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Labour Market Outcomes of Visible Minority Graduates from Alberta Universities, 1997

by

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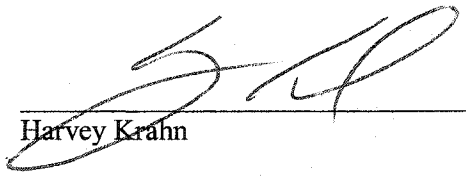

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Abstract

This study compares initial (two years after graduation) employment outcomes of 1994 Alberta universities graduates who consider themselves to be members of a visible minority group with employment outcomes of their non-visible minority counterparts. An examination of labour market experiences of visible minority members with high educational qualifications is particularly timely in light of increased demands of the Canadian post-industrial economy for highly skilled labour and a growing proportion of visible minorities among immigrants to Canada. Using the data from the 1997 Alberta Graduate Survey (AGS), this thesis asks whether investments in human capital in the form of post-secondary education by visible minority members and white graduates yield similar returns in the Canadian labour market. Previous research on racial discrimination in the Canadian labour market suggests that the disadvantaged position of racial minorities is likely due to non-recognition of their foreign credentials. This may serve as a mechanism of exclusionary social closure that utilizes educational credentials to restrict access to labour market opportunities.

By studying only graduates from Alberta universities, this study controls for the issue of non-recognition of foreign credentials and, as such, overcomes the limitations of past research that has been unable to determine the country of origin of educational qualifications of visible minority members. Therefore, if racial differences in labour market outcomes are observed in this study, non-recognition of foreign credentials cannot be used as the explanation. Results of the multiple regression analysis that controlled the effects of several additional demographic and socio-economic variables indicated that visible minority status had no significant influence on labour market outcomes. Visible minority graduates received equal returns to their university degrees; their unemployment rate, earnings, and employment quality did not differ significantly from those of other graduates. What appeared to have given advantage to visible minority members in the labour market, particularly with respect to finding employment, were their networks of social relationships. These social networks may also have

contributed to the income advantage for visible minority graduates with degrees in Law, Medicine and Dentistry. Overall, this study provided no evidence of racial discrimination against visible minority members who obtained their post-secondary educational credentials in Alberta.

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I: Introduction

The labour market is one sphere with the potential for racial discrimination to manifest itself in Canadian society. The labour market, characterised by differential employment success, serves as an arena wherein racial economic disparity can be perpetuated. Most sociological research that deals with questions of labour market discrimination involving ethnic and racial minorities provides evidence of persistent disparities in labour market outcomes between members of racial minority groups and their white counterparts. The literature is divided, however, with respect to the question of whether this disparity remains among racial minorities with high educational qualifications, particularly when such qualifications were obtained in Canada.

This thesis compares initial employment outcomes of visible minority adults and their non-visible minority counterparts (used as a comparison group) who graduated from Alberta universities in 1994. The central question is whether labour market outcomes of members of visible minority groups who possess Canadian post-secondary education differ substantially from those of non-visible minority graduates. This study of labour market discrimination involving racial minorities is particularly timely as a result of several social, economic, and demographic transformations that have taken place in Canada in the past 30 years.

Specifically, in the wake of changes to the immigration selection criteria legislation, Canada has been admitting a growing number of racial minorities, arriving predominantly from 3rd World countries. Consequently, the proportion of the Canadian labour force identifying itself as having visible minority status[1] has been growing rapidly since these changes were adopted in the late 1960s. In 1996, visible minorities constituted 11.2 percent of the Canadian population

[1] The term "visible minority" refers to persons who are non-white, non-Caucasian, and non-Aboriginal. The visible minority population includes Blacks, Chinese, Filipinos, Japanese, Koreans, Latin Americans, other Pacific Islanders, South Asians, South East Asians, West Asians, and Arabs (Kelly, 1995:3).

and this number is expected to rise to 20 percent by 2016. Changes to the immigration policy legislation were adopted as a response to the changing demands of the Canadian labour market that placed increased value on skills and education of workers. The need to attract highly skilled and educated immigrants stemmed from the demand of the Canadian post-industrial economy for highly skilled labour. Furthermore, labour market shortages of skilled workers that are already affecting certain sectors of the Canadian labour market increase the need to develop a better understanding of labour market experiences of visible minority members who constitute a rapidly increasing component of the Canadian labour force.

This is a study of racial inequality and labour market discrimination. The concept of inequality or stratification entails differential ranking of individuals, and inequality occurs in various spheres of society such as the labour market. In itself, inequality or stratification do not imply negative effects when they occur as a result of different abilities and qualifications of individuals in their competition for material rewards. Stratification becomes problematic when it reflects inequality of opportunity and rewards for certain groups of people for reasons other than their abilities and qualifications. Labour market discrimination occurs when individuals with similar qualifications and potential are denied access to labour market opportunities on the basis of phenotypic/ascribed characteristics such as race.

Several theoretical approaches are used in this study to facilitate a better understanding of racial discrimination in the labour market and to situate the problem within a larger sociological context. Human capital theory, which places an emphasis on individuals' skills, knowledge, and abilities as a basis for economic success, serves as an explanation of the supply side of the labour market. On the demand side are labour market segmentation theories, which

assert that while investments in human capital (in the form of education and training) may yield greater economic returns, there exist structural barriers that reduce labour market opportunities for certain types of workers based on predefined criteria. By studying racial inequality and labour market discrimination, this study addresses the question of social closure mechanisms. Theories that identify the mechanisms of social closure based on either race or education are utilised as explanations of structural barriers specified by labour market segmentation theories.

It is argued that, prior to the widespread adoption of employment equity legislation, the disadvantaged position of visible minorities in the Canadian labour market, characterised by their marginalisation into low-paying jobs, was rooted in overt racial discrimination. In this marginalisation process, the so-called "closure" of racial minorities occurred on the basis of the collective criteria of race. According to the "ethnically blocked mobility" hypothesis developed by Porter (1965), ethnicity and race serve as criteria of exclusion to deny ("block") labour market opportunities to ethnic and racial minorities, which ultimately results in the formation of labour market hierarchies that stratify individuals according to their ethnicity or race. Thus, from the "ethnically blocked mobility" perspective, labour market disadvantages of racial minorities are due to their phenotypic/ascribed characteristics.

Since the adoption of employment equity and human rights legislation (in the form of Employment Equity and Multiculturalism Acts), it has become increasingly difficult to engage in racially discriminatory practices that deny access to labour market opportunities to members of visible minorities on the basis of their phenotypic characteristics. At the same time, the post-industrial economic order has placed an increased emphasis on human capital characteristics of labour force participants. As a consequence, new forms of labour market

segmentation have materialised in the late 20th century. Educational qualifications have emerged as a new form of exclusionary closure (a process referred to as credentialism) in the post-industrial economy (Collins, 1979; Murphy, 1988; Parkin, 1979). Specifically, educational credentials can be used to screen members of certain groups from accessing the structure of privilege. Thus, the collective criteria of exclusionary closure based on race that were dominant in the past were superseded by the individual criteria of closure based on educational credentials.

For racial minorities in Canada, non-recognition of their foreign credentials has been argued to be the new, more subtly racist structural mechanism that serves to restrict them from entering the economic hierarchy at higher levels and helps to maintain traditional stratification patterns. The visible minority population in Canada is predominantly foreign-born. At the time of the 1996 Census, 68% of visible minorities were immigrants, 92% of whom arrived in Canada after 1971 (Statistics Canada, 1996). Increasingly, these recent immigrants are highly educated, the majority of adults arriving in Canada with post-secondary educational qualifications. Over 40 percent of adult immigrants (15 years of age and older) who arrived in Canada in 1999 possessed post-secondary degrees (either Bachelor's, Master's or Doctorate) (Citizenship and Immigration Canada, 2000). However, despite high educational qualifications of visible minority immigrants, there is strong evidence that their educational credentials obtained outside of Canada are frequently not recognised by Canadian employers. Non-recognition of foreign educational credentials can deny racial minorities opportunities in the Canadian labour market, thus, creating a new form of labour market segmentation of the visible minority population.

Past research that attempted to explain employment outcomes for ethnic and racial minorities in the Canadian labour market has been handicapped by an inability to assess the country of

"origin" of their educational credentials. Direct measures of the "origin" of educational background are rare in social surveys. Consequently, researchers had to find alternative, indirect ways to measure this concept. Not only are the studies that assess the origin of educational qualifications of visible minority groups scarce, but they also lack conclusive evidence of whether visible minorities who obtained their educational qualifications in Canada are able to overcome their disadvantaged position and enjoy equal access to employment opportunities in the Canadian labour market. Given current and projected shortages of skilled workers in Canada, the issue of differential treatment of visible minority members who possess Canadian educational qualifications becomes a major policy concern.

Previous research on labour market discrimination (reviewed in depth in Chapter III) determined the presence of discrimination primarily by means of the residual method. This method attributes the difference in labour market outcomes (e.g., income) that remains after controlling for socio-demographic characteristics to discrimination. Given the residual nature of the method, researchers who utilised this approach have urged that their findings should be interpreted with caution. It is possible that, in addition to discrimination, the residual difference in labour market outcomes may be due to other factors. For example, differential outcomes may be due to the lack of cultural or social capital of visible minority members, which can manifest itself as an inability to access sufficient information about available opportunities in the labour market or as an inability to present oneself effectively during interviews. Different outcomes may also be due to motivational factors that determine career aspirations of members of ethnic and racial minorities. Although this analysis will utilise the residual method to assess the extent of labour market discrimination, it is argued that due to the nature of the population under study, cultural or social capital deficiencies can be ruled out as an explanation of any residual difference. It is safe to assume that by the time visible minority

members graduate from a post-secondary program at a Canadian university, their cultural and social capital should not differ substantially from other graduates.

Despite the social, economic, and demographic changes that continue to affect the composition and the demands of the Canadian labour market, research on racial discrimination in the labour market has not kept up with these trends. In an attempt to bridge this gap, this study will update the existing research on labour market discrimination of racial minorities. Furthermore, in addition to its inability to determine the country of origin of educational qualifications of racial minority members (as noted earlier), previous research on labour market outcomes of racial minorities also adopted a narrow conceptualisation of labour market outcomes. As will be discussed in Chapter III, studies of labour market disadvantages of visible minority members have primarily utilised income and occupational status as measures of labour market outcomes. Research in the area of labour market outcomes has emphasised the importance of extending this conceptualisation beyond the traditional measures of income and occupation, to include job quality, unemployment, and underemployment. However, previous studies of racial labour market inequalities have failed to look beyond measures of occupation and income. This analysis will extend the scope of the past research on racial discrimination. In addition to measures of employment outcomes that have been utilised in the past (e.g., income), it will consider racial differences in the quality of employment, which have been previously neglected.

To summarise, by studying visible minority members who graduated from Canadian universities in Alberta, the present analysis is able to overcome the limitation of past research that failed to identify the country from which educational credentials were obtained. As all respondents possess Canadian post-secondary education, this study controls for (not measures directly) the source country of educational qualifications. From a theoretical perspective, by

comparing employment outcomes of Canadian university graduates who consider themselves to be members of a visible minority with those of university graduates who do not, the present study is designed to control for the effect of social closure mechanisms based on educational credentials (i.e., credentialism). Since both groups possess educational degrees from the same Alberta universities, non-recognition of foreign credentials will be ruled out as an explanation of differences in employment outcomes. If employment inequality persists even when visible minority members obtained their educational qualifications in Canada, it can be deduced that, for the labour market as a whole, other forms of discrimination serve as mechanisms of exclusionary closure to prevent racial minorities from having equal access to labour market opportunities.

In addition to the theoretical formulations, this study has important social policy implications. Specifically, it will demonstrate whether employment equity and pay equity programs operate effectively in the Canadian labour market so that unemployment rate, average monthly earnings, and the quality of employment of visible minority members with post-secondary education do not differ substantially from labour market outcomes of all other graduates. Furthermore, as a result of the increased demands of the post-industrial economy for highly skilled labour, there has been a renewed interest in human capital development. Indeed, in the 1990s, investments in human capital resources/potential have come to be viewed as the basis for social policy development. However, it remains unclear whether investments in human capital in the form of Canadian post-secondary education have a levelling/equalising effect on labour market opportunities for racial minority members. The present analysis of visible minority graduates from Alberta universities will be able to clarify to what extent Canadian educational credentials improve their initial labour market position.

Historical background for this study is provided in Chapter II. Theoretical approaches that guided the study of racial discrimination in the Canadian labour market are also discussed here. Chapter III provides a review of relevant Canadian research on labour market discrimination of Canadian ethnic and racial groups. Hypotheses of racial differences that are tested in this study are outlined at the end of this chapter. The design and the methodology of the 1997 Alberta Graduate Survey (AGS), which is utilised to test the hypotheses of racial differences, are discussed in Chapter IV. This chapter also details the selection procedure of the sub-sample of 1997 AGS respondents as well as the construction process of key variables. Chapter V presents a descriptive profile of the drawn sub-sample of the 1997 AGS respondents; their demographic characteristics, educational and initial labour market experiences are discussed in the preliminary fashion. Statistical results from the bivariate and multivariate analyses of respondents' unemployment rate, average monthly earnings, and the quality of employment are presented in Chapter VI. The study is concluded with Chapter VII, which discusses main results as well as strengths and weaknesses of this study. Policy implications and suggestions for future research are also provided here.

II: Historical Context and Theoretical Framework

Historical Context

Racial discrimination has permeated Canadian social structure for most of the 19th and 20th centuries. Throughout Canadian history, ascribed characteristics have been employed to stratify, segregate and discriminate against Aboriginal Canadians as well as ethnic groups such as Chinese, Japanese, Italians and Ukrainians (Henry *et al*, 1995; Das Gupta, 1996; Bolaria and Li, 1985; Li, 1999; Driedger and Halli, 2000). Historically, two charter groups, English and French, enjoyed privileged positions in the socio-economic hierarchy, although evidence exists that English occupied more superior positions than French (Porter, 1965). Other ethnic groups, on the other hand, were relegated to inferior positions and "faced obstacles to mobility, from blatant prejudice to sheer unequal resources" (Forcese, 1997:85). In the early 20th century, the majority of immigrants from Britain and USA were brought in as skilled workers and professionals who entered the class structure at an elevated level. In contrast, those immigrants from non-English speaking countries came mainly as farmers and unskilled labour (Forcese, 1997). This traditional structure of privilege that favoured those of British and American ancestry has not been challenged for much of Canadian history and was maintained with the aid of immigration policies that were designed to select immigrants on the bases of ethnic and cultural suitability criteria (Kalbach and Kalbach, 1999).

Until very recently, Canada has remained largely British and French in its composition. Since Confederation and until as recently as the 1991 Census, people of British and French origins comprised the majority of the Canadian population (over 90% at the time of Confederation and almost 70% at the time of the 1991 Census). During the 1960s, the criteria of preferred racial and ethnic background were removed from immigration policies, and selection criteria based on education, occupational skills and other factors were introduced. Changes in immigration

policy resulted in the dramatic shift in the source countries of immigrants from European to non-European. Large numbers of immigrants from Asia, Latin America and Africa have arrived in Canada since the 1970s, thus altering the "face" of the country.

Today, visible minorities constitute the fastest growing component of the Canadian population. In the 1940s, the proportion of immigrants from Asia, Latin America and Africa was only about 5% of all immigrants arriving in Canada, but this figure rose to 75% by 1991 (Basavarajappa and Jones, 1999). The proportion of these so-called "visible minority" migrants as a percentage of the total Canadian population has been growing rapidly. At the time of the 1981 Census, visible minorities represented 4.7% of the total population (1,130,000). By 1991, they accounted for 9.7% (2,715,000) and by 1996 they comprised 11.2% (3,197,480) of the total population. Furthermore, by 2016, the visible minority population is projected to reach 7 million, or 20% of the total Canadian population (Beaujot, 1999; Statistics Canada, 1996). These changes in the immigrant source countries produced an ethnically-heterogeneous labour force that has the potential to shake the traditional privilege structure that favoured British and other Western European ascendants.[2]

Although overt racial discriminatory practices, which characterised the Canadian labour market for many years, were officially prohibited since 1953 under the Canada Fair Employment Practices (FEP) Act, the legislation was "ineffective in dealing with endemic structural discrimination" (Calliste, 1987:302). There was still ample evidence of racial discriminatory practices operating in the Canadian labour market, as shown in two federal government reports

[2] Although the disadvantaged labour market position of Aboriginal Canadians raises similar concerns of racial discrimination and merits scholarly attention, this study excludes this segment of the population from the analysis and focuses on visible minorities only (for a definition of visible minority population, see page 2).

(the Daudlin (1984) report "Equality Now!" and the Abella (1984) report "Equality in Employment"). In 1986, the Canadian government adopted an affirmative action policy in the form of the Employment Equity Act. The main thrust of the legislation was to counteract systematic practices employed in the labour market to discriminate against members of certain groups. Visible minorities represented one of the four designated groups that were targeted by this legislation (the other three groups were women, Aboriginals, and persons with disabilities). The stated purpose of the Act was "to achieve equality in the workforce, and to correct the conditions of disadvantage in employment experienced by designated groups" (Minister of Employment and Immigration, 1988).

Changes in immigration policy were introduced in response to changing demands of the Canadian labour market. Major shifts in the structure of the labour force accompanied the transformation of the Canadian economy from an agricultural and industrial basis into the post-industrial economic order that began in the 1960s. The post-industrial economy is characterised by the shift from the manufacturing-based economic system to the knowledge-based system (Krahn and Lowe, 2002). Canada has undergone a major expansion of its urban economies, which resulted in a shift in the distribution of jobs by industry from manufacturing-based jobs toward jobs in the technology sector, service/consumer industry, business and social services.

These structural changes brought about an increase in the skill requirements of jobs and the demand for a highly skilled and highly educated work force (Baer, 1999; Krahn and Lowe, 1998a; Pendakur, 2000). The Canadian government invested heavily in the expansion of the educational system to meet the requirements of the labour market changes. Thus, educational attainment of the labour force has increased substantially since the 1970s. In 1971, 55.9% of

the labour force had less than a high school education. By 1991, that figure dropped to 26.7%. During the same period, the percentage of the workforce who possessed a university degree increased from 6.9% to 14.3% (Baer, 1999).

Furthermore, post-industrial restructuring of the labour force has increased demand for well-educated immigrants. Since the late 1960s, the Canadian immigration system has become highly "selective with respect to characteristics thought to be more associated with socio-economic success in an industrialised population, that is, professional and technical occupational skills, and high educational attainment" (Kalbach and Kalbach, 1999). Consequently, changes in the educational attainment of immigrants in the post-war period reflect the changes to the educational make-up of the evolving Canadian labour market as a whole.

Prior to WWII, most immigrants to Canada possessed relatively low levels of education. For example, at the time of the 1961 Census, 59% of immigrants who arrived prior to WWII had only elementary education or none at all. Eighty-eight percent of Ukrainian, 82% of Italian, 81% of Polish and 80% of Asian immigrants possessed these lowest educational levels (Kalbach, 1970). In contrast, immigrants arriving in Canada after the changes to immigration policy were increasingly highly educated. Twenty percent of adult immigrants (25 years old and older) who arrived in Canada between 1986 and 1994 possessed a university degree (Akbari, 1999). Of adult immigrants (15 years of age and older) who arrived in Canada in 1999, over 40% possessed post-secondary degrees (either Bachelor's, Master's or Doctorate) (Citizenship and Immigration Canada, 2000).

Thus, education was not as crucial for social and economic success during the pre-war period as it has become during Canada's period of post-industrialism (Kalbach, 1970:192). But, while Canada has been succeeding in attracting "much-needed immigrant talent" to help satisfy the demands of its knowledge-based economy, it has also been depleting the national human capital resources of the developing countries, from which these immigrants are arriving (Rao, 2001). This, however, is a subject that goes beyond the scope of this thesis.

Despite the desire to attract highly educated immigrants to fulfil the needs of Canada's post-industrial economy, racial minorities have continued to face formidable difficulties in securing satisfactory employment. Specifically, while educational and professional credentials from England, USA and other Western European countries were typically accepted by Canadian employers, credentials from other countries were not. It has been argued that non-recognition of foreign credentials has emerged as a new form of discrimination that prevents racial minorities from accessing labour market opportunities in Canada (McDade, 1988).

This thesis examines initial labour market outcomes for visible minority adults who graduated from Alberta universities in 1994 and compares them with the outcomes for non-visible minority graduates from the same post-secondary institutions. If significant patterns of racial inequality are still observed, we will have to conclude that, in addition to the non-recognition of foreign credentials, other discriminatory practices continue to exist in the Canadian labour market.

In light of the discussed transformations in the Canadian society and economy, this study is particularly timely as it examines labour market experiences of the segment of the Canadian population that has become the fastest growing component of the country's labour force and is

increasingly well educated. Furthermore, given that the value of formal post-secondary education in the post-industrial Canadian economy has increased and education has come to play a more central role in determining job allocation, it becomes increasingly important to investigate labour market experiences of visible minority members who possess high educational credentials, and particularly those members who obtained their qualifications in Canada. Analysis of initial labour market outcomes of visible minority adults who graduated from Alberta universities in 1994 will thus contribute to an understanding of the value of Canadian post-secondary education for the economic success of visible minority members. Lastly, growing shortages of skilled labour in some sectors of the Canadian labour market gives/lends even more urgency to this topic.

Theoretical Framework

In this section, the analysis of initial labour market outcomes of 1994 graduates of Alberta universities is situated within a suitable theoretical framework. Human capital and labour market segmentation theories are discussed. Hypotheses of social closure mechanisms based on (1) race and (2) education are proposed as two explanations of structural barriers specified by labour market segmentation theories. This theoretical framework facilitates an understanding of the issue under study and frames it within a larger sociological context. Further, it enables its comparison with other research that utilised similar theoretical approaches. The theoretical framework chosen for this analysis also enables formulation of testable research hypotheses that can guide the empirical analysis.

Social stratification in any given society emerges as a result of individual competition for scarce resources. It can be defined as "the differential ranking of the human individuals who compose a given social system and their treatment as superior and inferior relative to one

another in certain socially important respects" (Parsons, 1954:69). Stratification and inequality in the labour market emerge as a consequence of competition for material rewards (Anisef *et al*, 1982; Forcese, 1997; Driedger and Halli, 2000). The underlying principle that distinguishes a liberal and democratic society, which Canada considers itself to be, is that individuals are provided with equal opportunity to compete for unequal rewards. If individuals are given equal opportunities, then stratification and inequalities emerge as a consequence of differing abilities and other factors. In this sense, labour market stratification is not problematic. When there are no barriers to employment, and the acquisition of proper qualifications opens up more opportunities and leads to upward mobility, stratification does not represent a disadvantage (Reitz, 1990). Conversely, stratification does represent a disadvantage when it is a result of the denial of equal opportunities to individuals with similar abilities and qualifications.

The debate concerning structural inequalities that characterise the Canadian labour market is preoccupied with the factors that determine an individual's position in the labour force. Are the hierarchical distinctions among labour force participants due to true differences in their abilities or are they a result of unequal access to labour market opportunities and resources? This is a very basic sociological question that is concerned with an opportunity structure of any given society. Several theories attempt to interpret what determines an individual's position in the labour market and why some are more successful in the competition for material rewards than others.

Human Capital Theory

Human capital theory provides a framework for explaining individual differences in employment outcomes. According to this neo-classical theory, economic success in the labour market is determined by the human capital people possess. If capital is understood as "the

principal or fund employed in earning interest or profits," then human capital is that principal embodied in people (Eastman, 1987:69). Thus, knowledge, skills and abilities that people possess are considered their human capital, which is expected to yield profits. Human capital theory rests on the notion of investment in people. Investments in one's knowledge, in the form of formal education and training, are seen as investment in one's "fund" or "principal" that will result in higher entry positions into and subsequent greater success in the labour market (Hornbeck and Salamon, 1991; Eastman, 1987). Thus, human capital theory posits that labour market inequality is a direct result of differences in individual's investment in human capital.

The modern neo-classical version of human capital theory is rooted in Adam Smith's economic formulations, which viewed people as one of the most important resources of a nation. People's skills and knowledge were seen as a form of capital, crucial for the generation of wealth; the quality of human input was considered inseparable from economic success and growth (Eastman, 1987). Grounded in the ideas of Adam Smith, human capital theory was formulated by an American economist, Gary Becker. In Becker's view, the theory is concerned exclusively with wage/income differences (material rewards). It assumes a perfectly competitive labour market and posits that individuals' incomes vary according to the differences in the amount of human capital content, a quotient of variables such as formal education and training undertaken by individuals (Becker, 1964).

The importance of human capital for achieving income success has been further extended to analyses of occupational structure. Sociological research on the distribution of job rewards has been dominated by the approach taken by Blau and Duncan (1967) who developed a causal model of socio-economic achievement that emphasises the importance of educational credentials (in addition to other factors such as father's education and occupation) for

predicting an individual's first job and their subsequent occupation. This model is known as the status attainment model. Later, human capital theory was utilised in analyses of the distribution of other job rewards such as benefits, job security, and the quality of working conditions (Juster and Duncan, 1975). Indeed, Duncan (1976) found that human capital variables have a greater explanatory power when the dependent variable includes additional measures of economic success.

The increase in educational attainment of labour force participants that accompanied the process of post-industrialism can be interpreted as growing investments in human capital that improved the quality of the Canadian labour force (Forcese, 1997; Boyd *et al*, 1985; Krahn and Lowe, 2002). Post-industrialism brought with it a new opportunity structure, in which education came to play an increasingly important role. The so-called "knowledge workers" - those with high levels of education who are involved in the production and dissemination of knowledge (e.g., scientists, professionals, etc.)- have become crucial for the knowledge-based economy (Bell, 1973; Reich, 1991).

Allocation of jobs in the post-industrial occupational structure has come to be largely determined by individuals' qualifications. Human capital came to play a more prominent role in access to and allocation of labour market opportunities and rewards. Indeed, since the 1960s and 1970s, human capital development has been emphasised by the Canadian federal government "as the most important public policy goal" for building the knowledge economy. By the 1990s, it has come to form the core of social and economic policy debate (Krahn and Lowe, 2002:149; Alexander, 1997). As a result, in the last two decades there has been a renewed interest in human capital theory, its measurements and concepts, in the academic literature. As a leading public policy theme, human capital development is viewed as a means

of reducing labour market inequalities as well as a means of improving productivity and economic growth (Jerome-Forget, 1997).

Human capital theory has been attacked by researchers studying labour market outcomes for disadvantaged groups of the population (e.g., women, minorities). They have observed that human capital theory did not apply well to the study of poverty, unemployment and ghetto labour markets, where education and training appeared to have minimal influence on employment outcomes (Gordon, 1972; Kalleberg and Sorenson, 1979). Alternative theories of labour market segmentation emerged as a replacement for human capital theory. They were said to better explain the phenomena of income and occupational differentials and to point out sources of differences that could not be explained by individual characteristics emphasised by human capital theory (Eastman, 1987; Kalleberg and Sorenson, 1979; Krahn and Lowe, 1998a).

Labour Market Segmentation Theory

Historically, segmentation of the labour market has occurred as a result of various forces, which divided it into relatively discreet segments and restricted mobility of workers between those segments (Edwards *et al*, 1975). Among the earliest formulations of these alternative theories about the segmentation of the labour market is "dual labour market" theory. This approach views the market as being divided into two distinct sectors: primary and secondary. Piore was one of the first to articulate clearly the distinction between the two sectors.

> "[T]he primary market offers jobs which possess several of the following traits: high wages, good working conditions, employment stability and job securing, equity and due process in the administration of work rules, and chances for advancement.
> The...secondary market has jobs which, relative to those in the primary sector, are decidedly less attractive. They tend to involve low wages, poor working conditions, considerable variability in employment, harsh and often arbitrary discipline, and little opportunity to advance" (Piore, 1971:91 as cited in Gordon, 1972:46).

The most fundamental characteristic of the dual or segmented labour market is restricted mobility of workers between the segments or sectors. Indeed, the segmentation of the labour market is said to produce non-competing groups of workers (Kalleberg and Sorenson, 1979). Therefore, initial entry into the labour market and future upward mobility from the secondary to the primary labour market is hindered by structural barriers that prohibit access of workers to jobs within the primary sector, thus preventing their socio-economic achievement.

While human capital theory focuses on the supply side of the labour market, labour market segmentation theories focus on the demand side of the labour market. Human capital theory emphasises individuals' knowledge, skills and abilities that improve productivity. Thus, differences in income distribution can be altered by an individual through investments in formal education and other training. Alternatively, labour market segmentation theories argue that "only altering the structure of demand and of the opportunities offered by the job structure can alter the distribution of income" (Birnbaum, 1975:151).

