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### The Evaluation of Immigrants' Credentials: The Roles of Accreditation, Immigrant Race, and Evaluator Biases

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THE EVALUATION OF IMMIGRANTS' CREDENTIALS: THE ROLES OF  
ACCREDITATION, IMMIGRANT RACE, AND EVALUATOR BIASES<sup>1</sup>

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**Abstract:**

Theories of subtle prejudice imply that personnel decision makers might inadvertently discriminate against immigrant employees, in particular immigrant employees from racial minority groups. The argument is that the ambiguities that are associated with immigrant status (e.g., quality of foreign credentials) release latent biases against minorities. Hence, upon removal of these ambiguities (e.g., recognition of foreign credentials as equivalent to local credentials), discrimination against immigrant employees from minority groups should no longer occur. Experimental research largely confirmed these arguments, showing that participants evaluated the credentials of black immigrant employees less favorably only when the participants harbored latent racial biases and the foreign credentials of the applicants had not been accredited. The results suggest the importance of the official recognition of foreign credentials for the fair treatment of immigrant employees.

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## EXECUTIVE SUMMARY:

Recently, immigrants, who already comprise approximately 20% of the labour force, have accounted for over 70% of labour force growth. Yet the analysis of census and survey data in Canada demonstrates that immigrants consistently experience lower rates of labour-force participation and lower earnings relative to the native-born population. Macro-level research by economists and sociologists has indicated that the lack of recognition of immigrants' foreign credentials, such as education (e.g., degrees and diplomas), contributes significantly to the suboptimal integration of immigrants. In particular, the credentials of visible minority immigrants are evaluated less favourably than those of white immigrants and native Canadians.

The devaluation of foreign credentials of visible minority immigrants presents a lose-lose situation. It leads to lower economic and psychological well-being for immigrants and it limits the extent to which Canada can take advantage of immigrants' skills and experience. Because visible minority immigrants consistently constitute an increasing proportion of all immigrants to Canada, it is critical to understand the reasons underlying the suboptimal utilization of their skills. Two answers are plausible. First, one possibility is that compared to native Canadians, immigrants may come from countries where the educational standards are lower than they are in Canada. Hence, the lower evaluation of immigrants' credentials reflects a difference in the actual quality of the education, resulting in a lower market value of immigrants' credentials. An alternate possibility is that the credentials of immigrants and native Canadians are at a minimum equivalent in their quality. Then, the lower evaluation of immigrants' credentials reflects prejudices employers hold against visible minorities.

Prior research on the devaluation of immigrants' skills was conducted with census and survey data. Such data do not directly measure prejudice and do not include information on the accreditation of foreign credentials, and therefore miss out on understanding potentially important reasons for the devaluation of immigrants' skills. With the intent to help close this gap of knowledge, we focused on three antecedents of skill discounting: the accreditation of credentials (whether their equivalence with Canadian degrees has been established), the race of the immigrant, and evaluators' subtle prejudice. We studied accreditation of credentials as important policy initiatives are currently underway to improve foreign credential recognition in Canada. Further, research has shown that in today's society subtle prejudice is more commonplace than is blatant prejudice, which has been on the decline since the 1960s.

Research on subtle prejudice suggests that individuals will act on their prejudicial attitudes if non-prejudicial justifications for such actions are available. We argue that individuals who make hiring decisions in Canada may consciously try to avoid being biased against visible minority immigrants yet the availability of a non-prejudicial justification might still facilitate behavioural manifestations of subtle prejudice. Specifically, the ambiguity associated with the true value of foreign credentials can be used as a seemingly legitimate justification for the expression of prejudice against visible minority immigrants. Once the foreign credentials have been accredited (i.e. their equivalence to Canadian credentials has been established) in Canada, however, the justification for expression of subtle prejudice is removed and visible minority immigrants would be treated fairly as white immigrants and native-born Canadians.

As our research aimed to uncover the psychological (i.e., subtle prejudice) factors that affect the evaluation of immigrants' credentials versus those of native Canadians, it had to involve human participants in a controlled setting. Four hundred five (48.15% female; 88.7% Canadian) students at a large Canadian university participated in a two part laboratory study. Of the participants, 304 had full-time employment experience ( $M = 21.92$  months). For 199 participants, their past experience included supervisory responsibilities ( $M = 12.44$  months).

In the first part of the study, we assessed participants' subtle prejudices. Several weeks later, in the second-part, participants evaluated profiles of three male applicants for a sales executive position in a Canadian firm. Two of the applicant profiles – a qualified white Canadian and an unqualified white Canadian - were kept constant for all participants. For the third profile, of a qualified applicant, we varied two factors: (1) job applicants' race (*black* or *white*) manipulated via the applicant's name and (2) job applicants' status in Canada (*landed immigrants from South Africa whose foreign credentials had been accredited in Canada* or *landed immigrants from South Africa whose foreign credentials had not been accredited in Canada* or *Canadian citizens with Canadian credentials*). The qualifications indicated in the third applicant profile were equivalent.

Our results show that, if foreign credentials were accredited, they were no longer discounted relative to Canadian credentials of equal quality. Furthermore, the accreditation of credentials immunized the evaluation of credentials from effects of immigrant race or personnel decision makers' biases. Participants did not differently evaluate the credentials of black and white immigrants when the credentials were accredited, but they did do so when immigrants' foreign credentials were not accredited. Importantly, subtle prejudice affected the evaluation of black immigrants' credentials relative to those of white immigrants only if they were not accredited.

Our study is among the first to highlight the role of the accreditation of foreign credentials in establishing turning a lose-lose situation into a win-win situation for immigrants and the Canadian economy. When immigrant credentials were certified as equivalent to Canadian credentials, the negative effects of their "foreignness" (or not being Canadian), applicant race, and evaluators' biases disappeared. According to our research, accreditation is not only an "equalizer" of credential quality, but also a "bias suppressor."

In terms of policy implications, our study suggests that non accredited foreign credentials constitute a key labour market barrier for visible minority immigrants. In that regard, immigration policy makers would be well served in framing initiatives around foreign credential accreditation. For example, foreign credential accreditation may become an important requirement for admission of immigrants (similar to the Australian approach) or the first step in the integration of newly arriving immigrants. Additionally, as our study indicates, addressing foreign credential accreditation is also relevant for managing the expression of prejudice against visible minority immigrants.

## THE EVALUATION OF IMMIGRANTS' CREDENTIALS: THE ROLES OF ACCREDITATION, IMMIGRANT RACE AND EVALUATOR BIASES

The Canadian economy increasingly relies on immigrants. Recently, immigrants, who already comprise approximately 20% of the labor force, have accounted for over 70% of labour force growth (Statistics Canada, 2004). Yet the integration of immigrant employees is slow and suboptimal. For example, their unemployment rates are higher than those of their native-born counterparts. Macro-level research by economists and sociologists (e.g., Li, 2001; Reitz, 2003) has indicated that the evaluation of foreign credentials contributes significantly to the suboptimal integration of immigrant employees. In particular, the credentials of the growing segment of visible minority immigrants (Reitz, 2005; Swidinsky & Swidinsky, 2002) are evaluated less favourably than those of white immigrants and native Canadians. For example, Alboim, Finnie, and Meng (2005) reported that a foreign university degree held by an immigrant on average had an earnings' return of less than a third of that of a Canadian university degree held by a native-born employee, unless the immigrant was white; then the foreign degree was comparable in value to a Canadian degree.

The research question in our study is: Why are the credentials of immigrants evaluated less positively than those of native Canadians? Two basic answers are plausible. First, one possibility is that compared to native Canadians, immigrants may come from countries where the educational standards are lower than they are in Canada. Hence, the lower evaluation of immigrants' credentials reflects a difference in the actual quality of the education, resulting in a lower market value of immigrants' credentials (Sweetman, 2004). An alternate possibility is that the credentials of immigrants and native Canadians are equivalent in their quality. Then, the

lower evaluation of immigrants' credentials reflects biases in favour of native Canadians (Conference Board of Canada, 2004; Couton, 2002; Reitz, 2005).

