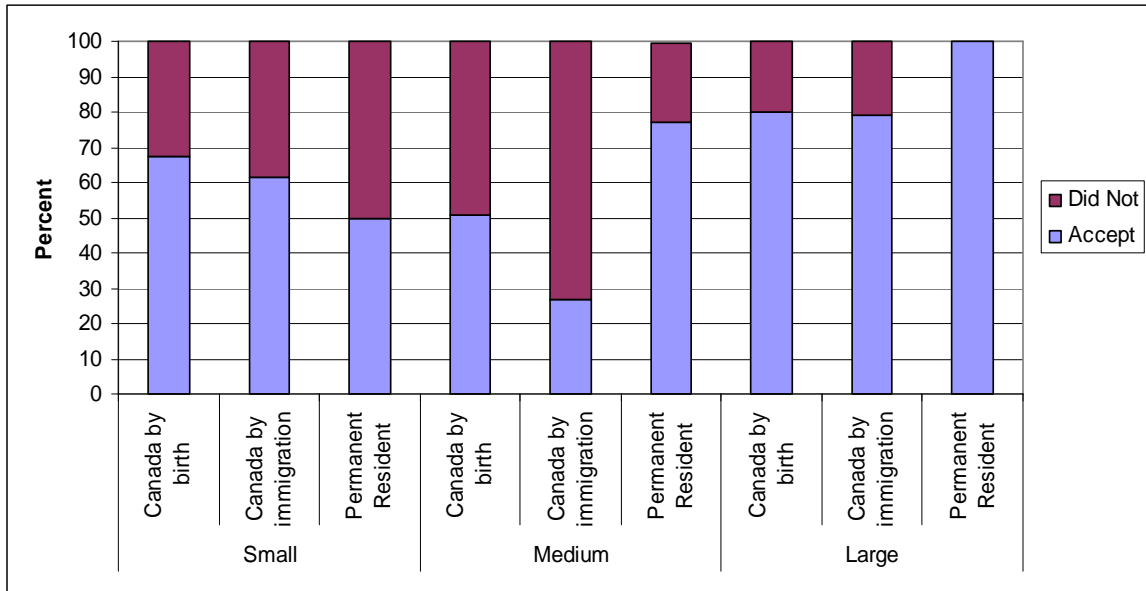


The pattern of yield on acceptance of offer was almost identical to the respondents with greater yield for applied versus automatic in all categories and a lower rate of acceptance for both types of scholarships when both parents are immigrants.

A logistic regression using binomial distribution was conducted to determine whether there was a statistically significant difference between the proportions of the acceptance of scholarship offer by type of scholarship and parent's citizenship. In comparison to the respondents (Figure 4.8), there is statistically significant difference between the proportions for both the type of scholarship,  $p = .0013$  and the acceptance of offer by citizenship,  $p = .0011$ . The  $p$  values were adjusted using the Tukey-Kramer adjustment for multiple comparisons.

Figure 4.9 provides the difference in yield rate for merit-aid level by respondents' citizenship.

**Figure 4.9. Respondents' Citizenship by Merit-Aid Level and Acceptance of Offer**



The acceptance of an offer was very high for large scholarships for all categories of respondents' citizenship. Non-immigrant respondents' scholarship acceptance was 80.00%, while acceptance for those who were immigrants was slightly lower, at 78.95%. All respondents who were permanent residents accepted the offer of scholarship. Medium levels of scholarship showed the greatest variation in acceptance of offer by respondents' citizenship. More respondents who were immigrants declined the offer of scholarship, with only 26.92% accepting. Just over half of respondents who were non-immigrants accepted the medium offer (50.96%), while permanent residents accepted at a yield rate of 77.28%. The small scholarships had a higher yield rate than medium scholarships. Small scholarships also indicated a wider variation in acceptance of an offer. Non-immigrants yielded the greatest level of acceptance (67.56%), immigrants (61.43%), and permanent resident (50%).

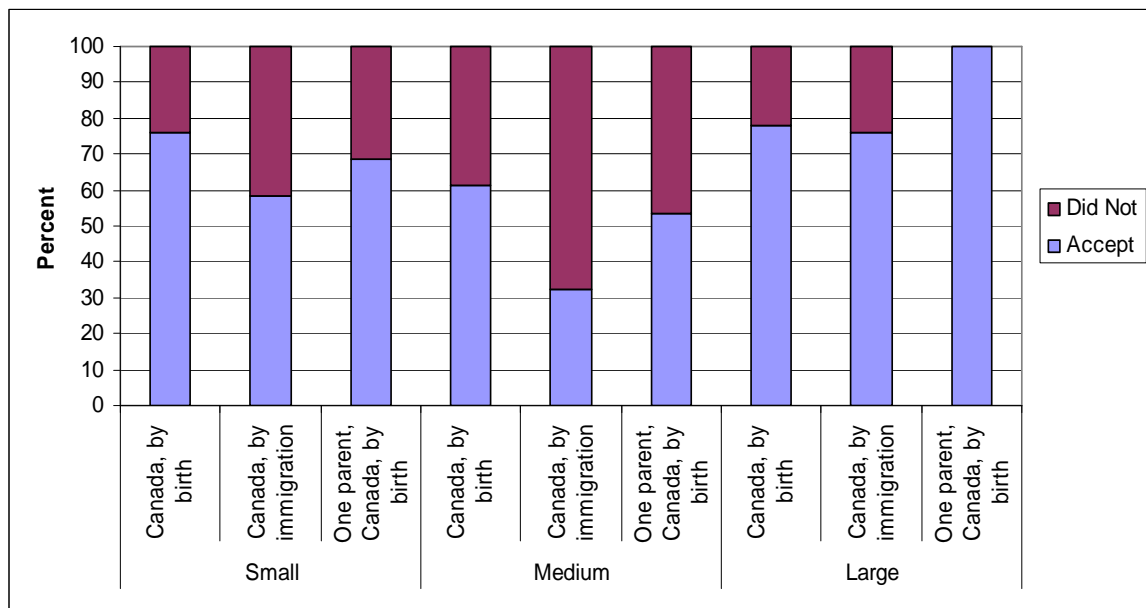
A logistic regression using binomial distribution was conducted to determine whether there was a statistically significant difference between the proportions of the



acceptance of scholarship offer by the level of scholarship and respondents citizenship. There was a statistically significant difference for the acceptance of offer for the level of scholarship between large and medium scholarships ( $p = .0001$ ) and medium and small scholarships ( $p < .0001$ ). There was also a statistically significant difference for acceptance of offer for respondents citizenship between non-immigrants and immigrants ( $p = .0443$ ).

Figure 4.10 provides the difference in yield rates for merit-aid level by parents' citizenship.

**Figure 4.10. Parents' Citizenship by Merit-Aid Level and Acceptance of Offer**



The rate of acceptance of offer showed an identical pattern for large scholarships by parent's citizenship to those of the respondents. Medium scholarships also show the lowest rate of acceptance and the same variability, but with a 10% increase in acceptance of the scholarship if both parents were non-immigrants compared to the respondent being a non-immigrant. The small scholarships also showed a similar pattern

of acceptance to the respondents, but with higher level of acceptance where one parent was a non-immigrant.

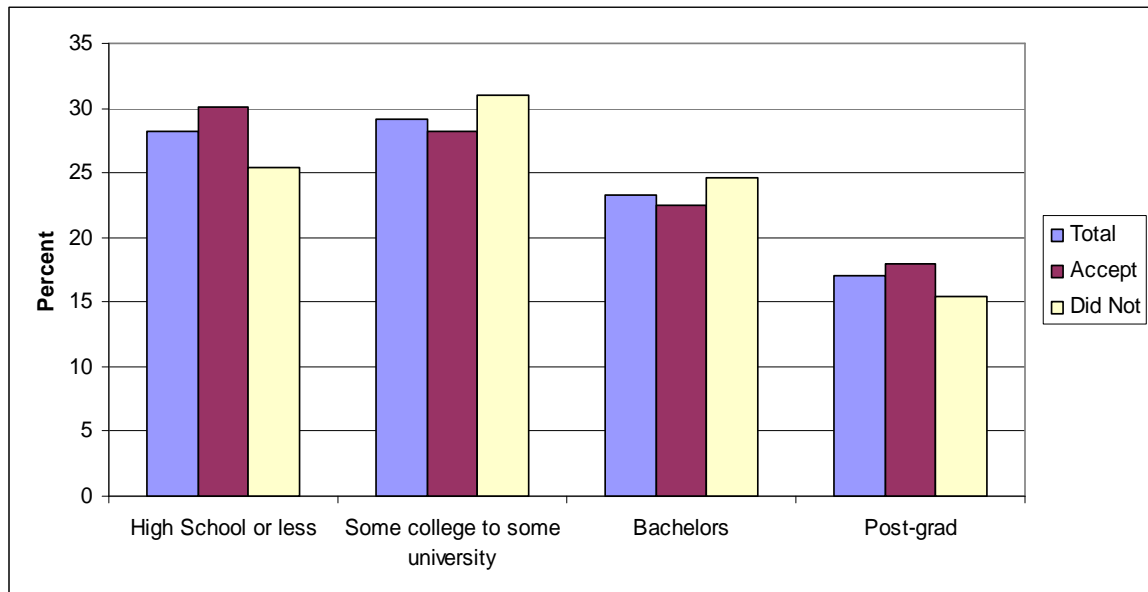
A logistic regression using binomial distribution was conducted to determine whether there was a statistically significant difference between the proportions of the acceptances of scholarship offer by the level of scholarship and parents' citizenship. There was statistically significant difference for the acceptance of offer by the level of scholarship between large and medium scholarships ( $p = .0001$ ) and medium and small scholarships ( $p < .0001$ ). There was also a statistically significant difference for acceptance of offer for parents' citizenship between non-immigrants and immigrants ( $p < .0001$ ).

#### **4.2.4. Parents' Highest Level of Education**

Respondents were asked to provide each of their parent's/guardian's highest level of education. They were provided with 10 choices—less than high school, high school or equivalent, some college, college or technical graduate, some university, bachelor's degree, professional certification, master's degree, professional degree, doctorate degree, or don't know. For the purposes of this study, these choices were grouped into four categories to provide an analysis of the data according to high school or less (first generation post-secondary), some college to some university (first generation university), bachelor's degree (university background), and post-graduate (advanced credentials). As the *don't know* category was very small, it was not included in the following figures.

Figure 4.11 provides mothers' highest level of education for all respondents.

**Figure 4.11. Mothers' Highest Level of Education**



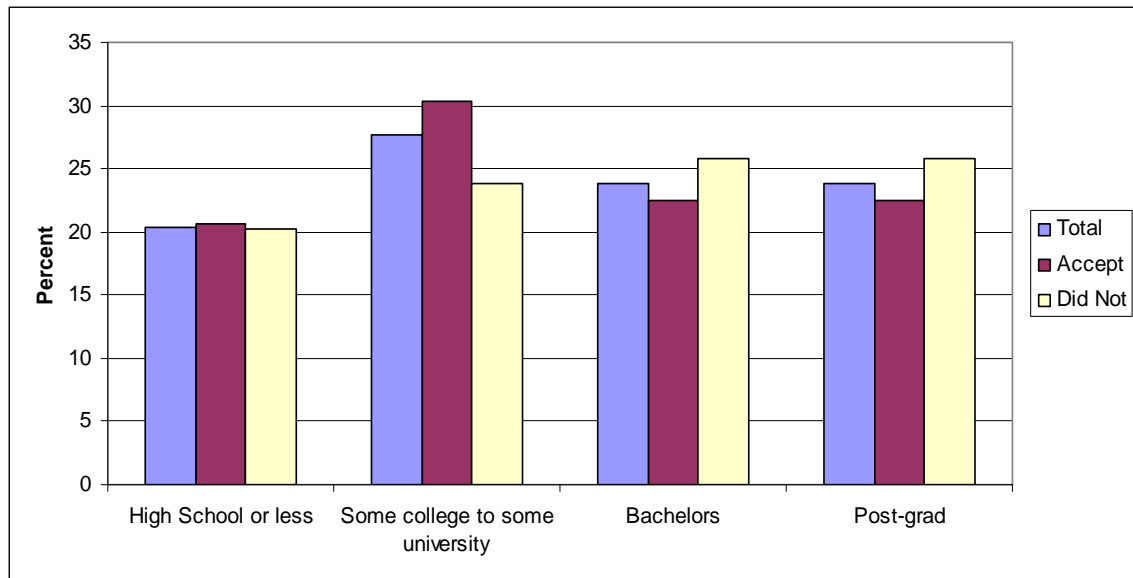
Where the mothers' highest level of education was either high school or less or post-graduate, a higher proportion of respondents accepted the scholarship offer. If the mothers had some college to some university, or a bachelor's degree, the respondents were more likely to not accept the offer of admission and scholarship.

Based on mothers' highest education, 58.31% of the respondents who accepted SFU's offer were first generation university, with 30.08% first generation post-secondary, compared to respondents who did not accept who were 55.99% first generation university and 25.40% first generation post-secondary. This provides a measure of how many of the respondents were first generation post-secondary and first generation university according to their mothers' highest level of education.

A  $\chi^2$  test was conducted to determine whether there was a statistically significant difference between the acceptances of scholarship offer by mothers' highest level of education. No statistically significant difference was found.

Figure 4.12 provides fathers' highest level of education for all respondents.

**Figure 4.12. Fathers' Highest Level of Education**



Compared to respondents' mothers, fewer respondents' fathers' highest level of education were high school or less (20.45%) and some college to some university (27.70 %). The category that showed the greatest yield on offer of acceptance for father's highest education was some college to some university.

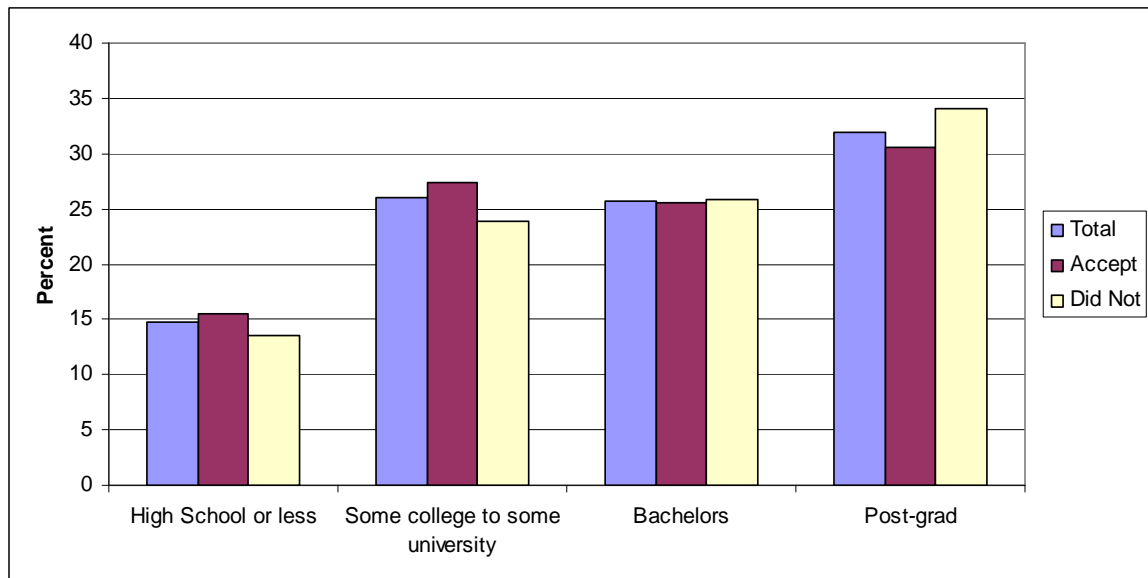
Based on fathers' highest education, there was a lower percentage of respondents who accepted SFU's offer who are first generation university (50.92%) and first generation post-secondary (20.58%). Respondents who did not accept also had a lower percentage who were first generation university (44.05%) and first generation post-secondary (20.24%). Again, these provided measures of how many of the respondents were first generation post-secondary and first generation university according to their fathers' highest level of education.

A  $\chi^2$  test was conducted to determine whether there was a statistically significant difference between the acceptances of scholarship offer by fathers' highest level of education. No statistically significant difference was found.

Combining mothers' and fathers' highest level of education provided a different picture. This variable was constructed for each set of parents by coding the parent with the highest education. Figure 4.13 shows, for each respondent, the parent with the highest level of education.

The number of respondents who were first generation post-secondary decreased to 14.70% for combined parent with highest level of education, compared to mothers only (28.2%) and to fathers only (20.40%). A decrease was also noted for those who were first generation university using combined parent with highest level of education (26.00%), compared to mothers only (29.30%) and to fathers only (27.30%). There was a small increase in the percentage of at least one parent holding a bachelor degree, (25.70%), compared to mothers only (23.30%) and to fathers only (23.80%). The greatest difference was found at the post-graduate category, with 32.00% of respondents having at least one parent with an advanced credential, compared to mothers only (17.00%) and to fathers only (23.8%).

**Figure 4.13. Parent with Highest Level of Education**



43.01% of the respondents who accepted the scholarship offer were first generation university and 15.57% first generation post-secondary. In comparison, fewer respondents who did not accept the offer were first generation university (36.40%) and first generation post-secondary (13.49%). Generally, as parental education rose, the acceptance of an offer decreased compared to those who do not accept.

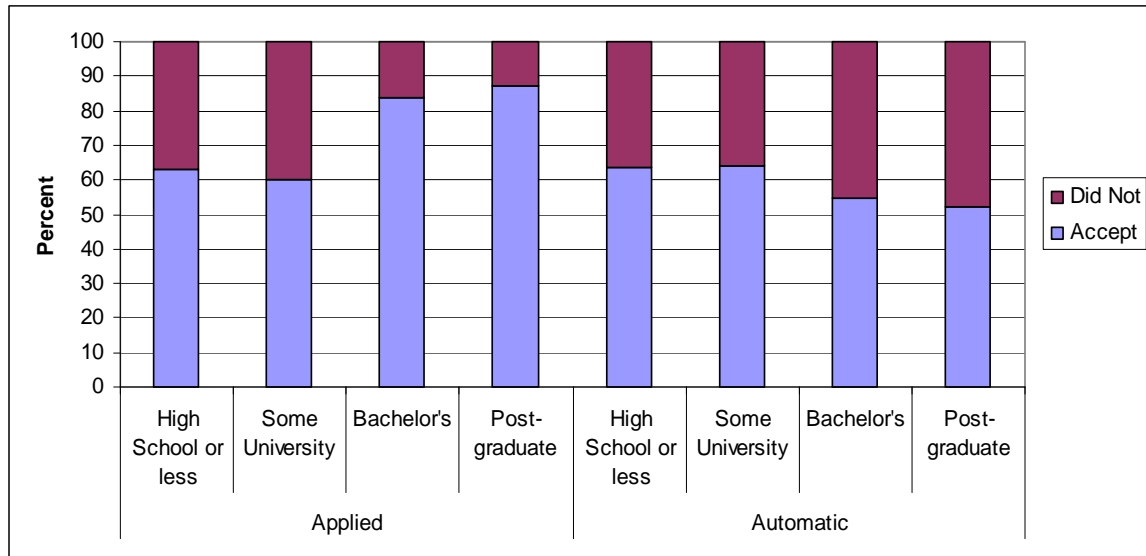
A  $\chi^2$  test was conducted to determine whether there was a statistically significant difference between the acceptances of scholarship offer by parent with highest level of education. No statistically significant difference was found.

As parental education was a major unit of analysis for this study, it was important to decide which of the three types of parental education to use for further analysis. A logistic regression using binomial distribution was conducted to determine whether there was a statistically significant difference between the proportions of the acceptances of scholarship offer by mothers, fathers or parents with highest education. There was no statistically significant difference for the acceptance of offer by any type of parental education.

Even though no statistically significant difference was found between the highest education of mother, father, or parents, the decision was made to use parent with highest level of education for analysis for this study because acceptance of the scholarship was only one component of this study. Furthermore, earlier literature illustrated that parental education was a significant contributor to university attendance (Andres & Krahn, 1999; Dorlet, 2005). In addition, parent with highest education best identified the respondents who are first generation post-secondary and first generation university.

Figure 4.14 provides the parent with the highest level of education by merit-based aid type (applied or automatic) by acceptance of offer.

**Figure 4.14. Parent with Highest Level of Education by Merit-Based Aid Type and Acceptance of Offer**



For applied scholarships, the respondents who are first generation post-secondary (high school or less) or first generation university (some college to some university) show lower yield rates at 63.13% and 60.00%. Respondents who had at least one parent who was university educated accepted at higher yield rates of 83.87% for bachelor's degrees and 87.10% for post-graduate credentials.