On the surface, the two theories appear to be contradictory in their nature and their implications. According to human capital theory, the labour market operates in an open society that maximises equality of opportunity where societal resources and job rewards are distributed according to individual merit. Conversely, segmented labour markets operate in a closed society that minimises equality of opportunity where class, race, and gender, not meritocracy, determine economic success (Anisef *et al*, 1982; Eastman, 1987; Edwards *et al*, 1975). The former theory presents a picture of individuals as agents of their own success, while the latter paints a portrait of individuals at the mercy of prevailing systemic mechanisms.

It is important to point out that it is not the objective of this study to test the applicability of competing theoretical paradigms. In fact, despite appearing contradictory in their implications, both theories can be seen as complementary within the context of supply and demand. Although a number of empirical analyses lend considerable support to the labour market segmentation, this theoretical formulation does acknowledge the importance of human capital variables for predicting labour market outcomes, thus allowing for interaction between the two approaches (Edwards *et al*, 1975; Gordon, 1972). Furthermore, segmentation theories recognise that the influence of education on labour market outcomes operates to a greater degree in the primary sector, which is characterised by jobs with higher wages, better working conditions and increased job security. Returns on human capital investment in the primary sector tend to exceed those in the secondary sector. Indeed, educational requirements are seen as barriers that are used to differentiate job requirements and bar entry into jobs in the primary sector (Piore, 1975; Gordon, 1972; Krahn and Lowe, 1998a; Pendakur, 2000).

Thus, processes postulated by human capital theory tend to operate in the primary sector more efficiently than in the secondary sector, where workers mobility is barred by institutional constraints. Indeed, segmentation theories maintain that entry positions into the labour market, the secondary market in particular, are largely determined by individuals' ascribed characteristics rather than their achieved characteristics (i.e., human capital). As Gordon (1972) put it, "[e]very version of the theory posits that race and sex will probably serve as fairly accurate predictors of inter-sectoral allocation as workers enter the market. Both minority group members and women are much more likely to begin their careers in the secondary market than white males" (Gordon, 1972:50). Thus, despite possessing good educational qualifications, many workers are trapped in the secondary sector jobs; their entry into the primary sector is hindered by ascribed characteristics such as gender, ethnicity and race.

Although labour market segmentation theories acknowledge that it might be discrimination on the part of employers that prevents workers from moving up into better jobs, they seldom go beyond identifying the mechanisms that segment the labour market to describe the actual processes (Kalleberg and Sorenson, 1979). Several sociological theories endeavour to fill the gaps left by labour market segmentation theories and to identify the reasons for the differential distribution of labour market rewards. In particular, the "ethnically blocked mobility" thesis has emerged as an extension of the economic theories of labour market segmentation, as an attempt to explain why some ethnic groups are more successful in the Canadian labour market than others.

Social Closure: Ethnically Blocked Mobility

The "ethnically blocked mobility" hypothesis offers one of the explanations of structural barriers, specified by segmentation theories, which operate in the labour market to restrict the labour force mobility of certain groups of people. The thesis attributes differential access to employment opportunities in the labour market to pre-existing hierarchies that segregate workers into low-paying jobs based on their ethnicity. The "ethnically blocked mobility" hypothesis, introduced by Porter (1965), treats ethnicity as a fundamental force in the formation of classes in Canadian society and the stratification of the Canadian labour market. If mobility is considered as a measure of social opportunity, then blocked mobility implies that individuals are denied equality of opportunity. In sum, the "ethnically blocked mobility" thesis attributes differential outcomes and labour market inequality that cannot be explicated by individuals' achieved characteristics to discrimination on the part of the powerful elite groups to segregate ethnic non-charter groups into lower status positions. Discrimination occurs when workers with equal abilities and achieved characteristics do not share the same rewards because they are

denied access to them. Ascribed characteristics, in this case ethnicity, thus form the basis of social status, which is measured in our society by occupational prestige and material rewards one receives in the labour market.

The "ethnically blocked mobility" thesis stems from Max Weber's theoretical formulations on social stratification. By specifying the link/relationship between class and ethnicity, Porter grounded his explanation of the existing social and labour market hierarchies in the relations of power, the concept central to Weber's work on social class structure (Forcese, 1997). Weber saw various mechanisms of social closure as the basis of social inequality. Mechanisms of social closure are generated and maintained by advantaged social classes and status groups to prevent/exclude other individuals and groups from equal access to scarce resources. The notion of social closure is based on the power of one group to deny access to societal resources and rewards to another group(s) on the basis of predefined criteria (Murphy, 1988). These criteria can take different forms. Thus, the "ethnically blocked mobility" thesis is rooted in the concept of social closure and identifies ethnicity and race as the selection criteria that exclude non-charter/non-white ethnic minorities from enjoying the same privileges and rewards in the labour market as those enjoyed by the dominant majority.

Social Closure: Credentialism

Following the formal abolishment of racially discriminatory employment practices and the adoption of employment equity and human rights legislation, it has become more difficult to employ overt/obvious tactics of racial discrimination in the contemporary Canadian labour market (Krahn and Lowe, 2002). In addition to the existing legislation, many large employers have voluntarily developed "diversity" policies as a direct response to concerns about labour market shortages and representing the changing composition of the Canadian society. As a

human resources management tactic, "diversity" policies aim at "making workplaces welcoming for everyone, regardless of their gender or race or their disability status" (Ibid: 205). However, despite the existing legislation, evidence exists that visible minorities continue to be disadvantaged in the labour market, possibly as a result of newly emerging forms of discrimination. These new forms are subtle and covert as opposed to the blatant and institutionalised discrimination of the past (Ibid: 140).

One of the mechanisms that can be employed by the advantaged social classes as a form of social closure is an emphasis on educational credentials, also referred to as "credentialism" (Murphy, 1988; Parkin, 1979; Collins, 1979). Credentialism can serve to restrict certain types of workers from entering the economic hierarchy at higher levels and help to maintain the segmented labour market. Following the rise in the importance of education for the post-industrial economic order, educational credentials have become "the major force shaping stratification in twentieth-century America... Just as the ethnic struggles shaped the other social struggles of the late nineteenth and early twentieth centuries, the permeation of educational credentials into the occupational world has shaped the major issues of stratification in recent decades" (Collins, 1979:94). The notion that educational qualifications can serve as a form of closure is not new and can be traced back to Weber (1971, 1978), who maintained that class formation was a result of two elements: education and property. Extending Weber's formulations, Parkin (1979) argued that "it is necessary to regard credentialism as a form of exclusionary social closure comparable in its importance for class formation to the institution of property" (Parkin, 1979:58). In order to capture the evolution of exclusionary mechanisms, Parkin differentiated between collectivist criteria such as race, ethnicity, and gender that apply to all members of the collectivity and individualist criteria such as educational credentials that apply to individual members. "The implication is that credentials have tended to replace racial,

ethnic, religious, and gender barriers of exclusion because they are more efficient at protecting the advantages of the credentialled of any particular generation, but at the cost of less efficiency in passing on those advantages to their off-spring" (Murphy, 1988:179).

While some post-industrial theorists argue that the post-industrial opportunity structure has reduced labour market inequalities (Bell, 1973), others contend that labour market inequalities in the post-industrial era have not subsided. On the contrary, they believe that inequalities between the "knowledge workers" (also called "symbolic analysts") and the "routine production workers" have become more pronounced. According to these theorists, new forms of labour market segmentation have materialised in the post-industrial economy, where post-secondary education became a powerful determinant of labour market success, and where, as a consequence, "symbolic analysts" have emerged as a new elite of post-industrial society (Reich, 1991). This view is consistent with the perspective held by the social closure theorists (Murphy, 1988; Parkin, 1979; Collins, 1979), who posit that in the late 20th century, educational credentials have superseded other criteria of exclusionary social closure (i.e., race, ethnicity, gender) that were dominant in the past.

But this does not mean that race and ethnicity no longer matter. In fact, with respect to ethnic and racial minorities, non-recognition of their educational credentials that originate outside of Canada is often viewed as yet another mechanism of social closure, employed to prevent the minorities from moving up the occupational hierarchy. Despite increased value being placed on immigrant education as a means of accessing the post-industrial Canadian labour market that relies heavily on highly educated and highly skilled workers, immigrants' foreign credentials are frequently not recognised in the Canadian labour market (see for e.g., McDade, 1988). In contrast to the "ethnically blocked mobility" thesis, which considers overt discrimination as the

cause of social stratification and labour market inequality, non-recognition of foreign credentials is posited to be a newly-emerged form of covert racial discrimination against ethnic minorities.

Summary: Universalism versus Particularism

Post-industrial society should theoretically see a rise in the importance of human capital and an erosion of traditional labour market barriers that employed mechanisms of social closure based on race, ethnicity, and/or sex to exclude certain groups from access to better jobs. This rational process of allocation of societal opportunities based on the criteria of ability and experience is termed "universalism," whereas the process of allocation of job opportunities based on such non-rational attributes as race and sex, which dominated the labour market during the earlier periods, is termed "particularism."[3]

> "Because an industrial occupational structure demands talent, the universalistic criteria become paramount and although vestiges of particularism remain, they are viewed as irrationalities. In this model, education plays an important role in the allocative process by training and developing intrinsic talents so that the most able get the most and best education. Thus educational achievement reflects ability and assures a maximal fit between the talent demands of the occupational structure and the talent outputs of the educational system" (Boyd *et al*, 1985:5).

In the context of the changes that have taken place in the Canadian economy/labour market as Canada advanced into the era of post-industrialism, labour market outcomes of Canadian workers should increasingly be determined by universalistic criteria. Human capital theory is expected to be more applicable to today's labour market, while evidence for labour market

[3] See Talcott Parsons' discussion of pattern variables, which constitute one dimension of his conception of an action system. Pattern variables are a set of dichotomous options of action orientations such as "ascription" vs. "achievement," "particularism" vs. "universalism." Particularistic/universalistic standards are used for the evaluation of role performance. Particularistic standards are more appropriate in relations between friends. However, in the business world, Parsons argues that rational universalistic standards should be adhered to, which judge people objectively, according to their merit.

segmentation theories is expected to wane. However, as outlined above, new forms of social closure may have emerged, thus reinforcing traditional patterns of labour market segmentation.

The focus of this analysis is to assess the extent to which particularistic criteria are still adhered to by Canadian employers in their hiring and other employment practices. The prevalence of particularistic criteria will be indicative of the continued existence of labour market segmentation barriers that prevent visible minority members from access to better primary-sector jobs, despite having educational credentials equivalent to those of non-visible minority members. Racial discrimination can operate by barring entry/denying access to visible minority members to employment in the labour market segments (i.e., firms, industries) that have "good quality" jobs. Furthermore, even when employment in these sectors is obtained, investments in human capital by visible minority members may not yield returns commensurate with their education and training. The operation of social closure mechanisms that employ educational credentials (i.e., devaluing foreign credentials) is controlled for in this analysis by studying visible minorities who possess the same educational qualifications as their non-visible minority counterparts, namely Canadian post-secondary university graduates. Therefore, credentialism is ruled out as an explanation of any differences in employment outcomes between the two groups that might be found. In addition to racial discrimination, labour market inequalities may be attributed to a variety of factors, such as differences in cultural and/or social capital, the measurement of which is beyond the scope of this study.

If racial differences are not found in this study, this evidence of the prevalence of universalistic criteria will indicate that investments in human capital by visible minority members yield similar returns as those by their non-visible minority counterparts. It will also indicate that segmentation barriers and social closure mechanisms based on race that have dominated the

Canadian labour market in the past have been eroding, and that consequently, discrimination of visible minorities is not entrenched in the Canadian labour market structure but rather is a disappearing phenomenon.

The next chapter of this thesis provides an overview of Canadian research literature on ethnic and racial discrimination in the labour market, demonstrating that segmentation barriers and social closure mechanisms based on ethnicity and race have dominated in the past. More recent studies suggesting that these barriers and mechanisms have been eroding in the contemporary Canadian labour market are also reviewed.

III: Review of Relevant Canadian Research

Sociological and economic research on ethnic stratification and segmentation in the Canadian labour market has gained importance following the dramatic changes to the composition of the Canadian labour force, outlined in a previous chapter. The debate over why some ethnic groups are more successful than others in the Canadian labour market has revolved around the "ethnically blocked mobility" hypothesis.

When examining Canadian class structure with data from three Canadian censuses (1931, 1941, 1961), Porter (1965) found a strong relationship between social class and ethnicity. His hypothesis was that ethnic groups are arranged "vertically" in Canadian society. He observed that British and French charter groups entered the social and economic structure at the top, and had good chances for upward mobility, whereas non-charter groups were locked at the bottom of the "vertical mosaic," in low status occupations. Porter depicted Canadian society as a society where access to societal resources and opportunities (wealth, power, privilege, jobs) was distributed according to membership in an ethnic group, a society where some ascribed characteristics were considered superior to others and formed the sole basis of class membership. Thus, he coined the term "ethnically blocked mobility" to describe why some ethnic groups were more successful than others in the Canadian labour market.

In the thirty years since Porter developed his thesis, there has been a large amount of research by Canadian social scientists who examined the relationship between ethnicity and socio-economic success/failure. Despite an abundance of existing research, there remains an ongoing debate over the proportionate influence of ethnicity on the socio-economic mobility of Canadian ethnic groups. Some studies discredit Porter's argument of ethnically blocked mobility and conclude that ethnicity is no longer a salient factor in the modern Canadian class

and labour market structure. Others, however, contend that while the effect of ethnic origin may have declined, stratification along racial lines has taken its place. In this section, past Canadian research will be reviewed and an attempt will be made to provide an explanation of these different conclusions.

Revisiting the Vertical Mosaic

Darroch (1979) replicated Porter's analysis of data from the 1931, 1951, and 1961 Canadian censuses as well as adding data from the 1971 Census. He found that the indices of occupational dissimilarity of ethnic groups tended to diminish over time. In other words, the level of occupational attainment of initially disadvantaged ethnic groups tended to converge with the national average over the four decades. This finding led him to question Porter's hypothesis of ethnically blocked mobility, which rests on the premise that initial stratification of ethnic groups in the Canadian labour market results in systematic discrimination of ethnic groups which precludes their mobility in the Canadian economic structure. He concluded by stating that ethnic stratification appears to be declining in Canadian society and ethnicity is no longer a drawback for socio-economic success. He insisted that the empirical evidence does not support the "ethnically blocked mobility" hypothesis and we must be "sceptical of the idea that ethnic affiliations are a basic factor in generally limiting mobility opportunities in Canada" (Darroch, 1979:16).

Lautard and Loree (1984) revised Darroch's analysis of the 1931-1971 Census data by utilising more detailed occupational scores. While both Porter and Darroch used only six broad occupational categories, Lautard and Loree utilised 388 occupational titles for 1931, 278 for 1951, 332 for 1961, and 496 for 1971 Census data. Contrary to Darroch's results, their analysis showed that ethnicity remains a salient factor in explaining occupational inequality in Canadian

society. They concluded by saying that "average occupational inequality is still substantial enough to justify the use of the concept 'vertical mosaic' to characterise this aspect of ethnic relations in Canada" (Lautard and Loree, 1984:342).

In a later study, Lautard and Guppy (1999) revisited the questions of vertical mosaic and ethnically blocked mobility, examining occupational stratification of ethnic groups in the Canadian labour market with more recent data from the 1981 and 1991 Censuses in addition to the 1931-1971 data. They found that between 1931 and 1991 there has been a decline in the significance of ethnicity for occupational attainment. The diminishing effect of ethnicity was especially noticeable in the most recent periods. These results led Lautard and Guppy to conclude that "social differentiation based on ethnicity [was] slowly eroding" (Lautard and Guppy, 1999:245).

Using data from the 1973 Canadian Mobility study, Pineo and Porter (1985) also studied the relationship between ethnic origin and occupational attainment. Having examined the correlation between ethnicity and occupations by age, Pineo and Porter established that the strength of the relationship between the two factors was rather weak. They considered their finding to be a confirmation of earlier observations made by Darroch (1979). Their results allowed them to conclude that "the vertical mosaic may have been only a period in Canadian history, a sharpening of the effects of ethnicity during the decades of great immigration" (Pineo and Porter, 1985:390). Furthermore, the results of their analysis also showed that ethnicity had no effect on occupational attainment for those born in Canada, indicating that the "ethnically blocked mobility" hypothesis is not supported when applied to second- or third-generation ethnic group members.

As recently as 1993, Isajiw, Sev'er and Driedger (1993) argued that claims of ethnicity as a drawback to social mobility must be rejected. After analysing survey data collected in Toronto, they found a persistent pattern of occupational mobility among the ethnic groups studied, indicating strong support for the convergence hypothesis that rests on the premise that, although ethnic groups are initially disadvantaged in the labour market, they make up for their disadvantage over time. They rejected Porter's model and concluded that, consistent with Darroch's (1979) findings, ethnicity does not retard occupational mobility (Isajiw *et al*, 1993:191).

The Vertical Mosaic Recast

One commonality among these authors/studies is their attention to the convergence in socio-economic attainment of different ethnic groups that has taken place in Canada in the recent past. Thus, the results of all of these studies reveal a weakening effect of ethnic background on one's economic success in the Canadian labour market, indicating waning support for the "ethnically blocked mobility" hypothesis that predicts that ethnicity hinders socio-economic success. However, what distinguishes all of these studies is that they did not address the labour market outcomes of members of non-white ethnic groups, the so-called "visible minorities." Out of 13 ethnic groups included in the analyses by Porter (1965), and later by Darroch (1979) and Lautard and Loree (1984), 11 were European and only two groups consisted of non-white respondents (Asian and Native Indian). Lautard and Loree (1984) stressed the importance of using a larger number of occupational categories in order to make the index of dissimilarity more sensitive. However, none of these scholars mention that the mean index is also sensitive to the number of ethnic groups used. Despite the fact that both non-white groups exhibited the largest index of dissimilarity in Darroch's (1979) analysis, he neglected to include more non-white groups in his analysis, as did Lautard and Loree (1984). Thus, the diminishing

occupational dissimilarity found in these studies may apply only to European ethnic groups. Furthermore, when Isajiw *et al* (1993) insisted that ethnic groups have achieved parity in terms of occupational attainment, they cautioned that all four groups under consideration were white racially and that their findings may not apply to other ethnic groups (Isajiw *et al*, 1993:192).

Agocs and Boyd (1993) noted the same problem with previous research that shows declining labour market inequality along ethnic lines during the 1931-1981 period. They argue that such conclusions are based on studies that emphasise experiences of predominantly European population (Agocs and Boyd, 1993:333). As a growing number of recent immigrants to Canada have arrived from non-European countries, it has been argued that the optimistic results based largely on European groups would not hold for non-European, non-white ethnic minorities. With the aid of 1986 Census data, Agocs and Boyd (1993) show that the occupational distribution of visible minority population is most dissimilar from the British group. Visible minorities were found to be under-represented in managerial and administrative occupations and over-represented in service, machining and product fabrication occupations. "Occupational data for 1986 do indeed offer support for the argument that the ethnic mosaic has been recast along racial-minority lines" (Agocs and Boyd, 1993:337). Thus, the authors contend that while labour market inequality based on ethnicity may have diminished, it has been replaced with racial stratification.

To summarise, one of the most important changes that has taken place since the publication of Porter's "Vertical Mosaic" is an increase in the number of non-white racial groups, which has significantly diversified the composition of the Canadian labour force. As a direct response to this ethnically and racially diverse society, policies of biculturalism have been replaced with multiculturalism policies. Although previous research has shown that the socio-economic

mobility of European ethnic groups that comprised the dominant proportion of the labour force in the past was no longer limited by their ethnic background, it is unclear whether the same pattern will apply to non-European, non-white racial groups. While European ethnic groups were able to improve their initially disadvantaged position in the labour market over time, it remains to be seen whether racial minorities will follow the same path. As Breton asks, "will this model operate when colour is involved, that is, when individuals have no choice in keeping or shedding a distinguishable trait...[and when] they have limited control over whether or not others will take it into account in their interaction with them" (Breton, 1998:88-89). He contends that colour differences may be likely to result in more persistent patterns of labour market discrimination as they make ethnic boundaries more visible than those based on culture. Evidence from studies that focus on labour market experiences of racial minorities certainly points in this direction.

Satzewich and Li (1987) addressed the earlier claims that ethnic occupational dissimilarity had diminished during the 1931-1981 period. Having examined the effect of ethnic origin on occupational status attainment (they included five non-white groups in their analysis of 16 ethnic groups who entered Canada between 1969 and 1971), they showed that the labour market stratification of ethnic groups was clearly along racial lines (Satzewich and Li, 1987:240). They suggest that there are significant labour market differentials based on race, which signify that discrimination and racial prejudice inhibit economic mobility of non-white ethnic groups.

Racial Income Inequality/Differentials

The studies by Darroch (1979), Lautard and Loree (1984), Lautard and Guppy (1999), and Isajiw *et al* (1993) considered labour market outcomes of ethnic groups only in terms of

occupational attainment. Satzewich and Li (1987) suggest that analyses of ethnic stratification need to be extended beyond measures of occupational status. Their analysis of ethnic inequality included measures of income as well as occupational status. They found that while the effect of ethnic background on occupational attainment has declined over the years, the effect of ethnicity on income has persisted. Such results led them to conclude that "there exists income discrimination on the basis of country of origin, despite controlling for occupational differences, and despite a trend toward less occupational dissimilarity between ethnic groups" (Satzewich and Li, 1987:240). Thus, discrimination in the labour market against racial minorities is more acute in terms of income disparity than with respect to occupational differences.

Evidently, research on occupational mobility does not provide an adequate picture of ethnic and racial stratification in the Canadian labour market. Neither do measures of occupational attainment assist us in assessing the overall quality of the jobs individuals get. At best, measures of occupational mobility serve as a proxy of labour market outcomes. Therefore, in order to adequately evaluate the extent of racial discrimination in the Canadian labour market, analysis of labour market outcomes of visible minority groups must take a multi-faceted approach and include various measures of their labour market position.

In his analysis of the new "vertical mosaic," Herberg (1990) examined labour market outcomes of Canadian ethnic and racial groups by including measures of remuneration in addition to measures of occupational status. He observed that although visible minorities were able to achieve parity in terms of occupational status, they "suffer[ed] from brutal income inequality" (Herberg, 1990:218). Herberg concluded that the vertical mosaic has undergone dramatic changes. While ethnic groups were able to overcome their disadvantages and improve their

socio-economic conditions, racial groups were able to achieve success in terms of occupational status but were still discriminated against with regard to income allocation. It is this type of discrimination that, according to Satzewich and Li, "accord[s] people with differential rewards for doing the same tasks" (Satzewich and Li, 1987:240).

Several other studies also show that income inequality experienced by racial minority groups persists despite their occupational achievement (Gee and Prus, 2000; Hou and Balakrishnan, 1996; Geschwender and Guppy, 1995; Lian and Matthews, 1998). Gee and Prus (2000) contend that income inequality in Canada reflects racial divisions between whites and non-whites, indicating a re-arrangement or transformation of Canada's vertical mosaic according to racial background. Using the 1994 Survey of Labour and Income Dynamics (SLID), they found that visible minorities experience an income deviation of over $3500 (from all persons who worked in 1994). Using hourly wage rate as a measure of earnings inequality, Christofides and Swidinsky (1994) found that visible minority men and women experience a wage gap of about 2 dollars per hour compared to their non-visible minority counterparts. Therefore, although occupational differences are less racially related, race remains an important determinant of income inequality.

Value of Human Capital for Economic Success

Most studies of ethnic inequality in the Canadian labour market have utilised a human capital approach to explain differences in employment outcomes of ethnic and racial minorities. Those studies that focused on occupational attainment of ethnic groups of European origin suggest that ethnicity affects occupation via education (Lautard and Loree, 1984), following the tradition of the status attainment model developed by Blau and Duncan (1967). According to

this approach, differences in occupational status between ethnic groups can be explained by differences in education and work experience.

Porter himself felt that one of the reasons for socio-economic differences between ethnic groups was differences in the amount of schooling (Porter, 1965:88). Traditionally, immigrants from Britain and USA were brought in as professionals, hence their high position in the socio-economic hierarchy. On the other hand, Ukrainians and Poles came to Canada as farmers. Furthermore, after controlling for education in their analysis of occupational attainment of primarily European ethnic groups, Pineo and Porter (1985) observed that the "educational system... has worked effectively to help minority Canadians overcome the disadvantages of their background. With these strong controls in place the ethnicity effects which remain are minor" (Pineo and Porter, 1985:391). Thus, initial labour market position of European ethnic groups can be largely explained by differences in education. It follows that their disadvantaged position could be overcome by investments in human capital. The question remains whether labour market experiences of recent immigrant cohorts, the majority of whom are non-white, will follow the same path and whether their initial disadvantages in the labour market can also be improved by investments in education.

Yasmin and Abu-Laban (1992) also attest that ethnicity is not relevant for explaining occupational inequality of major European groups. Their results, based on the 1981 Census, indicate that education is more important in explaining occupational disadvantages of these groups (Yasmin and Abu-Laban, 1992). The overall conclusion of these studies is that, for European ethnic groups, educational differences account for most of the differences in the occupational status and income allocation observed between these groups. However, as

Stelcner and Kyriazis (1995) noted, this effect is not observed among non-European, non-white groups.

Stelcner and Kyriazis (1995) conducted an analysis of earnings inequality among Canadian ethnic groups which showed that ethnicity is not an important determinant of income. Their analysis consisted of 16 ethnic groups, two of which were non-white. For all European groups, income inequalities were explained by differences in productivity characteristics such as education and work experience. Although the study provided no evidence of income discrimination against those of Chinese origin, the study provided "strong evidence that African men suffer from market discrimination to the extent that over 80% of their earnings gap cannot be explained by their relative productivity traits, including immigration status" (Stelcner and Kyriazis, 1995:69). Thus, human capital variables fail to explain labour market disadvantages of these groups.

These studies suggest that, while investments in human capital help European ethnic minorities overcome their disadvantaged position in the Canadian labour market, such investments fail to help members of non-white racial groups. Research shows that for European groups, lack of education and other job qualifications explains their lower statuses. Differences in socio-economic status diminish substantially after taking into account educational background. Thus, "previous research on ethnic inequality in Canada has shown that for most European origin ethnic groups, significant inequalities stem mainly from lack of education. Usually these inequalities end within a generation following immigration. Available evidence [on immigrants from non-traditional countries] suggests that discrimination against those groups is more significant, and may result in real inequalities among persons with similar job qualifications" (Reitz, 1990:149).

Herberg (1990) compared rankings for educational, occupational and income indices among Canadian ethno-racial groups. He found that, despite educational qualifications, visible minorities were disadvantaged in terms of income "because of racial discrimination that prevents awarding wages equivalent to credentials" (Herberg, 1990:218). Similarly, Kalbach and Kalbach (1999) compared three percentage distributions of adult populations of several non-white groups who immigrated to Canada between 1971-1991 and who (1) possessed some university education or completed a university degree, (2) were in managerial, administrative, and professional occupations, and (3) had a family income of $50,000 or above. They find it surprising that despite the general positive correlation between education, occupational attainment and income that has been established for Canada as a whole, all of the non-white groups failed to exhibit such correlation. "For many of the 1971-1991 non-European cohorts of immigrants, it seems that their educational and occupational statuses gained them admission to Canada but failed to produce economic rewards commensurate with their qualifications" (Kalbach and Kalbach, 1999:46). There is, therefore, considerable evidence that educational credentials of non-whites are not recognised by Canadian employers, perhaps because these credentials were obtained in another country, thus providing Canadian employers an opportunity to reject them.

Measuring Discrimination

Both Herberg (1990) and Kalbach and Kalbach (1999) conclude that differential returns to educational qualifications reflect the effect of discrimination that retards socio-economic success of visible minority groups in the Canadian labour market. Both analyses involved only a comparison of percentage distributions for education, occupation and income across ethnic and racial groups. However, in order to detect the effect of discrimination, it is necessary to

extend analyses beyond such descriptive measures and examine the causal mechanisms between education, occupation, and income (Hou and Balakrishnan, 1996).

The only study encountered during my literature search in which discrimination was tested directly was conducted by Henry and Ginzberg (1985). Field-testing was employed to assess differential hiring practices prevalent in the labour market as they relate to non-whites. Both white and non-white applicants were matched in their demographic and socio-economic characteristics. The results of the study demonstrated that "there is substantial discrimination affecting the ability of members of racial minority groups to find employment" (Henry and Ginzberg, 1985:4). A follow-up study, conducted in 1989, confirmed the results of the earlier study and provided no evidence of a decrease in racial discrimination against visible minorities in the Canadian labour market (Henry, 1999).

Traditionally, economists and sociologists have utilised the "residual method" (i.e., "regression method") to measure labour market discrimination. The "residual method" is based on human capital premises. It "measures discrimination against a particular group as a residual after accounting for productivity differences with the reference group" (Akbari, 1989:23-27). The earnings gaps are decomposed into two parts: the first that is due to differences in human capital characteristics and the residual part which cannot be explained by such differences and therefore is attributed to labour market discrimination. Thus, according to the residual method, the earnings gap between visible minority and non-visible minority members is due to differences in their educational and training characteristics, and to labour market discrimination. If visible minorities were discriminated against, they would receive lower returns to education and training. If discrimination were absent, visible minorities would receive the same returns to education as non-visible minorities would.