In our study we focus on three factors to assess whether the discounting of foreign credentials results from their quality or from biases: the accreditation of credentials (whether their equivalence with Canadian degrees has been established), the race of the immigrant, and evaluators' subtle biases (for a review, see Dovidio & Gaertner, 2004). We study subtle biases rather than blatant prejudice or taste as it has been referred in taste-based models of discrimination (e.g., Becker, 1971). Research (e.g., Schuman, Steeh, Bobo, & Kryson, 1997) has shown that in today's society subtle biases are more commonplace than are blatant prejudices, which have been on the decline since the 1960s. Subtle biases differ from blatant prejudice or taste. Individuals who indulge in blatant prejudice or taste do so consciously and gain satisfaction. Subtle biases, however, latently influence decisions involving members of majority and minority groups.

#### Importance of the Research Question

*Public Policy Implications.* Answers to the question of whether the lower evaluation of immigrants' credentials is a function their actual quality, subtle biases, or both inform public policy makers about the foci for investing their budgets. If the actual quality of immigrants' credentials drive their evaluation, a revision of the current point system for the evaluation of immigrants' qualifications, used in the admission process, may be in order, placing a heavier emphasis on the location (e.g., country) where immigrants were educated. Moreover, immigrants should be encouraged to attend training programs that would improve the quality of their credentials. If subtle biases result in the lower evaluation of immigrants' credentials, public policy makers may target employers who may make biased decisions. The development and

execution of trainings that raise the awareness for subtle hard-to-detect biases should be supported. Moreover, because subtle biases are more likely to affect employment decisions in ambiguous situations (Esses, Dietz, & Bhardwaj, 2006), public policy makers should consider reducing the ambiguity associated with the evaluation of foreign credentials. For example, the formal evaluation of credentials through credential evaluation services (e.g., World Education Services) may be formally included in the process for the admission of immigrants to Canada.

*Social implications.* Understanding the antecedents for the lower evaluation of immigrants' credentials has important implications for the Canadian economy and the well-being of immigrants. If the immigrant labour force is under-utilized, the Canadian economy incurs opportunity losses. If immigrants cannot be integrated into the labour force because of the lower quality of their credentials or because of subtle biases, their economic and psychological well-being suffers. Immigrants' perceptions of integration and success in their jobs play a significant role in their psychological well-being and productivity (Major & O'Brien, 2004). Research has found that unemployment puts people at an elevated risk for emotional and physical problems (e.g., Price, Choi, & Vinokur, 2002) and negatively affects reported physical health, anxiety, and depression (Turner, 1995). Immigrants also face additional strains because of relocation and adjustment (Akhavan, Bildt, Franzen, & Wamala, 2004). The potential under-utilization of immigrant employees and their lower well-being can pose significant threats to social cohesion in Canada.

*Scientific importance.* Past research on the antecedents of foreign credential evaluation has not included assessment of subtle biases. Hence, it could not explicitly address the above research question. Our study aims to overcome this gap in past research. Equally important, as

explained in detail below, it will be among the first to assess the effects of the accreditation of foreign credentials through credential evaluation services.

### Rationale for the Study

Prior to discussing the rationale of the study, we would like to note that we conducted an experimental study as it is difficult to assess subtle biases in the field. Both behavioral economists and psychologists have employed experimental studies to study employment discrimination (see Anderson, Fryer, & Holt, 2006, for a review). The participants in the experiment completed an in-basket exercise (i.e., they had to respond to a series of organizational memoranda) that included personnel selection decisions (Dietz & Pugh, 2004; Joshi, Dietz, & Esses, 2006). In the experiment, we varied the level of the four factors discussed below: Qualification, accreditation of job applicants' foreign credentials, job applicants' race, and evaluators' subtle biases.

#### Qualification

On the basis of a rational or homo economicus approach (i.e., recruiters are rational and recognize the quality of education) we suggest:

*Hypothesis 1:* Participants will evaluate the credentials of higher qualified applicants more favorably than those of lower qualified applicants.

For the purpose of this study, this is a trivial hypothesis, but it is important to establish that study participants correctly recognize the level of qualifications. Past research on the evaluation of credentials for majority and minority applicants (e.g., Bertrand & Mullainathan, 2004) has been criticized for potential confounds of majority and minority status with factors (e.g., social background) that result in productivity differences for majority and minority employees, even when they are equally qualified. One group of economic models of statistical discrimination



(e.g., Arrow, 1972) implies that employers may use minority and/or immigrant status as a proxy for unobservable productivity differences. We will include information on a productivity test (i.e., sales simulation test in our study) conducted by the potential employer. This productivity test conducted by the employer should prevent participants from using immigrant status and/or race as indicators of productivity differences.

### Accreditation of Credentials and Race

*Accreditation of Credentials.* Reasoning on the basis of a second group of statistical discrimination models (e.g., Altonji & Blank, 1999) suggests that employers believe that the same information is more precise for native Canadian citizens than it is for landed immigrants (stated differently, there is more noise or ambiguity in evaluating foreign credentials). We will test this theory by varying the ambiguity of the information about immigrants' credentials. Immigrant applicants will either have their foreign credentials accredited by a credential evaluation service such that their equivalency to Canadian credentials is explicitly mentioned or their foreign credentials will not have been accredited. We hypothesize:

*Hypothesis 2a:* Participants will evaluate the credentials of native Canadians with Canadian credentials and immigrants with accredited foreign credentials more positively than the foreign credentials of immigrants that have not been accredited.

*Race.* As indicated before, large-scale surveys show that prejudice and discrimination are less and less tolerated (e.g., Schuman, Steeh, Bobo, & Krysan, 1997; Krysan, 2002). On the other hand, however, actual discrimination against minority employees continues to be a problem. For example, in the 2003 Ethnic Diversity Survey (Statistics Canada, 2003), 20% of visible minorities reported that they had often or sometimes experienced discrimination in the past five

years. In a recent survey (Leger Marketing, 2007), 92% of Canadian respondents (both majority and minority respondents) stated that they had witnessed racist comments or behaviours.

To explain the ongoing discrimination against minority employees, we draw on Crandall and Eshleman's (2003) prejudice framework. Their framework suggests that the path from biases (i.e., negative attitudes against members of social groups) to discriminatory behavior is affected by both justification and suppression factors. Biases and prejudices still exist for various reasons (e.g., cultural learning, social categorization and identity), but anti-discrimination laws and norms largely suppress their behavioral expression. Thus, unless justification factors are available, biases do not result in discrimination.

If justification factors are available, however, discriminatory behaviours are likely to emerge. Crandall and Eshleman (2003) defined justification as "any psychological or social process that can serve as an opportunity to express genuine prejudice without suffering external or internal sanction" (p. 425). Logically, justification factors (e.g. ideologies and value systems, cognitions, roles, and social situations) are secondary to suppression factors as the engagement in discriminatory behaviours only requires justification in the presence of suppression factors.

One justification process that is particularly relevant in the employment context is that of "covering." When covering, individuals hide their biased motives behind seemingly non-biased and socially or personally tolerable explanations. For example, Brief, Dietz, Cohen, Vaslow and Pugh (2000) argued that so-called "business justifications" (whereby a behavior is attributed to business rationales) released biased personnel decision makers to act on their biases. These researchers found in two U.S studies that subtly prejudiced white participants discriminated against African American applicants only in the presence of a "business justification" (e.g., an organizational authority's belief that the demographic profile of new employees should match

that of the existing personnel) (see Petersen & Dietz, 2005, for a German example). Brief et al. explained the negative effects of person-organization fit arguments in terms of the perceived legitimacy of these arguments. That is, person-organization fit is often viewed as a legitimate means for fostering the bottom line. Support or enforcement of person-organization fit arguments by organizational authority figures amplifies the perceived legitimacy of these arguments, adding “source legitimacy” to the “legitimacy of the message.”

Discriminatory behaviours can also occur without explicitly stated alternate rationales, such as business justifications, for discriminatory behaviour, if the situational context is ambiguous (Dovidio & Gaertner, 2004; McConahay, 1986). If the rationale for a personnel decision is ambiguous (i.e., it may be bias, but there may be also a legitimate reason for not selecting a minority employee), a biased personnel decision is more likely to be enacted. In a study by Hodson, Dovidio, and Gaertner (2002), for example, whites discriminated against black applicants only when applicants’ credentials were mixed (e.g., low high school achievement and high aptitude test scores). Black and white applicants were not treated differently, when their qualifications were consistently strong or weak.