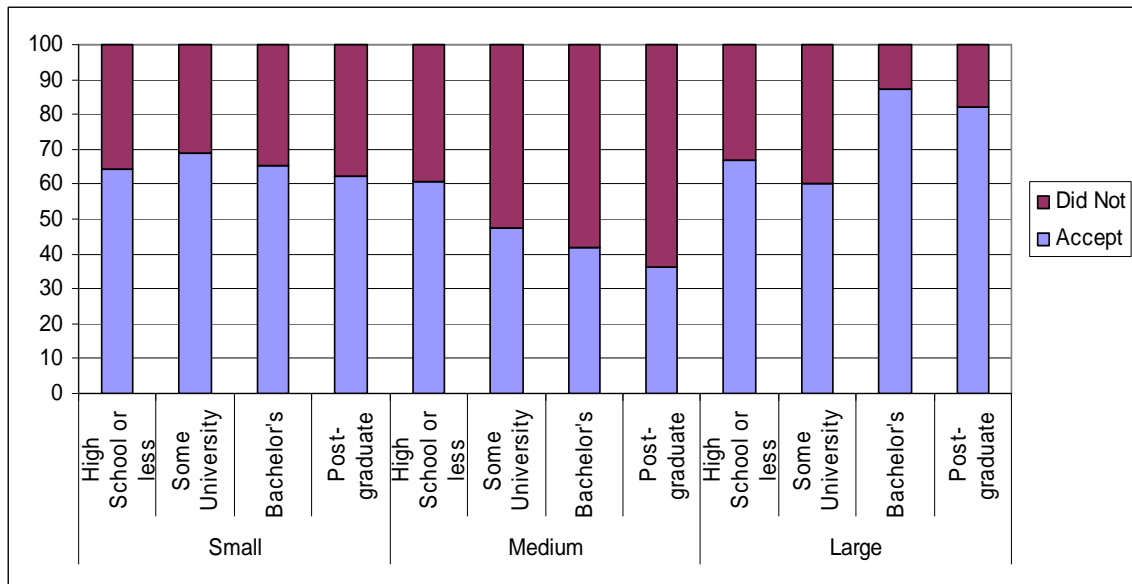
As the level of education increased, the level of acceptance of offer decreased for automatic scholarships. Respondents whose parental highest level of education was high school or less were more likely to accept the offer (63.51%) compared to respondents with parent with highest level of education was a post-graduate credential (52.05%).

A logistic regression using binomial distribution was conducted to determine whether there was a statistically significant difference between the proportions of

acceptance of the scholarship offer for parent with highest education and the type of merit-based aid. No statistically significant interaction effect was found.

Figure 4.15 provides the parent with the highest level of education by merit-based aid level (small, medium, or large) and acceptance of offer.

**Figure 4.15. Parent with Highest Level of Education by Merit-Based Aid Level and Acceptance of Offer**



The yield on the acceptance of offer for small scholarships is very consistent across parent, with highest level of education ranging from a low of 62.22% for post-graduate to a high of 68.91% for some university.

Respondents' acceptance of the scholarship offer for medium scholarships declined as parental education increased. The only category that had a higher acceptance of offer than did not accept the offer was respondents whose parent with the highest level of education was high school or less, at 60.87%. For all other education levels, more respondents declined the scholarship offer than accepted the offer.



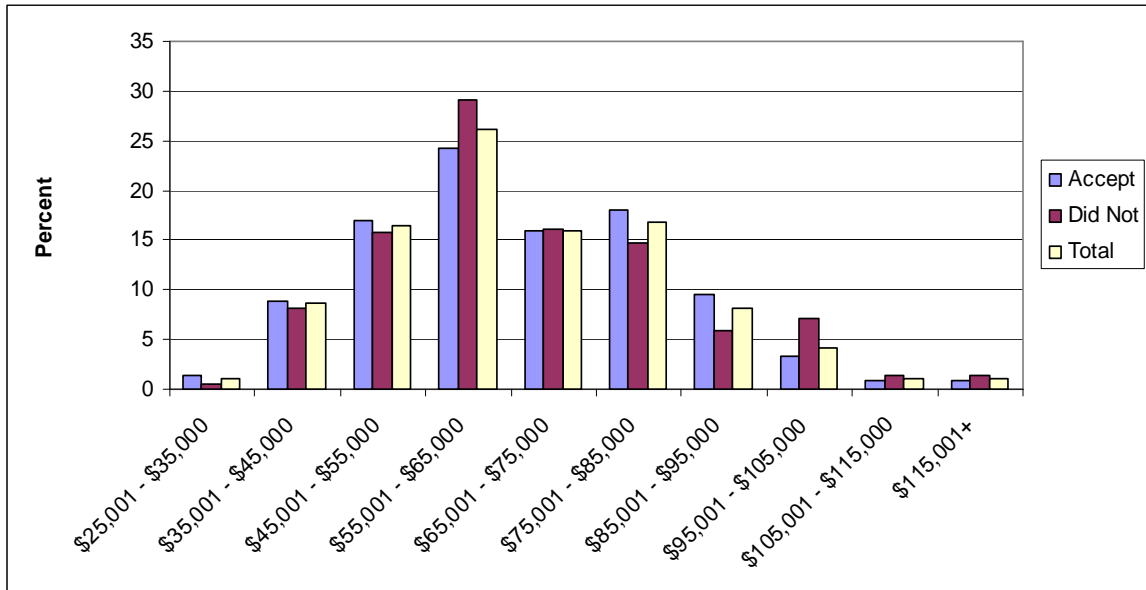
The acceptance rate of offers for large scholarships was very similar to the pattern for applied scholarships (Figure 4.15) with lower rates of acceptance for first generation post-secondary (66.67%) and first-generation university (60%) than for respondents with a parent with a bachelor's degree (87.50%) or a post-graduate credential (82.35%).

A logistic regression using binomial distribution was conducted to determine whether there was a statistically significant difference in the proportion of respondents' scholarship acceptance for parent with highest education measured against the level of merit-based aid. No interaction effect was found between the level of the scholarship and parent with highest education. There was a statistically significant difference for the acceptance of offer by the level of scholarship between large and medium scholarships ( $p < .001$ ) and medium and small scholarships ( $p < .0001$ ).

#### **4.2.5. Socio-Economic Status**

For the purposes of this study, to provide an estimate of SES, neighbourhood before tax median income was estimated using parental postal codes. These data were derived using Statistics Canada's Census Tract or Community Profile data. Forty-nine respondents did not provide their parents' postal code. As a result, data were only provided for 582 respondents. For descriptive statistics, these data were divided into income quartiles (first quartile  $\leq \$54,770$ , second quartile  $\$54,771$  to  $\$64,710$ , third quartile  $\$64,711$  to  $\$79,050$ , and fourth quartile  $\$79,051$  or  $>$ ), but in order to provide a picture of the range of incomes, Figure 4.16 estimates the percentage of respondent's within each neighbourhood income category at \$10,000 increments starting at \$25,000 annual before tax median family income.

**Figure 4.16. Before Tax Median Family Income**



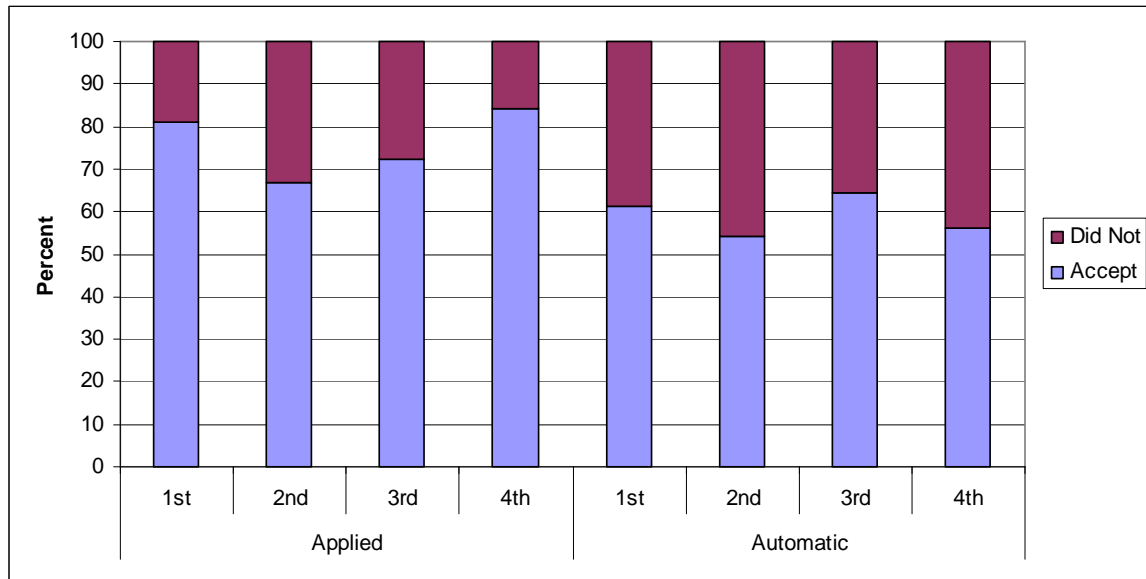
The lowest neighbourhood before tax median family income was \$25,329 and the highest was \$178,710. The range was \$153,381 and the median was \$64,710. The greatest proportion of the respondents had neighbourhood family incomes between \$55,001 and \$65,000, at 26.12%. The majority of the respondents lived in the province of British Columbia (92.87%), with 66.09% of respondents living in the Metro Vancouver area and the remaining 26.78% living elsewhere in the province. The neighbourhood median before tax family income for the respondents as a whole, aligned with the before tax median family income for the province of British Columbia (\$62,346), and for the Vancouver CMA (\$64,322) (Statistics Canada, 2009). Just more than half of the respondents who accepted SFU's offer live in neighbourhoods at the before tax median income or below (51.53%) for the province of British Columbia and the Vancouver CMA.

A logistic regression was conducted to determine whether there was a statistically significant difference between the acceptances of the scholarship offer based

on neighbourhood before tax median family income. No statistically significant difference was found.

Figure 4.17 provides the respondents' acceptance of offer by neighbourhood before tax median family income and the merit-based aid type.

**Figure 4.17. Before Tax Median Family Income Quartile by Merit-based Aid Type**



Respondents with family income in the second quartile had the lowest rate of acceptance for applied scholarships at 66.67%. The lowest and the highest quartiles had the highest acceptance rate at 80.98% and 84% respectively.

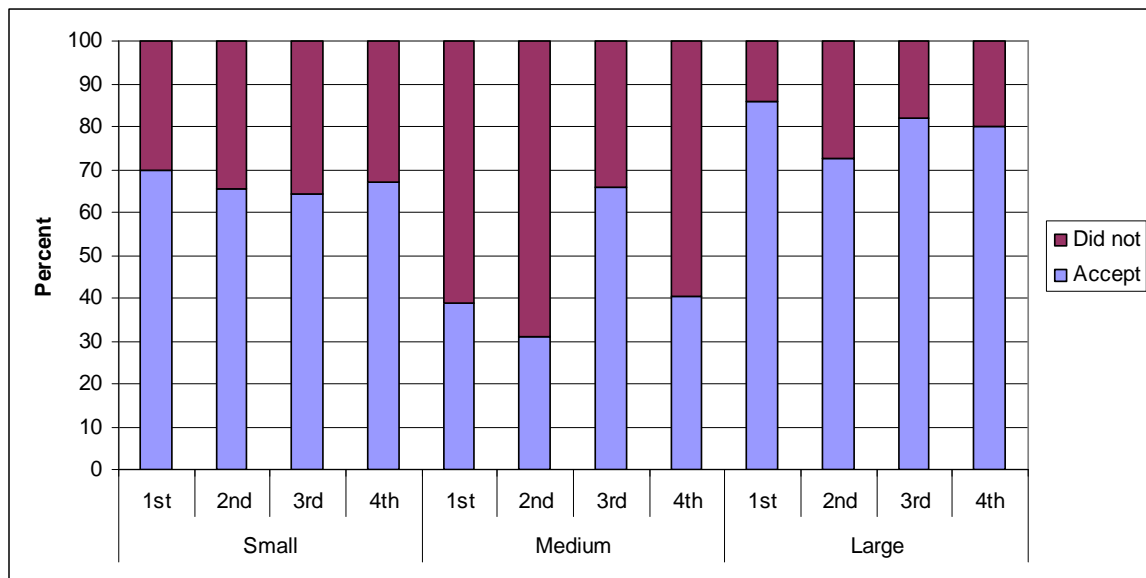
Automatic scholarship acceptance of offer by income quartile showed a relatively consistent pattern with the first (61.11%) and third (64.35%) income quartile almost being equal in acceptance and the second (54.10%) and fourth (56.30%) income quartile being almost equal. Overall, the acceptance of an offer continued to be lower for automatic scholarships than for applied scholarships.

A logistic regression using binomial distribution was conducted to determine whether there was a statistically significant difference between the proportions of

acceptance of the scholarship offer for before tax median income and the type of merit-based aid. No interaction effect was found between the type of scholarship and the co-variate of neighbourhood before tax median family income. There was a statistically significant difference for the acceptance of offer by type of scholarship ( $p < .0021$ ).

Figure 4.18 provides the respondents' acceptance of offer by neighbourhood before tax median family income and merit-based aid level.

**Figure 4.18. Before Tax Median Family Income Quartile by Merit-based Aid Level**



Again, the small scholarships showed very consistent yields of acceptance of an offer across all income quartiles (mid to high 60%). The medium level of scholarships again showed the greatest variation with the only acceptance of an offer over 50.00% being respondents with before tax median income in the third quartile at 65.71%. In all other quartiles, more respondents declined the offer with acceptance rates ranging from 40.54% for the fourth quartile to a low of 30.95% for the second quartile. Large scholarship acceptances of offer by income quartile also were consistent across

quartiles with the lowest acceptance of an offer 72.73% for the second quartile with all other quartiles over 80% acceptance of an offer.

A logistic regression using binomial distribution was conducted to determine whether there was a statistically significant difference between the proportions of acceptance of the scholarship offer for before tax median income and the level of merit-based aid. No interaction effect was found between the level of scholarship and the co-variate of before tax median family income. There was statistically significant difference for the acceptance of an offer by the level of scholarship between large and medium scholarships ( $p = .0005$ ) and medium and small scholarships ( $p < .0001$ ).

Figure 4.19 provides the additional factor of parents' citizenship with neighbourhood income quartile and acceptance of offer. Both parents, Canada, by birth showed yield rates ranging from a low of 65.00% for the fourth quartile to a high of 78.72% for the third quartile. When both parents are immigrants, the yield rate declined as the neighbourhood income increased while for one parent Canadian, the yield rate increased as the neighbourhood income increased.

A logistic regression using binomial distribution was conducted to determine whether there was a statistically significant difference between the proportions of acceptance of the scholarship offer for neighbourhood before tax median income and parent citizenship. No interaction effect was found between parent citizenship and the co-variate of neighbourhood before tax median family income. There was statistically significant difference for the acceptance of offer by parent citizenship between non-immigrant and immigrant parents ( $p = .0007$ ) and immigrants and one parent non-immigrant ( $p < .0278$ ).

**Figure 4.19. Before Tax Median Family Income Quartile by Parent Citizenship**

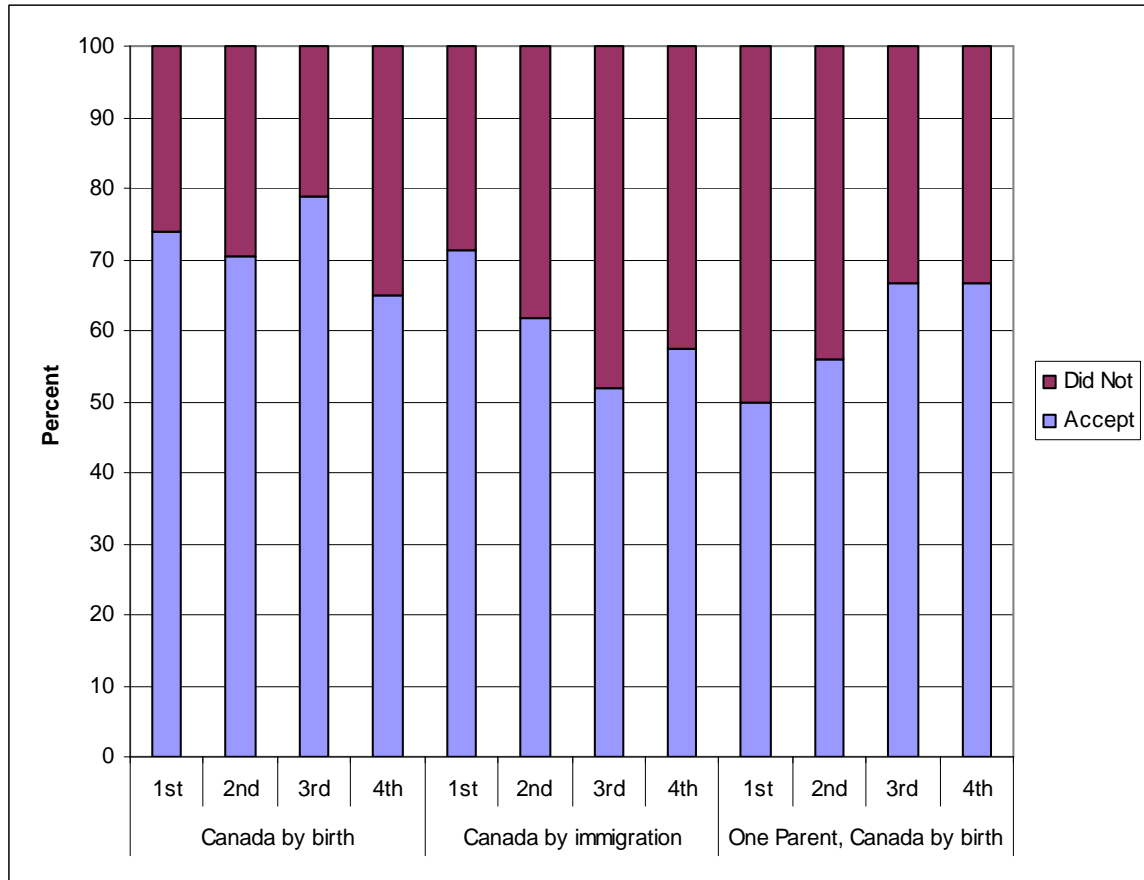
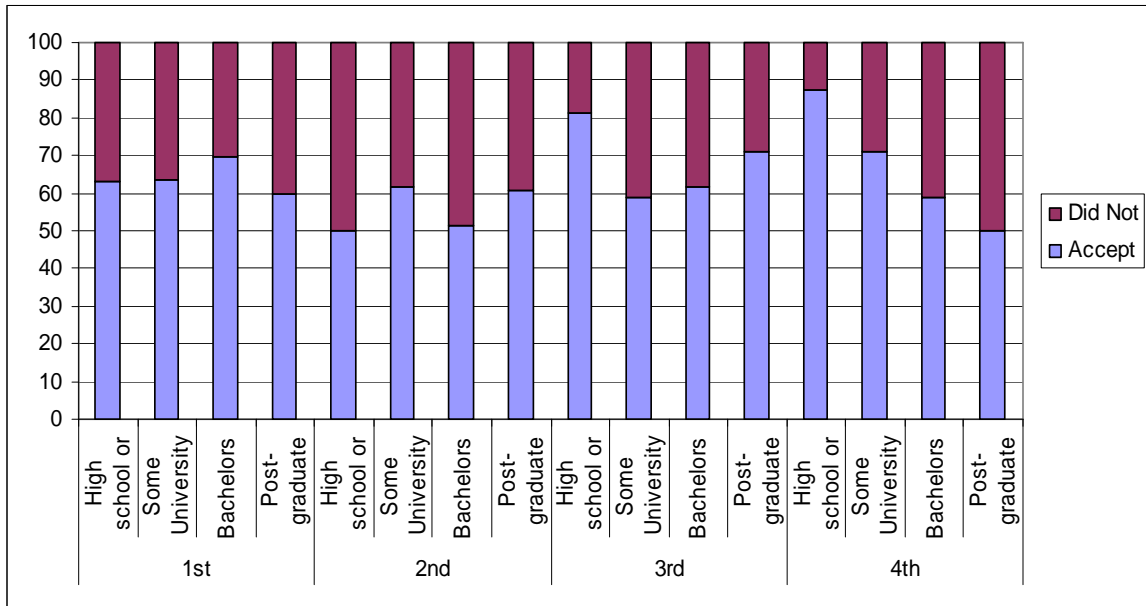


Figure 4.20 provides neighbourhood before tax median income quartile by parent with highest level of education. The first neighbourhood income quartile had a relatively consistent acceptance of offer across parent with highest education ranging from 60% for post-graduate education to 69% for bachelor's degree. The second neighbourhood income quartile showed the lowest rates of acceptance across all levels of parent with highest education. The third neighbourhood income quartile had the highest acceptance rate for the parent with the highest education high school or less. In the fourth quartile as the education level of the parent with highest education increased the acceptance of the scholarship offer declined.

**Figure 4.20. Before Tax Median Family Income Quartile by Parent with Highest Education**



A logistic regression using binomial distribution was conducted to determine whether there was a statistically significant difference between the proportions of acceptance of the scholarship offer for neighbourhood before tax median income and the parent with highest education. No statistically significant difference and no interaction effect was found between parent with highest education and the co-variate of neighbourhood before tax median family income.

### 4.3. Respondent and Parental Aspirations

This section provides the findings regarding the aspiration effect of institutional merit-based aid on the respondents' high school academic performance and the role parental aspirations play in affecting academic performance. It answers the following sub-research questions: "What were the aspiration effect of institutional merit-based aid on student's high school academic performance?" and "What role did the aspiration of

parents/guardians play in affecting the academic performance of children receiving merit-based financial aid?”

### 4.3.1. Respondent’s Aspirations

Respondents were asked two questions about the effect of receiving merit-based aid on their academic performance. Table 4.7 presents the sample mean, standard deviation, and the aggregate percentages across the distribution of responses for the two questions.

**Table 4.7. Effect of Merit-Based Aid on Academic Performance**

Items for Question 23	Mean	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Want to Answer
23e. Knowing I could receive a scholarship pushed me to achieve higher grades in high school	1.81	47.86%	32.96%	10.78%	5.86%	2.22%	0.32%
23f. Knowing I could receive a scholarship made me work harder in high school	1.88	45.32%	31.38%	13.63%	6.34%	2.38%	0.95%
Item	Mean		SD				
23e	1.81		0.995				
23f	1.88		1.027				

In total 80.92% of the respondents agreed or strongly agreed that knowing they could receive a scholarship pushed them to receive higher grades in high school while a smaller percentage, 76.70%, agreed or strongly agreed that it made them work harder in high school.