Disparities in Economic Returns to Human Capital Investments

Prior to considering the effects of education on income of Canadian ethnic groups, Winn (1985) was highly critical of affirmative action plans as he found "no empirical support for the premise that Canadian society is immobile and that visible or low prestige groups cannot make economic progress" (Winn, 1985:689). However, after examining the financial returns to educational qualifications, he revised his position and admitted that discrimination may be at play in the Canadian labour market. All foreign-born Canadians, and non-white immigrants in particular, exhibited "an enormous difficulty" in obtaining pay commensurate with their educational qualifications. Non-white groups were not able to overcome this disadvantage even by the second or third generation despite their educational attainment. Out of six non-white groups included in the analysis, four were in the top half with respect to education. However, the rates of return on education for native-born Canadians with university education showed that only two non-white groups were among the top half earners (Ibid: 692). Winn concluded that "the data on rates of return for higher education suggest that non-whites, especially foreign-born Pacific rim Asians, have difficulty translating educational propensity into earning power" (Ibid: 693).

Several more recent studies have addressed differential returns to human capital investment for non-white ethnic groups. Hou and Balakrishnan (1996), who examined the process of integration of visible minorities, observed that income disparity between racial groups has persisted despite educational and occupational accomplishments of visible minority members (Hou and Balakrishnan, 1996:323). The finding that visible minorities receive lower financial returns from their educational and occupational qualifications led the researchers to conclude that income inequality is related to discrimination.

Similarly, in their analysis of returns to education across various ethnic groups in Canada, Lian and Matthews (1998) observed that similar educational qualifications yield different financial returns for people of different ethnic and racial origins. Those of European ethnicity had above-average earnings and no significant differences in income within educational levels. On the other hand, those of non-white racial heritage had significantly lower earnings at all educational levels. The authors conclude that race today constitutes "the fundamental basis of income inequality in Canada" (Lian and Matthews, 1998:462).

In their study of income inequality, Gee and Prus (2000) examined earnings of ethnic groups after controlling for educational, occupational and other characteristics. In essence, it was assumed that various ethnic and racial groups had identical socio-demographic profiles. Their earnings, however, did not mirror their characteristics. After the specified controls were introduced, the net income deviation for visible minority men increased from $3500 to almost $4000, "indicating that they lose a considerable amount of money yearly because, and only because, they are not white" (Gee and Prus, 2000:251).

Thus, unlike European ethnic groups, Canadian visible minorities are observed to face significant financial penalties despite their educational qualifications. Their treatment in the Canadian labour market appears to be consistent with the blocked mobility hypothesis. However, it cannot be concluded that such treatment is a result of racial discrimination without first considering whether their lower incomes are a result of a lower labour market value of their educational credentials that were likely obtained outside of Canada. As suggested by Kalbach and Kalbach (1999), in the case of immigrants from 3rd World countries, their lower

socio-economic achievement may be a consequence of their foreign academic qualifications and occupational training not being recognised in the Canadian labour market.

Non-Recognition of Foreign Credentials

Despite the fact that a majority of immigrants who entered the country during the 1980s and 1990s were more educated than the Canadian-born population, they were more likely to be unemployed and to work in jobs that require little or no education and experience, possibly due to non-recognition of their qualifications (Badets and Howatson-Leo, 1999). Several other studies of immigrants have demonstrated that credentials of foreign-born Canadians are often not recognised in the Canadian labour market and that returns to human capital are lower if they were educated outside of Canada. Completion of Canadian education by immigrants improved their disadvantaged position considerably and, in some cases, they were able to achieve parity with the native-born (Boyd, 1985; de Silva, 1992; Wright and McDade, 1992; Wanner, 1998). However, most of these studies treated immigrants as one group without separately examining immigrants of non-white origin.

Evidence from studies of labour market experiences of recent immigrants, the majority of whom are non-white, shows that their path to socio-economic success differs from that of immigrants of earlier periods, the majority of whom were white. Bloom, Grenier, and Gunderson (1995), in their revision of an earlier study by Bloom and Gunderson (1991), found that integration of recent cohorts of immigrants into the Canadian labour market has been slower, especially for immigrants from Asia, Africa and Latin America. Immigrants arriving prior to 1965 were able to achieve parity in their earnings within 15 years. However, since then, integration has been taking longer, and for those immigrants arriving after the 1970s, achieving parity appears to be completely "out of reach" (Bloom *et al*, 1995:999). They

attribute this finding in part to the increased number of visible minorities among immigrants, which may have increased discrimination against them in the labour market. Similarly, Baker and Benjamin (1994) showed that immigrants who arrived after the 1970s integrate at a slower pace. They found that their initial earnings are about 20 percent lower than those of earlier cohorts.

Studies by Basavarajappa and Verma (1985) and Miller (1992) focused on Asian immigrants only. Both found that, despite higher education, Asian immigrants have lower earnings than the native-born, and even than other foreign-born groups. They attributed the findings of delayed parity in terms of income to non-recognition of foreign qualifications, lack of Canadian experience, and lack of fluency in English or French. Therefore, studies of recent immigrants show that they are more disadvantaged in the Canadian labour market. Their experiences follow a different path than those of earlier predominantly European immigrant groups. Furthermore, it is unclear whether their initially disadvantaged position can be ameliorated through investments in education, in a manner similar to those of European ancestry. The visibility of these groups may operate in addition to their immigrant status to handicap their socio-economic achievement.

In their study of visible minority income differentials, Basavarajappa and Jones (1999) estimated earnings of four groups, visible minority and non-visible minority, immigrant and Canadian-born, after controlling for human capital variables. Their analysis shows that economic returns to education for visible minorities are lower regardless of their nativity status (immigrant or native-born). The same number of years of schooling yields higher income for non-visible minorities than for their visible minority counterparts. Non-recognition of foreign educational credentials may serve as an explanation of lower income for foreign-born visible

minorities. However, it cannot explain why members of visible minorities who were born in Canada (and are presumed to have been educated in Canada) continue to suffer income penalties in the labour market. The authors attribute this difference in income to discrimination, concluding that "there appears to be a price to being a visible minority in the Canadian labour market" (Basavarajappa and Jones, 1999:256).

Although non-recognition of foreign educational credentials may explain lower earnings of visible minority groups born outside of Canada, it cannot explain the lower income status of visible minority groups born in Canada or of those racial group members who complete their education in Canada. It appears that visibility remains a factor in explaining labour market inequality and that non-recognition of credentials serves as a mechanism that conceals racial prejudice and discrimination. In the past, European immigrant groups were able to achieve parity by the second or third generation, even if their educational levels were lower than the average population (Hou and Balakrishnan, 1996). However, today disadvantages of non-white groups do not appear to subside even among the native-born population, who are likely to have obtained their education and work experience in Canada. Geschwender and Guppy (1995) also provide evidence that higher educational credentials do not yield higher economic payoffs for members of non-white groups born in Canada. Thus, even visible minorities born in Canada continue to pay economic penalties because of their colour.

Measuring the Origin of Educational Credentials

There are only few studies that directly test for the origin of education rather than merely alluding to it. Pendakur and Pendakur (2000) undertook the task of assessing whether the quality of education affects employment outcomes of visible minorities. In their analysis of six Central Metropolitan Areas (CMA), they found substantial earnings differentials between

whites and visible minorities, be they immigrants or native-born Canadians, after controlling for a number of socio-economic variables. "The earnings penalties faced by...visible minorities are large and significant and present in both native-born and immigrant populations" (Pendakur and Pendakur, 2000:189). Furthermore, the earnings gap did not abate substantially even after accounting for the origin of education. For white immigrant men, the earnings gap (compared with white native-born men) was only about two percent, whereas for visible minority immigrant men, the gap was over 15 percent. The earnings gap of visible minority women was seven percent after controlling for place of schooling, compared with one percent for white immigrant women.

Although discrimination was expected to affect those without post-secondary education to a greater extent, it was observed that visible minorities with post-secondary education suffered larger penalties (relative to white native-born men) than those without. Among immigrant men with post-secondary education, visible minority members suffered the largest earnings penalty of 15 percent. In contrast, educated immigrants from the UK and USA had an earnings advantage of 14 percent. Furthermore, visible minorities born and educated in Canada continued to be economically disadvantaged in the labour market, their earnings penalty reaching nearly 11 percent. The gap was also present among immigrant women with post-secondary education. Visible minority immigrant women also suffered the largest earnings disadvantage of 11 percent. These findings illustrate that white men receive higher returns to their education than do visible minority men, regardless whether or not they were born and educated in Canada. Higher earnings penalties are also experienced by visible minority immigrant women with post-secondary education. (Pendakur and Pendakur, 2000:176-177).

Results from the studies by Basavarajappa and Jones (1999) and Pendakur and Pendakur (2000) contradict those of de Silva (1996) who examined whether visible minority men who possess Canadian education experience discrimination in the Canadian labour market. He found that, prior to controlling for differences in the quality of education, language proficiency and work experience, the extent of discrimination against male visible minorities in the Canadian labour market was about 86 percent. However, once controls for the quality of education and other factors are introduced in the analysis, the effect of discrimination nearly disappears (one percent). He concludes that "a large portion of what is often believed to be discrimination turns out in the ultimate analysis to be merely a reflection of differences in the quality of education and experience between male visible minorities and their white counterparts" (de Silva, 1996:22). Thus, his analysis demonstrates that labour market inequality between white and non-white minority groups is due primarily to non-recognition of their foreign credentials. Once these groups acquire Canadian education and experience, they no longer remain subject to discrimination in the labour market.

Conflicting results obtained in these studies may be due to the problem of operationalisation of the concept of "origin of education." Most studies rely on Census data that do not measure this concept directly. Consequently, researchers have to find alternative, indirect ways to measure the quality of education. Pendakur and Pendakur (2000) measured the origin of education by constructing a new variable "place of schooling," which rested on several assumptions. If the highest level of schooling reported in the Census was received after entry to Canada, the place of schooling was thought to be Canada. If the highest level of schooling reported was beyond high school and was obtained prior to entry to Canada, the place of schooling was thought to equal the place of birth.

On the other hand, de Silva (1996) controlled on the origin of education of visible minority men by selecting only those respondents born in Canada on the assumption that "quality differences in education and work experience are of no relevance to the comparison of earnings between native-born visible minorities and native-born whites, since both groups have had all of their education and experience here. But, if there is discrimination, even native-born visible minority men would not be immune to it" (de Silva, 1996:21). However, although Basavarajappa and Jones (1999) control for the origin of education using the same assumption, their results differ from those of de Silva (1996). Thus, despite the fact that all three studies by de Silva (1996), Basavarajappa and Jones (1999), and Pendakur and Pendakur (2000) utilised the same data from the 1991 Census, their indirect measurements of the concept of the "origin of education" resulted in contradictory findings.

Another way to focus on the "quality of education" is to control for it by specifically studying Canadian college or university graduates. This is especially important as Pendakur and Pendakur (2000) have pointed out that the income gaps are larger for those with higher education. Furthermore, by studying initial labour market experiences of recent university graduates, it is possible to assess hiring practices that prevail in the Canadian labour market following the introduction of the employment equity legislation. Although previous research has illustrated continued disparities in the socio-economic achievement of visible minorities, it is not possible to determine whether or not hiring practices have changed in the post-employment equity era, because the Census data do not distinguish between recent hires and veterans of the labour force.

Statistics Canada conducts the National Graduate Survey (NGS) that tracks labour market experiences of a representative national sample of college and university graduates who

completed their studies in 1982, 1986, 1990, and 1995. Respondents are interviewed two and five years after their graduation. Wannell and Caron (1994) analysed the component of the data that dealt with labour market experiences of the class of 1990 two years after they completed their studies. Among university graduates who were employed full-time at the time of the survey, visible minorities earned about two percent more than did non-visible minorities. After further controls were introduced, the differences between visible minorities and other graduates were still negligible.[4]

In addition to income allocation, this study also explored employment levels of visible minority graduates. Substantial differences were observed in labour force participation and unemployment rates between visible minority and other graduates. Seventy-six percent of visible minority graduates were employed, compared with 84 percent of non-visible minority graduates. This difference in the employment rate can partially be due to a lower labour force participation rate observed for visible minorities (88% for visible minorities and 93% for non-visible minorities). Nonetheless, the unemployment rate for visible minorities was almost one-third higher than that for other graduates (14% for visible minorities and 10% for non-visible minorities) (Wannell and Caron, 1994:37-38). Lower participation rates and higher unemployment rates of visible minority graduates persisted across all fields of study except for Other Social Sciences (e.g., Geography, Political Science, Sociology) and in all regions of Canada except for British Columbia. The largest differences in the unemployment rate between visible minorities and non-visible minorities was observed among graduates from Agricultural and Biological Sciences programs (21.8% and 12.3% respectively), Fine Arts and Humanities (21.2% and 12.9% respectively), Medical and Other Health programs (11.4% and

[4] The multivariate model included the following controls: age, marital status, children, parents' education, home language, previous work experience, field of study, level of degree or length of program, public sector employment, region of residence and hours of work.

3.4% respectively), and Mathematical and Physical Sciences (15.1% and 8.2% respectively). On the other hand, the unemployment rate was lower among visible minority graduates from Other Social Sciences programs (6.6% and 12.0% respectively) (Ibid: 38).

As this summary indicates, respondents' field of study was controlled for in this analysis. The absence of such an approach in previous research on racial and ethnic inequality is a major limitation as differences in earnings and occupational status are greatly influenced by one's educational discipline. Since there may be a relationship between race/ethnicity and educational choice, differential income allocation that has previously been attributed to labour market discrimination may instead reflect differences in human capital characteristics (i.e., field of study) rather than phenotypic characteristics. Furthermore, an examination of occupational status according to the type of education individuals received can shed light on the extent of occupational discrimination, and more specifically on differential access to managerial and administrative positions (Agocs and Boyd, 1993; Duleep and Sanders, 1992; Nakhaie, 1995, Samuel, 1989; Samuel and Karam, 2000).

For example, a study conducted by the Ontario Human Rights Commission (1984) controlled simultaneously for the origin and the type of education by studying MBA graduates from Ontario universities. This study is particularly interesting as it addressed the issue of access to managerial and administrative positions, the type of jobs business school graduates typically seek. When career paths of white and non-white MBA graduates from the same school were compared, it was found that despite greater job search efforts, non-white graduates were less likely to be hired and promoted (Forcese, 1997; Dwivedi, 1989).

Summary

From a review of the relevant research literature, it is evident that the relationship between ethnicity and labour market outcomes in Canada has been studied extensively. Consistent with the "blocked mobility" hypothesis, previous research has illustrated that visible minority groups receive lower economic returns on their human capital investments. This serves as an indication of the existence of barriers to employment equity that deny visible minority members equal access to labour market opportunities. It has been suggested that such differential access is in part due to non-recognition of foreign educational credentials. Studies that directly control for the quality of educational credentials of visible minority groups are scarce and their evidence is inconclusive. Some provide evidence that regardless of nativity status and the origin of education, visible minorities remain disadvantaged in the labour market because of their "visibility." Others, however, contend that visible minorities born and educated in Canada were able to achieve parity, and in some cases even surpass, socio-economic achievement of non-visible minority groups.

These conflicting results may stem, in part, from methodological problems in measuring or controlling on the quality of educational credentials. Different approaches utilised by researchers to measure or control the concept of the "origin of education" are likely to be responsible for contradictory results obtained in these studies. Most analyses have been conducted with the aid of Census data and, therefore, had to rely on the measurements of ethnicity utilised in the census. The definition of ethnicity has been altered several times in the census and thus, may have further contributed to contradictory results.[5]

[5] For a comprehensive review of changes to the ethnicity question in the Canadian censuses, see Pendakur and Mata, 2000.

Furthermore, previous research on labour market discrimination has considered labour market inequality between ethnic and racial groups almost exclusively in terms of occupational status and income allocation. Gee and Prus (2000) illustrated that in addition to earnings, racial inequality was also pronounced with respect to employment levels. They found that members of visible minorities were more likely to be unemployed and to hold part-time employment. As discussed earlier, having examined the participation and unemployment rates of recent university graduates, Wannell and Caron (1994) also found that "in contrast to the earnings results, the employment patterns of visible minorities differ substantially from those of other graduates" (Wannell and Caron, 1994:53). Nonetheless, analysis of differences in the levels of employment of visible minority members remains a largely unexplored area of research.

Thus, previous research on labour market discrimination of racial minorities has taken a uni-dimensional approach to labour market outcomes of racial groups and has neglected to examine differences in other measures of labour market success/failure, such as unemployment and the quality of employment. Labour market discrimination can manifest itself in various forms. Hence, it is important to take a multi-dimensional approach to the study of racial labour market discrimination. In order to adequately assess the extent of racial discrimination in the Canadian labour market, it is important to consider not only racial differences in occupational attainment and remuneration, but also in unemployment and the quality of the jobs.

Indeed, it is highly imperative to examine the characteristics and conditions of employment of racial minorities. In a broader sense, high-quality employment is understood as employment that maximises utilisation of people's skills, knowledge and abilities. At the theoretical/conceptual level, employment quality is considered to be the latest policy iteration of human capital theory. At the more concrete/empirical level, high-quality jobs are understood

in terms of full-time, permanent employment, with good pay and benefits (Economic Council of Canada, 1990; Lowe, 2000). With the exception of earnings, the literature on racial inequalities in the labour market is basically silent with respect to these other measures. In their analysis of earnings differentials, Basavarajappa and Jones (1999) considered several labour market involvement measures (including part-time/full-time employment) as independent variables that influence income achievement, but failed to explore racial variations that might exist with respect to these measures.

The analysis of labour market outcomes of 1994 Alberta universities graduates in this study will contribute to the existing research on labour market discrimination of Canadian racial groups by examining differences in both employment levels and income allocation between white and non-white graduates from Alberta universities. Furthermore, this analysis will extend previous research by considering differences in the quality of employment that Alberta universities graduates were able to obtain following their initial entry into the Canadian labour market.

Hypotheses

By studying graduates from Alberta universities, it will be possible to compare visible minority members and other graduates while holding the quality and type of education constant. Thus, the issue of foreign credentials is controlled in this study. Given that both groups entered the labour market at the same time, variable economic conditions are of no consequence (cannot be considered a factor) in generating different labour market outcomes.

Drawing on prior research, this analysis is designed to determine whether labour market outcomes of visible minority graduates, specifically, unemployment, income, and the quality of

employment, differ substantially from those of other graduates. Based on the prior review of theoretical approaches, and on the discussion of research literature that deals with labour market discrimination of racial minorities, a number of alternative testable hypotheses emerge.

Much of previous research on racial discrimination suggests that the disadvantaged position of racial minorities in the Canadian labour market was due to structural labour market barriers, specified by segmentation theories. Social closure mechanism based on education, which serves as one of the barriers, is controlled through the design of this study. According to another social closure mechanism that utilises race to restrict labour market opportunities (i.e., ethnically blocked mobility hypothesis), visible minority graduates will receive lower returns to their investments in university education. Thus, hypothesis 1 predicts that, as a result of labour market segmentation barriers, their unemployment rate will be higher, earnings lower, and the quality of their employment inferior. If, however, social closure mechanism based on race no longer operates in the Canadian labour market, then visible minority graduates will receive equal returns to their university education. According to hypothesis 2, their unemployment rate, earnings, and employment quality are expected not to differ from those of other graduates. Thus, investments in human capital in the form of post-secondary education will yield labour market returns similar to those of other graduates, as predicted by human capital theory. It is also possible that as a result of employment equity programs, visible minority graduates will receive better treatment in the labour market than other graduates and consequently, will receive higher returns to their education. Thus, hypothesis 3 predicts that their unemployment rate will be lower, earnings higher, and the quality of their employment superior.

IV: Data and Methods

To test the specified hypotheses, cross-sectional data from the 1997 Alberta Graduate Survey (AGS) are utilised in this study. The 1997 AGS data provide information on initial labour market experiences of 1994 graduates two and a half years after their graduation from Alberta universities.[6] The 1997 AGS was conducted as part of a joint initiative between Alberta's post-secondary institutions and the provincial government, represented by the Ministry of Advanced Education and Career Development. The objective of this initiative was the development of a database of key performance indicators (KPI) that measured the quality of post-secondary education in Alberta. The key performance indicators, targeted by the 1997 AGS study, included labour force participation, employment rate, unemployment rate, full-time/part-time employment, average monthly salary, relevance of the job to program of study, and further enrolment in a post-secondary program.

The cross-sectional survey was intended to provide detailed information on initial employment outcomes for recent university graduates. By interviewing respondents two and a half years after their graduation from Alberta universities, it was possible to gather a wide range of information on initial labour market outcomes, such as work arrangements, income, benefits, skill utilisation and job satisfaction. The results of the survey were intended to provide provincial policy-makers with a better understanding of recent university graduates' transition into the labour market.

The testing of the specified hypotheses of this study is well accommodated by the 1997 AGS data. The survey questionnaire included a wide range of questions that facilitate an extensive

[6] See Krahn and Lowe (1998b) for a descriptive report on labour market and educational experiences of 1994 university graduates that includes a detailed description of the survey design and methodology.

analysis of initial employment outcomes of visible minority graduates. As noted earlier, the present study is designed to control for the quality of educational background of racial minority groups. As such, the use of survey data collected from respondents who graduated from universities in the same province, as opposed to the same country, reduces the possible variability in the quality of educational credentials. Thus, the 1997 Alberta Graduate Survey is even better suited for the analysis of labour market outcomes of visible minority graduates than Statistics Canada's National Graduate Survey (NGS).

Sampling, Data Collection, and Response Rates

The target population for the 1997 AGS consisted of 11,743 individuals who graduated (convocated) from any of the four universities located in the province of Alberta (University of Alberta, University of Calgary, University of Lethbridge, and Athabasca University) in 1994. University Registrars provided information on the target population that included name, address, telephone number, program of study, degree, diploma or certificate obtained, year and month of graduation, age and gender. The records were randomised within each university prior to their inclusion in the database. Out of 1,138 graduates with missing telephone number information, a new number was located for 689 people. Thus, the final sampling frame consisted of 11,294 graduates. Those graduates with overseas (outside of North America) contact information were omitted from the survey population. This strategy served as an attempt to ensure that the survey assessed graduates' experiences in the North American labour market only. By omitting those respondents who did not have a permanent address or telephone number in North America at the beginning of their studies at the Alberta universities, this approach also served to exclude non-permanent residents of Canada or USA (i.e., foreign students) from the study.

The questionnaire content and the research procedures were inspected by a Steering Committee of representatives from the provincial government (AECD) and the universities concerned, and were approved by a Research Ethics Committee at the University of Alberta. The questionnaire was pre-tested on 42 respondents, selected at random from the sampling frame, and the pre-test interviews were included in the final sample.

The data were collected between January 29 and February 27, 1997 by the Population Research Laboratory (PRL) at the University of Alberta, who were contracted to conduct the study. The questionnaire was administered by a team of trained interviewers with the aid of the CATI (Computer Assisted Telephone Interviewing) system. In order to ensure proportionate representation of smaller universities and smaller faculties in the final sample, the records from smaller universities and faculties were over-sampled during the initial phase of the data collection. With the aid of this strategy, the percentages of graduates from four universities included in the final sample closely matched the actual percentages, and are thus representative of the target population (see Table 4.1).

A total of 6,012 graduates were interviewed, resulting in the overall response rate of 53 percent of potential respondents with telephone numbers, or 51 percent of all potential respondents. Non-response was primarily due to inability to contact a graduate (n=5,731). The reasons for non-response included the following: a respondent could not be located at the number provided by the university Registrar (30% of non-response), the number provided was not in service (13% of non-response), answering machine (11% of non-response), a respondent has moved overseas or was not available (11% of non-response), and other reasons. Non-response from refusals to participate in the study was minimal; refusals by graduates accounted for only 5 percent of non-response.

Table 4.1: Population Universe and Completed Interviews

		University of Alberta	University of Calgary	University of Lethbridge	Athabasca University	All Alberta Universities
All 1994 graduates	N	6,442	4,217	888	196	11,743
	%	54.86	35.91	7.56	1.67	100
Available phone numbers	N	6,125	4,092	881	196	11,294
	%	54.23	36.23	7.80	1.74	100
Completed interviews	N	3215	2198	475	124	6012
	%	53.48	36.56	7.90	2.06	100
Response rate as % of all graduates		50%	52%	53%	63%	51%
Response rate as % of available numbers		52%	54%	54%	63%	53%

Sub-Sample Selection

For the purposes of this analysis, which focuses on employment outcomes of visible minority graduates, a sub-sample was drawn from the total sample of 6,012 graduates of Alberta universities. The sample of Alberta university graduates includes respondents who were enrolled in post-secondary studies at the time of the survey (full- and part-time students) and those who were not (non-students). In this analysis, the sub-sample was restricted to non-students to circumvent difficulties when interpreting the results of the study. This selection is based on the rationale that continuing students find employment in the student labour market, where the pay and the quality of employment are substantially different from the type of employment individuals seek after graduation (Marquardt, 1998). Thus, by restricting the sample to non-students, clearer results from the analysis can be expected. Non-students were selected based on a negative response to the question "Are you a student now?" (n=1408).

As previously mentioned, Wannell and Caron (1994) restricted their analysis of the National Graduate Survey (NGS) data to only those graduates of Canadian universities who were employed full-time. By making such a sub-sample selection, they excluded those respondents who held part-time employment, thus limiting their ability to evaluate racial differences in the quality of employment. The present analysis will avoid this error by selecting respondents who were employed at the time of the survey either on a part-time or a full-time basis.

Furthermore, it is believed that employment outcomes of graduates of Aboriginal ancestry may be significantly worse than those of other graduates (Armstrong, 1999; de Silva, 1999). Once again, this presents a possibility for complicating and confusing results. While labour market experiences of Aboriginal graduates merit scholarly attention, the differences in their employment outcomes may skew the results for the non-visible minority group, which is used as a comparison group in this study. Therefore, the sub-sample for this study was further limited to non-Aboriginal graduates by selecting those respondents who answered negatively to the question "Do you consider yourself to be an aboriginal person?" (n=83). If necessary, interviewers elaborated on the definition of Aboriginal status to the respondents by providing examples such as Status Indian, Non-Status Indian, Inuit, or Metis. After the appropriate selections were made, the sub-sample consisted of 4,542 respondents. This sub-sample was used for the analysis of unemployment rates among Alberta university graduates who were not students at the time of the survey and were not of Aboriginal ancestry.

With the exception of the analysis of unemployment, the sub-sample was further restricted to those non-students who were employed at the time of the survey, whether on a full- or part-time basis. The selection was made using the derived variable on employment status that was based on the question: "Do you currently have a paying job, including self-employment?" The

resulting sub-sample consisted of 4208 respondents, who were employed (full- or part-time), were not enrolled in post-secondary studies at the time of the survey, and who do not consider themselves to be of Aboriginal ancestry.

Measurement of Key Variables

The 1997 AGS data facilitate analysis of employment patterns of visible minority graduates in greater detail than was previously possible by providing a wider range of measures of labour market transition of recent university graduates. Specifically, within the framework of this research, the 1997 AGS data allow this analysis to examine the quality of employment enjoyed by members of racial minority groups, in addition to an assessment of unemployment rates and income attainment. Although differences in earnings distribution are also considered in this analysis, it is believed that income may not be the best measure of labour market success/failure of recent graduates, given the short span of their post-graduation employment. Thus, three dependent variables are utilised in this analysis: unemployment level (rate), income, and the quality of employment. Unlike some of the previous studies reviewed earlier, occupational status is not used as a dependent variable in this analysis. Rather, a measure of occupational skill level is included in the quality of employment index (see below). In the same way that income may not be the best measure for this cohort, it may also be premature to use occupational status as a measure of labour market position of 1994 Alberta university graduates, given the short span of their careers. It is unlikely that most graduates had attained their ultimate occupational status two and a half years after graduation.

The measure of the unemployment rate in this study is based on the number/percentage of graduates who were in the labour force and were looking for employment at the time of the survey. The derived measure was based on several survey questions that asked about

respondents' employment status and was created by the 1997 AGS researchers after the data collection was completed. Those respondents who answered negatively to the question: "Do you currently have a paying job, including self-employment?" were asked a further question: "Are you currently looking for a job?" Those who answered positively were considered to be unemployed. Furthermore, those respondents who stated that the main reason they have not held a paying job since graduating in 1994 was because they could not find a job, or could not find the job they wanted, were also considered to be unemployed. The derived variable that measures the level of unemployment was re-coded into a dummy variable *unemployment* in order to make it amenable for logistic regression analysis. A score of zero (0) was assigned to those respondents who were employed and a score of one (1) was assigned to those respondents who were unemployed at the time of the survey.