We contend that the discounting of foreign skills can serve as a justification for discriminating against visible minority members (Esses, Dietz, Bennett-AbuAyyash, & Joshi, 2007). Typically, established standards for the evaluation of foreign skills are not available. The evaluation of the skills of foreign-trained workers is associated with greater ambiguity than that of locally-trained workers. Hence, decision makers may have to rely on judgment calls to a greater degree that they would have in the evaluation of skills obtained locally (e.g., Reitz, 2005). Even if decision makers have all the necessary information about foreign skills, they may still feel less confident of their decisions about foreign-trained workers than of their decisions

about locally-trained workers. The lack of established standards for evaluating foreign skills and the resulting ambiguity and uncertainty allow room for subjective factors to play a more significant role. For example, personnel decision makers who can be expected to favour their ethnic in-group at the expense of ethnic out-groups may view the foreign skills of ethnic minority immigrants as a risk, whereas the foreign skills of in-group immigrants may be seen as a non-issue (or even as valuable international experience).

In summary, employment discrimination is more likely occurs when non-biased justifications for discriminatory behaviour are available. Here we argue that foreign credentials may be used as a “cover” for devaluing the credentials of minority immigrants. The accreditation of foreign credentials is expected to reduce the ambiguity associated with the evaluation of foreign credentials, and, does not allow the use of the foreignness of accredited credentials as a cover.

*Hypothesis 2b:* Applicant race will moderate the main effect of H2a, such that the evaluation of white and black native Canadians and the evaluation of black and white immigrants, whose credentials have been accredited, will not differ, whereas black immigrants, whose credentials have not been accredited will receive less positive evaluations than white immigrants.

### Subtle Biases

Newer psychological theories of prejudice (e.g., Dovidio & Gaertner, 2004) focus on the phenomenon of subtle biases. Four key propositions are: First, as previously indicated, blatant prejudice is largely a thing of the past, but subtle biases in favor of majority groups (e.g., white Canadians) and against members of minority groups continue to exist. Second, individuals differ in their biases toward members of other groups. Third, subtly biased individuals state and believe that they are *not* prejudiced against immigrants (or have a preferential taste for native

Canadians). Fourth, subtly biased individuals are latently affected by these biases in their treatment of majority and minority group members. As discussed in the preceding section, subtle biases result in discriminatory behavior only if a seemingly non-biased explanation for these behaviors exists (e.g., ambiguity or noise in the information on immigrant applicants). Fifth, non-biased individuals treat majority and minority members equally. They are not expected to be affected by the belief that the information about minority group members is more ambiguous or noisy than that for majority group members.

Hence, newer theories of prejudice suggest an interaction effect, such that only subtly biased participants will attach lower evaluations to non-accredited foreign credentials of immigrants.

Stated formally:

*Hypothesis 3a:* The more participants harbor subtle biases against immigrants, the more positively they will evaluate the credentials of native Canadians with Canadian credentials and immigrants with accredited foreign credentials relative to the foreign credentials of immigrants that have not been accredited (moderation of the main effect hypothesized in Hypothesis 2a).

*Hypothesis 3b:* The interaction effect described in 2b will be pronounced for participants who are biased against ethnic minorities.

Hypotheses 3a and 3b cannot be explained by economic models of taste-based discrimination (e.g., Becker, 1971; Darity & Mason, 1998) or psychological models of blatant prejudice. These models imply that some employers have a prejudiced “taste” for native Canadian employees over immigrant employees that is not affected by the accreditation (or lack thereof) of foreign credentials. This taste would be expressed independent of whether it can be explained as non-prejudicial or not.

*Methods and Results**Overview*

As the current research aims to uncover the psychological (i.e., subtle biases) factors that affect the evaluation of immigrants' credentials versus those of native Canadians, it has to involve human participants. Furthermore, given the difficulty to assess subtle biases in the field, we conducted an experiment. Both behavioral economists and psychologists have employed experimental studies to study employment discrimination (see Anderson, Fryer, & Holt, 2006, for a review). In our study on employment discrimination, participants completed an attitude survey and an in-basket exercise (where they had to respond to a series of organizational memoranda) that included personnel selection decisions (e.g., Brief et al., 2000). In the attitude survey, participants filled out a set of psychometric scales (including a number of filler scales used to disguise the purpose of the study). As part of the in-basket, participants were given profiles of prescreened applicants and asked to assess job applicants' quality of education, work experience, and skills.

The strength of experiments is that they allow the isolation of the factors (e.g., applicants' race and quality of credentials) that are hypothesized to influence the studied phenomenon (i.e., the evaluation of credentials in the proposed study). The experimental approach gives us the highest degree of control over our research setting as we vary the hypothesized factors and keep relevant alternate explanations (applicant gender, expected productivity of the applicant, applicant age, language skills of applicants) constant across applicants. In contrast, field survey research or research using archival data (e.g., census data) would not allow us to do so because it would include the possibility of a wide range of alternate explanations. An experimental approach also allows us, during data analyses, to control for participant characteristics (e.g., gender, age) that might affect the hypothesized relationships.

Below we report the experimental procedure in detail. For the current study, the experimental materials were developed during January-February, 2007 and approved by the business ethics review board at the University of Western Ontario in March, 2007. The data were collected during the summer 2007, fall 2007 and early winter 2008 academic terms at a large Canadian University.

### *Methods*

#### *Participants*

Four hundred five (48.15% female) students (77.8% were business students, remaining were psychology students) at a large Canadian University participated in this study. 85.7% of the participants were undergraduate students. 88.7% of the participants were Canadian citizens and 68.5% were born in Canada. Two hundred twenty eight participants were White (the majority of the remaining ones being Asians). Of the participants, 304 had full-time employment experience ( $M = 21.92$  months). For 199 participants, their past experience included supervisory responsibilities ( $M = 12.44$  months). They were recruited for a two-part study entitled “Study on managerial decision making” and received either course credit or a remuneration of \$10 in exchange for their voluntary participation.

#### *Procedure*

*Part 1: Attitude survey.* At the beginning of the semester, participants completed a set of questionnaires. The students were informed that the questionnaires were designed to investigate various factors, which might affect managerial decision making. Embedded in the questionnaires was a measure of bias against immigrants and one measure of bias against ethnic minorities. In addition, all participants completed a number of demographic items following the questionnaires.

*Part 2: The in-basket exercise.* Two weeks after filling out the Part 1 questionnaire, participants completed an in-basket exercise that as a managerial decision making task. In-basket exercises are a standard tool in corporate assessment centers, in which employees are often screened for assignments and promotions (e.g., Thornton, 1992). Participants assumed the role of Chris Meyer, Executive Vice President of Human Resources at a real estate services firm, Edmund Real Estate Services. They read descriptions of both the firm and their role as Chris Meyer and later completed an in-basket exercise in their role. The in-basket required participants to make decisions regarding a variety of issues (for example, whether to exceed a travel and entertainment budgets and what salary to offer an incoming training and development manager). For each in-basket decision, participants were provided with a number of suggested decision alternatives; additional space for comments was also provided.

Embedded in the in-basket exercise, was a personnel decision task where participants (in their role as Chris Meyer) provided evaluations and hiring recommendations for the position of Sales Executive – Commercial Real Estate. For this task, all participants received instructions from the President of Edmund Real Estate Services to take into account applicant education and experience when making evaluations. All participants also received a copy of the job posting for the position that indicated the education (a university degree in business, commerce, or a business-related field) and work experience (minimum three years of high quality sales experience, preferably in commercial real estate) required for the job. Immediately following the job posting, all participants reviewed three applicant profiles. Participants were asked to rate each applicant in terms of the quality of the applicant as a potential job candidate.

Participants were assigned randomly to one of six experimental conditions. In each condition, two of the applicant profiles – a qualified white Canadian and an unqualified white



Canadian - were kept constant across conditions. The third profile, in each condition, was of a qualified applicant. For this third profile, we varied two factors: (1) job applicants' race (*black* or *white*) manipulated via the applicant's name and (2) job applicants' status in Canada (*landed immigrants from South Africa whose foreign credentials had been accredited in Canada* or *landed immigrants from South Africa whose foreign credentials had not been accredited in Canada* or *Canadian citizens with Canadian credentials*).