$\chi^2$  tests were conducted to determine whether there were statistically significant differences between the ratings for respondents by acceptance of the scholarship offer, by parental citizenship, or parent’s highest level of education. No statistically significant



differences were found for 23e. For 23f, borderline significance ( $p = .0558$ ) was found between the proportions of respondents whose both parents were non-immigrants to respondents whose both parents were immigrants.

### 4.3.2. Parents Aspirations

Respondents were asked two questions about their parents' encouragement regarding attending university and receiving merit-based aid. In addition to these two questions, respondents were also asked who provided the greatest motivation or influence on being offered a scholarship and why. This section also describes the responses to questions about the use of a tutor in the last two years of high school. A tutor was a proxy for parental aspirations particularly parental proactivity in providing resources to support their child (Cabrera & La Nasa, 2000).

Table 4.8 presents the sample mean, standard deviation, and the aggregate percentages across the distribution of responses for the two questions regarding parental encouragement.

**Table 4.8. Effect of Merit-Based Aid on Academic Performance**

Items for Question 23	Mean	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Want to Answer
23g. My parents encouraged me to do well in hopes that I would be admitted to university	1.70	48.34%	37.56%	10.46%	2.38%	0.95%	0.32%
23h. My parents encouraged me to do well in hopes that I would receive a scholarship	2.07	34.71%	34.87%	19.97%	7.29%	2.38%	0.79%
Item	Mean		SD				
23g	1.70		0.825				
23h	2.07		1.028				

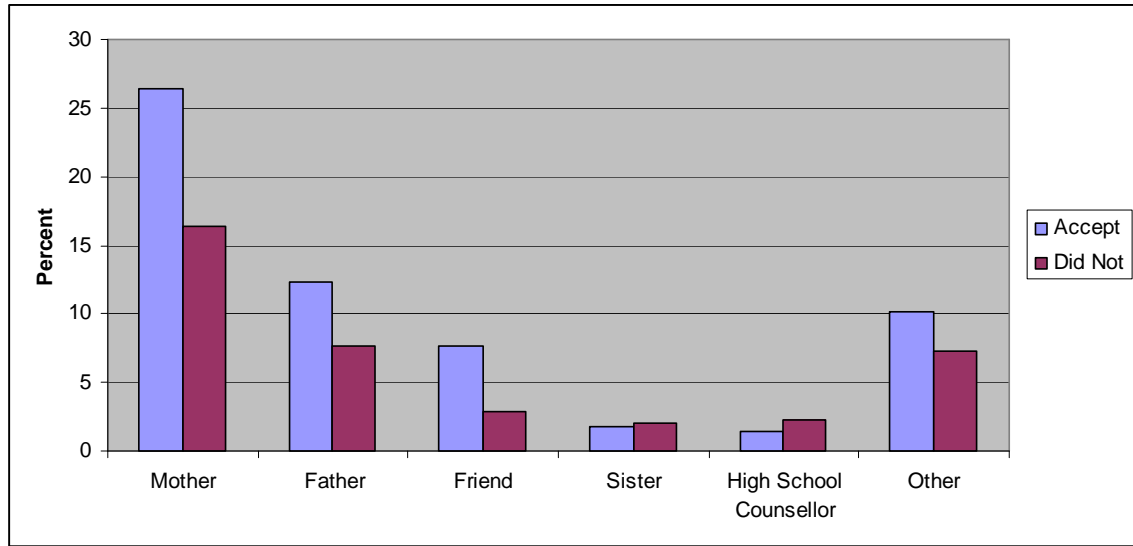
In total 85.90% agree or strongly agreed that their parents encouraged them to do well in high school in hopes that they would be admitted to university. A smaller percentage, 79.58%, agreed or strongly agreed that their parents encouraged them to do well in high school in hopes of the respondent receiving a scholarship.

$\chi^2$  tests were conducted to determine whether there were statistically significant differences between the proportions of the ratings for respondents by acceptance of the scholarship offer, by parental citizenship, and parent's highest level of education. For 23g, a statistically significant difference ( $p = .0006$ ) was found between the proportions of respondents whose both parents were non-immigrants to respondents whose both parents were immigrants using the Cochran-Mantel-Haenszel test. For 23h, no statistically significant difference was found.

#### 4.3.2.1. **Person Who Provided Greatest Motivation or Influence**

Respondents were asked to indicate the person who provided the greatest motivation or influence to receive a scholarship offer. Figure 4.21 provides the top six categories of individuals who provided the greatest motivation by acceptance of the scholarship offer.

**Figure 4.21. Person Who Provided the Greatest Motivation**



Mothers were considered the greatest motivation at 42.97% and, fathers were second at 19.97% for a combined total of 62.76%. The *other* category was the next highest at 17.43% with over two-thirds of respondents who selected the other category indicating that they themselves were their greatest motivator.

In addition to indicating who was the most influential person, respondents were asked an open-ended question to indicate why this person was the most influential. Responses were segmented into codable units, all responses were then read as a whole, and then coded based on five major themes and eight sub-themes. Some respondent's answers were unable to be coded as they did not answer the question or the comment did not relate to the question asked. For the 631 responses, 549 responses were able to be coded, leaving 82 responses coded as unknown. Once the coding was completed pivot tables were created to identify themes and meta-themes.

The first major theme was that the person who provided the greatest motivation was a source of support. Over half of the responses related to this major theme. This support though came in different ways or was perceived in different ways. The first sub-

theme within the support theme was interesting in that, although it was predominately a parental message, it was the sub-theme with the greatest variety of influencers. In addition to parents, it also included extended family, siblings, friends, and high school counsellors. The motivation for the respondent was a result of someone believing in them.

My friend is a born genius. There's no denying it. Most people I know think that my brain cells could fit into a sippy cup with ample room to spare, but he believed in me. Hearing for the first time that I could achieve, and was smarter than I thought possible was a great motivation to prove myself to the others who had their doubts in me. (Received small automatic scholarship)

The next sub-theme was the kind of general support of usually a parent but most commonly a mother.

My mother has always encouraged and supported me in whatever I wanted to do, despite the ups and downs that came along. (Received small automatic scholarship)

Some respondents described support more specifically with the message being one of expecting the best from the respondent. Again, this was primarily a parental message.

They didn't motivate me for the scholarship just motivated me to do my best; which is how I looked at it. I was more motivated to do my best than worry about what scholarship I would get. (Received small applied scholarship)

Other respondents spoke about the desire to make their family members proud due to the support they had received and what they had been able to accomplish.

My father has always had really high hopes for me and always believed I'd be able to accomplish great things. So when I was offered this scholarship, it showed him that my education had done me well. He always wanted me to go above and beyond what he had done as a student, and this was a step in the right direction. (Received small automatic scholarship)

The last two sub-themes within the support theme describe messages that parents use to instill success in their children. The first is if you work hard you will be rewarded for your hard work.

My mom knew I had achieved a lot throughout my high school career and she just always encouraged me to look into scholarships to compensate for my hard work. (Received medium automatic scholarship)

The other parental support message was create a better future. This was the smallest of the support sub-themes but the comments predominantly reflect the immigrant experience.

My mother is from the Philippines and was not able to have the same opportunities as are available to me today and so she wants me to take advantage of everything I can so that I do not have to have the same future that she has which is running a day care out of our basement. (Received medium automatic scholarship)

The second major theme was the role of pressure in achieving a scholarship. This was broken into two sub-themes—the role of peers and the pressure or the expectations of parents. Peer pressure was seen, in a positive light, as a motivating force that created a rivalry among friends.

They did not motivate me directly but it seemed as if we were in competition of who would win the most amount. As a result, I tried my best to outshine him. (Received large applied scholarship)

Parental pressure or expectations were viewed in two ways. One not so positively that reflected the importance of how parental expectations are communicated.

Rather than motivation, I felt pressure from my father to win scholarships, since he has very high expectations of me. (Received medium automatic scholarship)

The other parental pressure was seen more positively acting as a motivational factor.

My mother had almost a full ride at SFU for winning the Terry Fox scholarship. She saw that I was achieving top marks and believed that I could receive a similar scholarship if not better. (Received small automatic and small applied scholarship)

The third major theme was the respondent wanting to ease the financial burden of their family or a specific influential family member. They had witnessed their parent(s) hard work and wished to pay back by contributing to the family financially. For them the scholarship money mattered. Of the respondents who answered this way, over two-thirds had parents who were immigrants.

He worked in a car wash company and washed cars with his bare hands. And then, all the salary were just for paying my fee of study. If I receive the scholarship, my dad can reduce the time of working and stay in the family longer. (Received small automatic scholarship)

The fourth major theme was interesting in that respondent's saw themselves as their greatest influence. They believed they are motivating themselves through having the drive and passion to succeed. Reading their comments gave the sense that they will be successful.

I am passionate about what I intend to do and I will do whatever it takes to get to where I want to be. This is why I worked as hard as I did in high school to gain the grades that warranted the offers of scholarships. (Small Automatic Scholarship)

The final major theme was the influencer who provided a role model. This theme, like the first sub-theme, had a wider variety of influencers beyond parents with siblings and grandparents playing a role. These individuals had important influence and shaped the respondent's actions.

My mother never finished high school, and went back to finish it after having two kids. She graduated from SFU when she was 37 in 2004. (Small Automatic Scholarship)

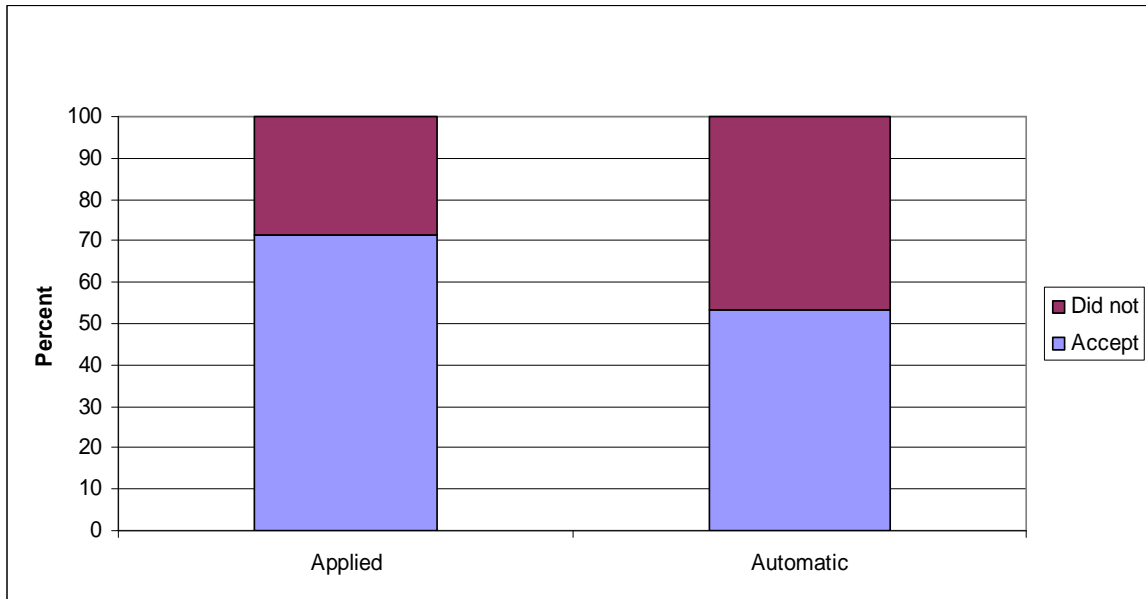
The respondents as a whole describe some kind of motivating force in their life helping them to achieve a scholarship offer. The majority of the motivation was positive in nature and comes from their closest ties—their family. Some families decided to provide this support in a more tangible way by hiring a tutor. The next section provides information on the use of a paid tutor as a proxy for parental aspirations.

#### 4.3.2.2. **Use of Paid Tutor**

Respondents were asked whether they had a paid tutor in their last two years of high school as a proxy for parental aspirations. 135 respondents (22.29%) indicated that they had a paid tutor in their last two years of high school. 60.00% of respondents who hired a tutor had a paid tutor in one subject, 23.70% had a paid tutor in two subjects, and 16.29% had a tutor in three or more subjects. The most common subject was Mathematics followed by English and Physics.

Figure 4.22 provides a breakdown for respondents who hired a tutor by merit-aid type and acceptance of offer. The yield on offers of acceptance was very similar to the respondents as a whole (Figure 4.2) for applied for scholarships (71.43%) and automatic scholarships (53.33%).

**Figure 4.22. Paid Tutor by Merit-Aid Type and Acceptance of Offer**

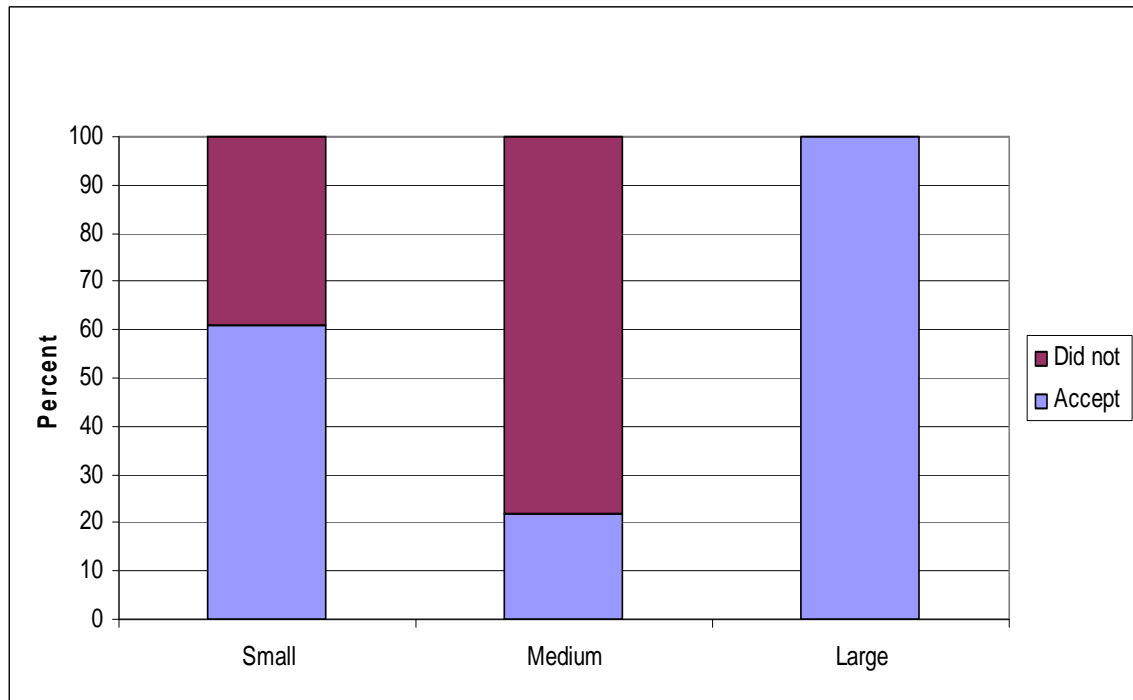


A  $\chi^2$  was conducted to test for a difference between the two proportions. There was no statically significant difference in the acceptance of offer for applied versus automatic scholarships with the use of a tutor.

Figure 4.23 provides a breakdown for respondents who hired a tutor by merit-aid level and acceptance of offer. Compared to the respondents as a whole (Figure 4.3), the yield on offer of acceptance was about the same for small scholarships at 60.75%. It was over 20% lower for medium scholarships (21.90% compared to 43.64% for all respondents) and 20% higher for large scholarships with every respondent who hired a tutor and received a large scholarship accepting the scholarship offer.



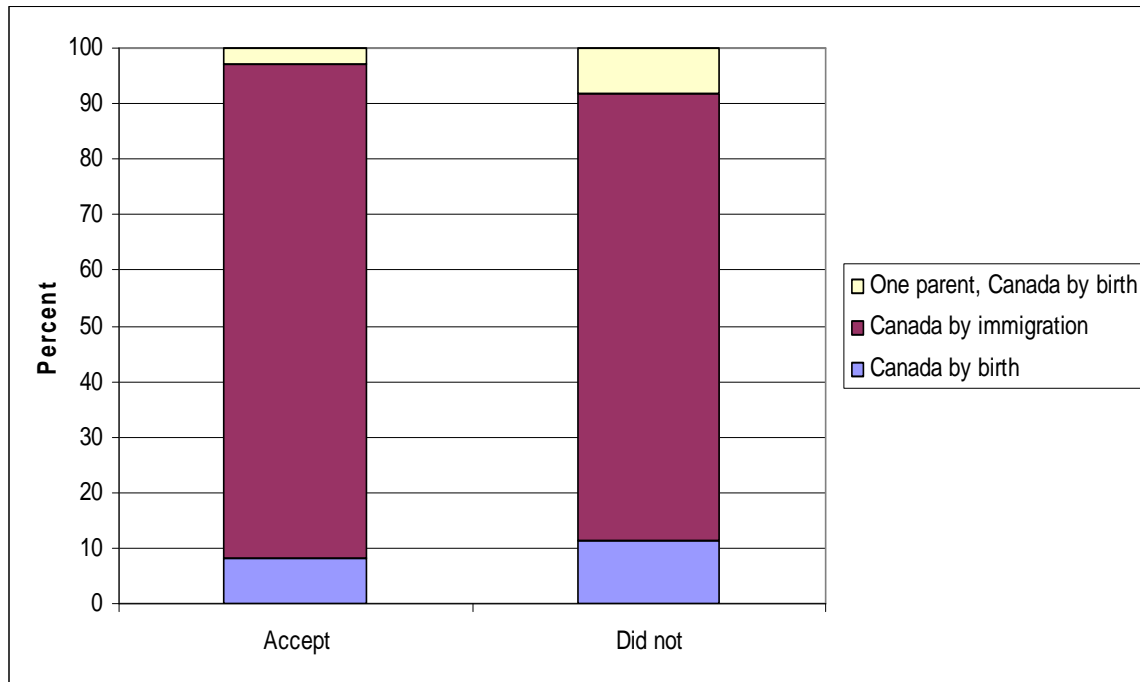
**Figure 4.23. Paid Tutor by Merit-Aid Level and Acceptance of Offer**



A  $\chi^2$  test was conducted to determine whether there was a statistically significant difference between the proportion of acceptance of scholarship offer for level of merit-based aid for small and medium,  $p < .0001$ . It was not possible to do this for large level, given there were no “did not” accept values. Therefore, there is a statically significant difference in the acceptance of offer between the small and medium level of scholarships offers.

Figure 4.24 describes parents’ citizenship of respondents who hired a tutor by acceptance of offer.

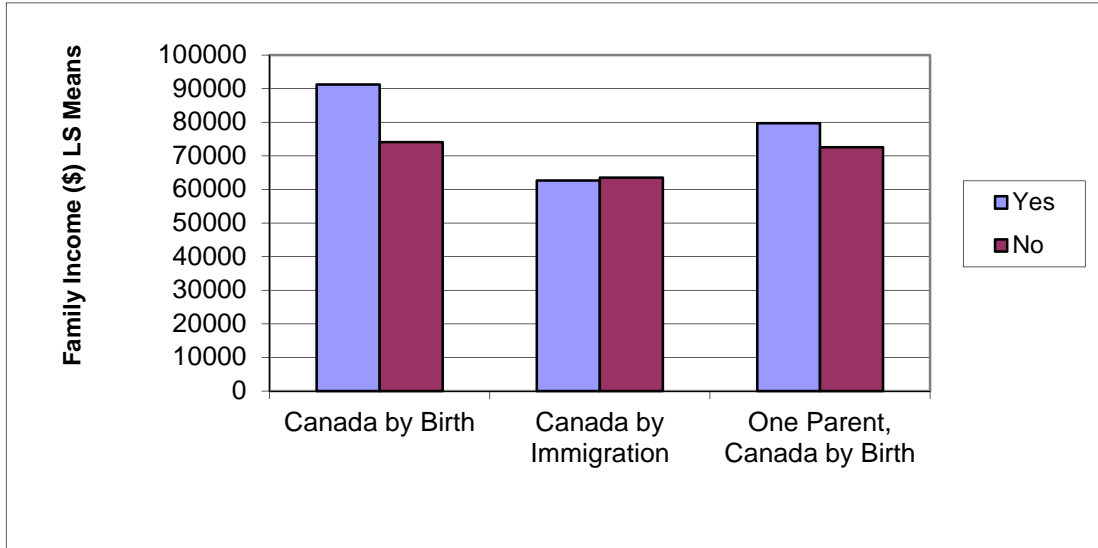
**Figure 4.24. Paid Tutor and Parent Citizenship**



Slightly more than 85% of respondents who had a paid tutor came from families where both parents were immigrants. The yield on offer of acceptance was higher for both parents, immigrant (89.19% vs. 80.33%) and was lower for both parents, non-immigrant (8.11% vs. 11.48%) and one parent, non-immigrant (2.70% vs. 8.20%). A  $\chi^2$  test was conducted to determine whether there was a statistically significant difference between the proportions of acceptance of scholarship offer for parent citizenship. No statistically significant difference was found.

Figure 4.25 shows the difference between respondents who had a hired tutor by their parents' citizenship and neighbourhood before tax median family income to those respondents who did not have a tutor.