The validity of income measures has often been regarded as suspect in social survey research. Due to the sensitivity of the question, people are often reluctant to disclose the amount of personal earnings. Even when reported, the amount may be either under-reported or over-reported/inflated as a result of social desirability on the part of respondents (Fowler, 1993). Furthermore, if not asked properly, the reported answers may not be good measures of respondents' personal income, thus resulting in measurement error (Fowler, 1995).

In an attempt to overcome such measurement problems, a measure of respondents' income in the 1997 AGS was created using responses to several survey questions. The question: "Working your usual hours at your current (main) job, approximately what is your gross salary or earnings, before taxes and deductions?" was supplemented by a question about the pay period of the earnings stated (e.g., hourly, daily, weekly, monthly). Those respondents who held more than one job (n=612) were asked another two similar questions about income from

their other job(s). In order to achieve uniformity in the pay period responses, the *income* variable was derived so that respondents' income is measured on a monthly basis. Furthermore, respondents' incomes from their main job as well as from other job(s), if applicable, were combined to create a measure of income from all jobs. Although non-response to the question concerning income is generally high in social surveys, only 10.5 percent of employed 1997 AGS respondents declined to state their earnings (n=441). Non-response to this question was low probably as a result of the effort on the part of the research team to design reliable measures as well as on the part of the interviewers to establish rapport with respondents.

The variable *income* is a ratio level measure of respondents' gross monthly earnings from all jobs and has a range of values from 33 to 24,500 dollars. Despite exceptionally high values of monthly earnings of several respondents, their income levels were plausible given their education and the nature of their occupations. For example, the respondent with a monthly income of 24,500 dollars held an MBA degree and worked as a Vice-President of an oil and gas company. However, an income of 22,000 dollars a month by a post-doctorate research fellow in medical sciences appeared problematic. This respondent declared 264,000 dollars as annual income. It may be that this sum reflected the respondent's post-doctoral research grant and therefore, did not constitute his/her actual salary. This case was dropped from the analysis of monthly earnings.

In addition to measures of unemployment and income, the 1997 AGS data contain a vast array of dependent variables that can be utilised to measure different aspects of employment quality: permanent/temporary employment, full-time/part-time employment, employment benefits (i.e., extended health benefits, dental plan, and retirement/pension plan), occupational skill level, as well as two measures of respondents' subjective assessment of their earnings and their job.

The last two measures are particularly interesting as they focus on whether individuals feel their current pay and position in the labour market is commensurate with their education and skills.

These dependent variables could be used separately (as single items) in order to examine racial differences in the quality of employment. However, such analysis would be limited to logistic regression analysis as most of these variables are binary. It would also be very cumbersome to compare results from many regression equations. For the purposes of this study, these variables that measure various aspects of employment quality are combined to construct a composite measure (index) of the quality of employment (see Table 4.2). The index has greater validity for measuring the concept of employment quality than do individual/single measures. It is also suitable for analysis of racial differences by means of ordinary least squares (OLS) regression, because the index, which is used as a dependent variable, measures the quality of respondents' employment at the interval level. Furthermore, whereas the distributions of the separate binary variables are likely to be skewed, by combining several binary variables into a composite measure, the distribution of the index approximates a normal distribution, thus satisfying the assumption of normality of the OLS regression (see Figure 4.1).

The cumulative "quality of employment" index was constructed from nine survey questions, using weighted response categories that reflect a better quality of employment: permanent employment, full-time employment, extended health benefits, dental plan, retirement plan /pension, high occupational skill level, supervision of other employees, and self-assessment that earnings as well as the skill level of employment are commensurate with achieved levels of education, training and experience.

Table 4.2: Quality of Employment Index: Weighting of Individual Items

Item	*Score*
Permanent Job	1.00
Full-time Job	1.00
High Occupational Skill Level	1.00
Supervision of Other Employees	1.00
Extended Health Plan	0.33
Dental Plan	0.33
Retirement Plan/Pension	0.33
Self-Assessment of Earnings	0.50
Self-Assessment of Skill Level	0.50

The permanent nature of respondents' jobs was measured using the survey question: "Is your job permanent or temporary?" The definition of permanent and temporary employment was provided to the respondents. A permanent job was defined as a job that has no indication of when it would end and a temporary job was defined as a job that would terminate at some specified time. Those respondents who indicated that they held permanent jobs were assigned a score of one (1) in the cumulative index (n=3824).

The full-time nature of respondents' jobs was determined using the question: "What is the total number of hours you usually work per week in your job?" Respondents were considered to be working full-time if they indicated that they worked 30 hours or more per week. Those respondents that held full-time jobs were assigned a score of one (1) in the cumulative index (n=4173).

The 1997 AGS questionnaire provides three measures of employment benefits. Respondents were asked: "Does your job provide any of the following benefits? (a) Extended health benefits, (b) Dental plan, (c) Retirement plan/pension." Those respondents who receive

extended health benefits were assigned a score of 0.33 (n=3248), those respondents whose job provides a dental plan were assigned a score of 0.33 (n=3251), and those whose job provides a retirement plan/pension were assigned a score of 0.33 (n=2584). Thus, if a respondent's job provided all three types of benefits, she/he would receive a score of 0.99 in the cumulative index.

The skill level of respondents' occupations was based on the following survey questions: "What kind of work do you do? What is your job title? What does this job involve?" The use of multiple questions was intended to encourage respondents to elaborate on their occupational status. This amount of detail was necessary in order to properly classify respondent's occupation according to the National Occupational Classification (NOC). The NOC system is more advantageous than the Standard Occupational Classification (SOC) system, which was widely used in the past, in that it captures the skill requirements of respondents' jobs (Krahn and Lowe, 1998a:58). The NOC includes 25,000 occupations that exist in the Canadian labour market and provides information on the skill level as well as the skill type of each occupation. There are four skill levels plus an additional level for managers. The distinction between the levels is based on the education and training required for the job. Jobs in skill level A (professional jobs) require a university degree, whereas jobs at the managerial level may not require university education. On the other hand, jobs in skill level D require no formal education (for examples of occupations in each skill level and type, see Table 2.2 in Krahn and Lowe, 1998a:60-61; for a complete list of occupations, see Employment and Immigration Canada, *National Occupational Classification* (Ottawa: Canada Communications Group, 1993)).

In the 1997 AGS study, four occupational skill levels were derived from the NOC codes. The original skill levels were adjusted to take into account the primarily professional nature of occupations held by university graduates. Thus, the NOC's semiskilled and unskilled levels (C and D) were collapsed into a single category (4) due to a small number of such occupations in the 1997 AGS study. As a result, category 1 includes occupations at the managerial level and consists of managers and senior managers. Category 2 includes professional occupations and has occupations such as accountants, engineers, physicians, lawyers, professors, researchers, and writers. Category 3 includes technical, paraprofessional, and skilled occupations such as administrative occupations, technical occupations in engineering and electronics, medical technologists and technicians, sales and services supervisors, police officers, etc. Category 4 includes semiskilled and unskilled occupations such as clerical occupations, office equipment operators, retail sales clerks, cashiers, childcare and home support workers, labourers, etc. For the purposes of this study, those respondents with occupations at the managerial (1) and professional (2) skill levels were combined into a single category, reflecting employment of better quality, and were assigned a score of one (1) in the quality of employment index (n=3645).

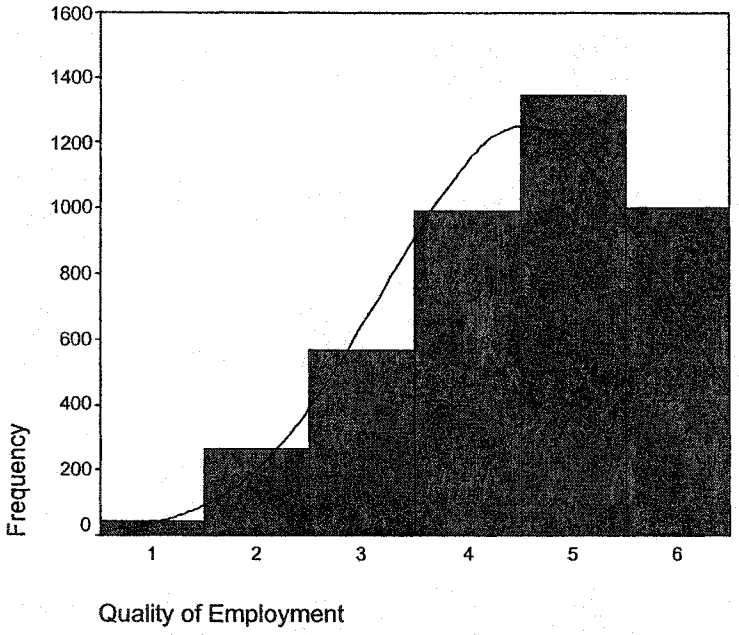
The 1997 AGS questionnaire also included a question: "Do you supervise the work of other employees?" that provides an additional measure of the quality of respondents' employment. Those respondents who answered positively to this question were assigned a score of one in the cumulative index (n=2250). Finally, responses to two questions that asked the respondents to self-assess their level of earnings and the skill level of their jobs were included in the index. The questions asked: "Given your education, training and experience, do you feel that you are earning: More than you deserve, About the right amount, or Less than you deserve" and "Given your education, training and experience, do you feel that you are overqualified for your job?"

Those respondents who felt that they earn about the right amount, or more than they deserve and those who did not feel overqualified for their jobs were identified as having employment of better quality (n=2298 and n=3594, respectively). In each case, they were assigned a score of 0.5. Thus, respondents who felt that their earning were commensurate with their education, training and experience and did not feel overqualified for their jobs would receive a score of one (1) in the cumulative index.

The constructed cumulative index measures the quality of employment enjoyed by recent university graduates on several different dimensions and has a range of values from 0 to 6. A score of zero (0) represents low quality of employment, while a score of six (6) represents employment of very high quality. As can be seen from Figure 4.1, the distribution of the index is slightly negatively skewed with a mean score of 4.05, indicating that a majority of Alberta university graduates were employed in reasonably good jobs two and a half years after graduation.

Although a question about promotion was asked of respondents, it was not included in the index because the question was not asked of self-employed respondents, thus resulting in a high number of missing cases (n=1517). Furthermore, although information on self-employment patterns among recent university graduates was available in the 1997 AGS data, it was also not used in the construction of the quality of employment index. According to the blocked mobility hypothesis, self-employment is considered as an alternative to wage labour in the segmented labour market which restricts employment opportunities for certain ethnic groups.

Figure 4.1: Frequency Distribution of Quality of Employment Index



However, several recent studies have demonstrated that regardless of their nativity and visibility status, those with post-secondary educational qualifications have a higher propensity to be self-employed (Beaujot *et al*, 1994; Mata and Pendakur, 1999; Maxim, 1992). Indeed, having distinguished between self-employment in professional and non-professional occupations of Canadian immigrants, Beaujot and colleagues (1994) found that the highest propensity toward self-employment in professional occupations was among the foreign-born with post-secondary education obtained in Canada. Furthermore, in his analysis of self-employment among visible minorities, Maxim (1992) found that "many second-generation visible minority-group members are attracted disproportionately to those self-employed professional sectors (e.g., medicine) which offer higher than average levels of income" (Maxim, 1992:194). Thus, it is unclear whether, for university educated visible minorities, self-employment is a consequence of labour market discrimination or, alternatively, whether it is a desirable form of employment. Therefore, the ambiguity in the interpretation of this

measure precludes its use for the assessment of the quality of employment of recent university graduates.

As noted earlier, differences in employment outcomes of Alberta university graduates will be analysed according to respondent's visible minority status and field of study. These two variables are central to this analysis of race and labour market outcomes. Visible minority status was based on respondents' self-identification with the visible minority population. It was measured using responses to the question: "Do you consider yourself to be a member of a visible minority group?" At the time of the interview, if asked, the interviewer clarified to respondents that "persons who are non-Caucasian in race or non-white in colour" were considered members of visible minorities. It could be argued that such a measure of visible minority status based on respondents' self-identification has greater validity than measures previously utilised by other researchers, such as country of birth, mother tongue, and language spoken at home. The potential for measurement error is larger within these other measures because they do not necessarily measure race. For example, one could be white and born in Kenya, or a Japanese respondent could speak English at home. Furthermore, these measures fail to determine how people perceive themselves in relation to others, using the criteria of colour. For the purposes of the regression analysis, the binary variable *visible minority status* was re-coded into a dummy variable. A score of one (1) was assigned to those respondents who identified themselves as members of visible minority groups (n=485) and a score of zero (0) was assigned to all other respondents (n=3723).

The focus of this analysis is to evaluate the effect of visible minority status on labour market outcomes of Alberta university graduates. Moreover, recognising that the type of education respondents' received (i.e., field of study) plays an important role in determining employment

outcomes, this analysis considers the effect of visible minority status according to respondents' field of study. Information on respondents' program of study was initially provided by the Registrars of the four Alberta universities and confirmed by the respondents during the interview. Given that each university has different faculties and each faculty offers different programs of study, the information about the major discipline/program of study and the faculty from which the degree was obtained was used to create a measure of the respondent's field of study in order to achieve uniformity of response categories. The 1997 AGS research team identified several challenges they faced when constructing 'field of study' categories.

> "Researchers must strike the right balance among the following goals: 1) ensuring that categories are as homogeneous as possible with respect to the different programs they encompass; 2) creating enough categories to allow detailed assessments of the outcomes of graduates from specific faculties or programs; 3) ensuring adequate sub-samples sizes so that reliability and confidentiality can be assured; and 4) creating a classification system that has a manageable number of categories for ease of data presentation" (Krahn and Lowe, 1998b:15-16).

The researchers created 21 'field of study' categories: 15 categories for the undergraduate programs and six categories for the graduate programs of study (see Krahn and Lowe, 1998b:15-16). Although some of the descriptive analysis in the present study was carried out using all 21 categories, the original categories were collapsed into nine categories for the purposes of the regression analysis to ensure an adequate number of cases in each category (see Table 4.3).

Prior to its inclusion in the multiple regression equation, the *field of study* variable was re-coded into a series of dummy variables, where a score of one (1) was assigned to a different 'field of study' category for each dummy variable. In the regression equation for each dependent variable, one 'field of study' category had to be omitted from the model so that it could serve as an intercept in the regression analysis and could therefore be used as a

Table 4.3: Field of Study Categories

Original	N
Fine Arts	108
Social Sciences	566
Humanities	149
Business/Commerce	476
Education	914
Physical Education/Kinesiology	136
Engineering	216
Law	103
Medicine/Dentistry	64
Nursing	176
Other Health Professions	164
Social Work	60
Mathematics/Physical Sciences	155
Biological Sciences	98
Agriculture/Forestry/Earth Sciences	138
M.A.	103
M.Ed.	164
M.Sc./M.Engineering	152
MBA	71
M.S.W./M.Nursing	63
Ph.D.	132
Total	**4208**

Collapsed	N
Fine Arts/Humanities/Social Sciences	823
Business/Commerce	476
Education/Physical Education	1050
Engineering	216
Law/Medicine/Dentistry	167
Nursing/Other Health Professions/ Social Work	400
Natural Sciences	391
Master's	553
Doctorate	132
Total	**4208**

comparison (reference) group for interpretation purposes. The category that had the smallest difference in the average values of the dependent variable between visible minority and non-visible minority groups was omitted from the regression equation. This rationale was used in order to approximate equivalent values of the intercept in the two models that were tested separately for visible minority and non-visible minority groups (see below). Thus, for the analysis of unemployment rates, the Law/Medicine/Dentistry category served as a reference category, for the analysis of income levels, the Doctorate category was selected as a reference

category, and for the analysis of the quality of employment, the Natural Sciences category was omitted from the regression equation (see Tables 6.2, 6.5, and 6.8).

In addition to visible minority status and field of study, eight other independent variables were controlled in the regression analysis in order to explore the possibility of additional effects on employment outcomes of 1994 graduates from Alberta universities. Demographic characteristics include respondent's gender, marital status, dependants, age, and disability status. Other independent variables are post-graduation enrolment since 1994, prior work experience, and industry type.

Numerous studies have illustrated that labour market outcomes can be influenced by demographic characteristics of respondents. Being male, married, and/or older, having no dependents and no employment disability is expected to be associated with more success in the labour market. A binary variable *gender* was re-coded into a dummy variable with a score of one (1) for males and a score of zero (0) for females. *Marital status* categories were re-coded into a dummy variable so that a score of one (1) represents those respondents who were married or living with a partner and a score of zero (0) represents those respondents who were single (never married), divorced, separated, or widowed. For the variable *dependants*, a score of one (1) was assigned to those respondents who had dependent children and/or dependent adults living with them at the time of the survey and a score of zero (0) was assigned to those respondents without any dependants. Respondent's *age* is a ratio-level variable that measures the age of the respondents in years, ranging from 20 to 66 years. A measure of respondents' *disability status* is based on the number of respondents who consider themselves to have a disability that may disadvantage them in employment (1) and those who do not (0).

Among non-students, there may be some respondents who have taken additional training since their graduation in 1994. Labour market outcomes for these respondents are expected to differ from other graduates of Alberta universities as their additional education/training has delayed their entry into the labour force. It may also have improved their labour market prospects. A question from the 1997 AGS questionnaire was utilised in order to capture these respondents: "Since graduation in 1994, have you been enrolled in any post-secondary program for credit (i.e., leading toward a degree, diploma or certificate)?" For the independent variable *post-graduation enrolment since 1994*, those respondents who answered positively to this question were assigned a score of one (1) and all other respondents were assigned a score of zero (0).

Furthermore, the experience obtained from full-time employment prior to graduation from university in 1994 may give an advantage in the labour market to those graduates with such experience. In order to differentiate between the respondents with and without full-time work experience, the following question was utilised: "Before you completed your [university] program in 1994, did you ever work full-time, that is, usually 30 or more hours a week, not including summer jobs or co-op work terms?" (Prior to enrolling or while enrolled in the program). For the independent variable *prior work experience*, those respondents who answered positively to the question were assigned a score of one (1) and all other respondents were assigned a score of zero (0).

Remuneration as well as the quality of employment, and benefits packages in particular, are expected to vary according to the type of industry respondents were employed in: private or public. Furthermore, as a result of formal Employment Equity programs in the public sector, labour market experiences and outcomes for visible minorities may be different depending on the type of industry where they are employed. The 1997 AGS questions pertaining to

respondents' occupation included a question: "What kind of business, industry, or service is this?" Original responses to this question were classified according to the Standard Industry Classification (SIC) codes. In order to make a distinction between public and private sectors, 2-digit industry titles were collapsed so that educational services, health and social services, and public administration came to form the public sector, and all other industries came to form the private sector. Out of 470 self-employed respondents in the sub-sample, 165 were working in the public sector industries; these respondents were re-coded to become part of the private sector. Thus, the *industry type* variable is a binary variable, where a score of one (1) represents respondents working in the public sector industries and a score of zero (0) represents respondents working in the private sector industries.

The following chapter, Profile of 1994 Graduates from Alberta Universities, presents a descriptive analysis of the sub-sample of Alberta university graduates, using the measures outlined in this chapter as well as additional measures from the 1997 AGS that were identified as being relevant to the study. The chapter on Multivariate Findings: Unemployment, Earnings, and Quality of Employment provides results of the multiple regression analysis that was used to evaluate the specified hypotheses of this study.

V: Profile of 1994 Graduates from Alberta Universities

As previously noted, labour market outcomes of university graduates are expected to vary according to their program of university study. This reasoning is based on a refinement of human capital theory, which predicts that individuals' investments in higher education yield higher economic returns in the labour market. The original formulations of the human capital theory are extended to take into account differences in labour market outcomes that are due not only to the length of higher (post-secondary) education but also to the type of post-secondary education, that is, the field of study.

The sub-sample of 1994 graduates of Alberta universities who responded to the 1997 Alberta Graduate Survey is profiled in this chapter. Respondents' experiences during their university studies, their transition to work after graduating, and their occupational and other employment outcomes are presented according to the field of study as it is believed that post-graduation experiences of respondents can be influenced by the academic program in which they were enrolled during their university studies. Furthermore, the choices individuals make with respect to their program of study can also be influenced by their demographic characteristics. Therefore, demographic characteristics of respondents are also presented according to the field of study.

Demographic Characteristics

As previously discussed, the initial sample of 6012 Alberta university graduates who responded to the 1997 AGS study was reduced to 4208 graduates by restricting the sample to non-students, non-Aboriginal, and employed respondents. Table 5.1 presents demographic characteristics of 4208 respondents by their field of study. As can be gleaned from the table,

the highest number of graduates completed their degrees in the field of education (n=914), Social Sciences (n=566), and Business/Commerce (n=476). A total of 553 respondents

Table 5.1: Demographic Characteristics of Respondents by Field of Study

Field of Study	Average Age	Female	VisMin	Disabled	Married or Common-Law	With Dependents	Total N
		% of respondents					
Fine Arts	27.4	67.6	6.5	3.7	40.2	19.4	108
Social Sciences	26.7	62.2	10.1	2.7	45.3	15.0	566
Humanities	27.2	73.2	10.1	3.4	42.5	16.2	149
Business/Commerce	25.5	44.5	14.7	1.7	41.7	16.0	476
Education	29.4	72.4	7.5	2.8	60.2	32.7	914
Physical Education/Kinesiology	24.9	50.7	4.4	0.0	44.1	16.2	136
Engineering	25.0	16.2	19.9	0.9	43.5	16.7	216
Law	29.9	52.4	6.8	4.9	57.4	23.5	103
Medicine/Dentistry	27.2	40.6	17.2	0.0	54.7	23.4	64
Nursing	30.4	96.0	11.4	2.3	62.5	39.8	176
Other Health Professions	25.3	68.3	17.1	1.2	48.1	21.3	164
Social Work	33.1	78.3	8.3	5.0	58.3	30.0	60
Mathematics/Physical Sciences	25.5	28.4	21.3	2.6	40.6	14.8	155
Biological Sciences	24.9	51.0	21.4	5.1	41.8	16.3	98
Agriculture/Forestry/Earth Sciences	25.5	43.5	7.2	2.9	40.6	15.2	138
M.A.	34.8	61.2	5.8	1.9	77.5	38.2	103
M.Ed.	40.4	64.0	3.7	4.9	77.3	49.1	164
M.Sc./M.Engineering	31.8	28.9	18.4	2.6	78.0	42.1	152
MBA	33.9	33.8	4.2	0.0	81.7	50.7	71
M.S.W./M.Nursing	38.0	85.7	7.9	7.9	69.8	46.0	63
Ph.D.	37.3	30.3	26.5	4.5	78.5	54.3	132
Total	**28.7**	**57.1**	**11.5**	**2.7**	**54.0**	**26.3**	**4208**

received graduate degrees at the Master's level. On the other hand, only 60 respondents received degrees in Social Work and 64 in Medicine or Dentistry.

Two and a half years after graduation, the sub-sample of 1994 Alberta university graduates was, on average, almost 29 years old. Respondents who completed graduate degrees were older than respondents with undergraduate degrees. Among respondents with undergraduate degrees, those who specialised in Social Work, Nursing, Law and Education were older on average (33.1, 30.4, 29.9 and 29.4 years old, respectively). Females made up more than half of the sub-sample of 1994 university graduates (57.1%). Variations in gender distribution across different fields of study are substantial. It is evident that females were more attracted to areas such as Nursing (96.0% at the Bachelor's level and 85.7% at the Master's level), Social Work (78.3%) and Education (72.4% at the Bachelor's level and 64.0% at the Master's level). On the other hand, they were less inclined to go into fields such as Engineering or Mathematics and Physical Sciences (16.2% for Engineering and 28.4% for Mathematics and Physical Sciences at the Bachelor's level, and 28.9% at the Master's level). Females were also under-represented among graduates from MBA and Doctorate programs (33.8% and 30.3%, respectively).

Eleven and a half percent of the graduates in the sub-sample identified themselves as a member of a visible minority group. This percentage is slightly lower than the one for the total sample (14%), but is still higher than the provincial average of nine percent (Statistics Canada, 1996:3 as quoted in Krahn and Lowe, 1998b:18). A higher proportion of visible minorities among university graduates indicates that visible minorities were more likely to pursue university education. Furthermore, a smaller proportion of visible minorities in the sub-sample of non-students indicates that visible minorities were also more likely to continue their studies after they graduated in 1994 from one of the four Alberta universities. Thus, both findings indicate

that there is a higher participation in university education among visible minorities. A substantial variation in the representation of visible minority members across different fields of study was also observed. At the undergraduate level, the proportion of visible minority members was higher in programs in Mathematical and Physical Sciences (21.3%), Biological Sciences (21.4%), Engineering (19.9%), Medicine/Dentistry (17.2%), and Other Health Professions (17.1%). At the graduate level, they gravitated towards Master's of Science/Master's of Engineering (18.4%), and Doctorate programs (26.5%). It appears that visible minorities tended to make investments in university education in the subject areas that yield higher returns in the labour market.

The proportion of graduates in the sub-sample with a disability that may disadvantage them in employment was almost 3 percent. Fifty-four percent of the sub-sample were either married or living with a partner and 26 percent had either dependent children or dependent adults living with them at the time of the survey. The number of married or common-law respondents and those living with dependants was higher among older graduates (those who completed graduate degrees, as well as those with a specialisation in Nursing, Education, and Social Work (39.8%, 32.7%, and 30.0%, respectively)).

Educational Experiences and Transition to Work

Tables 5.2 and 5.3 present information about respondents' educational experiences and their transition from university to the labour force. Although the information presented in these tables is not utilised in the regression analysis of labour market outcomes of 1994 Alberta university graduates, this additional information about the survey respondents is useful for gaining a better understanding of their background. As can be observed from Table 5.2, only ten percent of the sub-sample was enrolled in their university programs part-time. At the

undergraduate level, part-time enrolment was higher among graduates from the programs in Other Health Professions (18.5%), Nursing (17.8%), Fine Arts (16.2%), Social Work (13.8%), and Engineering (13.7%). At the graduate level, most graduates were enrolled full-time, with the exception of those enrolled in Doctorate programs (11.4%). As a result of their older age, almost all respondents in the sub-sample who completed graduate studies worked full-time prior to or during their enrolment in the graduate programs. At the undergraduate level, graduates from programs in Social Work, Law, and Nursing were more likely to have worked full-time (76.7%, 66.0%, and 55.1%, respectively). This may be due to their older age and, in turn, may explain their tendency toward part-time enrolment.

When asked how important it was for them to acquire the skills needed for a particular job, the majority of respondents felt that acquisition of skills was important to them at the time when they decided to enrol in their chosen programs of study; 52.9 percent said it was "very important" and a further 30.6% felt it was "important" to them to acquire the job skills. Acquisition of skills was particularly important to graduates from the programs in Medicine or Dentistry, Law, Physical Education, Education, Engineering, Social Work, and Business and Commerce.

Not all those for whom the acquisition of skills was very important were able to develop and/or improve their skills by enrolling in a co-op education or other work experience programs during their university studies. Overall, only 6.5 percent of respondents in the sub-sample reported enrolment in such programs. At the undergraduate level, those who specialised in Business or Commerce, Medicine or Dentistry, and Law were more successful in developing their skills through the co-op or work placements (14.9%, 9.4%, and 8.7%, respectively). Among respondents with graduate degrees, only those who completed Master's of Science or Master's

Table 5.2: Educational Experiences by Field of Study

Field of Study	Enrolled Part-Time	Worked Full-Time*	Acquisition Of Skills Very Important**	Enrolled In Co-op
	% of respondents			
Fine Arts	16.2	45.4	44.4	6.0
Social Sciences	15.8	46.3	45.2	5.2
Humanities	4.2	45.6	43.8	3.5
Business/Commerce	4.5	43.7	56.1	14.9
Education	10.6	53.6	66.0	6.9
Physical Education/Kinesiology	9.6	29.4	79.3	3.7
Engineering	13.7	29.2	63.9	5.6
Law	9.7	66.0	84.5	8.7
Medicine/Dentistry	9.5	31.3	89.1	9.4
Nursing	17.8	55.1	55.2	6.4
Other Health Professions	18.5	29.3	47.2	6.2
Social Work	13.8	76.7	63.8	3.4
Mathematics/Physical Sciences	9.2	41.3	36.6	2.0
Biological Sciences	3.2	28.6	36.1	3.2
Agriculture/Forestry/Earth Sciences	6.0	34.8	28.5	5.2
M.A.	5.9	75.7	27.5	1.0
M.Ed.	6.5	94.5	37.8	2.6
M.Sc./M.Engineering	7.9	67.1	54.3	9.9
MBA	0.0	91.5	29.6	4.2
M.S.W./M.Nursing	0.0	88.9	30.6	1.6
Ph.D.	11.4	75.8	30.5	3.8
Total	**10.2**	**51.2**	**52.9**	**6.5**

* Full-time work experience was assessed using the question: "Before you completed your [specific] program in 1994, did you ever work full-time, that is, usually 30 or more hours a week, not including summer jobs or co-op work terms? (Prior to enrolling or while enrolled in the program).