The resulting six experimental conditions, therefore, had the following combinations of profiles: (1) a qualified white Canadian, an unqualified white Canadian, and a qualified black Canadian, (2) a qualified white Canadian, an unqualified white Canadian, and a qualified black immigrant whose foreign credentials had not been accredited in Canada, (3) a qualified white Canadian, an unqualified white Canadian, and a qualified white Canadian, (4) a qualified white Canadian, an unqualified white Canadian, and a qualified white immigrant whose foreign credentials had not been accredited in Canada, (5) a qualified white Canadian, an unqualified white Canadian, and a qualified white immigrant whose foreign credentials had been accredited in Canada, and (6) a qualified white Canadian, an unqualified white Canadian, and a qualified black immigrant whose foreign credentials had been accredited in Canada.

As explained in detail later, we used two or more names per race resulting in two versions for each of the six conditions (a total of 12 versions). The use of two rather than one name eliminated the possibility of name effects. Moreover, for each of the 12 versions, the order in which the three applicant profiles were presented was also counterbalanced (e.g., qualified White Canadian, unqualified White Canadian, qualified Black Canadian in one version for condition 1 and qualified Black Canadian, unqualified White Canadian, and qualified White

Canadian in another version for condition 1). That is, we had a total of 24 versions of the in-basket exercise. The counterbalancing addressed potential sequencing effects.

Following the in-basket, participants completed a short questionnaire on the specifics of the hiring task. Included in the questionnaire were the manipulation check items. Upon completion of all materials, participants were fully debriefed.

### *Measures*

*Experimental control variables.* To eliminate alternate explanations for the hypothesized relationships, we experimentally controlled for applicant gender, age, language skills and expected productivity. Applicant gender, male, was kept constant for all the applicant profiles. The profiles also indicated that applicants belong to a similar age bracket (born either in 1977 or 1978 or 1979). To ensure equivalence of language skills, all profiles indicated that participants met the English language proficiency requirements. To ensure that race or citizenship status was not viewed as an indicator of expected productivity, the profiles indicated that all applicants had passed the sales simulation exercise of Edmund Real Estate Services, where their performance in sales scenarios was assessed.

*Statistical control variables.* Information on four items obtained at the end of the questionnaires completed in Part 1 of the study was used to statistically control for participant characteristics that might affect the hypothesized relationships. We controlled for participants' gender (*male* or *female*), ethnicity (*white* or *non-white*), age (*in years*), academic stream (*psychology student* or *business student*) and academic level (*undergraduate* or *graduate*).

### *Independent variables*

*Qualification of applicants.* In each experimental condition, two of the applicants were qualified and one unqualified for the position. The qualified applicants met both the educational

and work experience requirements of the job whereas the unqualified applicants met only the educational requirement.

*Applicant race.* Applicant race information was experimentally manipulated by using ostensibly “White” names of Ian Donaldson, Peter Bradley, Trevor Matthews, James Cunningham, or “Black” names of Mangoba Ngweyga and Ngconde Balfour in the applicant profiles (see, for example, Dietz, Esses, Bhardwaj, & Joshi, 2005). Dietz et al. (2005) pretested these names in a list of 32 names presented to a sample of 41 undergraduate students. These participants were asked to indicate the race and sex that they would attribute to each name. Based on the pretest responses, for the current study, we selected six names (four male white names and two male black names) that were indicated as most likely to be seen as those of a White man or a Black man. As mentioned earlier, we used two or more names per race to ensure that our results were not attributable to the usage of a particular name.

*Applicants’ credentials.* In the applicant profiles, we manipulated applicants’ credentials using the location at which the applicant had received education and whether the immigrant applicant’s degree was certified as equivalent to Canadian degree. The applicant was either educated in Canada or in South Africa. For the applicant educated in Canada, degrees were obtained from the University of Victoria, Dalhousie University, or the University of Winnipeg. For the applicant educated in South Africa, the degree was obtained from the University of Johannesburg. Additionally, a statement about the equivalence of the South African degree of the applicant to a Canadian degree indicated that applicant’s credentials were certified as equivalent to Canadian credentials.

That the applicant was either Canadian or South African was additionally reinforced by including information on the place of birth and eligibility to work in Canada. For the Canadian

applicants, place of birth was specified as Gloucester, Ontario or Lunenburg, Nova Scotia or Ottawa, Ontario and eligibility to work in Canada was indicated as “Canadian citizen.” For the immigrant applicants, place of birth was Pretoria, South Africa and eligibility to work in Canada was indicated as “landed immigrant (since 2005).”

*Measures of individual differences in participants’ attitudes.*

*Bias against immigrants.* Bias against immigrants was measured using eight from the Sidanius, Pratto, Sinclair and van Laar’s (1996) 16-item social dominance orientation scale. These eight items represent a measure of group based dominance (see Jost & Thompson, 2000). Two representative items from the group based dominance (GBD) scale read “It’s probably a good thing that certain groups are at the top and other groups are at the bottom” and “If certain groups of people stayed in their place, we would have fewer problems.” Participants indicated the extent to which they agreed with each item on a 7-point Likert-type scale (ranging from 1 = strongly disagree to 7 = strongly agree). Responses to the eight items were averaged to yield a scale score. Higher scores on the GBD scale indicated higher levels of GBD. The mean for GBD was 2.54 ( $SD = 1.18$ ). Coefficient alpha for this scale was .87, indicating high internal reliability (Cronbach, 1951).

*Bias towards ethnic minorities (BIAS).* Wang, Davidson, Yakushko, Savoy, Tan and Bleier’s (2003) 7-item empathic perspective taking scale was used to measure participants’ bias towards ethnic minorities (hereafter ‘ethnic bias’). Participants indicated their extent of agreement with each of the items on a 7-point Likert scale, ranging from 1 (*Strongly agree*) to 7 (*Strongly disagree*). For example, the following reverse coded item is one of the items comprising the BIAS: “I feel uncomfortable when I am around a significant number of people who are ethnically different than me.” Another item in the BIAS reads “It is easy for me to

understand what it would feel like to be a person of another ethnic background than my own.”

Scores for the BIAS are obtained by averaging the item scores. Higher scores reflect higher ethnic bias. The mean for BIAS was 3.66 ( $SD = 1.19$ ). Coefficient alpha for this scale was .78, indicating high internal reliability.

*Dependent measures.*

*Evaluation of applicants' educational credentials.* Participants rated the suitability of applicant's education on one item (“Suitability of education”) and the quality of applicant's education on one item (“Quality of education”). Responses were provided on a 7-point scale ranging from 1 (“Extremely poor”) to 7 (“Extremely good”), with higher scores indicating a more favorable evaluation of the suitability/quality of applicant's education. Responses to the two items were averaged to yield a scale score for evaluation of applicants' educational credentials. For the first applicant profile, the mean for evaluation of educational credentials scale was 5.51 ( $SD = .78$ ). For the second applicant profile, the mean for evaluation of educational credentials scale was 5.22 ( $SD = 1.00$ ). For the third applicant profile, the mean for evaluation of educational credentials scale was 5.27 ( $SD = .95$ ). For the three applicant profiles, coefficient alphas for this scale were .73, .86 and .78 respectively indicating high internal reliability.

*Manipulation checks.*

*Qualification of applicants.* For each applicant, the manipulation check item for educational qualification read “Did [applicant's name] have a university degree in business, commerce, or a business-related discipline?” Participants responded to this item either as “Yes” or “No.” Additionally, for each applicant, the manipulation check item for work experience read “Which of the following indicates the most correct statement about [applicant's name] work

experience?” The two response categories included: “[applicant’s name] had less than 3 years of commercial real estate sales experience” and “[applicant’s name] had 3 years or more of commercial real estate sales experience.”

The response for the manipulation check item for qualification was scored as correct if the participant responded correctly to both the manipulation check item for educational qualification and that for work experience. If the participant responded incorrectly to either the manipulation check item for educational qualification or the item for work experience, the response for the manipulation check for qualification was scored as incorrect.

*Applicant race.* For each applicant, the manipulation check item for race read “What do you think is the ethnic background of [applicant’s name]?” Participants responded to this item by marking one of the following five categories: “Black/African”, “White/Caucasian”, “Asian”, “Hispanic”, and “Other (please specify):\_\_\_\_\_.”

The response for the manipulation check item for applicant race was scored as correct if the participant correctly identified the applicant race.

*Applicants’ credentials.* For each applicant, a set of three-items was used to assess if the participants correctly identified applicants’ credentials. The first item read “Indicate the most correct statement about [applicant’s name]’s eligibility to work in Canada.” The two response categories included: “Canadian citizen” or “landed immigrant.” The second item read “Did [applicant’s name] receive a degree from a Canadian university?” Participants responded to this item either as “Yes” or “No.” A follow-up item read “If No, please indicate whether [applicant’s name]’s foreign degree was certified by the *Ontario International Skills Certification Board*”. Participants responded to this follow-up item either as “Yes” or “No.”