**Figure 4.25. Paid Tutor, Parent Citizenship and Before Tax Median Family Income**

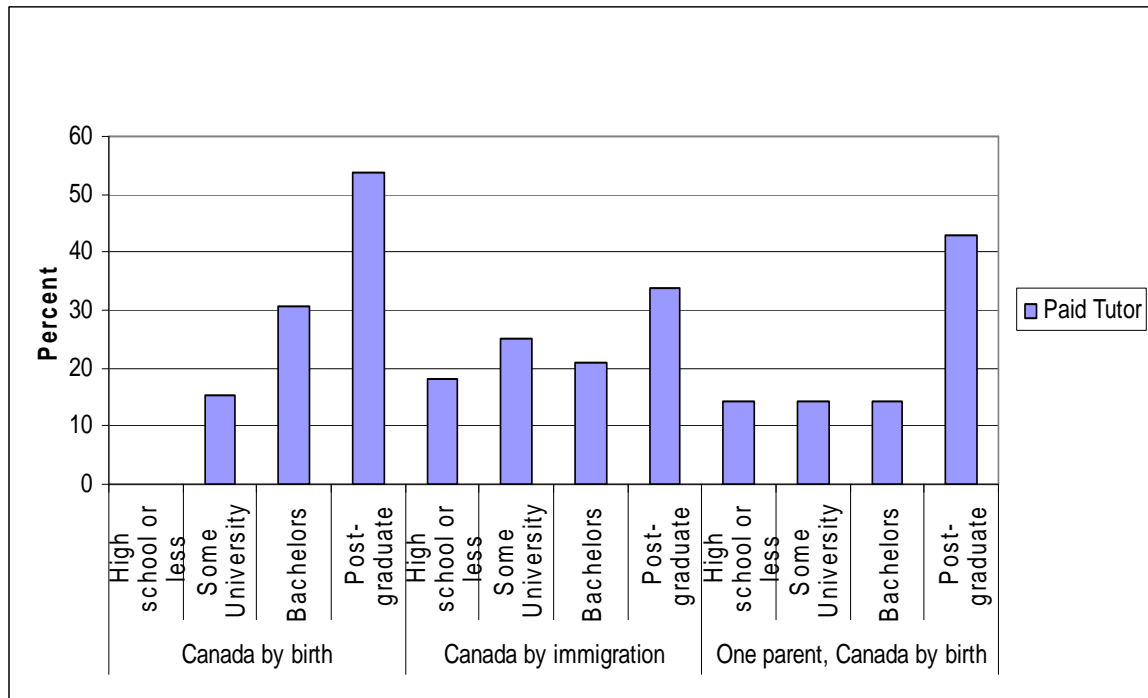


Respondents whose both parents were non-immigrant or one parent, non-immigrant and hired a paid tutor were more likely to come from neighbourhoods with higher before tax median family incomes. If both parents were immigrants, there was no difference in neighbourhood before tax median family income when hiring a tutor.

A two-way ANOVA was performed to determine whether there was a statistically significant difference interaction effect for parents' citizenship and the use of a tutor based on before tax median family income. The null hypothesis was rejected that the population means are all equal at a test statistic,  $F = 5.51$ , with a  $p < .005$ . Subsequent, post-hoc test using Tukey-Kramer, adjusting for multiple comparisons, showed that the both parents non-immigrant who hired a tutor had statistically significant difference in before tax median family income compared to both parents non-immigrant who did not hire a tutor ( $p = .0119$ ) and both parents immigrant regardless of whether they hired a tutor ( $p < .0001$ ). See Appendix J for a LS Means summary table.

Figure 4.26 describes those respondents who utilized a paid tutor by their parents' citizenship and parent with highest education.

**Figure 4.26. Paid Tutor by Parent Citizenship and Parent with Highest Education**



As the education level increased, use of a tutor increased in all parent citizenship categories with the greatest percentage in the post-graduate level. There were no respondents who hired a tutor who had a parent with highest level of education—high school or less – for both parents non-immigrant. Again, caution needs to be used in interpreting these result as the *n* for both parents, non-immigrant (*n* = 13) and one parent, non-immigrant (*n* = 6) are small. A  $\chi^2$  test was conducted to determine whether there was a statistically significant difference between the proportions for the use of tutor by level of parental education and parental citizenship. No statistically significant difference was found.

#### 4.4. Choice and Participation

The final section of this chapter examines the role of merit-based aid in students decision to attend and where to attend university. It answers the last two sub-research

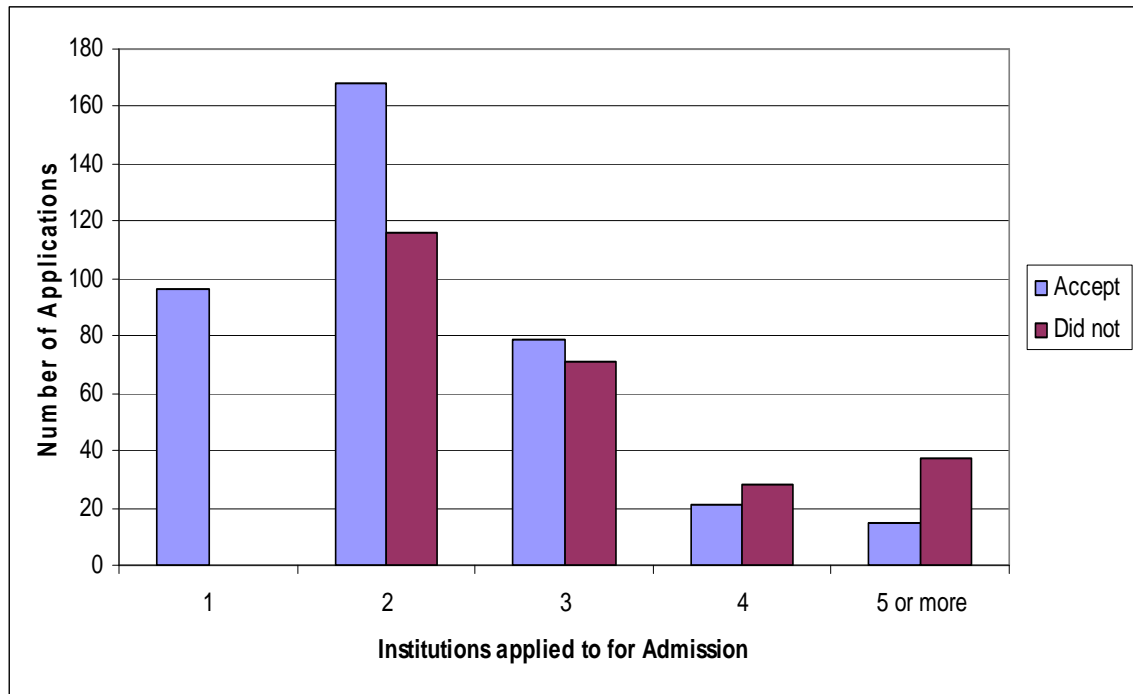
questions: “What role did the different types of institutional merit-based aid play in a students’ decision to attend university?” and “What did it mean to the student and their family to receive institutional merit-based aid?”

#### **4.4.1. The Role of a Scholarship Offer and Different Types of Merit-Based Aid**

This section begins by providing how many institutions the respondents applied to for admission. Then, the number of offers of scholarship the respondents received, the acceptance of offer by highest, and next highest offer are presented as well as the type and level. Finally, this section will end with the respondents’ perception of being offered a scholarship and its effect on their decision, why they accepted or did not accept the offer, and what it meant to them and their family to be offered merit-based aid.

The 631 respondents made 1,610 applications to post-secondary institutions with 96 (15.21%) applying only to SFU. Some respondents applied to as many as eight institutions. The mean number of applications was 2.55 with a standard deviation of 1.276. Figure 4.27 illustrates the number of applications made to institutions by acceptance of offer of admission and scholarship. While there was no provincial data to provide a relative comparator, this research suggests that students typically apply to two or three institutions (68.77%). If respondents applied to four or more institutions, the chance of the respondent accepting SFU’s offer of admission and scholarship decreased.

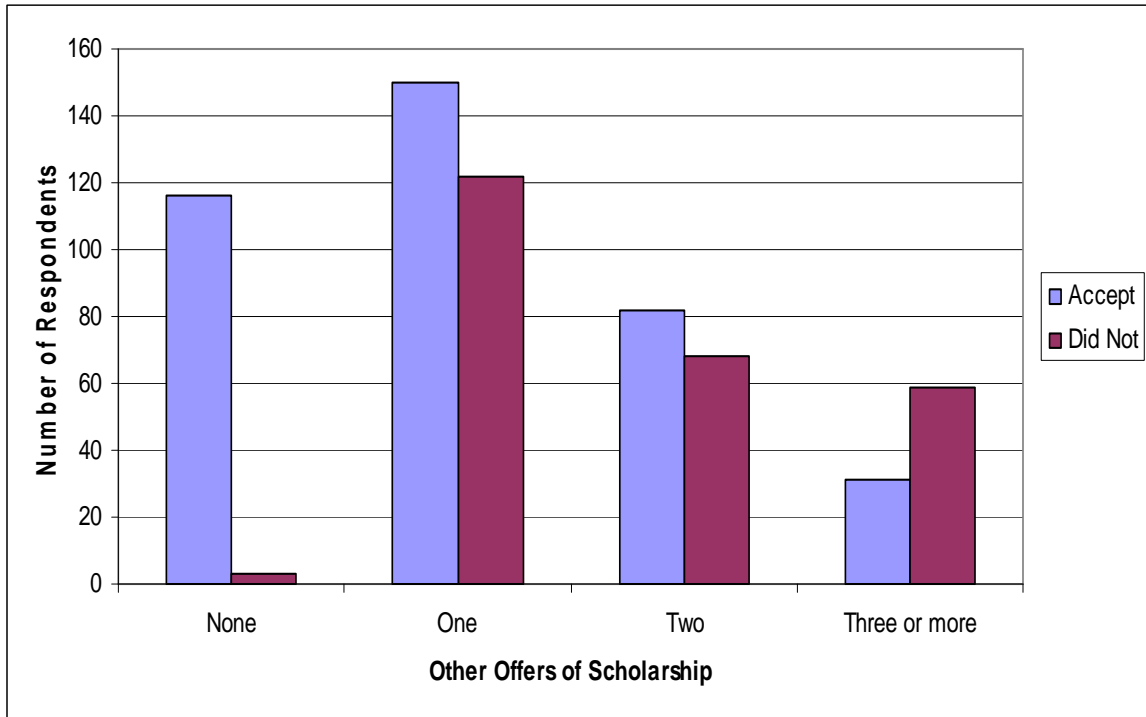
**Figure 4.27. Respondents' Number of Applications**



A logistic regression was conducted to determine whether the number of applications predicts the acceptance of the scholarship offer. There was statistically significant difference,  $p < .0001$ .

Figure 4.28 provides information on the other offers of scholarship that the respondents received. One hundred nineteen (18.43%) respondents did not receive any other offer of scholarship. Only three respondents who did not receive any other offer did not accept SFU's offer of admission and scholarship. The majority of respondents, 272 (43.10%), received one other offer; 150 (23.72%) received two other offers; and 90 (10.60%) received three or more offers. As the number of offers increased, the acceptance of the offer of admission and scholarship at SFU decreased; with those respondents who received more than three offers declining the offer more often than those accepting it.

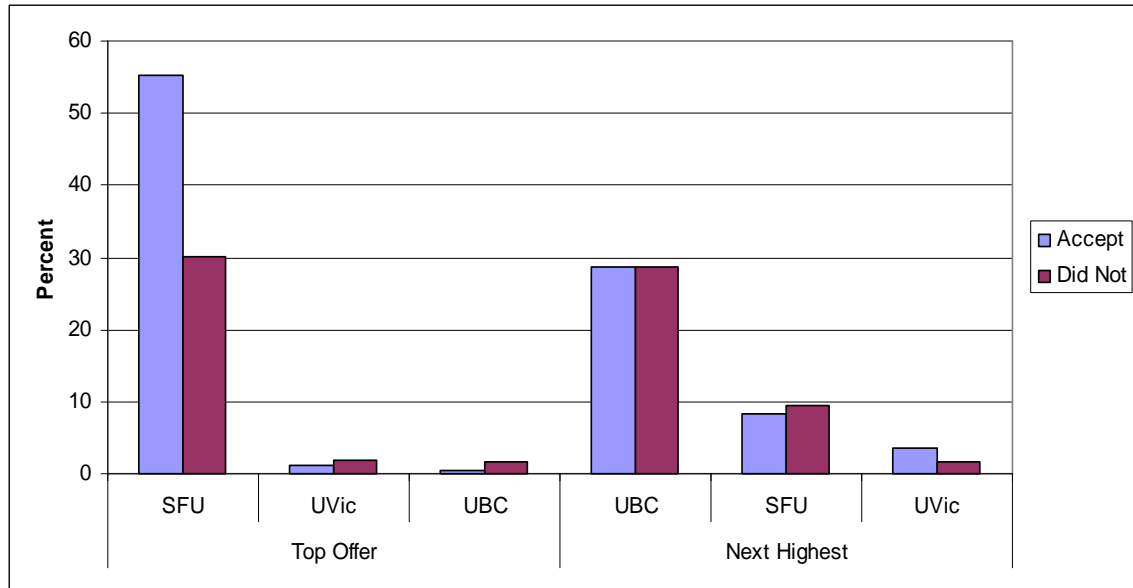
**Figure 4.28. Other Offers of Scholarship**



A logistic regression using binomial distribution was conducted to determine whether there was a statistically significant difference between the proportions of acceptance of the scholarship offer by the number of scholarship offers received. Adjusting for multiple comparisons using Tukey-Kramer the number of offers received were statistically significant,  $p < .001$  level for 3 or more offers of scholarship.

The respondents were asked to indicate their top offer and the next highest offer of scholarship and who provided it. Figure 4.29 indicates the top three institutions for the highest and next highest offer by acceptance of offer.

**Figure 4.29. Top and Next Highest Scholarship Offer by Acceptance**



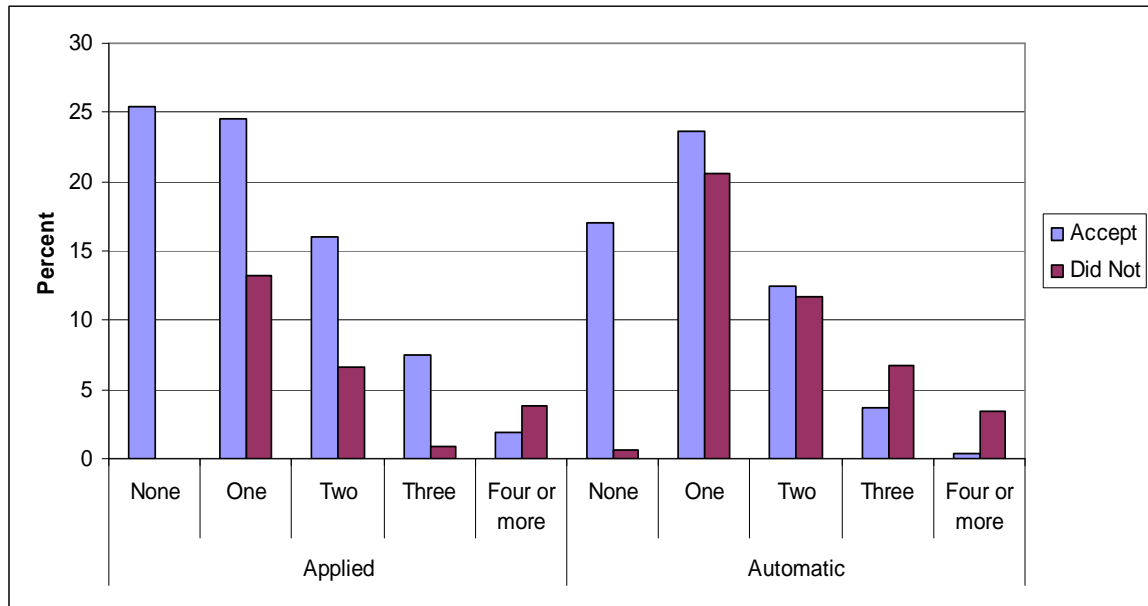
The mean for the highest offer was \$6,580, the median was \$3,500 and the standard deviation was \$10,236.83. The skewedness was due to a couple of scholarships valued at \$70,000 and one valued at \$184,000. The mean value for the next highest offer was \$3,197 and the median value was \$2,000 with a standard deviation of \$4,087.77. Again, the sample was skewed by scholarships in the \$30,000 to \$40,000 range.

The University of British Columbia (UBC) and the University of Victoria (UVic) were the top competitors for scholarships. SFU provided the top offer for the majority of the respondents at 86.96% with 56.04% of respondents in this category accepting SFU's offer. If other institutions were the top offer, respondents were more likely to accept that offer rather than accept SFU's. For the next highest offer, UBC was the lead institution. When UBC was the next highest offer, there was a 50/50 chance that the student would choose UBC or SFU. When SFU was the highest offer for next highest offer, there was slightly greater likelihood the respondent would decline the offer, and when Other or UVic were the next highest, there was a greater likelihood they would choose SFU.



Figure 4.30 describes the number of offers a respondent received by merit-aid type (applied and automatic).

**Figure 4.30. Number of Scholarship Offers by Merit-Aid Type and Acceptance of Offer**

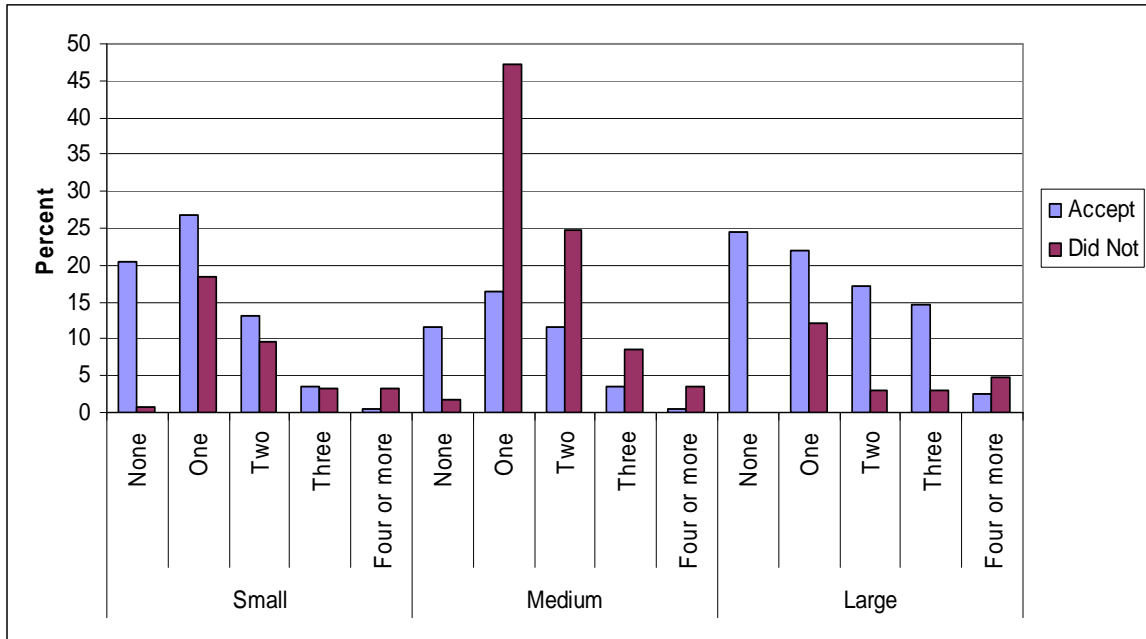


Yield rates on applied scholarships were strong compared to number of scholarship offers until the respondent received four or more offers. Automatic scholarships had less effective yield rates and the point at which a greater number declined the offer was three applications instead of four applications.

A logistic regression using binomial distribution was conducted to determine whether there was a statistically significant difference between the proportions of acceptance of the scholarship offer by the type of scholarship and number of scholarship offers received. No interaction effect was found between the type of scholarship and number of offers of scholarships received. Adjusting for multiple comparisons using Tukey-Kramer the level of offer was statistically significant,  $p < .001$  level for applied versus automatic scholarships. The number of scholarship offers received was statistically significant  $p < .001$  level for 3 or more offers of scholarship.

Figure 4.31 describes merit-aid level (small, medium, or large) by acceptance of offer for the number of offers the respondent received.

**Figure 4.31. Number of Scholarship Offers by Merit-Aid Level and Acceptance of Offer**



The yield rate of acceptance on large scholarships was high for respondents with fewer than four scholarship offers. It is important to note that almost a quarter (24.39%) of the respondents who received a large scholarship received no other offers of scholarship. Small scholarships showed a similar pattern but with a lower number of offers (three or more) being the point at which more respondents declined the offer of scholarship than accept it. Again, over one-fifth of the respondent's (21.23%) only received one offer of scholarship. Medium scholarships produced the lowest yield rate of acceptance of scholarship offer. Even respondents whose only offer was from SFU declined the offer and respondents holding one or more offers were more likely to decline the offer than accept it.

A logistic regression using binomial distribution was conducted to determine whether there was a statistically significant difference between the proportions of acceptance of the scholarship offer by the level of scholarship and number of scholarship offers received. No interaction effect was found between the level of scholarship and number of offers of scholarships received. Adjusting for multiple comparisons using Tukey-Kramer the level of offer was statistically significant,  $p < .001$  for large to medium and medium to small scholarships. The number of offers received was statistically significant,  $p < .001$  level for 3 or more offers of scholarship.

#### 4.4.2. Perceptions of the Offer of Scholarship

The next tables provide information on the how the offer of scholarship affected their decision to attend SFU. Table 4.9 presents the sample mean, standard deviation, and the aggregate percentages across the distribution of responses for the effect of the amount of the scholarship and their decision to attend SFU. Even though only 60.06% of the respondents accepted SFU's offer of admission and scholarship (see Table 4.2), 72.74% indicated that it made the effect on their decision to attend SFU moderately or highly attractive. Over 25% of respondents indicated it had no effect and less than 2% indicating the amount of scholarship making the decision to attend SFU slightly or highly unattractive.