** Respondents were asked to respond to the question: "When you decided to enrol in the [specific] program, how important was it for you to acquire skills needed for a particular job?" on a four-point scale (1=Very important; 2=Important; 3=Not important; 4=Not at all important). Only percentages for score one (1) are presented in the table.

Table 5.3: Transition to Work by Field of Study

Field of Study	Adjustment to Work Very or Somewhat Difficult*	Degree Required for Job	Job Very Related to Program of Study**
	% of respondents		
Fine Arts	46.3	34.6	30.8
Social Sciences	33.5	37.3	13.5
Humanities	37.6	34.2	13.4
Business/Commerce	27.7	59.5	33.2
Education	30.7	83.1	49.9
Physical Education/Kinesiology	25.9	44.9	35.3
Engineering	30.1	87.4	36.1
Law	28.2	94.1	70.6
Medicine/Dentistry	31.7	100.0	98.4
Nursing	28.0	42.3	48.9
Other Health Professions	18.9	93.3	79.3
Social Work	27.1	79.7	54.2
Mathematics/Physical Sciences	29.4	54.5	27.1
Biological Sciences	39.2	57.3	17.3
Agriculture/Forestry/Earth Sciences	25.4	62.8	35.0
M.A.	23.3	73.0	36.3
M.Ed.	16.7	77.4	54.9
M.Sc./M.Engineering	18.5	83.2	47.0
MBA	8.6	84.1	54.9
M.S.W./M.Nursing	15.8	91.9	66.7
Ph.D.	22.9	89.4	67.2
Total	**28.4**	**67.0**	**41.1**

* Respondents were asked to respond to the question: "Since graduating in 1994, how would you rate your adjustment from university to the work force?" on a four-point scale (1=Very difficult; 2=Somewhat difficult; 3=Somewhat easy; 4=Very easy). Percentages of responses to scores one (1) and two (2) are presented in this table.

** Respondents were asked to respond to the question: "Overall, how related in your current (main) job to the program from which you graduated in 1994?" on a four-point scale (1=Very related; 2=Somewhat related; 3=Not very related; 4=Not at all related). Percentages of responses to score one (1) are presented in this table.

of Engineering degrees were more likely to be enrolled in co-op or work experience programs (9.9%).

In terms of the university-to-work transition, almost one third of the respondents in the sub-sample (28.4%) rated their adjustment from university to the work force as very or somewhat difficult (see Table 5.3). A high proportion of graduates with liberal arts degrees, and those with degrees in Fine Arts and Humanities in particular, felt that their adjustment to the work force was difficult (46.3% of Fine Arts, 37.6% of Humanities, and 33.5% of Social Sciences graduates). Among undergraduates with science degrees, a high proportion of graduates from Biological Sciences programs considered their transition to the work force difficult (39.2%). Among undergraduates, graduates from programs in Other Health Professions were least likely to rate their adjustment to work as difficult (18.9%). Most respondents with graduate degrees, and particularly graduates from MBA programs, felt that their adjustment to work was not difficult.

For 67 percent of the sub-sample, having a university degree was a requirement when they were hired/selected for their jobs. Furthermore, 41 percent of respondents indicated that, overall, their current jobs were very related to the university program from which they graduated in 1994, and a further 37 percent of respondents felt that their jobs were somewhat related to their education. Conversely, only eight percent of respondents indicated that their employment was not at all related to the program from which they graduated.

Differences by field of study with respect to these two measures are striking. All graduates from Medicine or Dentistry programs indicated that their medical degrees were required when they were hired for the job. Furthermore, all of them indicated that their jobs were either very

related (98.4%) or somewhat related (1.6%) to their university programs. Similar observations can be made for graduates from programs in Law, Other Health Professions, Engineering, Education, Social Work, and those with graduate degrees. In contrast, graduates from liberal arts programs (Fine Arts, Social Sciences, Humanities), Physical Education, and science programs (Mathematics and Physical Sciences, Biological Sciences, Agriculture, Forestry and Earth Sciences) were not as likely to hold jobs that required a university degree or to feel that their jobs were very related to their university programs of study. Indeed, only a quarter of those with degrees in Humanities and Fine Arts were able to secure jobs that required a university degree (34.2% and 34.6%, respectively), and few respondents with degrees in Humanities, Social Sciences, and Biological Sciences felt that their jobs were very related to their university programs of study (13.4%, 13.5%, and 17.3%, respectively).

Labour Market Outcomes

Table 5.4 presents information on occupational outcomes of the sub-sample respondents by field of study. Overall, it can be observed that for a vast majority university education does yield higher returns in the labour market with respect to occupational status, a finding that supports human capital theory. Two and a half years after graduation, the majority of respondents (62.4%) held positions in professional occupations and another 10.7 percent of respondents secured managerial jobs. Only 11.8 percent of graduates found positions at the semiskilled or unskilled occupational level, positions that required no formal education. In contrast, only 24 percent of all labour force participants in Canada were found in professional occupations and another 10 percent held managerial positions in 2000 (Krahn and Lowe, 2002:67).

Evidence of occupational success of 1994 Alberta university graduates by field of study provides further support for human capital theory. The observed percentages clearly indicate that in order to attain higher occupational status, the type of education makes a big difference. The highest proportion of graduates who managed to secure professional jobs two and a half years after graduation was among those with professional degrees. Without exception, all graduates from Medicine and Dentistry programs were in professional jobs two and a half years

Table 5.4: Occupational, Self-Employment, and Industry Outcomes by Field of Study

	Occupational Skill Level Category*				Self-	Public
Field of Study	1	2	3	4	Employed	Sector
	% of respondents					
Fine Arts	10.3	35.5	26.2	28.0	31.8	25.2
Social Sciences	15.2	32.3	26.3	26.1	11.1	34.1
Humanities	5.4	36.9	23.5	34.2	14.1	29.7
Business/Commerce	22.7	42.1	17.3	17.9	13.7	8.9
Education	3.2	83.0	8.0	5.8	4.2	86.9
Physical Education/Kinesiology	16.2	38.2	23.5	22.1	11.0	50.7
Engineering	0.9	93.1	4.6	1.4	5.1	2.3
Law	2.0	95.1	0.0	2.9	24.5	3.9
Medicine/Dentistry	0.0	100.0	0.0	0.0	50.0	50.0
Nursing	2.3	94.9	1.1	1.7	4.0	95.5
Other Health Professions	0.0	72.0	26.2	1.8	5.5	90.2
Social Work	1.7	62.7	35.6	0.0	11.9	84.7
Mathematics/Physical Sciences	12.3	55.5	12.3	20.0	12.3	20.6
Biological Sciences	13.3	43.9	27.6	15.3	6.1	46.9
Agriculture/Forestry/Earth Sciences	4.4	40.1	44.5	10.9	15.3	18.2
M.A.	14.6	66.0	10.7	8.7	25.2	48.5
M.Ed.	28.0	58.5	9.8	3.7	9.8	86.5
M.Sc./M.Engineering	11.9	75.5	9.3	3.3	15.2	33.1
MBA	45.1	49.3	4.2	1.4	16.9	11.3
M.S.W./M.Nursing	22.2	66.7	7.9	3.2	9.5	88.9
Ph.D.	9.1	84.1	6.1	0.8	10.6	73.5
Total	**10.7**	**62.4**	**15.2**	**11.8**	**11.2**	**49.6**

* Occupational skill level categories were based on two-digit NOC codes and have the following titles: Skill level A "Managerial," Skill level B "Professional," Skill level C "Technical/Paraprofessional," Skill level D "Semi-skilled/Unskilled" (see Construction of Key Variables section in Data and Methods chapter).

after graduation. A great majority of graduates from programs in Law, Nursing, Engineering, Education, Other Health Professions, and Social Work were also found in professional jobs (95.1%, 94.9%, 93.1%, 83.0%, 72.0%, and 62.7%, respectively). Evidently, graduates from professional schools possess specific skills that allow them to enter a very delineated labour market. A majority of respondents with Business or Commerce degrees held either managerial (22.7%) or professional (42.1%) positions. Similarly, most respondents with graduates degrees were found in jobs at either the managerial or professional skill level.

In sharp contrast to this picture of occupational success of graduates with professional or graduate degrees is the occupational status attainment of respondents with liberal arts and science degrees. A majority of respondents with degrees in Fine Arts, Social Sciences, and Humanities as well as those with degrees in Agriculture, Forestry, Earth Sciences and Biological Sciences were found in jobs at the paraprofessional or semiskilled and unskilled levels, jobs that do not require a university degree. Empirical evidence from previous research suggests, however, that it takes graduates with liberal arts and science degrees longer to reap the rewards of/from their university education and to enter the labour market with higher-level jobs (Giles and Drewes, 2001).

The nature of respondents' jobs can also be evaluated by considering patterns of self-employment as well as of industry type (private vs. public). Despite a growing trend toward self-employment in the 1990s, the rate of self-employment among Alberta university graduates was, on average, only 11 percent, or almost half the provincial average of 20 percent (see column 5 in Table 5.4). The rate of self-employment was the highest among respondents from Medicine or Dentistry and Law programs (50.0% and 24.5%, respectively). The number of self-employed graduates from these and other programs (such as Engineering, Business and

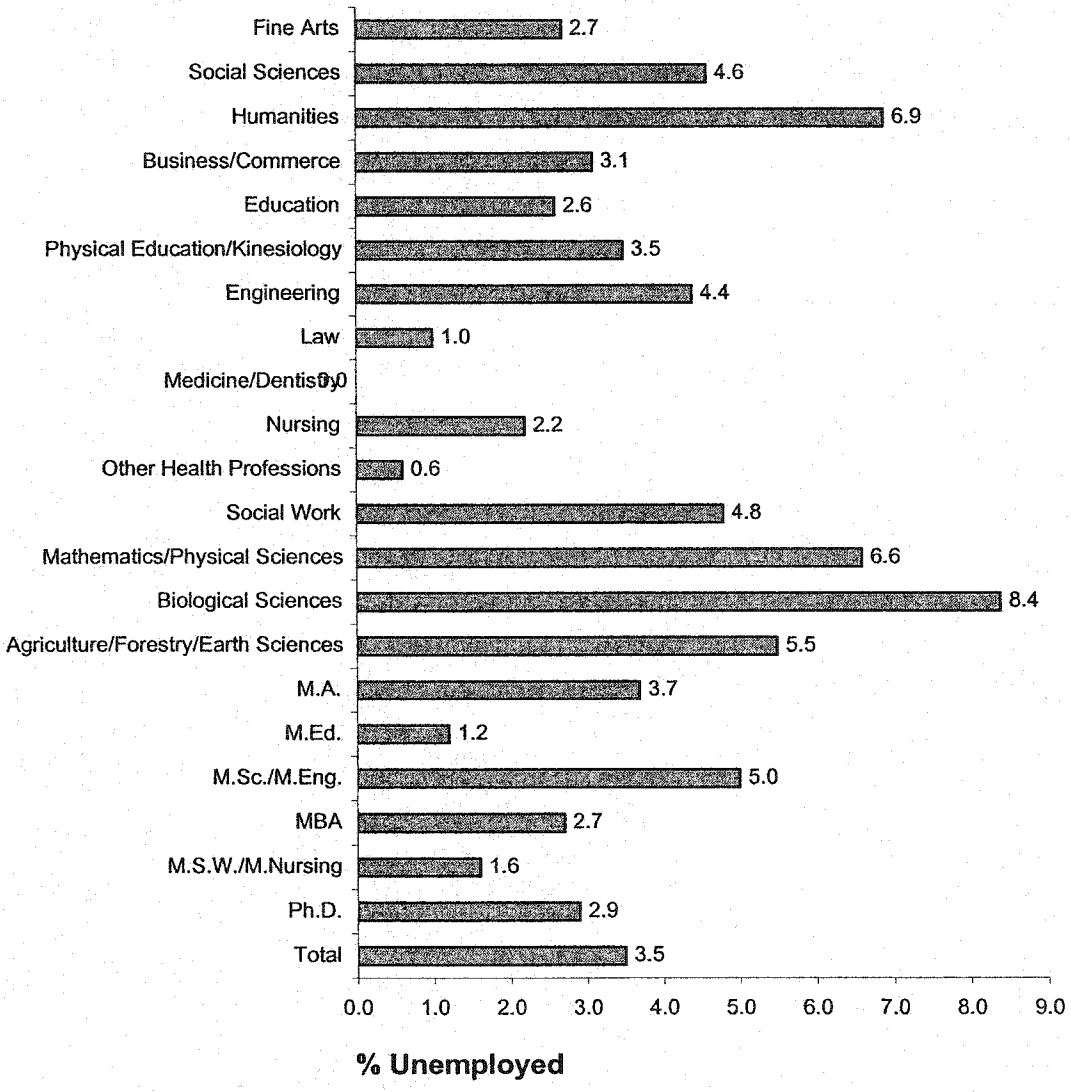
Commerce) is expected to rise as their careers progress. Two and a half years after graduation, many of these graduates are still continuing their education by completing internships and specialised training at the hospitals, articling and apprenticeships at the law firms, or working toward other types of professional accreditation. A surprisingly high rate of self-employment was also observed among graduates from Fine Arts and Master's of Arts programs (31.8% and 25.2%, respectively).

Almost half (49.6%) of the respondents in the sub-sample were employed in the public sector industries, such as educational services, health and social services, and public administration (see column 6 in Table 5.4). Only a small minority of graduates from programs in Engineering (2.3%), Law (3.9%), Business and Commerce (8.9%), including MBA (11.3%), were employed in the public sector. In sharp contrast were those with undergraduate or graduate degrees in Nursing, Other Health Professions, Education, and Social Work, nearly all of whom were employed in the public sector. At the undergraduate level, 95.5 percent of Nursing graduates, 90.2 percent of graduates from Other Health Professions, 86.9 percent of Education graduates and 84.7 percent of Social Work graduates were employed in the public sector. At the graduate level, 88.9 percent of Master's of Nursing graduates and 86.5 percent of Master's of Education graduates were working in the public sector industries.

Besides occupational status attainment, labour market outcomes of 1994 graduates from Alberta universities are also evaluated, in a preliminary fashion, in terms of unemployment, earnings, as well as a number of other indicators of the quality of their jobs, such as temporary versus permanent employment, supervision of other employees, benefits provided by the job, and self-assessment of earnings and the skill level of the job. In 1997, the unemployment rate of the total sample of 1994 Alberta university graduates was 4.9 percent. After omitting from

the sample those individuals who were enrolled in post-secondary programs (either on a full- or part-time basis) as well as persons of Aboriginal ancestry, the unemployment rate dropped to 3.5 percent. This rate is substantially lower than the 1997 provincial average of 6 percent (Krahn and Lowe, 1998b).

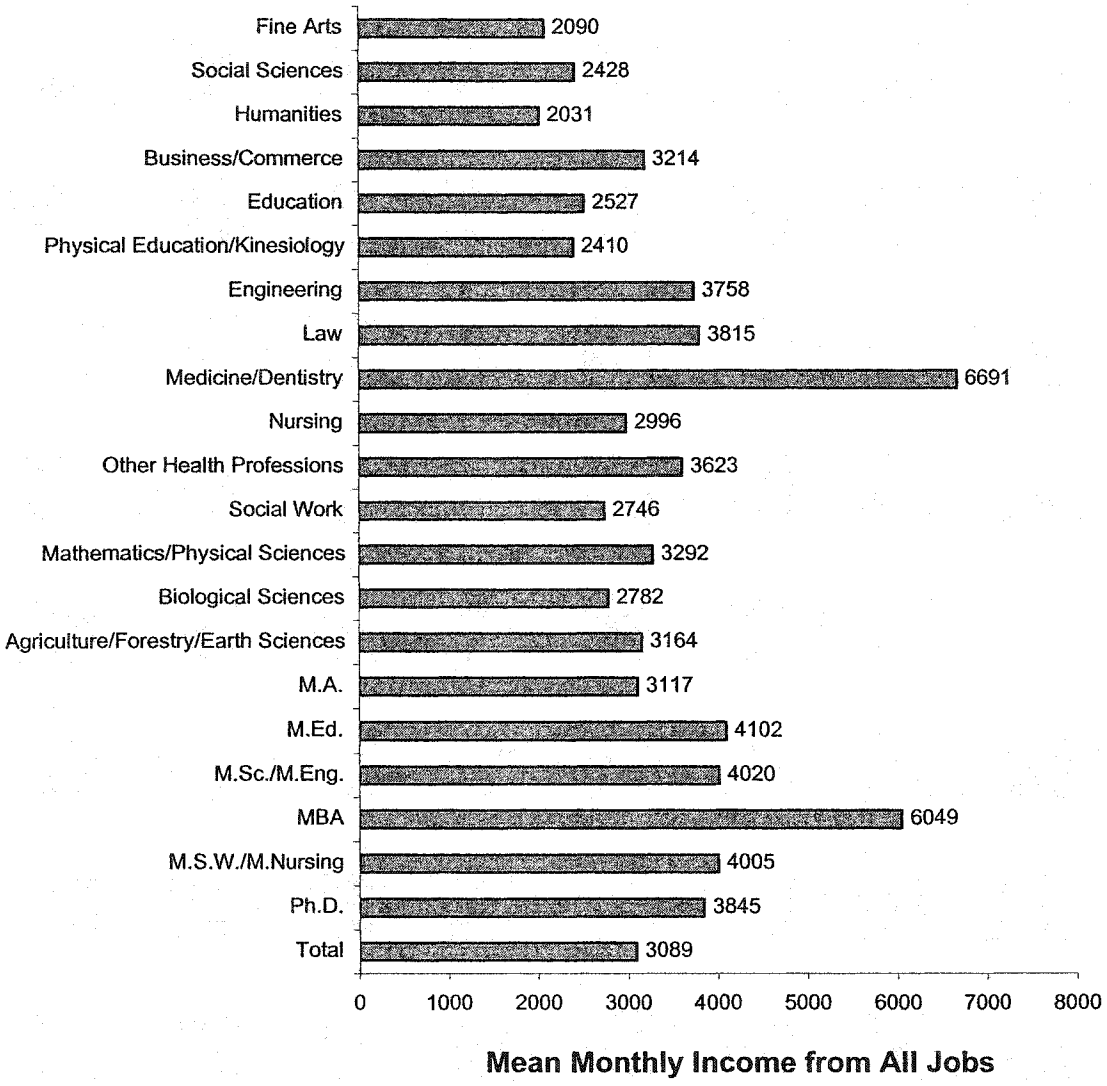
Figure 5.1: Unemployment Rate by Field of Study*



* Analysis of unemployment was based on the sub-sample that was not restricted to employed respondents (see Data and Methods chapter).

Significant variations in the unemployment rate were observed by field of study. Two and a half years after graduation, a high number of respondents with degrees in Biological Sciences, Humanities, and Mathematics and Physical Sciences were still unemployed

Figure 5.2: Average Monthly Earnings by Field of Study*



* Analysis of average monthly earnings was based on the sub-sample that was restricted to employed respondents only.

(8.4%, 6.9%, and 6.6%, respectively). Above average unemployment was also observed among graduates from Social Work and Social Sciences (4.8% and 4.6%, respectively). Surprisingly, unemployment was also relatively high among graduates with undergraduate Engineering degrees as well as Master's of Science and Master's of Engineering degrees (4.4% and 5.0%, respectively). On the other hand, almost all graduates from Other Health Professions, Law, Nursing, Master's of Education, Master's of Social Work and Master's of Nursing were employed two and a half years after graduation. Furthermore, there were no unemployed graduates among those with degrees in Medicine and Dentistry.

The most lucrative jobs in terms of income were landed by those with professional degrees in Medicine/Dentistry and MBAs, who had an average monthly income of $6691 and $6049, respectively (see Figure 5.2). Those respondents with degrees in M.Ed., M.Sc./M.Eng., M.S.W./M.Nursing, Ph.D., Law, Engineering, Other Health Professions, Mathematics/Physical Sciences, Business/Commerce, Agriculture/Forestry/Earth Sciences, and M.A. also received incomes that were above the average of $3089. Without exception, all respondents with graduate degrees had above average earnings, and the earnings of those with MBA degrees were particularly high. Graduates with liberal arts degrees were once again at a disadvantage. The incomes of Fine Arts and Humanities graduates were the lowest at $2090 and $2031, respectively.

In addition to unemployment and income, labour market outcomes of 1994 Alberta university graduates are also assessed in this study with the aid of indicators, presented in Table 5.5, that measure the quality of respondents' working arrangements from several dimensions. As can be observed from the table, almost 22 percent of respondents were in temporary jobs two and a half years after graduation. The highest proportion of respondents working in temporary jobs

Table 5.5: Employment Outcomes by Field of Study

Field of Study	Temporary Job	Part-Time Job	Supervise Others	Health Benefits	Dental Plan	Pension Plan	Earn Less Than Deserve*	Over-qualified**
	% of respondents							
Fine Arts	26.2	28.0	29.0	38.1	39.0	32.1	77.4	40.8
Social Sciences	21.9	11.5	43.1	60.2	59.6	45.6	59.2	43.5
Humanities	23.5	23.5	29.1	55.4	50.7	44.9	60.0	46.6
Business/Commerce	6.9	3.4	57.1	73.1	70.8	51.6	48.2	30.9
Education	38.1	19.1	25.9	74.2	74.4	72.9	61.0	19.2
Physical Education/Kinesiology	26.5	10.4	44.9	60.7	58.5	47.7	62.2	34.6
Engineering	4.2	0.0	53.7	83.3	82.8	62.0	29.1	13.6
Law	7.8	3.9	72.3	59.8	60.4	6.9	39.4	7.9
Medicine/Dentistry	34.4	3.1	87.5	40.6	55.6	17.5	45.2	0.0
Nursing	17.0	31.3	55.1	60.9	67.4	57.6	49.1	19.9
Other Health Professions	7.9	12.8	53.7	67.1	74.4	49.1	27.2	15.9
Social Work	18.6	10.2	28.8	69.5	71.2	60.3	65.5	15.3
Mathematics/Physical Sciences	15.6	5.8	43.2	67.5	68.8	46.1	48.0	30.4
Biological Sciences	29.6	12.2	42.9	61.2	58.2	49.0	56.3	38.5
Agriculture/Forestry/Earth Sciences	22.6	7.3	56.2	60.3	55.6	43.4	43.1	20.6
M.A.	16.7	12.6	48.5	66.0	66.0	50.5	62.0	35.9
M.Ed.	14.6	12.8	57.7	81.0	81.7	79.3	59.6	27.6
M.Sc./M.Eng.	20.5	4.0	62.9	69.1	71.1	53.3	46.7	18.9
MBA	9.9	5.6	67.6	80.3	77.5	63.4	32.4	16.9
M.S.W./M.Nursing	19.0	14.3	50.8	71.0	72.6	69.4	57.6	16.1
Ph.D.	30.8	6.1	55.3	65.9	63.6	59.8	63.1	23.1
Total	**21.7**	**12.3**	**45.6**	**67.6**	**67.7**	**55.1**	**53.4**	**26.4**

* Respondents were asked the question: "Given your education, training and experience, do you feel that you are earning: More than you deserve (1), About the right amount (2), Less than you deserve (3)." Percentage of responses to score three (3) are presented in this table.

** Respondents were asked the question: "Given your education, training and experience, do you feel that you are overqualified for your (main) job?" Percentage of positive responses is presented in this table.

was among Education graduates (38.1%). Although a high proportion of Medicine and Dentistry graduates stated that their jobs were temporary (34.4%), this figure may be misleading as it is likely that at the time of the survey, these graduates were still completing their internships and specialised training at the hospitals, and hence were inclined to consider these jobs temporary. Once again, at a disadvantage were graduates with liberal arts degrees, Biological Sciences, Agriculture/Forestry/Earth Sciences and Physical Education programs as well as those with Doctorate and Master's of Science and Master's of Engineering degrees. An above average proportion of them were only able to find temporary employment two and a half years after graduation. On the other hand, a very large majority of graduates from programs in Engineering, Business and Commerce, Law, Other Health Professions, and MBA were able to secure permanent employment. Furthermore, while respondents with degrees Engineering, Medicine and Dentistry, Business and Commerce, Law, M.Sc. and M.Eng., and MBA were found predominantly in full-time jobs, an above average proportion of graduates from Nursing (both at the undergraduate and graduate levels), Fine Arts, Humanities, and Education programs were working in part-time jobs.

Overall, 45.6 percent of respondents stated that they supervise the work of other employees. The percentage distribution of respondents who supervise the work of other employees as part of their working arrangement corresponds to the nature of respondents' work. While a majority of respondents with degrees in Medicine and Dentistry, Law, and Business and Commerce (either at the undergraduate or graduate level) as well as those with graduate degrees supervised the work of others, only a quarter of graduates from Education, Social Work, Fine Arts and Humanities stated that they supervise the work of others as part of their jobs.

Most respondents held jobs which provided a lucrative benefits package. Over two-thirds had jobs that provided extended health benefits and a dental plan, and over half had jobs that provided a retirement plan or pension. Many Engineering graduates were able to secure not only permanent and full-time jobs, but also jobs that provided extensive benefits package: 83.3% had extended health benefits, 82.8% had a dental plan, and 62.0% had a retirement plan/pension. Despite the fact that a high proportion of Education graduates were working in temporary jobs, many of them stated that their jobs provided all three types of benefits (74.2%, 74.4%, and 72.9%). Similarly, a majority of those with graduate degrees in Education indicated that their jobs provided all three types of benefits (81.0%, 81.7%, and 79.3%). Many graduates from Business and Commerce programs (either at the undergraduate or graduate level) also had very good benefits packages (at the undergraduate level: 73.1%, 70.8%, and 51.6% and at the graduate level: 80.3%, 77.5%, and 63.4%).

On the other side of the spectrum were graduates with Fine Arts, Medicine and Dentistry, and Law degrees, many of whom had jobs that did not provide benefits. This may be due to a high rate of self-employment among these respondents as well as a high incidence of temporary employment among Medicine and Dentistry, and Fine Arts graduates. Widespread temporary and part-time employment as well as self-employment may also explain why the proportion of graduates from Humanities, Social Sciences, Agriculture, Forestry, Earth Sciences, Physical Education, and Nursing, who receive benefits is lower than the average.

Given their lower earnings, and a high incidence of temporary, part-time and self-employment that does not always provide benefits, it is not surprising that many graduates with liberal arts degrees felt that they earned less than they deserve and were overqualified for their jobs. Similarly, many Education, Physical Education, and Nursing graduates also felt that they

earned less than they deserve, given their education, training and experience. Graduates with degrees in Other Health Professions, Engineering, and Law, on the other hand, were the least likely to feel underpaid (27.2%, 29.1%, 39.4%, respectively). They also were not as likely to feel overqualified for their jobs (13.6% and 7.9%). Again, this is not surprising given that two and a half years after graduation, a majority of them had secured permanent, full-time employment that provides good benefits and higher wages.

It is somewhat surprising to find that 45.2 percent of Medicine and Dentistry graduates felt that they earn less than they deserve, given that their salaries are the highest of all university graduates. However, none of them felt overqualified to their jobs. At the graduate level, those with Doctorate and M.A. degrees were the most likely to feel that they earn less than they deserve (63.1% and 62%, respectively) and those with MBA degrees were the least likely to feel underpaid (32.4%). They were also the least likely to feel overqualified for their jobs, along with M.S.W. and M.Nursing, and M.Sc. and M.Engineering graduates (16.9%, 16.1%, and 18.9%, respectively). The highest proportion of graduates who felt that they were overqualified for their jobs, given their education, training and experience was among those with M.A. degrees (35.9%).

Summary

This chapter has provided a descriptive profile of 1994 graduates of Alberta universities with respect to their demographic characteristics, educational experiences, school-to-work transition, occupational and other employment outcomes. A profile of demographic characteristics of respondents by field of study has demonstrated that respondents' choices with respect to their program of study vary according to their age, gender, as well as marital, visible minority and disability statuses. Furthermore, a preliminary analysis of respondents' educational and school-

to-work transition experiences, and occupational and other employment outcomes has shown that graduates' experiences at the university and in the labour market are influenced by the type of education they received. While some university degrees (e.g., Engineering, Law, Medicine and Dentistry) ensured an easy transition of graduates into a specialised/delineated labour market with predominantly good jobs, other university degrees (e.g., Fine Arts, Humanities, Biological Sciences, Agriculture/Forestry/Earth Sciences) did not. However, it must be remembered that in addition to the field of study, differences in labour market outcomes may also be due to demographic and other socio-economic factors. Central to this analysis are differences in labour market outcomes between members of visible minority groups and other graduates. Therefore, the specified hypotheses of racial differences in the labour market need to be tested with the effects of demographic and other socio-economic characteristics of Alberta university graduates being controlled. The next chapter of this thesis presents results of the multiple regression analysis of several demographic and other factors on unemployment rates, average monthly income, and the quality of employment among 1994 Alberta universities graduates.