The response for the manipulation check item for applicant credentials was scored as correct if the participant, depending on the experimental condition, responded correctly to all the three items. If the participant responded incorrectly to any one of the three items, the response for the manipulation check for applicant credentials was scored as incorrect.

### *Results*

#### *Manipulation checks*

*Qualification of applicants.* 82.8% of participants correctly identified the qualifications of the first applicant,  $\chi^2(1, N = 393) = 198.07, p < 0.001$ . 85.0% of participants correctly identified the qualifications of the second applicant,  $\chi^2(1, N = 404) = 202.47, p < 0.001$ . 86% of participants correctly identified the qualifications of the third applicant,  $\chi^2(1, N = 393) = 236.71, p < 0.001$ .

*Applicant race.* 93% of participants correctly identified the race of the first applicant,  $\chi^2(1, N = 400) = 295.84, p < 0.001$ . 94% of participants correctly identified the race of the second applicant,  $\chi^2(1, N = 402) = 311.73, p < 0.001$ . 80% of participants correctly identified the race of the third applicant,  $\chi^2(1, N = 401) = 135.38, p < 0.001$ .

*Applicants' credentials.* 90.1% of participants correctly identified the credentials of the first applicant,  $\chi^2(1, N = 402) = 270.89, p < 0.001$ . 88.9% of participants correctly identified the credentials of the second applicant,  $\chi^2(1, N = 404) = 250.31, p < 0.001$ . 87.4% of participants correctly identified the credentials of the third applicant,  $\chi^2(1, N = 400) = 240.25, p < 0.001$ .

#### *Hypotheses testing*

See Table 1 for a summary of the results. The hypotheses were generally supported. Table 2 shows the means, standard deviations and intercorrelations for all variables.

*Test of Hypothesis 1.* Hypothesis 1 stated that the credentials of higher qualified applicants would be evaluated more favorably than those of lower qualified applicants. As mentioned earlier, a qualified white Canadian applicant and an unqualified white Canadian applicant were two of the three applicant profiles in each of the six experimental conditions. A t-test comparing the mean evaluations of these two applicants indicated that qualified white Canadians ( $M = 5.51, SD = .78$ ) were evaluated more favourably than unqualified white Canadians ( $M = 5.22, SD = 1.00$ ),  $t(403) = 6.89, p < .001$ . Thus, Hypothesis 1 was supported. For the purpose of this study, Hypothesis 1 established the ability of the participants to distinguish among job applicants. We will not further discuss this hypothesis.

*Tests of Hypotheses 2a, 2b and 3b.* Hypothesis 2a suggested that the credentials of native Canadians with Canadian credentials and immigrants with accredited foreign credentials would be evaluated more positively than the unaccredited foreign credentials of immigrants. Hypothesis 2b suggested that the evaluation of White and Black native Canadians or White and Black immigrants with accredited credentials will not differ, whereas only Black immigrants without accreditation of foreign credentials will receive less positive evaluations than White immigrants without accreditation of foreign credentials. Hypothesis 3b suggested that increasing bias against ethnic minorities (i.e. Blacks in this study) will lead to less favourable evaluations of Black immigrants with unaccredited foreign credentials. However, ethnic bias will not affect the evaluations of White and Black native Canadians or White and Black immigrants with accredited foreign credentials. We tested these hypotheses using hierarchical multiple regression analyses (e.g., Cohen & Cohen, 1983) with participant gender, age, ethnicity, academic stream and academic level as the statistical controls, and applicant race, applicant credentials status and bias towards ethnic minorities as the independent variables. The dependent variable was the



evaluations of educational credentials of the third applicant profile (the profile that varied across the six experimental conditions). Table 3 shows the results of the regression analyses.

Prior to the regression analyses, two dummy variables were formed as applicant credentials status had three levels. For the first dummy variable, immigrants with accredited foreign credentials condition was coded 1 and the native Canadians with Canadian credentials and immigrants with unaccredited foreign credentials conditions were coded 0. For the second dummy variable, immigrants with unaccredited foreign credentials condition was coded 1 and the native Canadians with Canadian credentials and immigrants with accredited foreign credentials conditions were coded 0. This dummy coding allowed us to use the native Canadians with Canadian credentials as the reference group and to use the first dummy variable to compare the native Canadians with Canadian credentials condition to the immigrants with accredited foreign credentials condition (i.e. Canadian/Accredited condition) as well as to use the second dummy variable to compare the native Canadians with Canadian credentials condition to the immigrants with unaccredited foreign credentials condition (i.e. Canadian/Foreign condition).

Step 1 of the regression yielded a main effect of participant gender. Female participants ( $M = 5.44$ ,  $SD = .97$ ,  $n = 195$ ) evaluated the educational credentials of the third applicant more favourably than did male participants ( $M = 5.12$ ,  $SD = .91$ ,  $n = 210$ ),  $t(403) = 3.46$ ,  $p \leq .001$ .

Consistent with Hypothesis 2a, the results of step 2 indicated that the raw regression coefficient for the Canadian/Foreign condition dummy variable was significant. Specifically, the credentials of native Canadians with Canadian credentials and immigrants with accredited foreign credentials ( $M = 5.35$ ,  $SD = .92$ ) were evaluated more positively than the unaccredited foreign credentials of immigrants ( $M = 5.12$ ,  $SD = .99$ ),  $t(403) = 2.32$ ,  $p < .05$ . The credentials of native Canadians with Canadian credentials ( $M = 5.42$ ,  $SD = .88$ ) were evaluated more

favourably than were those of immigrants with unaccredited foreign credentials ( $M = 5.12, SD = .99$ ),  $t(278) = 2.66, p < .01$ . Also, the evaluations of credentials of native Canadians with Canadian credentials ( $M = 5.42, SD = .88$ ) and immigrants with accredited foreign credentials ( $M = 5.27, SD = .95$ ) did not differ,  $t(267) = 1.32, ns$ . Moreover, the evaluations of credentials of immigrants with accredited foreign credentials ( $M = 5.27, SD = .95$ ) and immigrants with unaccredited foreign credentials ( $M = 5.12, SD = .99$ ) were not significantly different from each other,  $t(259) = 1.25, ns$ . Thus, Hypothesis 2a was supported.

Consistent with Hypothesis 2b, the results of step 3 indicated that the raw regression coefficient for the Canadian/Foreign condition dummy X applicant race interaction was significant at  $p < .10$  level. The pattern of the interaction was such that black immigrants without accredited credentials ( $M = 4.95, SD = 1.10$ ) were evaluated less positively than white immigrants without accredited credentials ( $M = 5.30, SD = .82$ ),  $t(134) = -2.05, p < .05$  but the credentials of white and black native Canadians were not evaluated differently,  $M = 5.42, SD = .83$  versus  $M = 5.41, SD = .94$ ,  $t(142) = -.08, ns$ . Furthermore, white immigrants with accredited credentials ( $M = 5.22, SD = 1.05$ ) and black immigrants with accredited credentials were not evaluated differently ( $M = 5.32, SD = .82$ ),  $t(123) = .56, ns$ . Thus, Hypothesis 2b was supported.

The results of step 4 showed that ethnic bias, as expected, did not directly affect credential evaluation. However, as suggested by Hypothesis 3b, ethnic bias interacted with applicant race and applicant credentials. The raw regression coefficient for the Canadian/Foreign condition dummy X applicant race X BIAS interaction was significant. On assigning participants to a high-ethnic-bias or a low-ethnic-bias group on the basis of a median split ( $Mdn = 3.5714$ ), results (see Table 4 for mean evaluations in different experimental conditions) indicated that relative to participants with lower levels of ethnic bias, participants with higher levels of ethnic

bias evaluated only Black immigrants with foreign credentials more negatively. Participants' level of ethnic bias, however, did not lead to differential evaluations of black or white native Canadians with Canadian credentials or black or white immigrants with accredited foreign credentials. Thus, Hypothesis 3b was supported.