**Table 4.9. The Amount of Scholarship and Effect on Decision to Attend**

Item for Question 22	Mean	SD	Highly Attractive	Moderately Attractive	Had No Effect	Slightly Unattractive	Highly Unattractive
22. The amount of scholarship that I was offered at SFU made my decision to attend SFU	2.07	0.767	22.82%	49.92%	25.52%	0.95%	0.79%

$\chi^2$  tests were conducted for this question to determine whether there were statistically significant differences between the proportions of the ratings for respondents by acceptance of the scholarship offer, by parental citizenship, and parents' highest level of education. For Question 22, a statistically significant difference ( $p = <.0001$ ) was found between the proportions of respondents who accepted and did not accept the scholarship offer. A higher percentage of those who accepted the offer rated the offer highly attractive (28.23%) compared to respondents that did not accept the offer (14.68%).

Table 4.10 presents the sample mean, standard deviation, and the aggregate percentages across the distribution of responses for three questions associated with the effect of the scholarship on their choice and participation.

**Table 4.10. The Effect of Scholarships on Choice and Participation**

Items for Question 23	Mean	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Want to Answer
23a. I was likely to attend SFU before I knew about my scholarship	2.62	22.35%	28.53%	21.24%	19.81%	7.61%	0.48%
23b. When deciding where to go for university, the amount of the scholarship was important in making my decision where to attend	2.67	14.10%	36.93%	22.98%	18.38%	7.13%	0.48%
23f. The amount of scholarship I was awarded was higher at SFU than offers from other institutions to which I was admitted	1.92	46.59%	27.26%	11.73%	5.71%	5.39%	3.33%
Item	Mean		SD				
23a	2.62		1.243				
23b	2.67		1.150				
23f	1.88		1.027				

Over half of the respondents (50.88%) indicated that they were likely to have attended SFU prior to knowing about the scholarship. Slightly over half (54.03%) agreed or strongly agreed that the amount of the scholarship was important in making their decision where to attend while 72.85% agreed or strongly agreed that SFU provided the top scholarship offer.

$\chi^2$  tests were conducted for each question to determine whether there were statistically significant differences between the proportions of the ratings for respondents by acceptance of the scholarship offer, by parental citizenship, and parent's highest level of education. For 23a, a statistically significant difference ( $p < .0001$ ) was found between the proportions of respondents who accepted and did not accept the scholarship offer. Over 55% of respondents who accepted the offer indicated they agreed or strongly agreed they were likely to attend SFU before they knew about the scholarship compared to just over 6% of those who did not accept the offer. A statistically significant difference was also found between the proportions of respondents who accepted and did not accept the scholarship offer when both parents were non-immigrants to respondents who's both parents were immigrants using the Cochran-Mantel-Haenszel test ( $p < .0001$ ).

For 23b, a statistically significant difference was found between the proportions of respondents who accepted and did not accept the offer of scholarship ( $p < .0001$ ). Of those respondents who accepted the offer, over 40% indicated the amount of scholarship was important (agreed or strongly agreed) in making their decision to attend versus 16% for those who did not accept the scholarship offer.

For 23c, a statistically significant difference was found between the proportions of respondents who accepted and did not accept the offer of scholarship ( $p < .0001$ ). A

greater proportion of those who accepted the scholarship offer were more likely to agree or strongly agree that the SFU offer was higher than others they received. Statistically significant difference in the proportions was also found for respondents whose both parents were non-immigrants to respondents whose both parents were immigrants ( $p < .001$ ). A greater proportion of the respondents whose both parents were immigrants were more likely to agree or strongly agree that the scholarship was their highest offer.

#### **4.4.2.1. Why Accepted or Did Not Accept Offer of Scholarship**

In addition to the close-ended questions regarding accepting or not accepting of the scholarship offer, the respondents were asked to provide reasons as to why they accepted or did not accept the offer. The qualitative responses provide further insight into what were the motivations for accepting or declining the offer of admission. While there are similarities, there are also differences between those who accepted and those who did not.

##### **4.4.2.1.1. Accepted Scholarship Offer**

Of the 379 respondents who accepted the scholarship offer, 367 answers were coded leaving 12 answers coded unknown. The major themes identified were first choice, help financially, and the highest offer. What is interesting to note is that respondents often did not give one reason but a combination of reasons as to why they accepted the scholarship offer.

First choice was the dominant theme for the respondents who accepted the scholarship offer with over one-third mentioning it as either the sole reason or part of their reason. The sub-themes identified within first choice were first and only choice, offered solidified decision, first choice but helped financially, first choice and highest offer, and finally offered choice of program.

First and only choice primarily reflected the group of respondents who only applied to SFU. The following student reflected the reasoning of the 96 respondents who only applied to SFU:

SFU is the only post secondary institution I have any interest in attending right now, so I didn't see a point in applying to a number of other Universities just to see if I could get in. I had no doubt that I would be accepted to SFU because I have maintained a good GPA, so I thought it would be a waste of time and money to fill out other applications. (Received small automatic scholarship)

These students knew what they wanted; they made their choice when they applied for admission, prior to any offer of scholarship. While for other students, SFU was a first choice but the offer solidified their decision to attend.

With the offer of the scholarship from SFU, I took time to look at all of the benefits of each school (location, classes, etc.) and SFU constantly came out on top for me. (Received small automatic scholarship)

Another perspective on first choice was that SFU was the first choice but they saw the scholarship as a means to helping them financially with the expenses of university. These students saw the scholarship as a bonus assisting them with their educational expenses.

I was planning on going into SFU regardless of whether I received a scholarship or not. The scholarship would help me pay for my education at SFU. (Received automatic medium scholarship)

For other respondents it was the combination of first choice and highest offer that helped them make their decision.

As a working student coming from a middle class background, any financial assistance I can get in my post-secondary education is greatly appreciated. While I was already considering Simon Fraser as my primary choice, their being the highest entrance scholarship offer merely cemented my preferences. (Received small automatic scholarship)

And, the final first choice sub-theme perspective—has to do with program of choice. This was a small sub-theme but for these students the deciding factor was getting an offer into their program of choice.

It was a bigger scholarship in terms of money; however, SFU also presented a[n] offer of admission to the faculty (business) of my desire which really affected my decision. (Received small automatic scholarship)

While many students mentioned financial help in combination with first choice, financial help on its own was the next major theme. Just under one-third of the students mentioned it on its own or in combination with another reason. It had two components, the predominant being help with paying for tuition or other expenses, and a smaller but important sub-theme of needing the financial aid.

Help with paying tuition was useful even if it was for one year as the money they had saved or earned through the school year or in the summer could then be used in subsequent years.

I knew it would help me pay my way through university. It gave me money I wouldn't have to make to buy books, or pay for housing, etc. (Received small automatic scholarship)

Respondents whose parents are immigrants primarily articulated the need for financial aid. Some just stated clearly that they needed it, while others were clearer as to their need.

Due to the financial situation of my home it was necessary for me to take the highest value scholarship if I wanted to complete a 4-year degree. (Received large applied scholarship)

The third theme for respondents who accepted the scholarship offer was that the offer was the highest one. Almost a quarter of the respondents indicated this by itself or in combination with another reason helped them make their decision. Highest offer was mentioned in relation to competitors and the cost of attendance. The two highest



combinations of reasons were first choice and highest offer (already mentioned) and highest offer and proximity.

Some students who accepted the scholarship offer were savvy consumers calculating the cost of attendance against net price in their reasoning for accepting the highest offer.

Because it turned out to be the greatest offer of money when compared to the tuition fee. (Received large applied scholarship)

Highest offer was most often mentioned in relation to UBC, the institution that is SFU's greatest competitor for scholarship students.

I accepted SFU's Scholarship offer because it values more than what UBC has offered to me. (Received small automatic scholarship)

What was interesting to note was that highest offer and proximity was a significant sub-theme in the highest offer theme. It was not clear which of these two factors tipped the balance of the decision but with UBC being across the city, travelling time was a significant issue for students.

SFU provided the highest amount of money, and I wanted to attend SFU more anyway. I liked the atmosphere at SFU when I went for a tour and it is close to my house, so my travel time is a lot short[er] than if I was to attend UBC. (Received small automatic scholarship)

#### **4.4.2.1.2. Did Not Accept Offer**

Of the 252 respondents who did not accept the scholarship offer, only nine responses were unable to be coded. The major themes were first choice and proximity. First choice had a number of sub-themes—not first choice, accepted to program of choice, scholarship not enough to sway decision, reputation, and offer more.

Almost 90% of the responses were coded as first choice but what needs to be stated was that most of the responses were “wish to attend UBC instead” or “I choose

not to attend SFU” providing little information other than the determination that SFU was not the first choice. Of the respondents that provided more information within the first choice theme—being offered their program of choice was the deciding factor.

SFU had the better scholarship offer, and they were nicer to me in all things related to the admission process; unfortunately, the program I want—BFA in Creative Writing—is only offered through UBC so I took the lesser offer. (Received small automatic scholarship)

The next sub-theme was that the offer was not enough to sway their decision from their first choice school.

Between UBC and SFU, UBC was my first choice, and as the financial state of my family is in particularly healthy shape, we collectively decided that the extra \$1,500 was negligible in the face of my preference. (Received small automatic scholarship)

Reputation appeared as a sub-theme of first choice for respondents who did not accept SFU’s offer. The ranking or perceived reputation of their first choice institution was the important factor in their decision.

It was a very hard decision because it was a lot of money to give up but ultimately I decided that even though McGill had offered me nothing that it is one of the top universities in Canada, and like I previously indicated, the quality of education is very important to me. (Received large applied scholarship)

The final sub-theme within first choice was that the scholarship offer was higher from another institution. These students tended to receive large or medium level scholarship offers and applied to multiple institutions.

I received a higher monetary offer from Queen's University. (Received medium automatic scholarship)

The second theme was proximity—although not a large number of respondents mentioned this factor, the comments reflected those of respondents who accepted

SFU's scholarship offer. Commuting time is important for students who choose to live at home in the metro Vancouver area.

Because the commute to UBC is far more convenient and less time-consuming for me. (Received small automatic scholarship)

The other proximity theme that was a minority view arose from the number of respondents in the study coming from rural areas, outside the metro Vancouver areas or other parts of the country. This view was reflected for both those who accepted and did not accept the scholarship offer but in slightly different ways. If the scholarship offer was enough, it allowed the respondent to consider choices beyond their local institution.

Because it was the only offer that made it financially feasible for me to go to university without requiring me to attend the University of Lethbridge, which is my hometown university. (Received large applied scholarship)

If the scholarship was not enough to cover the cost of attendance, they made different choices not to attend their first choice institution.

I didn't accept because I wanted the bigger scholarships that SFU offered, and did not receive one. I therefore decided that I should start off my post-secondary education at NIC (to save \$) before going to SFU to finish the last two years of my Bachelor's Degree. (Received small automatic and small applied scholarship)

There were many factors that affect a student's decision to accept an offer of scholarship with first choice institution being the primary one for both those who accepted or did not accept the scholarship offer. For some students receiving a scholarship offer changed their decision while for others it was an important part of the decision. However, was there value beyond making a decision on choice? As a way to discern the respondents' sense of value, they were asked how they characterized the effect of receiving merit-based aid on themselves and their parents. The next section describes the findings.

#### 4.4.3. Characterization and Effect of Merit-Based Aid on Respondent and Parents

Table 4.11 presents the sample mean, standard deviation, and the aggregate percentages across the distribution of responses for two questions that describe the respondent's and their parents' characterization of the amount of the scholarship offer. The responses were very consistent for both parents and students with slightly more respondents indicating that the scholarship offer met expectations to far exceeding their parent's expectations (81.30%) compared to their own expectations (77.98%).

**Table 4.11. Respondent and Parents' Characterization of the Amount of Scholarship**

Questions 24 and 26		Mean	SD	Far Below	Somewhat Below	Met My Expectations	Somewhat Above	Far Exceeded
24.	How would you characterize the amount of the scholarship you were offered at SFU?	2.89	0.870	5.71%	24.41%	47.86%	19.49%	2.54%
26.	How would you describe your family's/guardian's characterization of the amount of scholarship you received?	2.81	0.894	9.19%	21.87%	50.24%	16.64%	2.06%
Item		Mean	SD					
24		2.89	0.870					
26		2.81	0.894					

$\chi^2$  tests were conducted for Questions 24 and 26 to determine whether there were statistically significant differences between the proportions of the ratings for respondents by acceptance of the scholarship offer, by parental citizenship, and parent's highest level of education. For Question 24, a statistically significant difference was found for respondents who accepted the scholarship offer compared to respondents who did not accept the offer ( $p < .01$ ). Respondents who accepted the scholarship offer

(29.16%) were more likely to indicate the scholarship met their expectations than those who declined it (18.70%). No significant difference was found in the proportion of the responses by any variable in Question 26.

#### 4.4.3.1. **What the Scholarship Meant to the Respondents**

The respondents were asked an open-ended question to ascertain what a scholarship offer meant to them. Responses were first segmented into codable units, the data read as a whole, and then each unit was coded. Some respondents answers were unable to be coded in this manner so were coded unknown because their comment did not answer the question asked. Of the 631 total responses, two responses were coded unknown. Once the coding was complete and the pivot table created, themes and meta-themes were identified. Further analysis was conducted on the “financial help” (FH) code in order to discern the differences in this large theme.

This set of answers was the richest of all the qualitative data in the study. Reading the transcript as a whole provided an overwhelming sense of positive sentiment with respondents viewing a scholarship offer as a reward and providing financial help. The first theme of reward and the second theme of financial help dominated the responses. The third major theme was the effect the scholarship had on the self, providing a sense of pride, feeling valued or feeling motivated, and the fourth theme, a small but important theme of, disappointment.

##### 4.4.3.1.1. **Offer as a Reward**

The largest theme was viewing the scholarship offer as a reward with 339 (over half) respondents viewing it this way. There were two distinctions in how they viewed the scholarship as a reward. The first distinction made by 241 respondents described the scholarship offer as a symbol of recognition or payoff for their hard work in high school.

I felt that for the first time in my life, my hard work was actually recognized. It meant so much to me also because I come from a low-income family, and the scholarship saved my family and me a lot of stress. (Received small automatic scholarship)

The second distinction of the other respondents in this group was the scholarship offer was a reward for their academic achievement.

I was happy to receive a scholarship that I did not have to apply for, which meant it was strictly based on my grades, which is much more important and meaningful to me than being given money for helping the community or for my leadership skills, such as many of the other scholarships do. (Received small automatic scholarship)

#### **4.4.3.1.2. Offer as Financial Help**

The next major theme was viewing the offer as financial help with 193 (about one-third) respondents viewing it that way. This large theme was broken into the following sub-themes: reducing the burden having lessened the financial strain, less cost by providing savings on tuitions or other costs, financial independence from parents, and allowing them to focus on their education.

Respondents who indicated that the scholarship reduced the burden commonly spoke of their own or their parents stress lessened and their long-term debt reduced.

I was very happy; it meant that I did not have to worry so much about finances. It meant that I could sleep at night and not worry about whether I would have to drop out of post secondary because I could not afford it or that I would have a huge debt at the end of my education. (Received small automatic scholarship)

Unlike the above respondents, others did not express the same emotion but still indicated that the scholarship meant help with the costs associated with post-secondary education such as tuition. This assistance helped them or their parents reduce the cost of attendance.

To be offered a scholarship is a big thing. No matter how much it is, it is still something that would help me get through university. (Medium automatic scholarship)

Two smaller sub-themes emerged that are worth noting, the first one is that the scholarship offer allowed the respondents to focus on their education. Reducing the need to work as much or relieving the need to think about the costs of post-secondary.

I was incredibly happy when I received it; it meant that I could relax some of the stress I had about being able to pay for university and that I could have more time to study and do well rather than using the time to work and try to get the money needed to attend. (Small applied scholarship)

The second of the smaller sub-themes gave the respondents financial independence from their parents. This was important as it helped them feel they were contributing to their post-secondary education.

I was very happy to know that my work in high school was good enough that it was worth a monetary reward to attend a university. It is great that I can contribute to the cost of my education through academic effort and my parents don't have to support me fully. (Received medium automatic scholarship)

#### **4.4.3.1.3. Offer as an Affect on Self**

The third major theme was that the scholarship offer had one or combination of the three effects—a sense of pride, a feeling of being valued, and/or feeling motivated with 163 respondents (one quarter) answering this way. The first sub-theme, a source of pride was primarily described in relation to the applicants themselves, but parents are also mentioned.

Because in school you are always doing one project, test or assignment after another, you never have time to feel proud of the work you have done, it is always more of a "oh thank god I'm done". Receiving a significant recognition of the work I had done made me feel proud and that all my effort wasn't just overlooked. (Received medium automatic scholarship)

The next sub-theme was the effect of feeling valued. This was described in relation to the scholarship offer creating this sense the institution wanted the respondent.

It showed me that the school saw me as a desirable student based on my grades. The amount offered showed that this particular school (SFU) desired me as a student more than the other universities I applied to.  
(Received medium automatic scholarship)

The final sub-theme of this major theme was motivation. These respondents were further motivated to continue to perform well in high school and as they transitioned to first year university.

Being offered a scholarship meant a lot to me. I think it was an important reminder for all the hard work and time I have spent throughout the year. It will also encourage me to work harder in university. It feels like a pat on the back for all the hard work I have put into my academic studies.  
(Received small automatic scholarship)

#### **4.4.3.1.4. Offer as Disappointment**

The fourth, although small, sub-theme (34 respondents) was the sense of disappointment in the offer or in themselves. For respondents who were disappointed in their offer, their answers implied that they had hoped for more and be recognized for attributes other than grades.

I was grateful to be offered a scholarship but I felt that I was not recognized for my community service and grades in High school. Because I had an 89% average while doing part-time work and volunteer work, I was not eligible for most scholarships and was disappointed.  
(Received small applied scholarship)

Respondents who were disappointed in themselves were a very small minority but the scholarship offer was a call to perform better as they realized they were capable of more.

It did feel good to be offered a scholarship. It also brought feeling of regret. It made me regret not putting effort into high school. I coasted with basic A's. I realize that an A isn't just an A. There is a huge difference between 87% or 88% and 96% or 97%. It was a reality check that came



just in time for post secondary. Effort pays off, literally. (Received small applied scholarship)

#### 4.4.3.2. **What the Scholarship Meant to the Parents**

The respondents were asked an open-ended question to ascertain what a scholarship offer meant to their parents. Responses were first segmented into codable units, read as a whole, and then each unit was coded. Some respondent's answers were unable to be coded in this manner so were coded unknown because their comment did not answer the question asked. Of the 631 total responses, 629 were coded leaving two responses receiving an unknown coding. Once the coding was complete and the pivot table created, themes and meta-themes were identified.

There were two major themes and one minor theme, the first major theme was that parents were proud of the respondent with 391 respondents (two-thirds) indicating this. The second major theme was the scholarship offer characterized as financial help to the family with 256 respondents (40%) indicating this. The minor theme speaks to parental expectations regarding scholarships in planning financially for university. While only 46 respondents mentioned this, it articulated a level of parental expectation that can be either motivating or create disappointment.

##### 4.4.3.2.1. **Offer as a Source of Parental Pride**

The first major theme was broken into three sub-themes—general parental pride, pride in that it confirmed that their child was capable, and that the parents had raised the child well. The general sense of pride was positive for the respondent as they had made their parents happy and provided the family with external recognition.

They were relieved as heck! They celebrated and hugged me repeatedly because they were just so happy. They still haven't stopped boasting proudly to people we know. My mom (who has a PhD in Biology but it is not recognized in Canada) told me that I would have gone to university no matter what, but that it's nice to have it paid for me. My dad asked me if

"missing a few parties and taking those honours courses paid off" to which I agreed :) (Received large applied scholarship)

The next sub-theme in the pride theme was that the scholarship was tangible evidence to the parents that they had a bright capable child who was hard working and/or academically able.

It showed my family that I have achieved my academic goals in high school. This scholarship also shows my parents that I have been studying efficiently in high school. (Received small academic scholarship)

The final sub-theme describes parental pride in the form of good parenting. The scholarship again was evidence that the parents raised their child well.

My family were very proud of me to have received such a prize that limited students receive. A scholarship is a sign of their children having been brought up well and gaining success in the future. (Received small automatic scholarship)

#### **4.4.3.2.2. Offer as Financial Help**

The second major theme was that parents characterized the scholarship as financial help. The first of the two sub-themes within this theme were that it helped reduce the cost to the parents for paying for university.

They were proud and happy to get a bit of a price cut on the tuition. (Received small automatic scholarship)

The second sub-theme was that parents characterized the scholarship as relieving the financial burden. Like the respondents themselves, the scholarship relieved financial stress in the family and supported participation at university.

It meant the world to my mother, she cried she was so happy, this is because in reality we would never have been able to afford my attending of university without the scholarship I was offered. (Received medium applied scholarship)

#### **4.4.3.2.3. Offer Expected**

The final theme, although a small one, was broken into two sub-themes regarding parental expectations about scholarships. The first sub-theme was that some parents expected the scholarship and this created a positive effect on the child.

I honestly think they expected it, which was one of the reasons why I worked really hard to get it, so I wouldn't disappoint them. (Received small automatic scholarship)

The other sub-theme was that some parents expected more, and this was a source of disappointment for the parents, as they thought their child deserved more than they received.