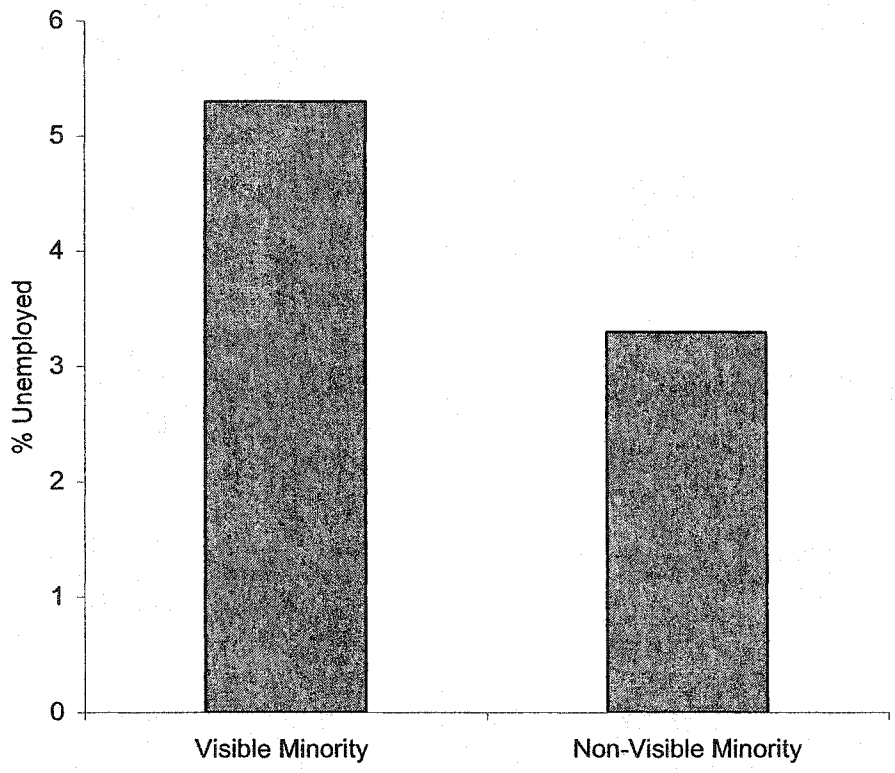
VI: Multivariate Findings: Unemployment, Earnings, and Quality of Employment

Unemployment Among 1994 Graduates of Alberta Universities

During the preliminary analysis of unemployment levels among Alberta university graduates in the previous chapter, it was established that although the overall unemployment rate in 1997 was rather low (3.5%) among non-student graduates, the percentage of unemployed respondents varied substantially by field of study. The goal of this section is to examine differences in unemployment levels among 1994 Alberta university graduates not only by field of study but also by visible minority status. Furthermore, it is necessary to examine such differences by means of regression analysis so that other factors that might affect differences in the unemployment levels are controlled.

While the overall unemployment rate in 1997 was at 3.5 percent among sub-sample respondents, variation in the number of unemployed respondents among visible minority graduates and their white counterparts is surprisingly substantial. Out of 512 graduates who consider themselves to be of visible minority, 27 failed to secure gainful employment two and a half years after their graduation from a university in Alberta, constituting an unemployment rate of 5.3 percent. In sharp contrast to this is the unemployment rate among all other graduates. Out of 3849 white respondents, 126 were still unemployed in 1997, constituting an unemployment rate of only 3.3 percent (see Figure 6.1). The difference in the unemployment rate between the two groups is two percentage points. A Chi-square test revealed that this difference is statistically significant at 0.05 level of significance (x^2=5.34, p=0.021).

Figure 6.1: Unemployment Rate by Visible Minority Status



A breakdown of unemployment rates by respondents' field of study and visible minority status, presented in Table 6.1, shows that in many fields of study the percentage of unemployed graduates was higher among white respondents than among graduates who consider themselves members of visible minority groups. Fewer visible minority members with degrees in Biological Sciences, Agriculture/Forestry/Earth Sciences, Mathematics/Physical Sciences, and Social Work were unemployed when compared with the number of unemployed white graduates with such degrees. Almost no differences in the unemployment rate between the two groups were observed among graduates from Medicine/Dentistry, Other Health Professions, and Law. Virtually all of respondents with degrees in these fields were employed at the time of

Table 6.1: Unemployment Rate by Respondent's Field of Study and Visible Minority Status

Field of Study	Visible Minority		Non-Visible Minority		Difference
	%	Total N	%	Total N	%
Fine Arts	0.0%	7	2.9%	104	-2.9%
Social Sciences	10.9%	64	3.8%	529	7.1%*
Humanities	6.3%	16	6.9%	144	-0.6%
Business/Commerce	4.1%	73	2.9%	418	1.2%
Education	4.2%	72	2.4%	866	1.8%
Physical Education	0.0%	6	3.7%	135	-3.7%
Engineering	6.5%	46	3.9%	180	2.6%
Law	0.0%	7	1.0%	97	-1.0%
Medicine/Dentistry	0.0%	11	0.0%	53	0.0%
Nursing	0.0%	20	2.5%	160	-2.5%
Other Health Professions	0.0%	28	0.7%	137	-0.7%
Social Work	0.0%	5	5.2%	58	-5.2%
Mathematics/Physical Sciences	2.9%	34	7.6%	132	-4.7%
Biological Sciences	0.0%	21	10.5%	86	-10.5%
Agriculture/Forestry/Earth Sciences	0.0%	10	5.9%	136	-5.9%
M.A.	0.0%	6	4.0%	101	-4.0%
M.Ed.	0.0%	6	1.3%	160	-1.3%
M.Sc./M.Engineering	17.6%	34	1.6%	126	16.0%**
M.B.A.	25.0%	4	1.4%	69	23.6%*
M.S.W./M.Nursing	0.0%	5	1.7%	59	-1.7%
Ph.D.	5.4%	37	2.0%	99	3.4%
Total	**5.3%**	**512**	**3.3%**	**3849**	**2.0%***

* difference is statistically significant at 0.05 level of significance (Chi-square test)
** difference is statistically significant at 0.01 level of significance (Chi-square test)

the survey. Although unemployment was generally high among Humanities graduates, there were almost no differences in the unemployment rate between visible minority members and their white counterparts with degrees in Humanities.

A higher proportion of visible minority graduates from M.Sc./M.Eng., Social Sciences, Ph.D., MBA, and Engineering were unemployed at the time of the survey. Almost 11 percent (10.9%) of visible minority graduates from Social Sciences programs were unemployed in 1997, compared with 3.8 percent of non-visible minority graduates from these programs. Furthermore, a large number of visible minority graduates with M.Sc./M.Eng. degrees (17.6%) have failed to secure employment two and a half years after graduation, compared with only 1.6 percent of white graduates with such degrees who were unemployed. A similar picture is observed among visible minority graduates with Doctorate, Engineering, Education, and Business/Commerce degrees.

Although differences in the unemployment rate between visible minority graduates with degrees in Social Sciences, Master's of Science/Master's of Engineering, and M.B.A. and their white counterparts with the same degrees were large enough to be considered statistically significant, caution should be exercised when considering these differences. The overall unemployment rate of the sub-sample (3.5%) indicates that there are only 153 respondents who were unemployed at the time of the survey. An even smaller number of unemployed respondents of visible minority status in each 'field of study' category was often insufficient for proper statistical analysis and therefore, precludes an adequate assessment of differences in the unemployment rate between visible minority graduates and non-visible minority graduates. For example, although the unemployment rate among visible minority graduates with MBA degrees was calculated at 25 percent, there were only four MBA graduates of visible minority status and only one of them was unemployed.

In an attempt to resolve the problem of insufficient number of cases, the 21 'field of study' categories were collapsed into nine categories (see Data and Methods chapter). Unemployment

rates of visible minority graduates were then explored using the collapsed 'field of study' categories (see Table 6.2). As Table 6.2 shows, only 1.5 percent of visible minority graduates with degrees in Natural Sciences were unemployed, compared with 7.6 percent of their white counterparts with the same degrees. This percentage difference in the unemployment rate between visible minority graduates and non-visible minority graduates of 6.1 percent is statistically significant at 0.05 level of significance. A similar relationship is observed among graduates from Nursing/Other Health Professions/Social Work programs, however the difference in the unemployment rate between visible minority graduates and non-visible minority graduates from these programs is not statistically significant.

Table 6.2: Unemployment Rate by Respondent's Field of Study (collapsed) and Visible Minority Status

Field of Study	Visible Minority		Non-Visible Minority		Difference
	%	N	%	N	%
Fine Arts/Humanities/ Social Sciences	9.2%	87	4.2%	777	5.0%*
Business/Commerce	4.1%	73	2.9%	418	1.2%
Education/Physical Education	3.8%	78	2.6%	1001	1.2%
Engineering	6.5%	46	3.9%	180	2.6%
Law/Medicine/ Dentistry	0.0%	18	0.7%	150	-0.7%
Nursing/Other Health Professions/Social Work	0.0%	53	2.3%	355	-2.3%
Natural Sciences	1.5%	65	7.6%	354	-6.1%*
Master's	12.7%	55	1.9%	515	10.8%**
Doctorate	5.4%	37	2.0%	99	3.4%
Total	**5.3%**	**512**	**3.3%**	**3849**	**2.0%***

* difference is statistically significant at 0.05 level of significance (Chi-square test)
** difference is statistically significant at 0.01 level of significance (Chi-square test)

A reverse relationship is found among graduates from Master's, Fine Arts/Humanities/Social Sciences, Doctorate, Business/Commerce, Engineering, and Education/Physical Education programs. Over 12 percent of visible minority graduates from Master's programs (12.7%) were unemployed two and a half years after graduation, compared with only 1.9 percent of white graduates from these programs. The difference in the unemployment rate between the two groups is over 10 percent (10.8%) and is statistically significant (p=0.000). The racial difference in the unemployment rate among graduates from Fine Arts/Humanities/Social Sciences programs is five percent. The difference is statistically significant at 0.05 level of significance. Although the number of unemployed visible minority graduates from Doctorate, Engineering, Education/Physical Education, and Business/Commerce programs was higher than that of non-visible minority graduates with such degrees, the racial differences in these fields of study were not found to be statistically significant.

In order to examine the effect of the visible minority status and the field of study on unemployment, it is important to take into account other factors that might be contributing to racial differences in the unemployment level. Three multivariate logistic regressions were fitted to evaluate the effect of visible minority status on the probability of being unemployed, while controlling for demographic variables (gender, marital status, dependants, age, disability status), post-graduation enrolment since 1994, prior work experience, and field of study (see Table 6.3). The specified models were tested at a 0.05 level of significance.

The first multiple regression equation was tested using the entire sub-sample (n=4333). As can be seen from the first column in Table 6.3, although visible minority status increases the probability of being unemployed by 1.4 times, the effect is not statistically significant. The preliminary analysis of racial difference in the unemployment rate has shown that the

Table 6.3: Results from the logistic regression of selected predictor variables on the probability of being unemployed

Independent Variables	Full Sample Exp (B)	Visible Minority Exp (B)	Non-Visible Minority Exp (B)
Visible Minority Status			
Visible minority = 1	1.424	***	***
Gender			
Male = 1	1.117	1.376	1.059
Marital Status			
Married or have partner = 1	0.608*	0.211*	0.684
Dependents			
Have dependent children or adults living with you = 1	1.545	1.737	1.547
Age	0.995	1.032	0.987
Disability Status			
Have disability = 1	1.753	0.001	2.765*
Post-Graduation Enrolment since 1994			
Have been enrolled in post-secondary program = 1	1.467*	1.844	1.403
Prior Work Experience			
Worked full-time before graduating in 1994 = 1	0.832	0.961	0.782
Field of Study			
Fine Arts/Humanities/ Social Sciences	7.448*	2025.684	5.775
Business/Commerce	4.748	837.417	4.064
Education/Physical Education	4.654	810.337	3.842
Engineering	6.281	1174.792	5.219
Nursing/Other Health Professions/Social Work	3.200	0.784	3.238
Natural Sciences	9.893*	277.796	10.335*
Master's	5.751	4305.188	3.347
Doctorate	5.106	1380.202	3.637
Constant	0.007**	0.000	0.110**
N	4333	509	3824

* coefficient is statistically significant at 0.05 level of significance (Wald test)
** coefficient is statistically significant at 0.01 level of significance (Wald test)

difference in the unemployment rate between visible minority graduates and non-visible minority graduates is statistically significant. However, the effect of visible minority status dissipated when other factors were controlled.

Results of the logistic regression indicate that the effects of marital status, post-graduation enrolment since 1994, and several 'field of study' categories were statistically significant. Those respondents who were married or were living with a partner were 1.4 times less likely to be unemployed than were single, divorced, separated, or widowed respondents. Such difference in the unemployment level between two marital groups may be due to greater social networks of friends and relatives, which may have improved the odds of securing a job for married and common-law respondents. Those respondents who had been enrolled in post-secondary programs after their graduation from an Alberta university in 1994 were 1.5 times more likely to be unemployed than those respondents who were not. This finding is not surprising, as post-graduation studies of these respondents may have delayed their entry into the labour force.

For the field of study variable, Law/Medicine/Dentistry category was used as a reference group in the multiple regression model. Results of the regression analysis show that, in comparison with Law/Medicine/Dentistry graduates, all other respondents had more difficulties securing gainful employment. Graduates from Natural Sciences programs were almost ten times (9.9) more likely to be unemployed than graduates from Law/Medicine/Dentistry. Fine Arts/Social Sciences/Humanities graduates were 7.4 times more likely to be unemployed than graduates from Law/Medicine/Dentistry programs. Although the effects of other categories were not found to be statistically significant, they do indicate that graduates from Engineering, Master's, Business/Commerce, Education/Physical Education, and Doctorate programs were at least 1.5

times more likely to be unemployed and graduates from Nursing/Other Health Professions/Social Work were 1.2 times more likely to be unemployed than graduates from Law/Medicine/Dentistry. These results further reinforce the findings from the descriptive analysis discussed above.

Although the effects of gender, dependents, age, disability status and prior work experience were not found to be statistically significant, males, respondents with dependents and those who have a disability were more likely to be unemployed, while older respondents and those who had prior full-time working experience before graduating from university in 1994 were less likely to be unemployed. As noted earlier, although the preliminary findings showed that there were statistically significant differences in the unemployment rate between visible minority graduates and non-visible minority graduates, the effect of the visible minority status on the probability of being unemployed was not statistically significant when other factors were controlled for in the multiple logistic regression analysis. Thus, the effect of the visible minority status has dissipated as a result of its relationship with other variables in the multiple regression model.

In order to examine the possibility of an interaction effect between predictor variables and visible minority status, the effects of the independent variables in the model were evaluated separately for those respondents who consider themselves to be members of a visible minority group and those who do not. This was done by splitting the sample according to visible minority status (see columns 2 and 3 in Table 6.3). The differences between the unstandardised (b) slope coefficients obtained from the two models were evaluated for statistical significance, using the following formula:

$$t = \frac{b_1 - b_2}{\sqrt{SE_1^{\,2} - SE_2^{\,2}}},$$

where b_1 is a regression slope for visible minority graduates and b_2 is a regression slope for non-visible minority graduates, and SE_1 is standard error of the slope for visible minority graduates and SE_2 is a standard error of the slope for non-visible minority graduates.

The interaction effect was considered to be statistically significant if the obtained t-value was greater than 1.96 ($p<0.05$). Although the differences between the slope coefficients for gender, marital status, disability status, post-graduation enrolment since 1994, prior work experience, and field of study appeared to be large at first glance, the calculated interaction effect was found to be statistically significant only between visible minority and marital statuses. This indicates that, while holding other variables constant, the probability of being unemployed is significantly lower among married or common-law respondents who consider themselves to be of visible minority than among married or common-law respondents who are white. While the results of the logistic regression for the entire sub-sample showed that married respondents and those living with a partner were less likely to be unemployed than their counterparts without a partner, the results from the logistic regression models for the split sub-sample indicate that this tendency in more pronounced among visible minority respondents. Cultural variations in familial and marital roles between the two groups may serve as one possible explanation of such difference, but further interpretation of this finding is provided in the next chapter.

Earnings of 1994 Graduates from Alberta Universities

The type of education individuals received (i.e., field of study) continues to influence their labour market experiences even after they secure employment. The preliminary analysis of average monthly earnings by field of study among employed respondents has shown substantial variations in the amount earned between different fields of study (see Figure 5.2 in Chapter V). A further breakdown of average monthly earnings by field of study and visible minority status demonstrated that income differences exist within each 'field of study' category (see Table 6.4). With the exception of visible minority graduates from Law, Other Health Professions, and MBA programs, whose earnings exceeded those of other graduates, visible minority graduates from all other 18 fields of study appeared to be disadvantaged with respect to income, at least at this early point in their careers.

In almost every 'field of study' category, graduates who consider themselves to be members of a visible minority group earned less than their white counterparts two and a half years after graduation. Visible minority graduates who had Master's and Agriculture/Forestry/Earth Sciences degrees were the most disadvantaged; they earned on average 1393 and 1098 dollars (respectively) less than their non-visible minority counterparts with the same degrees. Racial differences in income were also substantial among graduates from Medicine/Dentistry, Doctorate, Master's of Science/Master's of Engineering, Social Work, Mathematics/Biological Sciences, and Fine Arts programs. Every month, visible minority graduates from these programs received at least 470 dollars less than other graduates. For other programs, the racial disadvantage in earnings ranged from 39 to 344 dollars a month.

While racial income differences among Business/Commerce, Agriculture/Forestry/Earth Sciences, and Doctorate graduates were found to be statistically significant, they should be

Table 6.4: Average Monthly Income from All Jobs by Respondent's Field of Study and Visible Minority Status

Field of Study	Visible Minority		Non-Visible Minority		Mean Difference
	Mean	N	Mean	N	
Fine Arts	1647	5	2117	84	-470
Social Sciences	2196	53	2455	457	-259
Humanities	1851	12	2049	117	-198
Business/Commerce	2919	61	3263	367	-344*
Education	2427	59	2535	774	-108
Physical Education	2259	5	2417	119	-158
Engineering	3553	42	3814	153	-261
Law	5167	7	3700	82	1467*
Medicine/Dentistry	6065	9	6810	47	-745
Nursing	2918	16	3005	141	-87
Other Health Professions	4073	24	3538	127	535*
Social Work	2291	5	2790	52	-499
Mathematics/ Physical Sciences	2899	28	3393	109	-494
Biological Sciences	2660	16	2812	67	-152
Agriculture/Forestry/ Earth Sciences	2146	9	3244	115	-1098*
Master's of Arts	1792	4	3185	78	-1393*
Master's of Education	3967	5	4106	146	-139
Master's of Science/ Master's of Engineering	3590	23	4111	108	-521
Master's of Business Administration	7639	3	5968	59	1671
Master's of Social Work/ Master's of Nursing	3833	5	4022	52	-189
Doctorate	3419	33	4005	88	-586*
Total	**3025**	**424**	**3097**	**3342**	**-72**

* difference is statistically significant at 0.05 level of significance (t-test)
** difference is statistically significant at 0.01 level of significance (t-test)

considered with caution due to a small number of cases for many 'field of study' categories. For example, the earnings advantage of 1467 dollars for visible minority Law graduates is based on responses from only seven visible minority graduates. Likewise, the earnings disadvantage of 1393 dollars for visible minority Master's of Arts graduates is based on responses from only four visible minority graduates. To deal with this problem, Table 6.5 presents similar results using collapsed 'field of study' categories that have a larger number of respondents in each 'field of study' category.

Visible minority graduates were the most disadvantaged in terms of income if they held Doctorate, Natural Science, Master's, and Business/Commerce degrees; they earned 586, 501, 392, and 344 dollars (respectively) less a month than their white counterparts who held the same degrees. On the contrary, visible minority graduates with degrees in

Table 6.5: Average Monthly Income from All Jobs by Respondent's Field of Study (collapsed) and Visible Minority Status

Field of Study	Visible Minority		Non-Visible Minority		Mean Difference
	Mean	N	Mean	N	
Fine Arts/Humanities/ Social Sciences	2098	70	2339	658	-241
Business/Commerce	2919	61	3263	367	-344*
Education/Physical Education	2414	64	2519	893	-105
Engineering	3553	42	3814	153	-261
Law/Medicine/Dentistry	5672	16	4833	129	839
Nursing/Other Health Professions/Social Work	3464	45	3182	320	282
Natural Sciences	2699	53	3200	291	-501*
Master's	3791	40	4183	443	-392
Doctorate	3419	33	4005	88	-586*
Total	**3025**	**424**	**3097**	**3342**	**-72**

* difference is statistically significant at 0.05 level of significance (t-test)
** difference is statistically significant at 0.01 level of significance (t-test)

Law/Medicine/Dentistry had an advantage of 839 dollars a month, compared with their non-visible minority counterparts. Visible minorities who graduated from Nursing/Other Health Professions/Social Work programs also had an advantage of 282 dollars a month. An earnings advantage by visible minority graduates from these programs may reflect the existence of formal employment equity programs in Social Work, Nursing, Medicine, and Law workplaces. The *industry type* variable that was created in order to distinguish between public and private sector industries may serve as a crude measure of workplaces with and without employment equity programs during the next stage of the analysis. The effect of the industry type is controlled in the multiple regression analysis of respondents' average monthly income from all jobs.

The multiple regression model assessed the effects of visible minority status, field of study, demographic and other factors on income from all jobs. The model yielded an adjusted R-squared of 0.25, indicating that variables in this model account for 25 percent of the variance in respondents' income. Results of the regression analysis for the total sample show that the effects of all predictor variables, with the exception of dependants and post-secondary enrolment, were statistically significant (see column 1 in Table 6.6). The earlier descriptive analysis has shown that the overall income difference between visible minority graduates and non-visible minority graduates is only 71.2 dollars (see Table 6.4). Therefore, it is not surprising that the effect of the visible minority status on earnings was not statistically significant after controlling for the effects of other predictor variables.

The regression coefficients indicate that when other variables were held constant, the type of respondents' education (i.e., field of study) was one of the best predictors of monthly income. The smallest difference in average monthly earnings between visible minorities and non-visible

minorities was among graduates with Education/Physical Education degrees (see Table 6.5) and, therefore, this category was used as a reference group in the multiple regression equation. As can be observed from column 1 in Table 6.6, respondents with degrees in Fine Arts/Humanities/Social Sciences were disadvantaged in terms of income as compared with respondents with Education/Physical Education degrees (B=-0.053). Conversely, when other variables were held constant, those with degrees in Law/Medicine/Dentistry as well as those with Master's degrees fared much better than graduates from Education/Physical Education programs (B=0.257, B=0.263, respectively). Incomes of respondents from all other fields of study were also substantially higher than earnings of Education/Physical Education graduates (Business/Commerce B=0.097, Engineering B=0.122, Nursing/Other Health Professions/Social Work B=0.150, Natural Sciences B=0.083, and Doctorate B=0.094).

Regression coefficients also show that gender, marital status, age, and prior work experience had positive effects on respondents' earnings. Of these, the effect of respondents' gender was the strongest (B=0.204), indicating that when other variables were held constant, males had higher earnings than females. Furthermore, married respondents or those living with a partner tended to have higher incomes than single, divorced, or widowed respondents (B=0.042). A regression coefficient for age indicates that earnings of older respondents tended to be higher (B=0.082). Not surprisingly, prior work experience also had a positive effect on respondents' earnings (B=0.061), indicating that those respondents who had worked full-time prior to graduating from an Alberta university in 1994 had higher salaries than those without such work experience. On the other hand, disability status and industry type exhibited negative effects on monthly earnings, while holding other variables constant. Respondents who had a disability earned less than those who did not (B=-0.055). Last, results of the regression analysis show

Table 6.6: Effects of visible minority status and other predictor variables on Monthly Income from All Jobs

	Full Sample	Visible Minority	Non-Visible Minority
Independent Variables	Beta	b	b
Visible Minority Status			
Visible minority = 1	-0.025	***	***
Gender			
Male = 1	0.204**	313.72*	720.15**
Marital Status			
Married or have partner = 1	0.042**	73.54	145.04**
Dependants			
Have dependent children or adults living with you =1	-0.016	-152.27	-35.50
Age	0.082**	-17.65	20.67**
Disability Status			
Have disability = 1	-0.055**	-358.32	-569.15**
Post-Graduation Enrolment since 1994			
Have been enrolled in post-secondary program = 1	-0.023	-10.33	-111.16
Prior Work Experience			
Worked full-time before graduating in 1994 = 1	0.061**	803.89**	131.61*
Industry Type			
Public Sector = 1	-0.042*	-165.16	-141.82*
Field of Study			
Fine Arts/Humanities/ Social Sciences	-0.053**	-393.37	-209.06*
Business/Commerce	0.097**	344.88	512.35**
Engineering	0.122**	1016.26**	892.96**
Law/Medicine/Dentistry	0.257**	3187.44**	2079.71**
Nursing/Other Health Professions/Social Work	0.150**	1165.12**	785.73**
Natural Sciences	0.083**	261.33	496.05**
Master's	0.263**	1229.33**	1301.92**
Doctorate	0.094**	902.74**	964.26**
Constant	1788.4**	2625.53**	1707.44**
R^2	0.25	0.31	0.24
N	3746	421	3325

* coefficient is statistically significant at 0.05 level of significance (t-test)
** coefficient is statistically significant at 0.01 level of significance (t-test)

that when other variables were held constant, working in the public sector had a small negative effect on respondents' income (B=-0.042).

Finally, the effects of independent variables on respondents' monthly earnings were evaluated separately for visible minority graduates and non-visible minority graduates in order to examine the possibility of an interaction effect between predictor variables and visible minority status (see columns 2 and 3 in Table 6.6). The model for visible minority graduates yielded an R-squared of 0.31, indicating that it accounted for 31 percent of variability in incomes of visible minority respondents. The model for non-visible minority graduates yielded an R-squared of 0.24, indicating that 24 percent of variability in these respondents' incomes was explained by the model. Several interesting observations can be made when differences in the (unstandardised) slope coefficients are examined. In terms of respondents' field of study, the slope coefficients obtained from the two models reveal that many fields of study did not have as strong of an impact on incomes of visible minority graduates, as they did for non-visible minority graduates. This relationship was observed across all fields of study, except for Engineering, Law/Medicine/Dentistry, and Nursing/Other Health Professions/Social Work, which had a more positive effect for visible minorities.

When the interaction effects were tested using the formula for statistical significance (see page 103), they were statistically significant only among graduates from Law, Medicine, and Dentistry programs (t=3.36). The significant interaction effect for this single category indicates that, relative to the Education/Physical Education category, visible minority graduates from these programs attained significantly higher income levels than did their non-visible minority counterparts who graduated from the same programs. Specifically, the income slope for visible minority graduates from programs in Law, Medicine, or Dentistry (b=3187.44) was

significantly higher than was the income slope for non-visible minority graduates from these programs (b=2079.71), as compared to the income level of respondents with Education/Physical Education degrees, which served as an intercept. Thus, visible minority graduates from Law, Medicine, and Dentistry programs appeared to benefit financially from their degrees much more than did non-visible minority graduates from the same programs.

Substantial differences between visible minority graduates and their non-visible minority counterparts were also observed in the effects of gender, age, and prior work experience on respondents' income. The calculated interaction effects were statistically significant for gender, age, and prior work experience (t=-3.43, t=-3.32, and t=4.87, respectively). The effect of gender on earnings was much stronger among non-visible minority graduates, indicating that being a white male improves one's income much more than being a visible minority male. The significant interaction effect for age indicates that, after controlling for the effects of other variables, while being older improved income of non-visible minority graduates, it had a negative effect on earnings of visible minority graduates. Finally, having full-time work experience was shown to be much more beneficial for visible minority graduates than for all other graduates; the effect of prior full-time work experience on monthly earnings was much more positive for visible minority graduates. It is also interesting to note that, although not statistically significant, the effect of industry type on respondents' income was not as negative for visible minority graduates as it was for non-visible minority graduates, indicating that monthly earnings of visible minority graduates working in the public sector tended to be higher than monthly income of non-visible minority graduates working in the private sector.

Quality of Employment of 1994 Graduates from Alberta Universities

Although preliminary analysis of employment outcomes of respondents by their field of study (see Table 5.5 in Chapter V) demonstrated that the nature of respondents' jobs varies according to the type of education they received, few differences in the quality of employment were observed between visible minority graduates and non-visible minority graduates. As can be seen in Table 6.7, there was virtually no difference in the average scores on the quality of employment scale between the two racial groups. Alberta university graduates who consider themselves to be members of a visible minority group had an average score of 4.09, while all other graduates had an average score of 4.05 on the six-point scale measuring the quality of employment.