*Test of Hypothesis 3a.* Hypothesis 3a suggested that participants' level of subtle biases against immigrants would moderate the main effect hypothesized in 2a. That is, the more participants are biased against immigrants, the more positively they will evaluate the credentials of native Canadians with Canadian credentials and immigrants with accredited foreign credentials relative to the foreign credentials of immigrants that have not been accredited. To test this hypothesis we ran bivariate correlations, for each of the three experimental conditions for applicant credential status, between the measure of bias against immigrants – Group based dominance (GBD) – and evaluations of educational credentials for the third applicant profile.

Consistent with Hypothesis 3a, as participants' levels of group based dominance increased, unaccredited applicant credentials were evaluated more negatively,  $r(136) = -.16, p < .07$ . However, the relationship between GBD scores and the evaluation of credentials of native Canadians with Canadian credentials, and GBD scores and the evaluation of immigrants with accredited foreign credentials were not significant,  $r(143) = -.06, ns$  and  $r(125) = -.07, ns$  respectively. Thus, Hypothesis 3a was supported.

#### *Post-hoc analyses*

We conducted post hoc analyses to assess whether the evaluation of credentials for minority applicants differed as a function of their credential status and evaluators' bias against ethnic minorities. Specifically, we replicated support for H2a and 3b using data from participants in the three experimental conditions that had the following combination of applicant profiles: (1)

a qualified white Canadian, an unqualified white Canadian, and a qualified black Canadian, (2) a qualified white Canadian, an unqualified white Canadian, and a qualified black immigrant whose foreign credentials had not been accredited in Canada, (3) a qualified white Canadian, an unqualified white Canadian, and a qualified black immigrant whose foreign credentials had been accredited in Canada. We tested the following in the post-hoc analyses - (P1): The credentials of Black Canadians with Canadian credentials and Black immigrants with accredited foreign credentials would be evaluated more positively than the unaccredited foreign credentials of Black immigrants. (P2): Increasing levels of bias against ethnic minorities will lead to less favourable evaluations of Black immigrants with unaccredited foreign credentials. However, bias against ethnic minorities will not affect the evaluations of Black Canadians or Black immigrants with accredited foreign credentials.

We tested P1 and P2 using hierarchical multiple regression analyses (e.g., Cohen & Cohen, 1983) with participant gender, age, ethnicity, academic stream and academic level as the statistical controls, and applicant credentials status (using two credential dummy variables) and bias towards ethnic minorities as the independent variables. The dependent variable was the evaluations of educational credentials of the Black applicant profile that varied across the above mentioned three experimental conditions. Table 5 shows the means and intercorrelations among the variables and table 6 shows the results of the regression analyses.

Consistent with previous findings, step 1 of table 6 indicated a main effect for participant gender. Female participants ( $M = 5.49$ ,  $SD = .97$ ,  $n = 91$ ) evaluated the educational credentials of the black applicants more favourably than did male participants ( $M = 5.03$ ,  $SD = .96$ ,  $n = 116$ ),  $t(205) = 3.44$ ,  $p \leq .001$ . Step 1 also showed a main effect of applicant academic stream. Psychology students ( $M = 5.49$ ,  $SD = .99$ ,  $n = 44$ ) evaluated the educational credentials of the

black applicants more favourably than did business students ( $M = 5.16$ ,  $SD = .98$ ,  $n = 163$ ),  $t(205) = 1.98$ ,  $p \leq .05$ .

Consistent with P1, the results of step 2 (Table 6) indicated that the raw regression coefficient for the Canadian/Foreign condition dummy variable was significant. Specifically, the credentials of Black Canadians with Canadian credentials and Black immigrants with accredited foreign credentials ( $M = 5.37$ ,  $SD = .89$ ) were evaluated more favourably than were those of Black immigrants with unaccredited foreign credentials ( $M = 4.96$ ,  $SD = 1.11$ ),  $t(205) = 2.75$ ,  $p < .01$ . The credentials of Black Canadians with Canadian credentials ( $M = 5.42$ ,  $SD = .94$ ) were evaluated more favourably than were those of Black immigrants with unaccredited foreign credentials ( $M = 4.96$ ,  $SD = 1.11$ ),  $t(146) = 2.71$ ,  $p < .01$ . Moreover, the evaluations of credentials of Black Canadians with Canadian credentials ( $M = 5.42$ ,  $SD = .94$ ) and Black immigrants with accredited foreign credentials ( $M = 5.32$ ,  $SD = .82$ ) did not differ,  $t(133) = .60$ , *ns*. Furthermore, the credentials of Black immigrants with unaccredited foreign credentials ( $M = 5.12$ ,  $SD = .99$ ) were evaluated less favourably than of Black immigrants with accredited foreign credentials ( $M = 4.96$ ,  $SD = 1.11$ ),  $t(129) = 2.09$ ,  $p < .05$ . Thus, test for P1 received support.

The results of step 3 (Table 6) showed that that bias towards ethnic minorities did not directly affect credential evaluation. However, the raw regression coefficient for the Canadian/Foreign condition dummy variable X bias against ethnic minorities interaction term was significant. Specifically, the evaluations of Black Canadians with Canadian credentials or Black immigrants with accredited foreign credentials did not differ at high- or low-levels of bias against ethnic minorities,  $M = 5.48$ ,  $SD = .96$  vs.  $M = 5.30$ ,  $SD = .90$ ,  $t(74) = .82$ , *ns* and  $M = 5.44$ ,  $SD = .86$  vs.  $M = 5.22$ ,  $SD = .79$ ,  $t(57) = 1.05$ , *ns* respectively. However, participants with higher levels of bias against ethnic minorities evaluated Black immigrants with unaccredited

foreign credentials less favorably than did participants at lower levels of bias against ethnic minorities,  $M = 4.55$ ,  $SD = 1.10$  vs  $M = 5.29$ ,  $SD = 1.01$ ,  $t(70) = 2.98$ ,  $p < .01$ . Thus, P2 was supported.

### Discussion

The question that motivated this research was: Why are the credentials of immigrants evaluated less positively than those of native Canadians? We addressed this question with an experimental study to clearly isolate factors that explain the phenomenon of skill discounting. One may argue that the lower evaluation of immigrants' credentials reflects a difference in the actual quality of the credentials, resulting in a lower market value of immigrants' credentials (Sweetman, 2004). In some incidences that may be the case. We, however, found that even if the quality of education did not differ, immigrants' skills were discounted. Three factors explained this finding: the accreditation of credentials, the ethnicity of the immigrant applicant, and evaluators' biases. We discuss each of these factors below.

#### The Accreditation of Foreign Credentials

We are not aware of systematic research that has examined the impact of the accreditation of foreign credentials on their evaluation by personnel decision makers. Our results showed that, if foreign credentials were recognized, they were no longer discounted relative to Canadian credentials of equal quality (Hypothesis 2a). Furthermore, the accreditation of credentials immunized the evaluation of credentials from effects of immigrant race or personnel decision makers' biases. Participants did not differently evaluate the credentials of black and white immigrants when the credentials were accredited (Hypothesis 2b), but they did do so when immigrants' foreign credentials were not accredited. Table 4 shows that ethnic bias affected the evaluation of black immigrants' credentials relative to those of white immigrants only if they

were not accredited (Hypothesis 3b). We also conducted a follow-up analysis for Black applicants only which showed that Black immigrants without accredited credentials were evaluated more negatively than Black immigrants with accredited credentials. This bias was pronounced when the evaluators harbored ethnic biases.

We interpret these findings such that Canadian personnel decision makers, in principle, trust Canadian credentials but doubt foreign credentials (in this case, from South Africa). This view is likely grounded in assumptions about one's knowledge about Canadian and South African educational systems ("we know and trust the Canadian system, but not the South African system") and/or the perceived quality of the educational systems ("the Canadian system is good, but not the South African system"). Accreditation speaks to the latter issue of addressing concerns about the quality of degrees. For an accredited foreign degree, decision makers may perceive that they may not know much about the foreign countries system, but that they then have evidence of the foreign credential's quality (and, hence, they may also trust that the foreign degree is credible).

#### Immigrant Race

Our experimental research replicates the findings from previous survey research with regards to the effect of ethnicity on the evaluation of credentials. As mentioned in the introduction, Alboim, Finnie, and Meng (2005) reported that a foreign university degree held by an immigrant who was a member of an ethnic minority on average had an earnings' return of less than a third of that of a Canadian university degree. If the immigrant was white, however, the foreign degree was comparable in value to a Canadian degree. However, that research could not disentangle the effects of race and country, where the credentials were obtained, on credential evaluation. It was not clear whether minority immigrants' credentials were discounted

because of their minority status or because of the country where they obtained their credentials (and the quality of education provided in that country).