My parents believed that with my outstanding grades and assets I would have received greater scholarships. (Received small automatic scholarship)

Respondents generally characterized both their own and their parents response to a scholarship as a positive experience. A scholarship offer was characterized as an award for hard work and academic achievement that was a source of pride for parents. It also provided financial assistance in the way of reducing costs for some while for others; the financial help had a more dramatic effect on the family relieving financial stress and burden on the respondent and/or their family.

### **4.5. Summary**

This chapter detailed the quantitative and qualitative findings for this study. The findings provided a picture of the respondents who received an offer of merit-based aid describing the characteristics of those who accepted versus those who did not. It also provided a sense of their family background and how it shaped their aspirations, choice, and participation in post-secondary education.

Chapter 5 discusses the findings integrating the qualitative and quantitative findings within a combined theoretical framework of college choice theory and situated context. It discusses each layer of context—individual, family, school/community, and economic, social, and political—as it relates to aspirations, choice, and participation. The chapter concludes by identifying implications for practice, policy, theory, and further areas of research.

## **CHAPTER 5.**

### **Discussion and Implications**

This chapter brings together the quantitative and qualitative findings through the summary and discussion of the results by interpreting the findings and relating this study to previous research and the theoretical frameworks. Implications for practice, policy, and theory, and suggestions for future research conclude this chapter.

#### **5.1. Statement of the Problem and Review of the Methodology**

As described in Chapter Two, this study sought to determine the effect of institutional merit-based aid on student aspirations, choice, and participation at a large comprehensive urban university. The research model for this study was a mixed-methods approach using a concurrent triangulation design with an identical sample. An on-line web survey including both forced-choice and open-ended questions distributed to all domestic direct-entry recipients of merit-based aid for the Fall 2009 term constituted the source of the data. Using a parallel mixed analysis, analysis of the quantitative data included descriptive and inferential statistics as well as coding and theme analysis for the qualitative data.

#### **5.2. Summary of the Findings**

Using the first three dimensions from Perna's (2006) situated context framework (individual, family and school & community) and the primary research question dimensions (aspiration, choice, and participation) the summary of findings are presented

in Table 5.1. Section 5.3 offers a fuller discussion of the results using the combined theoretical framework of situated context and college choice theory in relation to the respondent's aspirations, choice, and participation. The fourth context—political, economic, and social—was not used as it was not specifically examined for this study.

**Table 5.1. Summary of Findings**

<b>Individual Context</b>	
Aspirations	<p>Respondents are predisposed to university with the majority having thought (Grade 7) and planned (Grade 10 &amp; 11) within typical time frames.</p> <p>Over 80% of respondents indicated that knowing they could receive a scholarship pushed them to try to achieve higher grades.</p> <p>76% indicated knowing they could receive a scholarship made them work harder.</p>
Choice	<p>University is the primary option with college seen as a back-up plan.</p> <p>63% of those who accepted SFU's scholarship offer were born in Canada.</p> <p>As the number of schools the respondent applied to and/or the number of scholarship offers increased, the acceptance of the scholarship offer decreased.</p> <p>15% of respondents only applied to SFU.</p> <p>Just over 20% of respondents received only one offer of scholarship.</p> <p>Respondents who accepted a scholarship offer rated more highly that the amount of the offer made their decision to attend SFU more attractive.</p> <p>Those who accepted a scholarship offer were more likely to indicate that they would attend SFU before they knew about the offer (55%); the amount of the scholarship was important in making their decision (40%); that the scholarship offer was higher than others that they had received (44%); and the amount of scholarship met or exceeded their expectations (43%).</p> <p>Admission to the respondent's first choice institution is a major factor in accepting the scholarship offer although it is first choice in combination with other factors such as program of choice, proximity, cost of attendance, offer not enough to sway decision, and reputation that effects their final choice.</p>
Participation	<p>Ranking the respondents' views of the scholarship offer, students reported that they saw the scholarship as: (1) a symbol of recognition or payoff for hard work, (2) financial help reducing the burden of the financial stress of post-secondary or assisting with the cost of attendance, and (3) having a positive effect on their sense of self.</p>

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## Family Context

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**Aspirations** 63% of respondents were from families where both parents were immigrants.  
56% of those respondents who accepted had families where both parents were immigrants.  
Over 55% of respondents had families where both parents were university educated.  
Over 85% of parents encouraged the respondent to do well in hopes they would be admitted to university. A greater proportion of respondents who were from families where both parents were immigrants were more likely to indicate this (63%).  
Almost 80% indicated their parents encouraged them to do well in hopes that the respondent would receive a scholarship.  
Parents provided the greatest motivation for seeking or attempting to obtain a scholarship; with mothers influence being the greater of the two parents.  
A motivating person was important in helping the respondents to achieve a scholarship. The majority of the respondents were motivated by someone from their closest ties—their family.  
85% of respondents who had a paid tutor in the last two years of high school were from families where both parents were immigrants.  
Of the parents who provided a paid tutor for their child, where both parents were non-immigrant, the family came from neighbourhoods with significantly higher incomes than in cases where both parents were immigrants.

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**Choice** 63% of the respondents offered scholarships came from immigrant families.  
57% of those who accepted the scholarship offer came from immigrant families.  
Respondents who came from non-immigrant families or where one parent was a non-immigrant were more likely to accept SFU's scholarship offer.  
A greater proportion of respondents from families where both parents were immigrants indicated that SFU's scholarship was the highest offer.

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**Participation** 43% of respondents who accepted the scholarship offer were first generation university students and 15% of those who accepted were also first generation post-secondary.  
Neighbourhood before tax median family income was \$64,000 for all respondents and 51% of those who accepted the scholarship offer had incomes at or below the median.  
Respondents characterized their parents' perception of the scholarship offer as a source of parental pride and a means to provide the family with financial help.  
Parental expectations of a scholarship offer was a motivating force or one that created disappointment as they expected more.

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**School Context**

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Aspirations	Planning 10 for BC students helps facilitate the search and choice phase.
Choice	Over 18% of students learned about the scholarship through their admission letter. Applied scholarships had the greatest yield rate. Medium level scholarships yield rate was under 50% with lower yield rates for respondents who are immigrants themselves and whose both parents are immigrants. Top competitors for scholarship students were other BC Research Universities. SFU was the top offer for over 86% of respondents, with 56% of those accepting the offer. When the next highest offer was SFU's top competitor for scholarships there was a 50/50 chance of acceptance of the offer. 24% of those who received a large applied scholarship received no other offers of scholarship.
Participation	Respondents who received automatic scholarships expressed appreciation for being recognized for their academic ability. Some respondents expressed disappointment in not being recognized for other attributes other than grades.

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### **5.3. Discussion of the Results**

This section combines two theoretical frameworks to organize the discussion of the results. The first is Perna's (2006) situated context framework, which is used to organize the discussion by working through the nested layers of context—individual, family, and school and community. The second framework is Hossler and Gallagher's (1987) college choice theory, which is considered within each of the situated contexts as it relates to the findings.

#### **5.3.1. Individual Context**

The individual context focuses on attitudes and behaviours that affect student aspirations, choice, and participation in post-secondary education. This provides a sense of respondents' internalized sense of self, providing insight into the effect of institutional merit-based aid on this select group of prospective students.



#### 5.3.1.1. Aspirations

According to college choice theory, this group of students was typically predisposed to post-secondary within normal time frames—first contemplating post-secondary participation during Grades 7 to 9, exploring options during Grades 10 and 11, and determining choices in Grade 12 (Hossler & Gallagher, 1987). They did not appear to differ greatly from the general college going population other than their decision of *whether to go* to post-secondary was never questioned. However, in this study the thought of attending university emerged for some students as early as the primary grades. Early aspirations did not consistently result in early planning or late planning, as both were evident. Early planners tried to ensure that they achieved their aspiration of attending university, considering all their options, and performing well academically, nearly guaranteeing admission to university. Late planners were complacent, as they simply believed they would attend post-secondary and had the academic ability that would enable them to achieve admission. Students who were both predisposed late and late planners were more likely to lack direction. It was not clear from the findings what individual motivation led these students to perform so well academically, but because of their academic performance, these students were able to receive a scholarship offer.

In this study, scholarship students' reported aspirations were foremost to receive admission to university. These were university bound students regardless of family income, parental education, or citizenship status. They clearly saw other post-secondary options, such as college or technical school only as a back-up plan. They realized that to achieve their aspiration, academic success was necessary. The effect of a potential scholarship was to push the respondents to achieve the required grades and work harder as they finished their final two years of high school. As such, a scholarship was

an indirect motivator for achieving their aspiration of admission to university. A scholarship did not have a direct aspiration effect of its own; the primary influence or relationship was more likely the effect of grade attainment on aspirations (Christofides, Hoy, Li, & Stengos, 2008). If a scholarship offer did not have a direct effect on student aspirations, what was its effect on student institutional choice?

#### 5.3.1.2. **Choice**

Admission to a first-choice university was the most important factor in deciding where to attend for students in this study. This was illustrated, as it has been in Chapman and Jackson's (1987) study, by the fact that some students indicated that the scholarship offer was not enough to sway their decision from their first-choice institution. Only students who received large scholarship offers relative to their first-choice offer were more likely to consider changing their decision. Students with high entrance admission averages (95%+) who received scholarships valued between \$5,000 and \$10,000 were more likely to accept a lower scholarship offer at their first-choice institution. Typically, these students were either immigrants themselves or the children of immigrants, reflecting the importance of choice of program and perceived reputation of the first-choice university amongst this population.

Admission to the program of choice and the perceived reputation of the first-choice university was evident as decision factors in this research. Program of choice has traditionally been a greater factor in Canada where students compete for entry into highly selective programs such as business or engineering (Davies & Hammack, 2005). These programs tended to have higher potential employment and income returns for graduates. Given the largely public university system in Canada, the perceived quality of education continues to be high across the country. Reputation is an emerging factor for

institutions in Canada and the shifting public perception is believed to be due to the development of the ranking industry and institutions differentiating themselves in order to compete for a shrinking pool of “the best and the brightest” (Davies & Hammack, 2005). This study provided evidence to support the trend of an emerging prestige hierarchy as respondents described it to be an important factor beyond the choice of program. In addition to institutional rankings and institutional differentiation, another factor that may be contributing to this prestige hierarchy are first and second-generation immigrants viewing institutional reputation as a means to improve their human capital.

Proximity to the university was also an important factor for many students in the study when determining where to attend. While there continues to be a tendency for students to study in their own province and institutions close to their home (Davies & Hammack, 2005), proximity in this study largely referred to commuting times. The time it takes to travel to and from the university affected choice more directly than the scholarship offer coupled with the ability to reduce the cost of attendance by living at home. For students who were not living in the Metro Vancouver area, the amount of the scholarship was a factor that determined their ability to attend their first-choice university, making it affordable to move or requiring them to stay close to home and attend their local institution. While this was a small group of students, the joy when the scholarship amount was enough to cover their additional expenses and the disappointment when it was not was palpable in the narrative. Kirby and Conlon (2005) stressed the need to recognize the additional costs that students from rural areas encounter in moving away from home. Presently, the scholarship program at SFU recognizes these additional costs through a one-time travel amount that increases the value of the scholarship offer by \$500 or \$1,000 depending on the distance from the university.

As the number of applications and the number of scholarship offers increased, the likelihood that a student would decline SFU's offer rose. While this represented just greater than 10% of students, this group was highly mobile and applied to institutions across the country as well as schools in the United States. In this circumstance, SFU was a back-up choice and the decision to accept SFU's offer was dependent on acceptance from students' first-choice institution in combination with the net price of attendance being affordable. The literature indicates that students with higher SES created a choice set that was more wide ranging geographically and reputation oriented (Cabrera & La Nasa, 2000; Hossler & Gallagher, 1987). While the number of students in this group was small in this study, students who received three or more offers tended to have a combination of higher parental education and higher estimated before tax median family income with parental education level being the more important of the two.

A final illustration to speak to the importance of first choice as the critical factor in accepting a scholarship offer was the number of students who only applied to SFU. While this was just greater than 15%, this group of students identified SFU as their only choice. These students knew they were admissible and that financial support through a scholarship was guaranteed with averages of 90% and above.

As in the case of aspirations, a scholarship offer was an indirect factor in choosing where to attend for the majority of students. Receiving an admission offer from a first-choice institution was the critical factor and the value of the scholarship secondary. Proximity also impacted the choice decision as it relates to commuting times for Greater Vancouver students while the scholarship offer had a more direct effect on choice for rural or out of province students dependent on whether the size of the scholarship was sufficient to meet their increased post-secondary expenses due to living costs. A student's choice set related to their SES with parental level of education being

the most significant factor. What then was the effect on student participation? Did scholarship offers continue to provide predominately-indirect effects for the individual?

#### 5.3.1.3. **Participation**

Study respondents described two effects of a scholarship offer on participation. The first was the recognition of either their academic performance and/or their hard work during high school. The students' perceived the scholarship to be a pay-off or reward for their performance. This is an interesting finding as there is no literature on this particular effect in the merit-based aid literature, nor does there seem to be a discernable difference in the respondents' perceptions by the value of the scholarship. The recognition effect as such may be a valuable contributor to a student's sense of accomplishment as they finish their high school career and transition to their post-secondary choice. A scholarship offer was an affirmation of their ability and potential for future success providing a positive sense of self as they transition to university.

The second effect related to the financial benefit of a scholarship in providing help with the cost of attendance or relieving the stress of the financial burden. Long and Riley (2007) and Paliniotis and Holdsworth (2005) both indicated that one way that students reduced the cost of attendance was choosing to live at home. More than 66% of the respondents planned to live at home thus minimizing their living costs and applying the scholarship amount to tuition, fees, and books. While it was not clear if this was how the students will actually utilize their scholarship money, the consistent reference to helping reduce the cost of attendance implied that its main purpose will be to pay for the more direct costs of post-secondary education.

The other description of the effect of the scholarship on the cost of attendance was the depiction of it relieving financial burden. In this case, the individual context was

that the scholarship, no matter the amount, was a means to reduce the financial debt associated with attending post-secondary. This was an emotional narrative of students not wanting to add to their family's financial struggles (Cabrera & La Nasa, 2000) but instead to be a contributor to the family through their own efforts. In this sense, the financial reward of a scholarship offer was a means of reducing financial stress in the family by reducing the parental contribution needed to cover the cost of attendance. The net price became more manageable ensuring the individual's participation in university.

The participation effect on the individual provided both a positive sense of self by receiving a scholarship and by the reduction of the overall net price of university attendance. Yet it appeared that the primary focus of the individual was to secure admission to their first choice university and this over-shadowed the reality of the financial costs until the time of choice. A scholarship became a necessity to assist with the cost of attendance. What then was the role of parents' in supporting their children's aspirations, choice, and participation in post-secondary education?

### **5.3.2. Family and Community Context**

The family and community context provides the respondents' perspectives on the effect of merit-based aid on parental aspirations, choice, and participation for their child's post-secondary education. This section illuminates parental characteristics and behaviours that shape and/or support their child's post-secondary decisions. This discussion is viewed through the perception of the respondent as they provided the parental data not parents directly.

### 5.3.2.1. Aspirations

Parents' aspirations in this study were for their son or daughter to be admitted to university. Almost two-thirds of the respondents, who received a scholarship offer, parents were immigrants and immigrant parents largely encouraged their child to do well in hopes of receiving admission to university. Finnie and Mueller (2008) found immigrant parents who held higher aspirations for higher levels of post-secondary completion to be "an important correlate of a child's access to PSE" (p. 17). They also found that parental educational levels were high amongst children of immigrants even though income levels were lower. They conjectured that immigrant parental aspirations "reflect cultural factors, including a strong pro-PSE ethos" (p. 20) with university being the preferred option. The findings in this study support the presence of this ethos. While immigrant parents may have reduced human capital themselves, parental cultural and social capital within immigrant communities appeared to play a more important role in transmitting the attitudes, behaviours, and value of a university education.

What was surprising in this study was the high percentage of parents (45%) whose highest level of education was below university. Over two-thirds of the parents in this category were immigrants. Given that the literature identified higher parental educational levels as a significant factor in ensuring access (Andres & Krahn, 1999; Dorlet, 2005) and affecting aspirations (Finnie & Mueller, 2008; Krahn & Taylor, 2005), the finding in this study seemed anomalous. One possible explanation is that immigrant parents' aspiration for a better life, regardless of education levels, creates motivation for their children to do well in school in order to attain admission to university. This was further illustrated in this study by the poignant commentary of students describing their parents' immigrant story. It was these stories of sacrifice that instilled parental expectations for their child's participation in post-secondary education in hopes of

creating a better life in their adopted country. This appeared to be a powerful parental influence to inspire aspirations within their children.

Cabrera and La Nasa (2000) indicated that parental encouragement takes two forms—aspiration and proactivity. In effect, proactivity was a measure of parents' willingness to make their aspiration a reality by planning and investing in their child's post-secondary education. As a means to determine this effect, parental investment in a paid tutor in the last two years of high school was used as a proxy measure. While only 22% of the respondents had a paid tutor, the results are interesting as over 85% of those who hired a tutor came from immigrant families. Further to this, non-immigrant families who hired a tutor had much higher incomes than those of immigrant families. This supports the notion that immigrant parents were willing to invest in their children's education to ensure their success so the next generation increases their human capital. Given the level of neighbourhood before tax median family incomes of immigrant families in this study, this was a potential financial sacrifice on the family signifying the level of parental commitment to their post-secondary aspiration for their children. Non-immigrant parents with high incomes were more likely to invest in a tutor than those with lower incomes. This spoke to the value these parents' place on post-secondary education as a means to retain and attain their child's human, social, and cultural capital. Their aspiration was to maintain the family's position via investing in their child's education prior to university. As no literature was found on the use of tutors and the effect on post-secondary access and participation, the findings in this study on this effect cannot be triangulated. This is a promising area for further research.

The last measure of the effect of parental aspiration in this study identified parents as the primary motivational force for a scholarship offer with mothers being the greater of the two parents. Mothers and fathers played an important role in supporting



and encouraging their children to believe they are capable and worthy of recognition. However, their first aspiration was for their child to receive admission to university. The scholarship offer was, for the most part a secondary aspiration. Like the individual student, it was a source of familial pride but also brought recognition of their good parenting and status in their communities.

While a scholarship offer appeared to be a secondary aspiration, the parental immigrant effect was evident in this study. With over two-thirds of parents both being immigrants, there appeared to be an immigrant effect both in achieving eligibility for a scholarship and investment in their child's education to ensure their success. Was the effect on choice, similar to that of the student or does a scholarship effect parental influence on choice differently?

#### 5.3.2.2. **Choice**

Finnie and Mueller (2008) confirmed the importance of parental aspirations on access to post-secondary, demonstrating that children of immigrants were out performing their non-immigrant counterparts in post-secondary attendance. What parents aspire for their children, in terms of the level of post-secondary completion, had an effect on access and the type of institution attended. As a result, more children of immigrants are attending university. What they did not explore was what effect parents have on institution of choice and program of study. This study provides some insight into the nature of parental influence on institutional choice.

While students were not asked directly how their parents influenced their choice, the effect of parental influence was ascertained through comparing parental backgrounds of respondents and the acceptance of offers. SFU's scholarship program attracted and supported a high proportion of students (greater than half) who came from

an immigrant background. However, it was in examining the families who did not accept the offer that the combined effect of first-choice institution and perceived reputation of institution within the immigrant community was illuminated. This was most apparent through analysis of the medium level scholarships where the value of the scholarship (\$5,000 to \$10,000) was not great enough to sway their decision to attend their first choice institution that offered a \$4,000 scholarship for the same admission average. The majority of students who declined this level of offer have parents who were both immigrants. The institution that was their first choice was the most established in British Columbia, ranked higher in the international rankings, and also provided the only option for professions such as medicine, dentistry, and pharmacy.

As most of the current literature examined student and parental aspirations on post-secondary access (Christofides et al., 2008; Finnie & Mueller, 2008; Krahn & Taylor, 2005), parental effects on choice of institution and program of study provides an area for further research. Understanding the effect of parents on institutional choice and program of study may provide a means to understand the parental immigrant and non-immigrant effect more clearly and its relationship to institutional aid—both merit and needs-based. Studies in the area of choice could inform institutional policy on the best use of financial aid dollars for meeting the needs of a more diverse student population. If, like for their children, a scholarship was an indirect factor for most parents, with attending a first choice institution the primary aspiration, what was the effect of a scholarship on the family's participation in university?

#### 5.3.2.3. **Participation**

A surprising finding in this study was that 43% of the students who accepted SFU's scholarship offer either came from families where they were the first to attend

university (15%) or will be the first to complete university (28%). Given the barriers to access for this group of students, such as over-estimating the cost of attendance (Côté et al., 2008; Cabrera & La Nasa, 2000; Looker & Lowe, 2001), this unintended outcome of the scholarship program was potentially a positive one for these families by assisting with the cost of attendance. Students whose parent had completed high school or less were the only group to more likely accept the medium value scholarship than not. Studies that examined price sensitivity illustrate the effect of net price—tuition minus financial aid—correlates to family income (Dynarski, 2002; Heller, 1997; Leslie & Brinkman, 1987; Singell & Stater, 2006; St. John, 2000) identifying the relationship between first generation students' families and lower SES as level of education correlated positively with higher earnings (Finnie & Mueller, 2008). First generation families in this study appeared to accept their highest offer of scholarship aid. While this may be a unique finding to SFU, the scholarship offer had a positive effect, providing much needed support once the cost of participation becomes a reality.