A breakdown of the quality of employment mean scores by field of study and visible minority status (see Table 6.7) has shown that, at the undergraduate level, visible minority graduates from programs in Social Sciences, Humanities, Physical Education, Other Health Professions, Social Work, and Biological Sciences held jobs of better quality than all other graduates from the same programs. The difference in the employment quality between the two racial groups was particularly pronounced among graduates from Social Sciences and Other Health Professions programs. Visible minority graduates from these programs scored on average 0.41 and 0.63 points (respectively) higher than did other graduates from these programs. These racial differences in the quality of employment held by Alberta university graduates were found to be statistically significant at the 0.05 level of significance. Although the quality of employment scores of visible minority graduates from Physical Education programs was 0.69 higher than the scores of other graduates from these programs, this racial difference in the quality of employment was not statistically significant, possibly as a result of a small number of visible minority respondents in this category (n=6).

Table 6.7: Quality of Employment (mean) by Respondent's Field of Study and Visible Minority Status

Field of Study	Visible Minority		Non-Visible Minority		Mean Difference
	Mean	N	Mean	N	
Fine Arts	2.86	7	2.94	101	-0.08
Social Sciences	3.96	57	3.55	509	0.41 *
Humanities	3.33	15	3.18	134	0.15
Business/Commerce	4.22	70	4.37	406	-0.15
Education	3.68	69	3.87	845	-0.19
Physical Education	4.33	6	3.64	130	0.69
Engineering	4.59	43	5.05	173	-0.46 *
Law	4.47	7	4.71	96	-0.24
Medicine/Dentistry	4.53	11	4.66	53	-0.13
Nursing	4.24	20	4.30	156	-0.06
Other Health Professions	4.98	28	4.35	136	0.63 *
Social Work	4.09	5	3.81	55	0.28
Mathematics/Physical Sciences	4.07	33	4.07	122	0.00
Biological Sciences	3.92	21	3.58	77	0.34
Agriculture/Forestry/Earth Sciences	3.64	10	3.90	128	-0.26
Master's of Arts	2.91	6	4.17	97	-1.26 *
Master's of Education	3.36	6	4.56	158	-1.21 *
Master's of Science/ Master's of Engineering	4.37	28	4.55	124	-0.18
Master's of Business Administration	4.66	3	4.96	68	-0.30
Master's of Social Work/ Master's of Nursing	4.49	5	4.36	58	0.14
Doctorate	3.99	35	4.40	97	-0.41 *
Total	**4.09**	**485**	**4.05**	**3723**	**0.04**

* difference is statistically significant at 0.05 level of significance (t-test)
** difference is statistically significant at 0.01 level of significance (t-test)

No differences in the quality of employment between the two racial groups were found among graduates from Mathematics/Physical Sciences programs. Visible minority graduates from all other undergraduate programs held jobs of poorer quality than did their non-visible minority counterparts who graduated from the same programs. Although the differences were negative,

they were not large enough to be considered statistically significant. Only racial differences in the quality of employment scores among Engineering graduates were found to be statistically significant at 0.05 level of significance. Visible minority graduates from Engineering programs had an average score that was 0.46 points lower than the score of other Engineering graduates, as measured on the six-point quality of employment scale.

At the graduate level, the jobs held by visible minority respondents with graduate degrees was generally of poorer quality than jobs held by other graduates. This relationship was observed across all fields of graduate study, except for Master's of Social Work/Master's of Nursing. The largest racial differences in the quality of employment were observed among respondents with Master's of Arts and Master's of Education degrees. The quality of employment scores of visible minority graduates from these programs were 1.26 and 1.21 points (respectively) lower than the scores of other graduates from the same programs. The racial differences among respondents with these degrees were statistically significant at 0.05 level of significance. Racial differences in the quality of employment among respondents with Doctorate degrees were also found to be statistically significant. Visible minority graduates with Ph.D. degrees scored 0.41 fewer points on the six-point quality of employment scale than did other graduates from Doctorate programs.

Thus, as results of this analysis show, visible minority respondents with graduate degrees, and M.A., M.Ed., and Ph.D. degrees in particular, were disadvantaged not only in terms of their earnings but also with respect to the quality of jobs they held. Two exceptions must be noted. Although visible minority graduates with M.S.W./M.Nursing degrees had lower earnings than their non-visible minority counterparts, the quality of their employment was slightly higher than that of other graduates with the same degrees. Conversely, visible minority graduates who

held M.B.A. degrees had substantially higher wages than their non-visible minority counterparts, but the quality of their employment was lower than that of other M.B.A. graduates. Taking respondents with Master's degrees as a whole, visible minority graduates scored 0.42 fewer points on the six-point quality of employment scale than did other respondents (see Table 6.8). This difference in the quality of employment between the two racial groups with Master's degrees was statistically significant at 0.05 level of significance.

When the effect of visible minority status on the quality of employment was tested in the multiple regression analysis that controlled for the effects of other predictor variables, the effect was not statistically significant (see Table 6.9). The specified model for the total sample accounted for 14 percent of the variance in the quality of employment. Regression results show that with the exception of visible minority status, the effects of all predictor variables on the quality of employment were statistically significant. When comparing standardised regression coefficients (Beta), it is evident that gender was the best predictor of job quality (B=0.155). Males were more likely to hold jobs of better quality than females. Married respondents and those living with a partner were also more likely to have held jobs of better quality than were their single, divorced, or separated counterparts (B=0.042). Prior work experience and industry type also had positive effects on the quality of graduates' employment. Those respondents who worked full-time prior to graduation and those working in the public sector tended to have jobs of better quality (B=0.046 and B=0.076, respectively).

On the other hand, the effects of dependents, age, disability status, and post-graduation enrolment on the quality of employment were negative. Those graduates who either had dependent children and/or adults living with them, were older, had a disability, or had been enrolled in post-secondary program in the last two and a half years since graduation were more

likely to be in jobs of poorer quality (B=-0.053, B=-0.045, B=-0.050, and B=-0.060, respectively).

Table 6.8: Quality of Employment (mean) by Respondent's Field of Study (collapsed) and Visible Minority Status

Field of Study	Visible Minority		Non-Visible Minority		Mean Difference
	Mean	N	Mean	N	
Fine Arts/Humanities/ Social Sciences	3.74	79	3.40	744	0.34 *
Business/Commerce	4.22	70	4.37	406	-0.15
Education/Physical Education	3.74	75	3.84	975	-0.11
Engineering	4.59	43	5.05	173	-0.46 *
Law/Medicine/Dentistry	4.51	18	4.69	149	-0.18
Nursing/Other Health Professions/Social Work	4.62	53	4.24	347	0.38 *
Natural Sciences	3.96	64	3.89	327	0.07
Master's	4.09	48	4.51	505	-0.42 *
Doctorate	3.99	35	4.40	97	-0.41 *
Total	**4.09**	**485**	**4.05**	**3723**	**0.04**

* difference is statistically significant at 0.05 level of significance (t-test)
** difference is statistically significant at 0.01 level of significance (t-test)

study) was also a good predictor of employment quality. The smallest difference in the average quality of employment scores between visible minority graduates and non-visible minority graduates was among those with Natural Sciences degrees (see Table 6.8 in this Chapter) and therefore, Natural Sciences category was used as a reference group in the multiple regression equation. As can be observed from column 1 in Table 6.9, Engineering, Master's, and Law/Medicine/Dentistry degrees had the strongest positive effect on the quality of When other variables were held constant, the type of respondents' education (i.e., field of employment (B=0.163, B=0.143, and B=0.118, respectively), indicating that graduates from

Table 6.9: Effects of visible minority status and other predictor variables on the Quality of Employment

	Full Sample	Visible Minority	Non-Visible Minority
Independent Variables	Beta	b	b
Visible Minority Status			
Visible minority = 1	-0.001	***	***
Gender			
Male = 1	0.155 **	0.18	0.45 **
Marital Status			
Married or have partner = 1	0.042 **	-0.03	0.13 **
Dependents			
Have dependent children or adults living with you =1	-0.053 **	0.33 *	-0.20 **
Age	-0.045 *	-0.05 **	0.00
Disability Status			
Have disability = 1	-0.050 **	-0.63 *	-0.32 *
Post-Graduation Enrolment since 1994			
Have been enrolled in post-secondary program = 1	-0.060 **	-0.13	-0.22 **
Prior Work Experience			
Worked full-time before graduating in 1994 = 1	0.046 **	0.41 **	0.08
Industry Type			
Public Sector = 1	0.076 **	0.08	0.22 **
Field of Study			
Fine Arts/Humanities/ Social Sciences	-0.109 **	-0.22	-0.38 **
Business/Commerce	0.110 **	0.26	0.50 **
Education/Physical Education	-0.027	-0.23	-0.06
Engineering	0.163 **	0.58 *	1.07 **
Law/Medicine/Dentistry	0.118 **	0.62	0.85 **
Nursing/Other Health Professions/Social Work	0.094 **	0.59 *	0.41 **
Master's	0.143 **	0.30	0.60 **
Doctorate	0.040 **	0.21	0.38 **
Constant	3.80 *	5.01 **	3.66 *
R^2	0.14	0.10	0.15
N	4166	480	3686

* coefficient is statistically significant at 0.05 level of significance (t-test)
** coefficient is statistically significant at 0.01 level of significance (t-test)

these programs secured jobs of substantially higher quality, as compared with jobs held by graduates from Natural Sciences programs. When other variables were held constant, the regression slopes for Business/Commerce, Nursing/Other Health Professions/Social Work, and Doctorate categories were also statistically significant (B=0.110, B=0.094 and B=0.040, respectively), indicating that graduating with a degree in one of these fields also ensured [having] employment of better quality, as compared with employment held by respondents with degrees in Natural Sciences. The only two categories that had negative slopes relative to Natural Sciences were the liberal arts and Education/Physical Education categories, although the slope for Education/Physical Education was not statistically significant (B=-0.109 and B=-0.027, respectively). These results indicate that graduates from Fine Arts/Humanities/Social Sciences programs had found employment of significantly poorer quality than did graduates from Natural Sciences programs.

In the final stage of this analysis, the sub-sample of Alberta university graduates was split according to respondent's visible minority status. As in previous analysis of unemployment and income, this was done in order to evaluate differences in the effects of predictor variables on the quality of employment between the two groups and to assess the possibility of an interaction effect between predictor variables and visible minority status. The multiple regression model applied to visible minority graduates yielded an R-squared of 0.10, while the same model applied to non-visible minority graduates yielded an R-squared of 0.15, indicating that ten and 15 percent (respectively) of variability in the quality of employment index was explained by the specified model.

A comparison of unstandardised regression coefficients (b) from the two equations revealed that the slope coefficients of several predictor variables differed between the two groups (see

columns 2 and 3 in Table 6.9). When other variables were held constant, the regression slopes for 'field of study' categories were generally lower among visible minority graduates than non-visible minority graduates in relation to the Natural Sciences category that served as an intercept. But the calculated interaction effect was statistically significant only among Engineering graduates (t=-2.22). This indicates that visible minority graduates from Engineering programs (b=0.58) were more likely to be found in jobs of significantly poorer quality than were their non-visible minority counterparts with Engineering degrees (b=1.07), as compared with graduates from Natural Sciences programs.

Although not statistically significant, a similar negative relationship was observed across all 'field of study' categories, except for Fine Arts/Humanities/Social Sciences and Nursing/Other Health Professions/Social Work. Relative to the Natural Sciences graduates, visible minority graduates from most university programs were more likely to have secured jobs of slightly poorer quality than the jobs secured by non-visible minority graduates from the same programs. The exceptions were visible minority graduates from Fine Arts/Humanities/Social Sciences as well as Nursing/Other Health Professions/Social Work, who reflected the opposite relationship. Thus, although for visible minority graduates, most university degrees did not ensure employment of the same quality as that held by non-visible minority graduates with the same degrees, the differences in the effects of specific university degrees on the employment quality between the two groups were generally negligible.

Statistically significant interaction effects were also found between gender, dependents, age, prior work experience and visible minority status. With respect to gender, male respondents who were white were more likely to hold employment of better quality than male respondents who considered themselves to be of visible minority (t=-3.73). Age was found to have a more

negative effect on the quality of employment for visible minority graduates than it did for non-visible minority graduates (t=-4.55). On the other hand, visible minority respondents who had dependent children and/or adults living with them at the time of the survey were more likely to be found in jobs of better quality than were all other graduates with dependants (t=3.25). Finally, a statistically significant interaction effect was observed between prior work experience and visible minority status (t=2.52). Visible minority respondents who had worked full-time prior to graduating from university in 1994 were much more likely to secure jobs of better quality than were other respondents with full-time work experience. Thus, this analysis has shown that prior full-time work experience was much more beneficial for visible minority graduates than it was for all other graduates. Furthermore, full-time work experience acquired by visible minority graduates prior to graduation helped not only to improve their earnings, but also secure jobs of better quality.

Summary

Three hypotheses about racial differences in labour market outcomes among 1994 Alberta universities graduates were tested in this chapter. The effect of visible minority status on labour market outcomes of graduates -measured by unemployment, income, and employment quality- was explored through bi-variate as well as multi-variate analyses. For the bi-variate analysis, cross-tabulations of visible minority status with the three dependent variables were utilised to evaluate racial differences in unemployment rates, income, and employment quality. In the first stage of the multi-variate analysis, the net effect of visible minority status on the three dependent variables was evaluated for the entire sub-sample, while controlling for the effects of gender, marital status, dependents, age, disability status, post-graduation enrolment since 1994, prior work experience, and field of study (industry type was included in the models for income and employment quality). In the second stage of this analysis, the sub-sample of

respondents was split according to visible minority status and the multiple regression models were tested separately for visible minority graduates and non-visible minority graduates.

When the effects of other variables were controlled in the multiple regression analysis, the net effect of visible minority status on unemployment, income, and employment quality was not statistically significant. Therefore, evidence from this study provides support for hypothesis 2, which predicted that there would be no significant differences in labour market returns between visible minority and non-visible minority graduates. Although the additive effect of visible minority status was not significant, several interesting interaction effects were found during the second stage of the multi-variate analysis of racial differences in unemployment, income, and quality of employment.

When the sub-sample of respondents was divided according to visible minority status for the analysis of unemployment, a significant interaction effect was observed between respondents' marital status and visible minority status. The probability of being unemployed was significantly lower among visible minority respondents who were either married or had a common-law partner than among non-visible minority respondents with the same marital status. Using income as the dependent variable, the effect of professional degrees in Law, Medicine, or Dentistry on respondents' incomes was substantially higher among visible minority graduates than among other graduates with professional degrees in these disciplines. Furthermore, incomes of visible minority respondents with previous work experience were also significantly higher than incomes of other graduates with similar previous work experience. Finally, when holding other factors constant, incomes of either older or male visible minority graduates were substantially lower than earnings of other respondents who were either male or older.

Although visible minority status did not have a statistically significant effect on the quality of respondents' employment, interaction effects between visible minority status and several predictor variables were statistically significant. Similar to the effect of gender and age on income, visible minority graduates who were either older or male were employed in jobs of substantially lower quality than were male and older respondents who did not consider themselves a visible minority. Likewise, among Engineering graduates, the quality of jobs held by visible minorities was much lower than that of other graduates. Conversely, the presence of dependent children or adults in the home, and prior work experience, aided visible minority graduates in securing better-quality jobs.

In addition to the additive and interaction effects of visible minority status discussed above, several additional additive effects involving other predictor variables were observed. With respect to human capital characteristics of respondents, the multi-variate results showed that holding a Natural Science or liberal arts degree increased respondents' odds of unemployment, as compared with having a degree in Law, Medicine or Dentistry, graduates of which programs had the lowest unemployment rate. In terms of income, with the exception of Fine Arts, Humanities and Social Science degrees, degrees in all other disciplines positively affected respondents' earnings, relative to graduates with Education and Physical Education degrees. A particularly strong positive effect on respondents' incomes was observed among respondents with professional degrees in Law, Medicine or Dentistry, and Master's degrees. Finally, analysis of employment quality revealed that respondents with degrees in Fine Arts, Humanities or Social Sciences, and in Education or Physical Education, held jobs of significantly poorer quality, as compared with graduates from Natural Sciences programs. Graduates from all other programs of study held jobs of better quality than did Education and

Physical Education graduates. Those with professional degrees in Engineering, Law, Medicine or Dentistry, and sample members with Master's degrees, were employed in particularly high-quality jobs.

Several other additive effects were also significant. With respect to unemployment, it was observed that enrolment in post-secondary programs after graduation from university (in 1994) increased respondents' likelihood of being unemployed, while being married or having a partner reduced respondents' chances of unemployment. In terms of income, having a disability, or working in the public sector, had a negative effect on respondents' income. On the other hand, being older, male, married or with a partner, or having prior work experience improved respondents' incomes. For the last dependent variable, quality of employment, the effects of all independent variables, with the exception of visible minority status and Education/Physical Education 'field of study' category, were statistically significant. Males and married/common-law respondents, as well as those with previous work experience, had jobs of substantially better quality. Those respondents working in the public sector also held better jobs. On the other hand, the presence of dependents in the house, older age, and disability status had negative effects on the quality of respondents' jobs.

VII: Discussion and Conclusion

The debate concerning labour market discrimination against Canadian ethnic and racial minorities has shifted following dramatic changes to the composition of the Canadian population and the labour force in the past several decades. Changes to immigration selection criteria legislation in the late 1960s precipitated the admission of a growing number of members of racial minority groups in Canada. Previous research on ethnic stratification in the Canadian labour market focused primarily on European ethnic groups that had dominated the labour force in the past. This research consistently demonstrated that, although initially disadvantaged, these groups were able to improve their labour market position over time. Thus, research has shown that the ethnic background of European immigrant groups did not hinder their socio-economic mobility in Canada.

However, more recent research focusing on non-European, non-white racial groups suggests that previous findings based on labour market experiences of European ethnic groups are not valid for today's racial minority groups. Researchers suggest that racial minorities follow a different path in the Canadian labour market. They argue that ethnic boundaries based on colour are more visible than those based on culture, and result in more persistent patterns of labour market discrimination that limit economic mobility of non-white ethnic groups.

Furthermore, labour market disadvantages of European ethnic groups could be explained, in large part, by their (deficient) human capital characteristics. Research has shown that their position could typically be improved through investments in human capital (i.e., education and training). The literature is divided, however, with respect to whether the disadvantaged position of today's non-white groups can be explained by their human capital characteristics. The lack of consensus among researchers who address this issue stems largely from an inability

to determine whether investments in education were made by racial minorities in their respective countries of origin or in Canada. If the former, labour market difficulties faced by non-white groups may reflect a rejection of foreign credentials by Canadian employers (a practice that might itself mask racial discrimination). If the latter, the lower labour market status of non-white groups can be more directly attributed to racial discrimination by Canadian employers. Thus, previous research on labour market disadvantages experienced by Canadian racial minorities has been handicapped by an inability to assess the country of origin of educational credentials.

This thesis overcomes this limitation of past research by studying only visible minority respondents who possess Canadian degrees obtained at one of four universities in Alberta in the same year (1994). This research design makes it possible to determine whether investments in human capital, and more specifically in post-secondary education at an Alberta university, enable members of visible minority groups to receive returns in the labour market to their investments similar to those received by their white counterparts. Overall, the results of this study support the hypothesis that racial minorities who possess Canadian university qualifications are not discriminated against in the Canadian labour market. Multiple regression analysis revealed that visible minority status had no significant (additive) effects on labour market outcomes (unemployment, income, and quality of employment) of 1994 Alberta university graduates.

Additive Effect of Visible Minority Status on Unemployment, Income, and the Quality of Employment

Following their graduation from Alberta universities in 1994, visible minority graduates from many university disciplines had fewer difficulties entering the labour market and securing

employment than did their non-visible minority counterparts. Although, consistent with the results from the National Graduate Survey (Wannell and Caron, 1994), the overall unemployment rate for visible minorities was almost one-third higher than the unemployment rate for other graduates, this difference was likely produced by a substantially higher unemployment rate among visible minority graduates from MBA, Master's of Science/Master's of Engineering, and Social Sciences programs. With the exception of graduates from these programs, visible minority graduates appeared to have a slight advantage over other graduates with respect to securing employment. Indeed, visible minority graduates from most university programs were more likely to be employed two and a half years after their graduation from university than were their white counterparts who graduated from the same programs.

A multiple regression analysis confirmed that the difference in the unemployment rate between visible minority and non-visible minority graduates was not statistically significant, as visible minority status had virtually no effect on respondents' probability of being unemployed after controlling for the effects of a range of demographic and social factors. Therefore, 1994 Alberta universities graduates who considered themselves to be a member of a visible minority group appeared to have encountered no disadvantages in their search for employment as a result of their visibility or phenotypic characteristics.

However, while the results of the analysis of unemployment levels among Alberta university graduates were consistent with those from the 1992 National Graduate Survey (NGS), results of the descriptive analysis of 1997 AGS respondents' earnings differed from those obtained by Wannell and Caron (1994). Visible minority respondents in the 1992 National Graduate Survey earned more than did other respondents; on average, their annual income was 35,800 dollars as compared with an annual income of 35,100 dollars for non-visible minority

respondents. After controlling for other factors (see footnote 3 for variables included in Wannell and Caron's multivariate model), visible minority graduates from Canadian universities still earned 1.3 percent more than did all other graduates, indicating that "the net effect of differential labour market treatment was in the favour of visible minorities" (Wannell and Caron, 1994:31). In contrast, analysis of earnings of 1997 AGS respondents showed that visible minority graduates from Alberta universities earned less than their non-visible minority counterparts.

Although the overall difference in earnings (72 dollars) between the two groups of Alberta university graduates was not large, the earnings disadvantage of visible minorities was consistent across almost all 'field of study' categories, except for Law, Medicine, Dentistry, Nursing, Other Health Professions, and Social Work. This disadvantage was most pronounced among graduates from Master's of Art, Agriculture/Forestry/Earth Sciences, Doctorate, and Business/Commerce programs. Thus, the descriptive analysis confirmed the findings from previous studies that racial minorities do not receive the same job rewards as do white labour market participants (Gee and Prus, 2000; Hou and Balakrishnan, 1996; Geschwender and Guppy, 1995; Lian and Matthews, 1998; Satzewich and Li, 1987).

But, similar to the results obtained for unemployment in this study, visible minority status did not have a significant effect on respondents' earnings after other factors were controlled in the multiple regression analysis. Neither did it have a net effect on the quality of respondents' employment. No significant differences between the quality of jobs held by visible minority members and those held by other graduates were observed. Rather, as the multiple regression analysis demonstrated, a number of other factors influenced the quality of jobs held by Alberta university graduates (as will be discussed later in this chapter).

Other Groups Protected by Employment Equity: Women and People with Disabilities

From an employment equity perspective, it is interesting to note that, in addition to visible minority status, neither gender nor disability status had a significant effect on respondents' odds of securing employment. With the exception of Aboriginal respondents who were not included in this analysis, the three other groups covered by federal employment equity legislation (i.e., visible minorities, women, and people with disabilities) had the same probability of being unemployed as did their counterparts (i.e., whites, men, and those without disabilities). To the extent that Alberta findings can be extrapolated to the nation as a whole, this finding suggests that, among contemporary university-educated labour force participants, most groups that have traditionally been disadvantaged in the Canadian labour market (racial minorities, women, and people with disabilities) now have equal chances of gaining employment.

While the analysis of unemployment revealed that none of the three groups protected by federal employment equity legislation have been disadvantaged in their search for employment, analysis of monthly earnings and employment quality in this study showed that, although visible minority status had no impact on either of these dependent variables, gender and disability status had negative effects on both. Thus, while this study revealed no indication of racial discrimination, both women and persons with disabilities were disadvantaged in terms of their incomes and employment quality. Indeed, of the three variables, gender had the strongest impact on the level of respondents' earnings, indicating that gender inequalities may be the most difficult to eradicate.

These findings are particularly interesting when viewed with respect to the goals of employment equity and pay equity legislation. Equal access to labour market opportunities by visible minority members, women, and people with disabilities, as shown by the analysis of unemployment, can possibly be due to employment equity legislation that covers many employers (see Krahn and Lowe, 2002:204) across all Canadian provinces, including Alberta. The existence of employment equity legislation may also explain why results of the analysis of unemployment levels among Alberta university graduates were consistent with those from the 1992 National Graduate Survey (NGS). However, it cannot explain why women and people with disabilities were disadvantaged in terms of their job quality, as seen in the analysis of the quality of employment of 1997 AGS respondents. If visible minorities, women, and people with disabilities had completely equal access to labour market opportunities as a result of employment equity programs, they would also be expected to experience no disadvantages with respect to their job quality.

Perhaps, equal opportunity for visible minorities, women, and people with disabilities in securing employment was due to labour market shortages faced by many Canadian employers, particularly Alberta employers, rather than employment equity legislation. As Krahn and Lowe put it:

> "business motives may a more powerful influence [for achieving equality]: a growing number of employers realise that...they will face labour market shortages early in the 21st century. Employers are being confronted by the reality that women and members of the other three designated groups will make up a large majority of new labour force entrant in coming years" (Krahn and Lowe, 2002:205).

Furthermore, earnings disadvantages of women and respondents with disabilities, as revealed by the analysis of differences in monthly income, could be due to the absence of pay equity legislation in the province of Alberta. Alberta is one of only two provinces (in addition to NWT) that do not have formal pay equity legislation (Krahn and Lowe, 2002:211). The

absence of such legislation in Alberta could also help explain the discrepancy between the results of the analysis of 1997 AGS respondents' earnings and those obtained by Wannell and Caron (1994) with the national data. However, this explanation assumes that all, or most, 1997 AGS graduates were employed in Alberta, something that I cannot confirm. The absence of pay equity legislation in Alberta might also explain the slight income disadvantage of visible minority graduates from Alberta universities found during the descriptive analysis.

Interaction Effects of Visible Minority Status with Human Capital Variables

The goal of this study was to assess whether visible minorities receive fewer labour market returns to their human capital investments, or more specifically to their university degrees obtained from Alberta universities. While having a liberal arts or a natural science degree substantially increased the odds of unemployment, no significant differences were observed between visible minority and all other graduates in the impact of their university degrees on the probability of unemployment. Likewise, there was no difference in the impact of previous work experience between the two groups. Therefore, with respect to unemployment, the returns to investments in human capital by visible minority graduates were on par with all other graduates.

In contrast, human capital characteristics of respondents substantially influenced their monthly incomes as well as the quality of their jobs. Both previous work experience as well as specific university degrees determined the level of respondents' earnings and the quality of their jobs. Despite this, however, no evidence was found of the differential allocation of these labour market rewards between visible minority graduates and their non-visible minority counterparts with the same university degrees. For income, the only exception was graduates from Law, Medicine and Dentistry programs, and for job quality, the only exception was Engineering

graduates. Visible minority respondents from Law, Medicine and Dentistry programs had substantially higher earnings than did their non-visible minority counterparts. Conversely, Engineering graduates who considered themselves members of a visible minority group earned substantially less than did all other respondents with Engineering degrees. The higher earnings of racial minorities with professional degrees in Law, Medicine and Dentistry can perhaps be attributed to stronger social networks (i.e., greater social capital) of visible minority graduates. The preference of racial minority clients for dealing with a lawyer, a family physician, or a dentist who is also a visible minority member may be responsible for higher financial returns for visible minority graduates with professional degrees. Thus, visible minority respondents may be able to benefit from their possibly more extensive social networks. It is also possible that higher earnings of visible minority graduates with professional degrees in Law, Medicine and Dentistry may be a result of their stronger work ethic, which is characteristic of first and second generation immigrants. The descriptive analysis in Chapter V has shown that many graduates from these fields are self-employed (see Table 5.4). For visible minority professionals, self-employment may have offered a better opportunity to benefit from their strong work ethnic, thus resulting in higher earnings.

On the other hand, racial inequality in job quality among Engineering graduates may have been influenced by the existing culture of Canadian engineering firms. Professional engineering associations regulate the labour market for engineering graduates. While the absence of racial disparities in the level of unemployment among these graduates was likely due a high demand for engineers, the absence of racial differences in earnings may be due to specific income standards dictated by the professional associations. In contrast, these associations do not specify standards with respect to job quality. The culture of Canadian engineering firms may not be as conducive to employment equity as the culture of some public sector firms and,

therefore, may provide room for discrimination in areas such as opportunities for supervision and access to a wide range of fringe benefits. It is not clear, however, why racial disadvantages in job quality were present only among Engineering graduates.

Overall, although specific university degrees influenced the level of respondents' earnings and their job quality, there was very little evidence of racial discrimination on the basis of their specific educational credentials. Apart from the two exceptions noted above, the racial background of 1994 Alberta university graduates had no impact on labour market returns to their university degrees. Previous work experience (another measure of human capital) also influenced respondents' income and their job quality. However, in this case, significant differences in labour market returns to such experience were observed between visible minority and non-visible minority graduates. Visible minority graduates were able to benefit much more from the work experience they obtained prior to their graduation from university than were other graduates with such experience. Thus, while labour market returns to university degrees held by visible minority graduates were on par with other graduates, previous work experience of visible minority graduates received more recognition by employers and resulted in higher earnings and better job quality for visible minority respondents with such experience. A convincing explanation of this finding is, unfortunately, not immediately apparent.