The current study overcomes this shortcoming. It allowed for the comparison of white and black immigrants with exactly identical credentials from the same country. It showed that identically qualified white and black immigrants were evaluated differently (Hypothesis 2b). However, as mentioned above these biases were suppressed when credentials had been accredited. Furthermore, white and black Canadians' credentials were not evaluated differently.

One might interpret the latter two findings as indicating that racial biases were not prevalent among the participants. Theories of subtle bias, however, suggest a different explanation. These theories, as discussed in the introduction, suggest that humans harbor remnants of biases against members of other groups, but typically these biases are not expressed. Instead, social norms against prejudice and discrimination suppress their expression. When a seemingly non-biased justification for discrimination is available, however, these biases are expressed. It is plausible that unaccredited foreign credentials provide such a seemingly non-biased justification (i.e., "I cannot evaluate your credentials highly because they are foreign and not accredited."). Importantly, if such a justification was non-biased and sincere, not only the unaccredited credentials of the black immigrant, but also those of the white immigrant should have been discounted. This, however, was not the case, implying the hypocrisy in the use of such a justification for black immigrants only. It is noteworthy that applicant race did not have an effect, as mentioned before, when immigrant credentials were accredited. Consistent with subtle bias theory, we view this finding as indicating that accreditation negated the use of foreign credentials as a seemingly legitimate justification.



### Evaluators' Biases

We examined two types of evaluators' biases: those against immigrants (group-based social dominance), and those against blacks (ethnic biases in the form of ethnic perspective taking). Consistent with our expectations, group-based social dominance was associated with a more negative evaluation of immigrants' credentials, providing some support for Hypothesis 3a. This finding indicates that biases that affect the evaluation of credentials are not merely rooted in ethnic biases, but also in biases against immigrants in general. And, as expected, biases against blacks were, as mentioned before, associated with a negative evaluation of the black immigrant's credentials if they were not accredited (Hypothesis 3b). A follow-up analysis showed that ethnic bias also affected the evaluation of Black applicants such that those with unaccredited credentials were particularly negatively affected. These findings support the arguments discussed in the previous paragraph that suggest that ethnic biases affected the discounting of Black immigrants' credentials. Finally, Hypotheses 3a and 3b cannot be explained by economic models of taste-based discrimination, which imply that organizational decision makers discriminate uniformly against all immigrants and/or against all members of a minority group.

A surprising finding was a strong gender effect such that men evaluated immigrant applicants more negatively than did women. This finding may seem surprising in that all applicants were men, and, hence, one might have assumed same-gender favoritism. However, the devalued immigrants were also applicants and as such they were likely seen as unwanted ingroup members.

### Policy Implications

In discussing policy implications, one may argue that it is difficult to make inferences from a study in a sample of students, albeit they were mostly business students and about half of

them had supervisory experience. However, there are several arguments that speak to the generalizability of our findings to a sample of corporate personnel decision makers. First, our sample included MBA students who had significant professional and leadership experience. When we controlled for academic level (undergraduate versus graduate), we did not find significant effects for academic level. Second, our findings are highly consistent with those of previous research (e.g., Alboim et al., 2005) by economists and sociologists that used different methods and different samples. Hence, the participants in the current study appeared to arrive at the same decisions as did corporate recruiters. Third, we used a realistic experimental context. That is, in-basket exercises, which are commonly used in assessment centers, are realistic simulations of the decision-making environments faced by organizational members (Jansen & de Jongh, 1997). Bartol and Martin (1990) noted that “evidence exists that such exercises can realistically simulate the actual decision making environments of managers and . . . that managerial behaviors in simulated decisions parallel those ultimately exhibited on the job (Moses & Byham, 1977)” (p. 602, see also Schippmann, Prien, & Katz, 1990, and Thornton, 1992). Fourth, with regards to the effects of immigrant race and evaluators’ biases one might argue that our sample reduced the likelihood of significant findings for two reasons. First, our sample is more ethnically diverse than the current Canadian workforce. Second, our sample is younger than the current Canadian workforce. Both factors are negatively associated with biases against minorities (i.e., our sample, on average, was likely less biased than a sample of corporate recruiters would be). Yet, even in our sample biases affected the evaluation of immigrants’ applicant credentials.

With this disclaimer, we see the following policy implications of our research. First, the accreditation of immigrants’ credentials had uniformly positive effects for the evaluation of these

credentials. When immigrant credentials were certified as equivalent to Canadian credentials, the negative effects of their “foreignness” (or not being Canadian), applicant race, and evaluators’ biases disappeared. According to our research, accreditation is not only an “equalizer” of credential quality, but also a “bias suppressor.” There are several policy issues to consider:

1. Should foreign credential accreditation be part of the immigrant admission process? For example, it may become a requirement for the admission of immigrants (in particular those in the economic class) or it may be rewarded in the points system for the evaluation of immigrants.
2. Should the government become more involved in the accreditation process? Currently, the process is fragmented by profession and type of degree (e.g., professional versus academic). Professional colleges and evaluation services currently play a role in this process. Canadian embassies also may play a role.
3. Should education systems be standardized worldwide? For example, on the basis of the Bologna protocol, academic degrees in European Union countries are currently reaccredited as Bachelor’s and Master’s degrees (instead of, for example, “Magister” and “Diploma” degrees). This is a labor-intensive and costly process in most European countries that will hopefully make it easier for the graduates from universities in those countries to find employment worldwide.

Second, racial biases and biases against immigrants affected the evaluation of foreign credentials, but only when credentials were not accredited. Hence, it is obvious that the policy implications, discussed in the preceding paragraph, are also relevant for managing biases. In other words, even if biases cannot be reduced directly, their expression can be suppressed by removing the ambiguity surrounding the evaluation of foreign credentials.

Before further discussing policy implications concerning the role of biases, we would like to point out that research indicates that awareness trainings that are aimed at directly reducing these biases have not been very effective at the individual level (e.g., Brief & Barsky, 2000). At the organizational level, research by Kalev, Dobbin, and Kelly (2006) has shown that when awareness trainings were administered in isolation in organizations, these trainings did not have an effect on the representation of minorities. Instead diversity interventions were most effective if they clearly established accountability and responsibility for workforce diversity by, for example, having offices for diversity or chief diversity officers. Only, when organizations clearly established accountabilities and responsibilities for diversity, their awareness trainings had a positive (albeit only marginal) effect on the representation of minorities. Finally, while interview methods (e.g., structured interviews) in theory may reduce the influence of biases in personnel decisions, this appears to have little effect in practice.

In addition, research by Greenwald, Nosek, and Banaji (2003) indicates that the vast majority of people have subtle biases, often unknowingly to them. While biases carry a negative connotation, they are common, even if people do not recognize them. We see the following policy implications:

1. Should the government support and advocate awareness trainings? Yes, but in combination with interventions that establish accountability and responsibility for the fair treatment of all employees independent of immigrant status and ethnicity. It is not enough to create awareness.
2. Can the government create an environment that allows conversations about biases without legitimizing them? It appears that in today's society, talk about biases makes people uncomfortable, often resulting in defensive reactions. Biases, however, cannot be

addressed, if discussion about them is “off limits.” A starting point for normalizing acknowledgement of biases may be to promote a more complex understanding of biases. Our research, as does other research on biases, shows that blatant discrimination is a thing of the past. In our research, for example, blacks are not uniformly discriminated against (only black immigrants whose credentials are not accredited). Instead, as discussed earlier and shown in our research, biases affect discriminatory behavior only in situations where this behavior can be justified on seemingly non-biased grounds (i.e., the credentials are not accredited).

### Conclusion

We aimed to address the question of why immigrants’ foreign credentials are discounted. Our research indicates that three factors play key roles. First, foreign credentials, once they had been accredited, were not discounted. Second, white immigrants’ credentials were not discounted, but those of black immigrants were. Third, evaluators’ biases affected the evaluation of only those foreign credentials which had not been accredited.