The other finding of interest in regards to the effect of a scholarship on participation was neighbourhood before tax median family income for all respondents. The group of students receiving scholarship offers at SFU come from neighbourhoods with before tax median family income that matched that of the Census Metropolitan Area of Vancouver at \$64,000 per year with slightly more than half of those who accepted the scholarship being below the median. This reflects the very middle-class nature of the university and its original mandate to provide access to the average British Columbian. These high ability middle class students are living at home to manage the cost of attendance and minimize the financial burden on their families (Cabrera & La Nasa, 2000). The other possibility is that they are choosing an institution close to home to achieve the same cost benefits (Long & Riley, 2007; Patiniotis & Holdsworth, 2005).

The effect of a scholarship on the family was to ensure participation of their son or daughter. However, it was not clear what would occur if the family did not receive this financial support. Was the final decision to attend university independent of finances or did the scholarship offer allow for the elimination of less expensive options such as college for the first two years of university.

Respondents characterized their parents' perception of the scholarship offer first as a source of pride and second, as a means to provide financial help. Parental pride may have a direct effect on participation, as it provided external validation of their efforts and in the case of immigrant families provided a signal of the family's ability to re-gain their human capital (Finnie & Mueller, 2008). By using their cultural and social capital, immigrant parents were able to reduce the financial barriers to their children's participation. They seemed to be able to articulate their aspirations creating behaviours and attitudes in their children that are necessary for academic success in high school resulting in financial support in the form of scholarships to ensure university participation in their child's program and university of choice. Dinovitzer, Hagan, and Parker (2003) found that immigrant students who were proficient in their native language could access positive attributes of their ethnic communities "while their proficiency in English positions them to enjoy the resources offered in English through school activities" (p. 483).

Three distinct family characteristics existed within the scholarship student population—first generation students, middle class family incomes, and immigrant parents. Given the circumstances of each group individually and the potential interplay between each of these characteristics, it appears that SFU is supporting financial need through its merit-based scholarship program. While not an intended consequence, it is an interesting outcome and it is worth further study.

Parent characteristics and influences played an important role in direct-entry high school scholarship student aspirations, choice, and participation. Parents of students who received scholarship offers aspired for their child to receive admission to university first. The choice of institution was more dependent on the reputation of the institution than the value of the scholarship particularly for immigrant families. The scholarship offer provided a participation effect for different family characteristics such as first generation students, middle class families, and immigrant parents.

With this information, what additional insight was learned from examining the impact of the scholarship offer on student aspirations, choice, and participation from the school and community context?

### **5.3.3. School and Community Context**

For this study, school referred to both the high school and the university. This section examines the findings from the perspective of one or the other as it relates to the effect of a scholarship offer on student aspirations, choice, and participation. The discussion addresses potential areas for practice and policy implications for the secondary and post-secondary systems.

#### **5.3.3.1. Aspirations**

While there were no direct effects of a scholarship offer identified in this study for student aspirations on the school and community context, there was one factor provided within the provincial public high school curriculum that activated students' aspirations. Planning 10, a required course for high school graduation, provided an important milestone in formulating this group of students institutional "choice set" during the search stage of college choice theory (Hossler & Gallagher, 1987). It was in this course that the

aspiration of admission to university took shape as plans solidify in terms of career and post-secondary options.

University recruiters typically present to and meet with Grade 11 and 12 students. This is too late to effect the aspirations of those who are not already predisposed, for those who believe they cannot afford it, and for those who are underrepresented in attending university. Many studies identified the need for more effective information to parents and students at early stages in the college choice process (Cabrera & La Nasa, 2000; Côté et al., 2008; Looker & Lowe, 2001; Perna, 2006). While not the typical purview of the university, should it play a more significant role in shaping aspirations earlier to predispose more students and parents, particularly underrepresented groups? Alternatively, is this more appropriately the role of government? This is an important policy issue to contemplate given universities want to both shape their student body and provide a social and economic benefit to their communities.

While no direct role was determined in this study of the effect of institutional merit-based aid on aspirations within the school context, what was the effect on choice within the school context?

#### 5.3.3.2. **Choice**

The findings that are most relevant to the institutional context are related to the effect of merit-based aid on choice. This was not surprising given that universities offer scholarships as a means to shape choice. What was surprising was the nature of some of the findings for the institution that may alter current practice and policies. The effect of scholarships on students' choice of institution is best described as it depends. As described so far in this study many factors beyond a scholarship offer appear to have a

more direct effect on choice. These factors are further confirmed in discussing the findings in relation to the institutional context.

SFU was the top scholarship offer for 86% of the students resulting in an overall yield rate of 56% across all scholarship categories when SFU was the top offer. This gap in the acceptance of the offer illustrates that other factors are important in the choice decision for scholarship students. In order to better understand the potential reasons for this gap in acceptance, a discussion of top competitors, level, and type of scholarship as well as how students learned about the scholarship provide further insight into understanding this gap.

The top competitors for scholarship students were the other British Columbia research universities, with UBC being the primary competitor. The majority of scholarship students applied to UBC and SFU receiving scholarship offers from both. While institutional status appeared to be an important influence for some students when the next highest offer was UBC there was a 50/50 chance that students in this study would accept SFU's offer. While it was not clear what was affecting the choice to accept SFU's lower scholarship offer possible determining factors may be acceptance into their program of choice or proximity (in this case commuting distance) to the institution. The effect of commuting on choice was an interesting finding in this study and provides an interesting area for further research particularly for large urban areas with many post-secondary commuter institutions.

As a group, other universities across the country made up the second largest group of competitors. While not any one institution dominated the other category, students who applied to three or more institutions tended to apply to at least one out of province institution. This was a relatively small group of students which demonstrated

the importance of proximity in influencing choice and access to post-secondary education for the majority of students in this study (Davies & Hammack, 2005; Frenette, 2002; Kirby & Conlon, 2005).

The yield on the level and type of scholarship offer also provided important information for SFU on the effectiveness of its scholarship program. The two most important findings to discuss were the high yield rates on the applied scholarships and the very low yields on the medium level scholarships.

Scholarships that students need to apply for yield the greatest results at all financial levels. While the value of the scholarship may be considered to affect choice, given that well over half of the scholarships in the applied category were valued between \$2,000 and \$5,000, the more important factor was that students were aware of the scholarships as they need to put in the effort to make a separate application. What is not clear was whether the act of applying for a scholarship, given the research and work required by the student, created a greater commitment to the institution, or implied that the institution was a first choice in the student's choice set and the application process reinforced their choice. An interesting finding in this study that points to the latter effect was the fact that almost one quarter of the students who accepted the large scholarships only applied to SFU. In their case, the scholarship offer did not affect choice, they had already chosen SFU. This raised the question of whether these students needed the financial support to this level to attend SFU. On further analysis, 43% of the large scholarships went to students with neighbourhood family income below the before tax median family income and 64% of large scholarships went to immigrant families. This was a positive outcome for SFU's large entrance scholarships whose primary purpose was to attract the best and brightest students who were academically able and also demonstrated leadership potential through community service.



The medium level scholarships valued between \$5,000 and \$10,000 had very poor yields, particularly for students who were immigrants themselves or whose parents were immigrants. As discussed earlier in this study, this immigrant effect may be attributed to SFU not being the first choice for these academically able students, the value of the scholarship not being enough to change their decision from their first choice institution, and the status of the first choice institution perceived to be greater. The \$7,000 and \$10,000 level scholarships were consolation prizes for students who do not receive a large scholarship, and the \$5,000 level scholarship was automatically provided to students who have a admission average of 95+%. These scholarships need to be examined to determine if there are better uses of these dollars to attract students aligned with the university's goals.

The final finding that related to the yield on the medium level scholarships was how the students found out about the scholarship. Over 18% of students learned about the scholarship through their admission letter. This indicated that these students were not aware of the potential for an automatic scholarship prior to receiving their offer of admission. Moreover, their decision to apply was not affected by the scholarship. They applied without the knowledge of the scholarship. Fewer than half of these students accepted the scholarship offer, suggesting that greater awareness about the automatic scholarships offered at SFU need to be provided to students prior to applying for admission. While this may be a potential approach, this finding may more accurately reflect that in the case of these student's, application to SFU was a backup choice and the scholarship was not going to change their first choice unless the scholarship was large enough to do so (Chapman & Jackson, 1987).

While there are positive outcomes from SFU's scholarship program, there was not strong evidence that entrance scholarships were the primary factor in determining

institutional choice. At the beginning of this section, the effect of a scholarship offer on choice could be described as “it depends”. What was meant by this was that choice was not usually dependent on one factor and it was the interplay amongst a number of factors combined with individual and family attributes and circumstances that shaped institutional choice. In this study, a scholarship may figure more prominently in the choice process depending on the value of the scholarship, the student’s proximity to the institution, the student’s and/or family’s immigrant status, the process of receiving the scholarship, and knowledge of the scholarship. This poses many interesting questions for SFU to consider in examining its entrance scholarship program. What can be learned from discussing the findings of the school context on participation?

#### 5.3.3.3. **Participation**

While there were no effects of a scholarship offer identified in this study for the school context on student participation, there were a couple of important findings worth noting as they provided insight into what students value and identify areas of further research.

The first finding relates to automatic scholarships and the strong sentiment amongst students who received this type of scholarship that they appreciated the recognition of their academic ability. Even with the poor yield rates on automatic scholarships this sentiment reinforced that the value of a scholarship was greater than simply a monetary one. It may be that the effect of a scholarship offer worth exploring further is the student mindset created because of receiving a scholarship offer and the relationship to a successful transition to university. With the net price (cost of attendance) reduced for the first year and recognition of their abilities, are these students in a better position to succeed and persist at university. What happens for students when

their future academic performance does not meet their expectations based on past academic performance in their first term at university and they lose their scholarship? These are important questions for further research in understanding whether and how a scholarship may positively affect persistence.

The second finding identified the issue of disappointment on not receiving an applied for scholarship. While a small number of students expressed this, it identified a negative outcome of the applied scholarship process. For some students, not receiving large scholarship meant they had to settle for their second choice institution, as the value of the scholarship received was not enough to cover their cost of attendance at their first-choice institution. This was particularly true for students from outside the Greater Vancouver area. This raises the question of whether SFU should recognize the additional costs associated for these students in its scholarship program. Moreover, as the topic of disappointment is not mentioned in the financial aid literature, research investigating the effect of disappointment in relation to a scholarship offer and post-secondary participation may provide important insights.

#### **5.4. Implications for Practice, Policy, and Theory**

This study has many implications for practice, policy, and theory. Practice and policy are considered together as seven recommendations as they are so interconnected. The primary focus is on the school and community context as the greatest ability to re-examine current policy and practice resides with SFU given the findings in this study. The implications for theory discusses Chapman's (1981) college choice model, Hossler and Gallagher's (1987) college choice theory, and Perna and Thomas' (2006) framework as important constructs for conducting this type of research. An integrated model is proposed and discussed for conducting future research.

### **5.4.1. Practice and Policy Implications and Recommendations**

Institutional merit-based aid, in the form of entrance scholarships, is widely used at universities in Canada. Institutions are investing their own financial resources and those of donors in the hopes of attracting and shaping their student population. The findings in this study described a complex set of factors that affect student aspirations, choice, and participation with a scholarship offer acting as an “it depends” factor, depending on the individual, family, and school and community contexts. While this study only examined one form of institutional financial aid—merit-based aid, it demonstrated the importance of research in formulating institutional financial aid practice and policy. The following summarize the recommendations for SFU from this study:

1. Develop an institutional assessment model to monitor and evaluate annually the impact of merit-based aid and other forms of financial aid in order to inform decision-making about the institution’s financial aid policy.
2. Examine whether there is a need and/or desire to shape student/family aspirations and choice prior to Grade 11 especially for under-represented or identified student populations in the University’s strategic and academic plans.
3. Review the present goals of the entrance scholarship program for both applied and automatic scholarships to ensure that it is meeting the intended outcomes for the institution in comparison to top competitors programs and provincial/federal financial aid initiatives.
4. Review the effectiveness of the automatic entrance scholarships and examine alternate ways to repackage the dollars to attract this group of academically able students.
5. Analyze whether scholarship students who have financial need are accessing other sources of aid such as bursaries and student loans and build strategies to advise options available to ensure student success.
6. Review the present policy of providing a “top-up” to scholarship students who reside outside the metro Vancouver area to determine the effectiveness of this practice in influencing choice and meeting these students additional cost of attendance.
7. Examine the scholarship continuance policy to recognize the significant population of first generation post-secondary and university

scholarship recipients to ensure it is not creating a barrier to student success and persistence.

To manage their financial aid investment institutions need to build an assessment model that evaluates the effectiveness of the present financial aid policy on first-time enrolment and persistence (Somers, 1995). Financial aid modelling has become a common practice in the United States where richer data sets are available to institutions enabling analysis of the total effect of all financial aid on choice and persistence. While it is more challenging to create these analysis models in Canada due to the lack of a similar institutional data set, developing an annual institutional assessment model using existing data is the key implication for practice and policy from this study. The additional recommendations for practice and policy result from the findings from this study and provide a good place to start a review of the existing institutional practice and policy while a broader assessment model is developed.

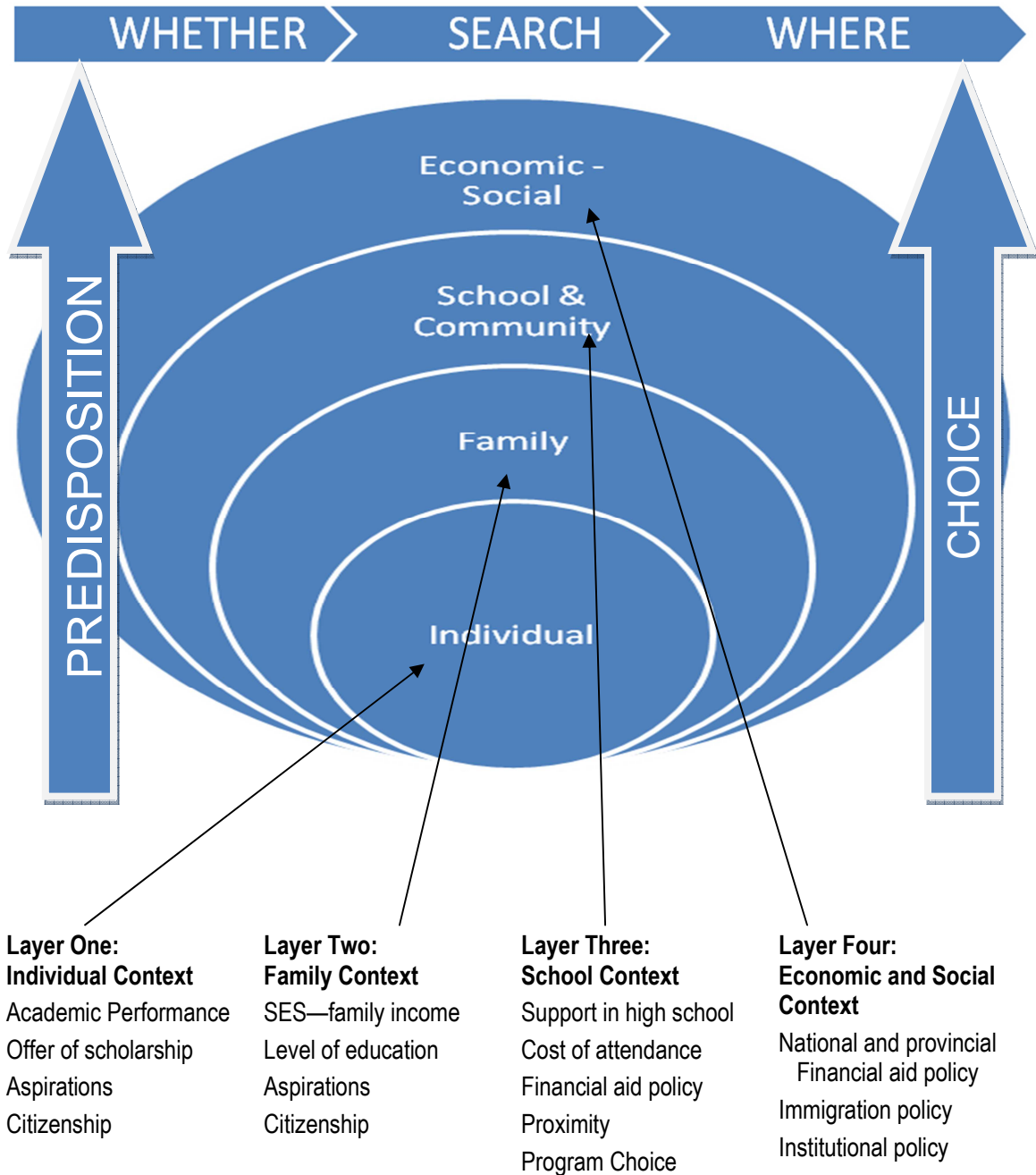
#### **5.4.2. Implications for Theory**

Two theoretical frameworks—college choice theory and situated context—provided the means to analyze, present, and discuss the findings of this study. The most important implication for theory from this study is the benefit gained by combining theoretical frameworks (Perna, 2006; St. John, 2006). It is through the lens of predisposition and the search stage of college choice theory that the effect of a scholarship offer on respondents' aspirations—individual context—is informed. The lens of the choice stage informed the effect of a scholarship offer on choice and participation for the individual, family, and school context. It is by placing college choice within a situated context theoretical framework that the complexities of the effect of a scholarship offer on student aspirations, choice, and participation can be viewed in multiple ways.

Situated context also provides a way to think about research in human, social, and cultural capital terms and broaden the discussion of the findings beyond any single theoretical lens.

Chapman's (1981) college choice model provides the foundation for a more fully integrated model of choice and context which "is influenced, first by the background and current characteristics of the student and the student's family and, second, by a series of external influences" (p. 503). The external influences he included are significant persons and the fixed characteristics of post-secondary institutions. Hossler and Gallagher (1987) built on this work by breaking the choice process into three stages with predisposition defined as an important factor in the "whether" part of the college choice process and in search and choice stages being part of the "where" to attend process. Perna and Thomas' (2006) situated context adds the notion that different layers of context influence behaviours, attitudes, and decisions, and incorporates the importance of understanding the theory lens of human, social, and cultural capital. Combining theoretical models or frameworks provides a means to examine the complex human decision of attending post-secondary education from multiple perspectives. Figure 5.1 proposes a visual model of choice and context combining the work of Chapman (1981), Hossler and Gallagher (1987), and Perna and Thomas (2006).

**Figure 5.1. Visual Model of Choice and Context**



The strength of combining the models is that the layers of context sit within a college choice decision-making framework and provide a tool to formulate research questions, examine the literature, design the research, and present and discuss the

findings. The college choice model provides the “how” a student makes choices and the layers of context provide “what” the choices are founded on illuminating the potential “whys”.

### **5.4.3. Suggestions for Additional Research**

In the course of conducting this study, a number of areas for further research emerged. These areas are discussed in relation to the individual, family, and school and community contexts.

#### **5.4.3.1. Individual Context**

This study found for some students that merit-aid provided a vehicle to meet financial need. While this was not the intent of the scholarship, further research exploring the nature of merit-based aid in this capacity and its effect on scholarship students versus students who only receive needs-based aid could prove useful. Research in this area would help to answer questions such as is the use of merit-based in this way a good investment? Are there differences in the effect on choice for students based on the type or combination of financial aid they receive?

One goal of scholarships is to attract the best and the brightest and another is the belief that these students will persist at a greater rate thus bringing prestige to the institution. This study did not address the effect of scholarship aid on student persistence at SFU. While persistence is a major focus of higher education research and preliminary research at SFU conducted, there are still many unanswered questions. One that emerges from this study relates to student’s predisposition and planning for post-secondary. Could the different combinations of early, on time, and late predisposition



and planning provide a means to analyze the likelihood for persistence at university helping to identify students at risk?

Another finding in this research was the positive effect the scholarship offer had on the student's sense of accomplishment. Understanding whether this positive effect has any relationship to persistence provides another avenue for further research regarding persistence.

#### 5.4.3.2. **Family Context**

The use of paid tutors provided some preliminary findings as a parental investment in their child's post-secondary future. As no literature was found on the use of paid tutors, research in this area for the post-secondary population as whole could provide important information regarding the effect of a tutor on post-secondary aspirations, choice, and participation.

Parents are a powerful influence, shaping their children's aspirations for post-secondary education. What is not as clear is parents' effect on a student's choice of institution and program of study. Research in this area could prove useful in understanding how this may differ according to family characteristics and how this shapes student success at university.

#### 5.4.3.3. **School and community Context**

Proximity to the university was an important decision factor in choosing what institution to attend. This study highlighted commuting time given the urban location of the university as one of the critical factors for many students in making their final choice of where to attend. Understanding the effect of commuting on choice and more

importantly on persistence and engagement are important areas of further research for urban institutions.

As reputation becomes a potentially more defining characteristic in the Canadian university system, determining how much merit-based aid it takes to offset a unit of reputation could provide a further area of research. This would provide institutions with a means to determine whether it is possible to change a student's decision to attend their first-choice institution and how large a financial incentive is required to do so.

## **5.5. Conclusion**

This study sought to determine the effect of institutional merit-based aid on student aspirations, choice, and participation at a large comprehensive urban university. This study used a mixed-methods model with a concurrent triangulation design. The data for the study were obtained from an on-line web survey, including both forced-choice and open-ended questions, distributed to all domestic direct-entry recipients of merit-based aid for the Fall 2009 term. Using a parallel mixed analysis, analysis of the quantitative data included descriptive and inferential statistics and the qualitative data were coded to identify themes. This study asked the question what was the effect of institutional merit-based aid on student aspirations, choice, and participation. The answer to this question was "it depends" while this may seem ambiguous, the findings provided numerous insights for the institution under study to analyze and review their present direct entry high school scholarship program. "It depends" speaks to the multiple factors and layers of context that contribute to a student being in a position to receive a scholarship offer and its effect on where they choose to attend university. While individual and family characteristics shape aspirations, choice, and participation, there were multiple combinations of factors that affected who accepted or did not accept a

scholarship offer. The type and level of the scholarship was only one of the factors and typically, was secondary, and in combination with other factors shapes the decision of where to attend.