Interestingly, Wannell and Caron (1994) found that, despite the overall income advantage of visible minority university graduates, earnings of visible minority graduates with Master's and Doctorate degrees were lower than earnings of other graduates with similar degrees. Indeed, the income disparity increased with each educational level. While visible minority respondents with Bachelor's or first professional degrees earned 800 dollars more per year than did their white counterparts, visible minority respondents with Master's and Doctorate degrees earned

600 and 680 dollars (respectively) less per year than did their non-visible minority counterparts. The descriptive analysis of 1997 AGS data revealed that disparities among respondents with graduate degrees were even more pronounced. Visible minority respondents with Master's and Doctorate degrees earned on average 392 and 586 dollars (respectively) less per month than their non-visible minority counterparts. Thus, for visible minority respondents, investments in human capital in the form of graduate degrees failed to yield financial returns comparable to those of all other graduates from graduate schools.

Interaction Effect of Visible Minority Status with Gender and Disability Status

Although, unlike gender and disability status, visible minority status had no additive effect on either respondents' earnings or their job quality in the regression analysis, it does not indicate that visible minority graduates experienced no disadvantages with respect to these two outcomes. Rather, as indicated by significant interactions between gender, age and visible minority status for income and job quality, they were deprived of labour market rewards for other reasons. Visible minority male graduates were employed in jobs of substantially poorer quality and received significantly lower incomes than did non-visible minority male graduates. If visible minority graduates were older, their incomes and job quality were also substantially lower than those of their non-visible minority counterparts. Thus, visible minority graduates from Alberta universities appeared to have no general disadvantages in securing employment, possibly as a result of labour market shortages. Once hired, however, they were less likely to receive the additional labour market rewards (i.e., earnings and job quality) that gender (males) and age (older) typically provide.

Other Additive Effects

Considering all of the social and demographic variables in the analysis, it was not gender, visible minority status, or disability status that made the biggest difference for securing employment. Rather, it was enrolment in post-secondary programs since graduation and respondents' marital status. Understandably, enrolment in post-secondary programs would have increased respondents' probability of being unemployed. Having been enrolled in a program of study since graduating from university in 1994 delayed these respondents' entry into the labour force and thus, reduced the length of time for job hunting. It is also possible that, after completing additional educational programs, some of these respondents were holding out/waiting for better career opportunities, which often take longer to find and are more difficult to secure. Post-graduation enrolment not only delayed entry into the labour market, but also often resulted in employment of poorer quality. The jobs of those who did secure employment after completing their additional training were of poorer quality simply as a result of their shorter time span in the labour market. After having completed their additional post-secondary programs during the time that elapsed since their graduation in 1994 until AGS data collection in 1997, they were still at the very start of their careers.

On the other hand, marital status improved respondents' odds of finding employment. Married respondents and those who had a partner were less likely to be unemployed than were single, divorced, and widowed respondents. This finding is not surprising given that "networking" was identified by the 1997 NGS respondents as the most effective way of finding their first job after graduation. One-third of NGS respondents stated that they found their first job through friends, relatives, or co-workers (Clark, 1999). The probability of securing employment by married respondents and those with a partner was likely improved by expanding the circle of people who could help them with the job search. For these respondents, it was not only their

own friends and relatives who were able to assist them in their job hunt, but also the friends and relatives of their spouses. The marital status of respondents not only increased their odds of securing employment, it also had a positive impact on earnings and job quality. If employed, married respondents and those with partners earned more money and were more likely to hold better quality jobs than were single, divorced, and widowed respondents. Thus, the expanded network of friends and relatives helped married and common-law respondents to secure better quality jobs with higher pay.

Social Capital Theory

Such social networks and relationships, on which individuals can rely as a source of support and resources, are at the cornerstone of the sociological concept of "social capital." Bourdieu (1986) defined social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition" (Bourdieu, 1986:248). Bourdieu and other social theorists use the notion of social capital, in addition to economic, human, and cultural forms of capital, to explain inequalities in the labour market and in society overall. Individuals' ability to derive benefits from membership in social networks results in differential access to opportunities through social connections (Portes, 1998).

Loury (1977) argued that neo-classical economic theories could not explain racial income inequalities because they focus exclusively on human capital characteristics. Differential access to labour market opportunities can be a result of differences in human capital characteristics but also of differences in people's connections to and information about the labour market. Labour market segmentation theories have also been criticised for their lack of explanations of why certain workers are trapped in secondary jobs. In his study of mobility in a

segmented labour market, Wial (1991) showed that certain workers were able to make successful transitions from secondary to primary employment as a result of their membership in "neighbourhood-based social groups that ha[d] customary linkages to particular primary jobs" (Wial, 1991:396).

Thus, in addition to human capital characteristics, labour market inequalities can be produced or reduced by differences in the amount and quality of individuals' social relationships and networks from which they are able to derive benefits. At the same time, these social relationships and networks can assist people in overcoming labour market segmentation barriers. Married and common-law respondents to the 1997 AGS likely had stronger connections to the labour market through their expanded network of friends and relatives. This may explain their lower unemployment, better quality and higher paying jobs. Furthermore, with respect to earnings and job quality, the social and financial support provided by respondents' partners during the job search could have enabled them to hold out for better opportunities, thus further contributing to the explanation of their higher salaries and better quality jobs.

Interaction Effects of Visible Minority Status with Other Variables

The significant interaction effect for unemployment found between marital and visible minority statuses indicates that the chances of securing employment for visible minority members were greatly improved by their social capital. Visible minority graduates who were either married or had a partner were less likely to be unemployed than other graduates with the same marital status. Thus, as discussed earlier, the social relationships and networks of relatives and friends which form an individual's social capital may be increased through marriage/partnership and, as such, may have improved the odds of securing a job for those respondents who had a

partner/spouse. Visible minority respondents were able to benefit from such social networks to a greater extent than were non-visible minority graduates. This finding may signify that stronger personal and familial relationships and/or wider networks exist for visible minority graduates. Thus, although social capital theory was not utilized at the outset as a theoretical framework for this study, results of this analysis suggest that it can be usefully adopted as an additional explanation of labour market differentials/inequalities.

However, the absence of an interaction effect between these two factors for earnings and job quality indicates that, while social capital may have helped visible minority graduates with a partner/spouse to gain access to labour market opportunities, it did not necessarily gave them access to better opportunities within the workplace. In contrast, visible minority graduates with dependents were able to secure jobs of better quality. We would expect that caring for a dependent child or adult would place additional restrictions on the type of jobs for which these respondents would consider applying. And, in the total sample, the presence of dependents in the house inhibited respondents' ability to secure better quality jobs. However, the presence of dependent adults or children did no deter visible minority graduates from securing better quality jobs, possibly as a result of the greater social support provided by their families. But this is speculation, at best, and further research would be required to explain this unusual finding.

Strengths and Limitations of this Study

The major strength of this study lies in its design that enabled me to hold constant the quality of educational background of racial minority groups in the Canadian labour market, thus controlling for the issue of foreign credentials that has been problematic in previous research. By studying labour market outcomes of visible minorities who possess Canadian post-

secondary educational qualifications, this study could go beyond previous research that was unable to identify the country of origin of educational credentials held by visible minority members. The possible variation in the quality of educational credentials obtained across Canada is further reduced by focusing on visible minorities who obtained their post-secondary degrees from one of four universities located in the same Canadian province. Thus, the design of this study is ideally suited for testing hypotheses about racial inequality in the Canadian labour market. Using this research design allowed me to determine whether labour market differences between highly educated white and visible minority groups are due to non-recognition of their foreign credentials or to more direct racial discrimination.

Another strength of this analysis is the utilization of "employment quality" as a labour market outcome. Although previous research on labour market outcomes has measured labour market success/failure in terms of a broad range of issues, research on racial stratification in the Canadian labour market has failed to look beyond measures of unemployment, occupation and income. In addition to previously examined measures of unemployment and income, this study introduced employment quality as a third measure of labour market position. The use of a range of different items in a cumulative index to measure the concept produced a measure with greater validity than that of single item measures. However, I must concede that, by using the cumulative index of employment quality, I was unable to examine some of the detail that analysis of individual items would have provided.

One weakness of this analysis is the absence of a measure of respondents' specific ethnic background. Many studies have noted variations in labour market outcomes between different ethnic groups (e.g., Basavarajappa and Jones, 1999; Boyd, 1985; Forcese, 1997; Pendakur and Pendakur, 2000). Among non-white groups, Japanese and Chinese have often outperformed

members of other visible minority groups, a finding that has been attributed to the longer tenure of Japanese and Chinese Canadians in the country. It might have been possible to derive information on ethnic background from respondents' country of birth. However, like ethnicity, country of birth information is not available in the 1997 AGS data set. Nor is information on respondents' nativity status.

While absent measures of ethnic background and country of birth limit this analysis of labour market outcomes of recent university graduates, the basic goal of this analysis is to evaluate labour market differences with respect to visible minority status. Although labour market success of various non-white groups may differ according to which specific racial group a respondent belongs, the concern of this analysis is with the performance of non-white groups in the Canadian labour market as a whole. This concern is particularly relevant in the context of Canadian employment equity legislation that is intended to ensure equal access to employment opportunities for members of all visible minority groups. Furthermore, it is assumed that foreign-born visible minorities are more disadvantaged in the labour market than native-born visible minorities as a result of their immigrant status.

However, the basic hypothesis of this analysis is whether members of visible minorities, be they immigrants or not, are discriminated against despite their educational qualifications. More specifically, the analysis is concerned with the question of whether visible minorities, who possess educational credentials that were obtained in Canada, are denied access to high-quality employment opportunities and whether their pay and job quality are commensurate with their qualifications. As the summary of results earlier in this chapter demonstrates, this study has provided relatively clear answers to this fundamental question.

Policy Implications and Suggestions for Future Research

Despite the few limitations noted above, the outlined strengths of this study make it very useful, particularly for public policy reasons. This study makes a valuable contribution to debates about differences in employment outcomes of visible minority groups. Overall, by providing evidence in support of the hypothesis of no racial differences in labour market outcomes, results of this study strengthen the case in support of human capital theory. Visible minority members who obtained their educational qualifications in Canada, or more precisely in Alberta, received labour market returns similar to those of their non-visible minority counterparts. Therefore, the disadvantaged position of racial minorities in the Canadian labour market, demonstrated by previous research, was likely due to non-recognition of their educational credentials obtained in their respective countries of origin.

University degrees held by visible minority graduates appear to have the same "value" in the Canadian labour market as do degrees held by all other graduates. Therefore, investments in human capital in the form of Canadian post-secondary education were shown to have an equalizing effect on labour market opportunities for visible minority graduates. Thus, results from this study lend further credence to policy initiatives that view investments in human capital as a basis for reducing labour market inequalities. Furthermore, given that racial minorities who possess Canadian university credentials did not appear to experience discrimination in the labour market, policy efforts should be directed toward other segments of the visible minority population, namely those without Canadian educational qualifications. Recognition of foreign educational credentials should become a policy priority.

What seems to have given a slight advantage to visible minority graduates in their job hunt were wider and stronger networks of personal and familial relationships. Thus, results of this

study are consistent with the emerging body of literature on social capital that underscores the importance of social ties for social and economic success. As Canada brings in immigrants from many 3rd world countries, policy makers need to recognize the importance of networks for labour market outcomes of racial minorities. Canadian racial minorities could benefit from immigration policy initiatives with greater focus on issues such as family reunification.

It is unclear from the policy perspective whether the non- effect of visible minority status on labour market outcomes indicates that racial minorities are no longer discriminated against in the Canadian labour market as a result of employment equity legislation, labour market shortages facing Canadian economy, or other factors. Further research that directly examines the effect of formal employment equity legislation in the workplaces is needed in order to answer this question. Furthermore, employment equity programs focus only on the representation of visible minority members and three other groups in the workplaces. In addition to concentrating on the counting of disadvantaged group members in the workplaces, employment equity legislation could be strengthened by focusing on the organizational practices and cultures in order to assess the kind of jobs held by members of different groups.

The income disadvantages of visible minority graduates from Alberta universities found during the descriptive analysis, as well as earnings disadvantages of women and those with disabilities revealed by the multiple regression analysis, point to the need for pay equity legislation, which is not implemented in Alberta. However, respondents to the 1997 AGS were interviewed two and a half years after graduation from Alberta universities. Assessing respondents' labour market outcomes so soon after graduation may not provide a sufficient time span in order to capture ultimate differences in respondents' earnings. While these findings serve as evidence of initial signs of labour market disadvantages or advantages of visible minority university

graduates, the differences may become either more or less pronounced as their careers progress. Indeed, as earlier studies by Bloom, Grenier, and Gunderson (1995) as well as by Baker and Benjamin (1994) have shown, racial minorities take longer to integrate into and succeed in the Canadian labour market. A follow-up study of 1994 Alberta universities graduates, perhaps five or ten years after graduation, would shed further light on their labour market experiences as their careers progress.

This study examined labour market outcomes of university graduates and as such, they were employed predominantly in primary sector workplaces that are likely to have formal employment equity legislation in place. Results of this analysis may not hold for other segments of the population such as college or vocational school graduates. More studies that assess possibly differential labour market experiences in these segments are needed in order to fully examine the extent of labour market discrimination against racial minorities.

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IX. Appendix: 1997 AGS Questionnaire

Degree Program:

FIRST, WE WOULD LIKE TO CONFIRM SOME INFORMATION.

1. Did you receive a _____ (degree/diploma/certificate) in _____ (month) _____ (year), at the University of

Yes 1
No **(EXPLAIN)**_____ 2

Institution:

University of Alberta 1
University of Calgary 2
University of Lethbridge 3
Athabasca University 4

Degree, diploma, or certificate obtained in 1994:

Bachelor's Degree (e.g. B.A., B. Ed., B.Sc.) 1
Diploma/certificate (e.g. Dental Hygiene, Orthodontics) . 2
Professional Degree (e.g. M.D., D.D.S., L.L.B.) 3
Master's Degree (e.g. M.A., M.Sc., M.Ed.) 4
Doctorate (e.g. PhD, D.Sc., D. Ed.) 5
Dual Degree (list both _____) 6

(DO NOT ASK ATHABASCA GRADUATES 2)

2. Did you obtain your degree/diploma/certificate in 1994 from the faculty of _____.

Yes 1
No **(EXPLAIN)**_____ 2

Faculty or program:

UNIVERSITY OF ALBERTA
Agriculture, Forestry and Home Economics 01
Arts 02
Business 03
Dentistry 04
Education 05
Engineering 06
Faculte Sainte-Jean 07
Graduate Studies and Research 08
Law 09

Medicine 10
Native Studies.. 11
Nursing 12
Pharmacy and Pharmaceutical Sciences. 13
Physical Education and Recreation 14
Rehabilitation Medicine 15
Science 16
Other **(PLEASE SPECIFY)**_____ 17

UNIVERSITY OF CALGARY
Education 18
Engineering..... 19
Environmental Design 20
Fine Arts 21
General Studies 22
Humanities 23
Phys. Ed. & Kinesiology 24
Law 25
Management 26
Medicine 27
Nursing 28
Science 29
Social Sciences 30
Social Work..... 31
Other **(PLEASE SPECIFY)**_____ 32

UNIVERSITY OF LETHBRIDGE
Arts and Science 33
Education (excluding combined degree programs) 34
Education (including combined degree programs)..... 35
Management 36
School of Fine Arts..... 37
School of Nursing..... 38
Other **(PLEASE SPECIFY)**_____ 39

ATHABASCA UNIVERSITY
Arts 40
Administration. 41
Commerce..... 42
General Studies 43
Nursing 44
Science 45
Other **(PLEASE SPECIFY)**_____ 46

THANK YOU FOR CONFIRMING THAT INFORMATION. NOW WE WOULD LIKE TO ASK A FEW QUESTIONS ABOUT THE PROGRAM YOU COMPLETED IN 1994.

3. a. What was your major (or program) in 1994?

Major: _____
(INTERVIEWERS: If more than one major given clarify as Dual Major and list both.)

b. In what year did you start studying for this degree, diploma, or certificate?

_____ (year)

(DO NOT ASK ATHABASCA GRADUATES 4 or 5)

4. Were you enrolled in your _____ program primarily as: **(READ)**

A full-time student 1
A part-time student 2
No Response 0

5. Were you enrolled in a Co-op education or other work experience program at university (i.e., a program that alternates periods of work and study)?

Yes 1
No 2
No Response 0

6. a. At the time of your graduation in 1994, approximately what was the total amount you owed from all student loans accumulated during your entire post-secondary education?

_____ ($ amount owed)

b. Approximately what was the total amount you owed from all other education-related debts (accumulated during your entire post-secondary education, e.g.,: credit cards, relatives, bank loans)?

_____ ($ amount owed)

7. When you decided to enrol in the _____ program, how important was it for you to acquire the skills needed for a particular job? Would you say: **(READ)**

Very important. 1
Important..... 2
Not important... 3
Not at all important..... 4
Don't know **(VOLUNTEERED)**..... 8
No Response.... 0

Post-Graduation Education:

8. a. Since graduation in 1994, have you been enrolled in any post-secondary program for credit (i.e., leading toward a degree, diploma or certificate)?

Yes..... 1 **(ASK 8b)**
No ..... 2 **(GO TO 11)**
No Response.... 0 **(GO TO 11)**

b. Are you a student now?

Yes..... 1
No 2
No Response.... 0

9. In what type of post-secondary program *were/are* you enrolled?

Technical Institute/Community College. 1
University - Undergraduate (e.g. B.A., B. Ed., B.Sc.)..... 2
University - Graduate (e.g. Master's, Doctorate) 3
University - Professional School (e.g. Law, Dentistry, Medicine) 4
Professional Certification **(VOLUNTEERED)**
(e.g. C.A., P.Eng., Nursing, Faculty of Extension) 5
Other **(SPECIFY)**_____ 6
No Response.... 0

10. *Were/are* you enrolled in this educational program primarily as: **(READ)**

A full-time student..... 1
A part-time student..... 2
No Response.... 0

11. Do you plan to enrol in *another* post-secondary program for credit: **(READ)**

Within the next year 1
Within the next several years 2
No immediate plans to enrol..... 3
No Response 0

Pre-Graduation Employment:

12. a. Before you completed your _____ program in 1994, did you ever work full-time, that is, usually 30 or more hours a week, not including summer jobs or co-op work terms? **(PRIOR TO ENROLLING OR WHILE ENROLLED IN THE PROGRAM)**

Yes ..... 1 **(ASK 12b)**
No ..... 2 **(GO TO 13)**
No Response .... 0 **(GO TO 13)**

b. What was the total number of months or years of full-time work experience that you had before completing the _____ program? Please add up the duration of all your full-time jobs.

_____ (total months) _____ (total years)

No Response 00

13. Did you have a part-time (*or full-time job*) in the last year of your _____ program prior to completion, not including summer jobs or co-op work terms? (*For this study, full-time employment is defined as working 30 hours or more per week, and part-time employment is defined as working less than 30 hours per week.*)

Part-time job 1
Full-time job 2
Neither 3
No Response 0

Post-Graduation Employment:

14. a. Since your graduation in 1994, did you ever have a paying job, including self-employment?

Yes ..... 1 **(GO TO 15)**
No ..... 2 **(ASK 14b)**
No Response .... 0 **(GO TO 36)**

b. What is the main reason why you have not had a paying job since you graduated in 1994? **(DO NOT READ CATEGORIES)**

Could not find a job	01	**(GO TO 36)**
Own illness or disability	02	**(GO TO 36)**
Family responsibilities	03	**(GO TO 36)**
Going to school	05	**(GO TO 36)**
Travelling	06	**(GO TO 36)**
Taking time off	07	**(GO TO 36)**
Could not find the kind of job I wanted	08	**(GO TO 36)**
Not interested in finding a job	09	**(GO TO 36)**
Other **(SPECIFY)**_____	10	**(GO TO 36)**
No Response	00	**(GO TO 36)**

(DO NOT ASK ATHABASCA GRADUATES 15)

15. Since graduating in 1994, how would you rate your adjustment from university to the work force? Would you say it has been …

Very difficult	1
Somewhat difficult	2
Somewhat easy	3
Very easy	4
Still adjusting **(VOLUNTEERED)**	5
No adjustment required; always in the labour force **(VOLUNTEERED)**	6
Don't know **(VOLUNTEERED)**	8
No Response	0

NEXT, WE WOULD LIKE TO ASK YOU ABOUT YOUR CURRENT ACTIVITIES.

16. Do you currently have a paying job, including self-employment? **(PROBE TO FIND OUT IF MORE THAN ONE JOB)**

Yes, one job	1	**(ASK 17)**
Yes, more than one job	2	**(ASK 17 and 18)**
No	3	**(GO TO 21)**
No Response	0	**(GO TO 21)**

17. a. What is the total number of hours you usually work per week in your (*main*) job?
(*The main job refers to the one with the most hours worked in a week.*)

_____ (total work hours per week)

(IF LESS THAN 30 HOURS PER WEEK, ASK 17b. OTHERWISE GO TO 18)

b. What is the main reason you usually work less than 30 hours per week (*in your main job*)?
(DO NOT READ CATEGORIES)

Full-time work is under 30 hours a week 1
Did not want full-time work 2
Own illness or disability 3
Personal or family responsibilities 4
Going to school 5
Could only find part-time work 6
Other 7
No Response 0

18. **(IF MORE THAN ONE JOB, ASK 18. OTHERWISE GO TO 19)**

What is the total number of hours you usually work per week in all jobs combined?

_____ (total work hours per week)

19. a. Are you self-employed (*in your main job*)?

Yes ..... 1 **(ASK 19b)**
No ..... 2 **(GO TO 20)**
No Response ..... 0 **(GO TO 20)**

b. Approximately how may people other than yourself do you employ (*in your main job*)?

_____ (number of employees)

Don't Know **(VOLUNTEERED)** 8
No Response 0

20. Is your *(main)* job permanent or temporary?
(*Permanent means there is no indication when the job will end. Temporary means the job will terminate at some specified time.*)

Permanent ..... 1 **(GO TO 22)**
Temporary ..... 2 **(GO TO 22)**
No Response ..... 0 **(GO TO 22)**

21. a. Are you currently looking for a job?

Yes ..... 1 **(GO TO 36)**
No ..... 2 **(ASK 21b)**
No Response ..... 0 **(GO TO 36)**

b. What is the main reason you are not looking for a job?
(DO NOT READ CATEGORIES)

Own illness or disability ..... 01 **(GO TO 36)**
Personal or family responsibilities ..... 02 **(GO TO 36)**
Going to school ..... 03 **(GO TO 36)**
No longer interested in finding a job ..... 04 **(GO TO 36)**
Waiting for recall (to former job) ..... 05 **(GO TO 36)**
Has already found a new job ..... 06 **(GO TO 36)**
Waiting for replies from employers ..... 07 **(GO TO 36)**
Could not find the kind of job wanted ..... 08 **(GO TO 36)**
Discouraged with looking ..... 09 **(GO TO 36)**
Travelling/taking time off ..... 10 **(GO TO 36)**
No reason given ..... 11 **(GO TO 36)**
Other ..... 12 **(GO TO 36)**
No Response ..... 00 **(GO TO 36)**

Current (main) Job:

22. a. What kind of work do you do? That is, what is your job title? *(If you held more than one job, choose the one with the most hours.)*

OCCUPATION _____

b. What does this job involve? **(DESCRIBE MAJOR WORK DUTIES)**

_____

_____

c. What kind of business, industry, or service is this?

_____

_____

23. In what month and year did you start this job?

_____ (month) _____ (year)

Don't Know **(VOLUNTEERED)** 8

No Response 0

(DO NOT ASK 24 IF SELF EMPLOYED)

24. Since starting work for your present employer, have you received any promotions?

Yes 1
No 2
No response 0

25. Do you supervise the work of other employees?

Yes 1
No 2
No Response 0

26. Does your (*main*) job provide any of the following benefits?

	Yes	No	NR
a. Extended health benefits (*not covered by provincial health insurance*)	1	2	0
b. Dental plan	1	2	0
c. Retirement plan/pension	1	2	0

27. a. Working your usual hours at your current (*main*) job, approximately what is your

gross salary or earnings, before taxes and deductions?
ENTER AMOUNT
_____ $

Don't know 8
No Response 0

b. ENTER PAY PERIOD
PROBE FOR PAY PERIOD, IF NECESSARY

Hourly. 1
Daily 2
Weekly 3
Every two weeks/twice a month 4
Monthly 5
Yearly 6
Other **(SPECIFY)** _____ 7
Don't know 8

No Response 0

(IF RESPONDENT HAS MORE THAN ONE JOB, ASK 28. OTHERWISE GO TO 29)

28. a. .....Approximately what is your gross salary or earnings in your other job(s),

before taxes and deductions, working your usual hours?
ENTER AMOUNT
_____ $

Don't know 8
No Response 0

b. ENTER PAY PERIOD
PROBE FOR PAY PERIOD, IF NECESSARY

Hourly. 1
Daily 2
Weekly 3
Every two weeks/twice a month 4
Monthly 5
Yearly 6
Other **(SPECIFY)** _____ 7
Don't know 8
No Response 0

Evaluation of Current (main) Job:

29. Was a university degree required when you were selected for your (*main*) job?

Yes 1
No 2
Don't know 3
No Response 0

30. a. In terms of the subject-area knowledge you acquired (e.g., history, biology, law), how related is your current (*main*) job to the program from which you graduated in 1994?

Very related 1
Somewhat related 2
Not very related 3
Not at all related 4
No Response 0

b. In terms of the general skills and abilities you acquired (e.g., communication skills, critical thinking, problem solving), how related is your current (*main*) job to the program from which you graduated in 1994?

Very related 1
Somewhat related 2
Not very related 3
Not at all related 4
No Response 0

c. Overall, how related is your current (*main*) job to the program from which you graduated in 1994?

Very related 1
Somewhat related 2
Not very related 3
Not at all related 4
No Response 0

31. Given your education, training and experience, do you feel that you are earning:

More than you deserve 1
About the right amount. 2
Less than you deserve... 3
Don't Know **(VOLUNTEERED)** 8
No Response 0

32. Given your education, training and experience, do you feel that you are overqualified for your (*main*) job?

Yes 1
No 2
Don't Know **(VOLUNTEERED)** 8
No Response 0

33. Now we would like you to assess to what extent you actually use the following skills, knowledge and abilities in your current (*main*) job. Using a scale of 1 to 5, where 1 is "not at all" and 5 is "to a great extent", to what extent do you use each of the following?

Not at All				To a Great Extent	DK	NR
1	2	3	4	5	8	0

a. Problem solving skills
b. Speaking skills

c. Writing skills
d. Ethical awareness
e. Creative thinking abilities
f. Computer skills
g. Information management skills
h. Ability to work independently
i. Ability to work well with others

34. Using a scale of 1 to 5, where 1 is "very dissatisfied" and 5 is "very satisfied", how satisfied are you with the following aspects of your current (*main*) job?

Very Dissatisfied				Very Satisfied	DK	NR
1	2	3	4	5	8	0

a. Pay
b. Benefits
c. Opportunities to make your own decisions
d. Opportunities to develop your skills and abilities
e. Opportunities for career advancement
f. Opportunities to do interesting and challenging work

35. All things considered, how satisfied are you with your current (*main*) job? (*Using the same scale of 1 to 5)*

Very Dissatisfied				Very Satisfied	DK	NR
1	2	3	4	5	8	0

Respondent's Demographics:

THESE FINAL QUESTIONS WILL GIVE US A BETTER PICTURE OF THE 1994 GRADUATES WHO TOOK PART IN THIS STUDY.

36. Sex of respondent **(DO NOT ASK: entered from University database)**

Male.... 1
Female 2

37. Age of respondent **(DO NOT ASK: entered from University database)**

_____ years

No Response.... 00

38. What is your current marital status? Are you **(READ)**...?

Single (never married) 1
Married or living with partner 2
Divorced/Separated/Widowed 3
No Response 0

39. Do you currently have dependent children or dependent adults living with you? **PROBE**

Yes, dependent children 1
Yes, dependent adults 2
Yes, both 3
No 4
No Response 0

40. Do you consider yourself to be a member of a visible minority group? *(Members of visible minorities are persons who are non-Caucasian in race or non-white in colour. Examples of visible minority groups are: Black, Asian, Middle Eastern, etc.)*

Yes 1
No 2
No Response 0

41. Do you consider yourself to be an aboriginal person? *(e.g. Status Indian, Non-Status Indian, Inuit, or Metis)*

Yes 1
No 2
No Response 0

42. Do you consider yourself to have a disability that may disadvantage you in employment?

Yes 1
No 2
No Response 0

WE'VE REACHED THE END OF OUR QUESTIONS AND I WOULD LIKE TO THANK YOU
VERY MUCH FOR YOUR TIME AND COOPERATION IN DOING THIS INTERVIEW.