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## **Appendices**

## Appendix A.

### Survey Instrument

#### Entrance Award/Scholarship Survey June 2009

- This preview shows all your questions on one page, the actual survey delivery will display one question per page for clarity
- Answer the required questions and click "Submit" to see what the "submitted" questions look like
- Click Edit to change an answer
- Click Close when you are finished previewing

#### Survey of students who received an admission offer and entrance scholarship offer for Fall 2009

Thank you for consenting to participate in the survey. Your responses are important to the success of this research. It should take you about 20 minutes to complete. Responses are confidential and no participants will be identified by name. Sincerely, Kate Ross Principal Investigator, Doctoral Candidate, Educational Leadership, Simon Fraser University

#### Q1 . What institutions did you apply to for admission? Check all that apply.

- McGill
- Queen's
- SFU
- UBC
- UBC-O
- U of Alberta
- U of Calgary
- UVic
- U of Toronto
- Other (Please specify in Q2)

#### Q2 . If you checked "other" in Q1, please indicate the other institutions that you applied to for admission.

#### Q3 . Please describe when you first thought about attending university and when you started planning for it?

\*

**Q4 . What other post-secondary options did you consider besides university?**

\*

**Q5 . Please describe the most important influence on your decision to attend university?**

\*

**Q6 . What Faculty was your first choice at SFU?**

- Applied Science
- Arts & Social Science
- Business
- Communications, Arts & Technology
- Education
- Environment
- Health Science
- Science

**Q7 . How did you first learn about the scholarships available at SFU?  
(Select one only)**

- Admission Letter
- Campus visit
- Family
- Friends
- High school counsellor
- Presentation at your school
- SFU publications
- Website
- Other (Please specify in Q8)

**Q8 . If you checked "other" for Q7, please specify how else you learned about scholarships at SFU.**

**Q9 . Which of the following scholarships were you offered at Simon Fraser University?**

- Simon Fraser Scholarship (value \$34,000)
- Simon Fraser Alumni Leadership Scholarship (Value \$29,000)
- Gordon M. Shrum (Value \$24,000)
- Shad Valley Gordon M. Shrum (Value \$24,000)
- Lloyd-Carr Harris Foundation Entrance Scholarship (Value \$20,000)
- Tadeusz Specht Memorial Scholarship (Value \$10,000)
- Dean's Scholarship (Value \$7000)
- Academic Excellence Scholarship (Value \$5000)
- H.Y. Louie & Lohn Foundation Entrance Award (Value \$5000)
- Summit Scholarship (Value \$3500)
- community Entrance Award (Value \$2000)
- Surrey Entrance Award (Value \$2000)
- Aboriginal Entrance Award (Value \$2000)
- North Shore Regional Scholarship (Value \$500)
- Other (Please specify in Q10)

**Q10 . If you checked "other" for Q9, please indicate the name and value of the scholarship.**

**Q11 . How many other post-secondary institutions offered you a scholarship?**

- None
- One
- Two
- Three
- Four
- More than Four



**Q12 . How many offers of scholarship did you receive in total?**

- None
- One
- Two
- Three
- Four
- Five
- More than five

**Q13 . Who provided the top offer?**

\*

**Q14 . What was the amount of your top offer?**

\*

**Q15 . Who provided the next highest offer?**

**Q16 . What was the amount of your next highest offer?**

**Q17 . Did you accept SFU's scholarship offer?**

- Yes
- No

**Q18 . If yes, please indicate why you accepted SFU's scholarship offer?**

**Q19 . If no, please indicate why you did not accept SFU's scholarship offer?**

**Q20 . If you did not accept SFU's scholarship offer, what do you plan to do in Fall 2009?**

- Attend another institution
- Work
- Work to save for university
- Travel
- Volunteer
- Other (Please specify in Q21)

**Q21 . If you checked "other" for Q20, please specify what you plan to do in Fall 2009?**

**Q22 . The amount of scholarship that I was offered at SFU made my decision to attend SFU:**

- Highly attractive
- Moderately attractive
- Had no effect
- Slightly unattractive
- Highly unattractive

**Q23 . Please indicate the extent to which you agree with each of the following statements.**

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree	Don't want to answer
I was likely to attend SFU before I knew about my scholarship :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When deciding where to go for university, the amount of the scholarship was important in making my decision where to attend :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The amount of scholarship I was awarded was higher at SFU than offers from other institutions to which I was admitted :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reducing the cost of attending school for my family through my scholarship was an important factor in my decision :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowing I could receive a scholarship pushed me to achieve higher grades in high school :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowing I could receive a scholarship made me work harder in high school :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents encouraged me to do well in hopes that I would be admitted to university :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents encouraged me to do well in hopes that I would receive a scholarship :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt the scholarship offer recognized my academic achievements in high school :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt the scholarship offer recognized my leadership abilities :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt the scholarship offer recognized my community service :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q24 . How would you characterize the amount of the scholarship you were offered at SFU?**

- Far below my expectations
- Somewhat below my expectations
- Met my expectations
- Somewhat above my expectations
- Far exceeded my expectations

**Q25 . Describe in your own words what it meant to you to be offered a scholarship.**

\*

**Q26 . How would you describe your family's/guardian's characterization of the amount of the scholarship you received?**

- Far below their expectations
- Somewhat below their expectations
- Met their expectations
- Somewhat above their expectations
- Far exceeded their expectations

**Q27 . Describe in your own words what it meant to your family/guardian for you to be offered a scholarship.**

\*

**Q28 . Did you have a paid tutor during your last two years of high school?**

- Yes
- No

**Q29 . If you answered yes to Q28, please check the courses you had a paid tutor for in high school?**

- Biology
- Chemistry
- English
- Math
- Physics
- Other (Please specify in Q30)

**Q30 . If you checked "other" for Q29, please indicate the subject you had a paid tutor in high school.**

**Q31 . Describe what were the personal factors that motivated or influenced you to be offered a scholarship.**

\*

**Q32 . Who was the person that provided the greatest motivation or influence on you being offered a scholarship?**

- Father
- Mother
- Grandfather
- Grandmother
- Brother
- Sister
- Friend
- High School counsellor
- Other (Please specify in Q33)

**Q33 . If your checked "other" for Q32, please indicate who was your greatest motivation or influence on you being offered a scholarship.**

**Q34 . Why was this person the greatest motivation or influence on you being offered a scholarship offer?**

\*

**Q35 . Describe the support you received from your high school to apply for scholarships.**

\*

**Q36 . Describe any reservations or lingering questions that you have about your choice to attend university in general. (To respond specifically about SFU, see Q37)**

\*

**Q37 . Describe any reservations or lingering questions that you have about your choice to attend SFU?**

\*

**Q38 . In addition to your scholarship, rank the three most important sources of funds for your education (1=most important, 2= second most important source, 3=third most important source).**

	<b>1</b>	<b>2</b>	<b>3</b>
Support of parents/family :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Registered Education Savings Plan :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grants/Bursaries :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Summer employment :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work during the school year :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bank Loan/Line of Credit :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Student Loans :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal savings :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Loan from family :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Co-op workterms :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify in Q39) :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q39 . If you checked "other" for Q38, please describe this source of funding for your education.**

**Q40 . Have you applied or are you planning to apply for a student loan in your first year?**

- Yes  
 No

**Q41 . Have you applied or are you planning to apply for a bursary (non-repayable grant) at the institution you plan to attend to support unmet financial need?**

- Yes  
 No

**You are more than half way done this survey and this final set of questions is the easiest part.**

Answer

**Q42 . What is your sex?**

- Male  
 Female  
 Other

**Q43 . What is your mother's highest level of education?**

Select One...  \*

**Q44 . What is your father's highest level of education?**

Select One...  \*

**Q45 . Of what countries are you a citizen? Please select all that apply.**

- Canada, by birth  
 Canada, by immigration  
 Other (please specify in Q46)

**Q46 . If you checked "other" for Q45, please specify of what countries other than Canada that you are a citizen.**

**Q47 . Of which countries is your mother/guardian a citizen?**

- Canada, by birth  
 Canada, by immigration  
 Other (please specify in Q48)

**Q48 . If you checked "other" for Q47, please specify what countries other than Canada that your mother/guardian is a citizen.**

**Q49 . Of which countries is your father/guardian a citizen?**

- Canada, by birth
- Canada, by immigration
- Other (please specify in Q50)

**Q50 . If you checked "other" for Q49, please specify what countries other than Canada that your father/guardian is a citizen.**

**Q51 . What is your first language?**

- English
- French
- Arabic
- Cantonese
- Dutch
- Farsi
- German
- Greek
- Hungarian
- Italian
- Korean
- Mandarin
- Polish
- Portuguese
- Punjabi
- Russian
- Spanish
- Tagalog (Filipino)
- Tamil
- Ukrainian
- Vietnamese
- Other (Please specify in Q52)

**Q52 . If you checked "other" for Q51, please indicate your first language?**



**Q53 . What is your mother's first language?**

- English
- French
- Arabic
- Cantonese
- Dutch
- Farsi
- German
- Greek
- Hungarian
- Italian
- Korean
- Mandarin
- Polish
- Portuguese
- Punjabi
- Russian
- Spanish
- Tagalog (Filipino)
- Tamil
- Ukrainian
- Vietnamese
- Other (please specify in Q54)

**Q54 . If you checked "other" for Q53, please indicate your mother's first language.**

**Q55 . What is your father's first language?**

- English
- French
- Arabic
- Cantonese
- Dutch
- Farsi
- German
- Greek
- Hungarian
- Italian
- Korean
- Mandarin
- Polish
- Portuguese
- Punjabi
- Russian
- Spanish
- Tagalog (Filipino)
- Tamil
- Ukrainian
- Vietnamese
- Other (Please specify in Q56)

**Q56 . If you checked "other" for Q55, please indicate your father's first language.**

**Q57 . Are you a member of a visible minority?**

- Yes
- No

**Q58 . If you checked "yes" for Q57, please indicate to which visible minority group you belong.**

**Q59 . Where will you be living for the Fall 2009 school year?**

- Residence on-campus
- Off-campus with parents
- Off-campus with other family members
- Off-campus with roommate(s)
- Off-campus on your own
- Other (please specify in Q60)

**Q60 . If you checked "other" in Q59, please specify where you will be living for the school year?**

**Q61 . Where is your parent(s)/guardian(s) primary residence?**

- Metro Vancouver
- Rest of British Columbia
- Another province/territory
- Outside Canada

**Q62 . What is your parents/guardians postal code in Canada?**

\*

**Q63 . Please provide the name of the high school you attended.**

\*

Submit

Close

## **Appendix B.**

### **Pilot Test Process**

#### **Pilot Test of Survey**

**April 22, 2009**

#### **Directions for Filling Out Survey**

Each student completes on-line survey independently. Jot down any questions on paper copy of survey. Note time at start and completion of the survey.

#### **Focus Group Questions**

Is the email that will be sent to the research participants clear?

What are your general impressions of the survey?

Were there any questions that were unclear? Difficult to understand? Confusing?

Was there anything that was uncomfortable to answer?

Were there any questions you wished I had asked?

## Appendix C.

### Second Pilot Test

#### Email Directions to Second Group of Student Pilot Testers

Dear Student

Here is the email that the students will receive about the survey plus a link to the survey. What I would like you to do is complete the survey, noting the length of time it takes you to complete. Once you have completed the survey please send me an email answering the following questions:

- How long did it take you?
- What are your general impressions of the survey?
- Were there any questions that were unclear? Difficult to understand? Confusing?
- Was there anything that was uncomfortable to answer?
- Were there any questions you wished I had asked?
- Any other comments?

What might assist you is to have a sheet of paper and note the question number and comments while going through the survey. This may extend the time slightly but don't worry about that.

Thank you so much for agreeing to assist me in the pilot phase of this research. To acknowledge your assistance please stop by my office as I have a small token of appreciation to give you. I am in [MBC 3106](#).

## Appendix D.

### Email Invitation to Participants

#### Email Invitation and Expressed-Opt in Consent

Dear Scholarship Recipient

My name is Kate Ross and I am a doctoral student in the Faculty of Education at Simon Fraser University (SFU). I am the principal investigator of a research study examining the effects of institutional merit-based student aid on student aspirations, choice, and participation. This study has been approved by the Research and Ethics Board at SFU.

Input from students who were offered an entrance scholarship at one or more institutions is important and your responses to the survey are central to this research. You are being asked to participate because you received a scholarship offer from SFU. Your input is important whether you accepted or did not accept SFU's offer of scholarship.

As an incentive to participate in this study, students that complete the survey will be entered in a draw for two \$250 bookstore vouchers from their institution's bookstore or bookstore of choice. To be eligible for the draw, your survey response must be submitted by July 17, 2009.

Thank you for taking the time to complete the survey. Your responses are important to the success of this research.

#### Informed Consent to Participate

By clicking on the survey link below and filling out the survey, you are consenting to participate in the research study entitled: The effect of institutional merit-based aid on student aspirations, choice, and participation: A mixed methods approach.

Your participation is voluntary and you are free to withdraw from the survey at any time without consequences.

There are no reasonably foreseeable harms or benefits that may result from participation as a research subject. Neither your responses to the questionnaire nor your decision about participation will have any impact on your scholarship offer.

The survey should take about 20 minutes to complete and is being conducted over a secured and encrypted SFU web site. Responses are confidential and no participants will be identified by name.

If you have any concerns or complaints, please contact Dr. Hal Weinberg, Office of Research Ethics at [hal\\_weinberg@sfu.ca](mailto:hal_weinberg@sfu.ca) or 778 782 6593.

You may obtain copies of the results of the study, upon its completion by contacting: Kate Ross at [kuross@sfu.ca](mailto:kuross@sfu.ca) or [kuross@sfu.ca](mailto:kuross@sfu.ca).

Click on the survey link if you consent to complete the survey  
<http://websurvey.sfu.ca/survey/36275759>

Please delete this email if you choose not to participate in the survey.

Thank you,  
Kate Ross

## Appendix E.

### Survey Reminders

#### Reminder Email End of Week 1

Dear Award/Scholarship Recipients

Last Sunday, June 28, 2009, you received an email from me requesting your participation in an on-line survey as part of my doctoral research at Simon Fraser University.

If you have already completed the survey, I thank you for your participation and taking the time to complete the survey.

If you **have not yet** completed the survey, your participation would be very helpful to me as every response is essential to the accuracy of the data and the completion of my doctoral dissertation. It should take you about 20 minutes.

By clicking on the survey link below and filling out the survey, you are consenting to participate in the research study entitled: The effect of institutional merit-based aid on student aspirations, choice, and participation: A mixed methods approach. The survey is being conducted over a secure and encrypted SFU web site. Responses are confidential and no participant can be identified by name.

Remember to **enter the draw** to receive **one of two \$250.00 bookstore vouchers** for the bookstore of your choice.

Thank you for your generous support of this research.

Best regards,  
Kate Ross  
Doctoral Student

To participate in this survey go to the following URL:  
\_token\_

Please don't reply to this message, direct all inquiries to [kuross@sfu.ca](mailto:kuross@sfu.ca)

Please delete this email if you choose not to participate in the survey.

## Reminder Email End of Week 2

Dear Award/Scholarship Recipients

This is the final notification requesting your participation in filling out an on-line survey as part of my doctoral research at Simon Fraser University. The survey will close the morning of July 17, 2009.

To all of you who have already completed the survey, I cannot thank you enough for your participation in this research.

If you have not yet completed the survey, your participation would be very helpful to me as every response is essential to the accuracy of the data and the completion of my doctoral dissertation. It should take you about 20 minutes.

By clicking on the survey link below and filling out the survey, you are consenting to participate in the research study entitled: The effect of institutional merit-based aid on student aspirations, choice, and participation: A mixed methods approach. The survey is being conducted over a secure and encrypted SFU web site. Responses are confidential and no participant can be identified by name.

Remember to enter the draw to receive one of two \$250.00 bookstore vouchers for the bookstore of your choice.

Thank you for your generous support of this research.

Best regards,  
Kate Ross  
Doctoral Student

To participate in this survey go to the following URL:  
\_token\_

Please don't reply to this message, direct all inquiries to [kuross@sfu.ca](mailto:kuross@sfu.ca)

Please delete this email if you choose not to participate in the survey.



## Appendix F.

### Summary of Data Analysis for Each Research Sub-Question

Research Question	Survey Questions	Data Analysis
What are the similarities and differences in the population using the following variable:		
a. Merit-aid type (automatic vs. applied)	Q9 by Q17	Descriptive statistics to compare yield and $\chi^2$
b. Merit-aid level (small, medium or large)	Q9 by Q17	Descriptive statistics to compare yield and $\chi^2$
c. Citizenship for student and parents (non-immigrant, immigrant or permanent resident)	Q45 by Q17 Q47 by Q17 Q49 by Q17 Constructed variable: Q47 & 49 by 17	Descriptive statistics to compare yield & $\chi^2$
	Q9 by Q45 by Q17 Q9 by Q47 & 49 by Q17	Descriptive statistics to compare yield & logistic regression to predict probability of membership
d. Parent/Guardian level of education	Q43 by Q17 Q44 by Q17 Constructed variable: Q43 & Q44 by Q17	Descriptive statistics to compare yield & $\chi^2$
	Q9 by Q43 & 44 by Q17 Q9 by Q43 & 44 by Q17	Descriptive statistics to compare yield & logistic regression to predict probability of membership
e. socio-economic status (postal code)?	Q62 by Q17 Q62 by Q9 by Q17 Q62 by Q47 & 49 by Q17 Q62 by Q43 & 44 by Q17	Descriptive statistics to compare yield & logistic regression to predict probability of membership

Research Question	Survey Questions	Data analysis
What is the aspiration effect of institutional merit-based aid on students' academic performance?	Q23 e & f Q23 e & f by Q17 Q23 e & f by Q47 & 49 by Q17 Q23 e & f by Q43 & 44 by Q17	Descriptive statistics
What role does the aspirations of parents/ guardians play in affecting the academic performance of children in receiving merit-based financial aid?	Q23 g & h Q23 g & h by Q17 Q23 g & h by Q47 & 49 by Q17 Q23 g & h by Q43 & 44 y Q17 Q32 by Q17 Q34 Q28 by Q9 by Q17 Q28 by Q47 & 49 by Q17 Q28 by Q47 & 49 by Q62 Q28 by Q43 & 44 by Q47 & Q49	Descriptive statistics  Descriptive statistics & $\chi^2$ Qualitative analysis of themes Descriptive statistics
What role did the different types of institutional merit-based aid play in a student's decision to attend university?	Q1 & Q2 by Q17 Q12 by Q17 Q13 & Q15 by Q17 Q14, Q16 Q12 by Q9 by Q17  Q22 & Q23a, b, & c Q18 & 19	Descriptive statistics & $\chi^2$  Descriptive statistics  Descriptive statistics & logistic regression to predict probability of membership Descriptive statistics Qualitative analysis
What did it mean to the student and their family to receive institutional merit-based aid?	Q24 & Q25 Q25 & Q27	Descriptive statistics Qualitative analysis

## Appendix G.

### Inter-Rater Reliability Coefficients

FILENAME            IntercodersubmissionApril17.csv  
filesize            2506 bytes  
*n* columns            12  
*n* variables            6  
*n* coders per var        2

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	<b>Percent Agreement</b>	<b>Scott's <i>Pi</i></b>	<b>Cohen's <i>Kappa</i></b>	<b>Krippendorff's <i>Alpha</i></b>	<b><i>N</i> Agreements</b>	<b><i>N</i> Disagreements</b>	<b><i>N</i> Cases</b>	<b><i>N</i> Decisions</b>
Q3	77.78	0.75	0.75	0.75	63	18	81	162
Q4	90.12	0.84	0.84	0.85	73	8	81	162
Q18	87.65	0.83	0.83	0.83	71	10	81	162
Q19	92.59	0.88	0.88	0.88	75	6	81	162
Q25	70.37	0.68	0.68	0.68	57	24	81	162
Q27	77.78	0.75	0.75	0.75	63	18	81	162

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Appendix H.

Logistic Regression Scholarship Acceptance and Parents' Citizenship

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Differences of ParentCitizenshipCon Least Squares Means  
Adjustment for Multiple Comparisons: Tukey-Kramer

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ParentCitizenshipConstructed	ParentCitizenshipConstructed	Adj P
Both Canada by Birth	Both Canada by Immigration	0.0007
Both Canada by Birth	One Parent Canada by Birth	0.9166
Both Canada by Immigration	One Parent Canada by Birth	0.0655

---

Appendix J.

Least Square Means Paid Tutor

Least Squares Means for effect ParentCiti*Q28Answer						
Pr >  t  for H0: LSMean(i)=LSMean(j)						
Dependent Variable: AllFamiliesBeforeTax						
i/j	No, Can by birth	No, Can by immigration	No, One parent Can by birth	Yes, Can by birth	Yes, Can by immigration	Yes, One parent, Can by birth
No, Can by birth		0.0119	<.0001	<.0001	0.9943	0.9788
No, Can by immigration	0.0119		<.0001	<.0001	0.0087	0.8071
No, One parent Can by birth	<.0001	<.0001		0.9987	0.0038	0.2908
Yes, Can by birth	<.0001	<.0001	0.9987		0.0058	0.2542
Yes, Can by immigration	0.9943	0.0087	0.0038	0.0058		0.9490
Yes, One parent Can by birth	0.9788	0.8071	0.2908	0.2542	0.9490	