### References

- Akhavan, S., Bildt, C. O., Franzen, E. C., & Wamala, S. (2004). Health in relation to unemployment and sick leave among immigrants in Sweden from a gender perspective. *Journal of Immigrant Health, 6*, 104-118.
- Alboim, N., Finnie, R., & Meng, R. (2005). The discounting of immigrants' skills in Canada: Evidence and policy recommendations. *IRPP Choices, 11*(2), 1-28.
- Altonji, J. G. and R. M. Blank (1999). Race and gender in the labor market. *Handbook of labor economics*. A. Orley and C. David. Amsterdam, North-Holland: 3143-3259.
- Anderson, L.R., Fryer, R.G., & Holt, C.A. (2006). Discrimination: Experimental evidence from psychology and economics. In Rogers, W. (Ed.), *Handbook on the economics of discrimination* (pp. 97-118). Cheltenham, England: Edward Elgar Publishing.
- Arrow, K. J. (1972). The theory of discrimination. In Ashenfelter, O., & Rees, E. (Eds.), *Discrimination in labor markets* (pp. 3-33). Princeton, NJ: Princeton University Press.
- Bartol, K. M., & Martin, D. C. (1990). When politics pay: Factors influencing managerial compensation decisions. *Personnel Psychology, 43*, 599-614.
- Becker, G. (1971). *The economics of discrimination*. Chicago: University of Chicago Press.
- Bertrand, M., & Mullainathan, S. (2004). Are Emily and Greg and more employable than Lakisha and Jamal? A field experiment on labor market discrimination. *American Economic Review, 94*(4), 991-1013.
- Brief, A. & Barsky, A. (2000) Establishing a climate for diversity: The inhibition of prejudiced reactions in the workplace. *Research in Personnel and Human Resources Management, 19*, 91-129.
- Brief, A. P., Dietz, J., Cohen, R. R., Pugh, S. D., & Vaslow, J. B. (2000). Just doing business: Modern racism and obedience to authority as explanations for employment discrimination. *Organizational Behavior and Human Decision Processes, 81*, 72-97.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Conference Board of Canada (2004). *The voices of visible minorities speaking out on breaking down barriers*. Retrieved September 5, 2005, from <http://www.triec.ca/docs/ConfBrdCanVoicesVisibleMinorities.pdf> (2004).
- Couton, P. (2002). Highly skilled immigrants: Recent trends and issues. *Isuma, 3*(2), 114-123.
- Crandall, C. S., & Eshleman, A. (2003). A justification-suppression model of the expression and experience of prejudice. *Psychological Bulletin, 129*, 414-446.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*, 297-334.
- Darity, W. A., Jr., & P. L. Mason (1998). Evidence on discrimination in employment: Codes of color, codes of gender. *Journal of Economic Perspectives 12*, 63-90.

Dietz, J., Esses, V., Bhardwaj, A., & Joshi, C. (2005). Employment discrimination against ethnic immigrants: The role of foreign credentials. In J. Dietz, A. Bhardwaj, & C. Joshi (Chairs), *U.S., German, and Canadian perspectives on employment discrimination against immigrants*. Symposium conducted at annual meeting of the Society for Industrial and Organizational Psychology (SIOP), Los Angeles, CA.

Dietz, J., & Pugh, S. D. (2004). I say tomato, you say domate: Differential reactions to English-only workplace policies by persons from immigrant and non-immigrant families. *Journal of Business Ethics*, *52*, 365-379.

Dovidio, J.F., & Gaertner, S.L. (2004). Aversive racism. *Advances in Experimental Social Psychology*, *36*, 1-52.

Esses, V.M., Dietz, J., & Bhardwaj, A. (2006). The role of prejudice in the discounting of immigrant skills. In R. Mahalingam (Ed.), *The cultural psychology of immigrants* (pp. 113 -130). Mahwah, NJ: Erlbaum.

Esses, V. M., Dietz, J., Bennett-AbuAyyash, C., & Joshi, C. (2007). Prejudice in the workplace: The role of bias against visible minorities in the devaluation of immigrants' foreign-acquired qualifications and credentials. *Canadian Issues/Themes Canadiens*, *Spring*, 114-118.

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the Implicit Association Test: An improved scoring algorithm. *Journal of Personality and Social Psychology*, *85*, 197-216.

Hodson, G., Dovidio, J. F., & Gaertner, S. L. (2002). Processes in racial discrimination: Differential weighting of conflicting information. *Personality & Social Psychology Bulletin*, *28*, 460-471.

Hollenbeck, J. R., Ilgen, D. R., & Segoe, D. J. (1994). Repeated measures regression and mediational tests: Enhancing the power of leadership research. *Leadership Quarterly*, *5*, 3-23.

Jansen, P., & de Jongh, F. (1997). *Assessment centres: A practical handbook*. Chichester, England: Wiley.

Joshi, C., Dietz, J., & Esses, V. (2006). Continuing employment discrimination amidst the need to embrace diversity: The role of organizational recruitment climates, Paper presented at the Annual Conference of the Administrative Sciences Association of Canada, Banff, Canada.

Jost, J. T., & Thompson, E. P. (2000). Group-based dominance and opposition to equality as independent predictors of self-esteem, ethnocentrism, and social policy attitudes among African Americans and European Americans. *Journal of Experimental Social Psychology*, *36*, 209-232.

Kalev, A., Dobbin, F., & Kelly, E. (2006). Best practices or best guesses? Assessing the efficacy of corporate affirmative action and diversity policies. *American Sociological Review*, *71*, 589-617.

Krysan, M. (2002). Recent trends in racial attitudes. Retrieved April 8, 2005, from <http://tigger.cc.uic.edu/~krysan/racialattitudes.htm>.

Leger Marketing (2007). *Sun Media Tolerance Report*. <http://cnews.canoe.ca/CNEWS/CNEWSImages2003/Sun%20Media%20Tolerance%20Report.pdf>

- Li, P.S. (2001). The market worth of immigrants' educational credentials. *Canadian Public Policy*, 27, 23-38.
- Major, B., & O'Brien, L. T. (2004). The social psychology of stigma. *Annual Review of Psychology*, 56, 393-421.
- McConahay, J. B. (1986). Modern racism, ambivalence, and the Modern Racism Scale, In J. Dovidio & S. Gaertner (Eds.), *Prejudice, discrimination and racism* (pp. 91-125). Orlando, FL: Academic Press.
- Moses, J. L., & Byham, W. C. (1977). *Applying the assessment center method*. Elmsford, NY: Pergamon Press.
- Petersen, L.-E., & Dietz, J. (2005). Enforcement of workforce homogeneity and prejudice as explanations for employment discrimination. *Journal of Applied Social Psychology*, 35(1), 144-159.
- Price, R. H., Choi, J. N., & Vinokur, A. D. (2002). Links in the chain of adversity following job loss: how financial strain and loss of personal control lead to depression, impaired functioning, and poor health. *Journal of Occupational Health Psychology*, 7, 302-312.
- Reitz, J.G. (2003). Occupational dimensions of immigrant credential assessment: Trends in professional, managerial, and other occupations: 1970-1996. In C.M. Beach, A.G. Green, & J.G. Reitz (Eds.), *Canadian immigration policy for the 21st century* (pp. 469-506). Kingston: John Deutsch Institute, Queen's University.
- Reitz, J.G. (2005). Tapping immigrants' skills: New directions for Canadian immigration policy in the knowledge economy. *Choices*, 11(1).
- Schippmann, J. S., Prien, E. P., & Katz, J. A. (1990). Reliability and validity of in-basket performance measures. *Personnel Psychology*, 43, 837-859.
- Schuman, H., Steeh, C., Bobo, L., & Kryson, M. (1997). *Racial attitudes in America: Trends and interpretations*, (revised edition). Cambridge, MS: Harvard University Press.
- Sidanius, J., Pratto, F., Sinclair, S., & van Laar, C. (1996). Mother Teresa meets Genghis Khan: The dialectics of hierarchy-enhancing and hierarchy-attenuating career choices. *Social Justice Research*, 9, 145-170.
- Statistics Canada. (2003). *Canada's ethnocultural portrait: The changing mosaic*. Retrieved October 1, 2005, from <http://www12.statcan.ca/english/census01/products/analytic/companion/etoimm/canada.cfm>
- Statistics Canada (2004). *The changing profile of Canada's labour force*. Retrieved January 17, 2005 from <http://www12.statcan.ca/english/census01/Products/Analytic/companion/paid/canada.cfm>.
- Sweetman, A. (2004). Immigrant source country educational quality and Canadian labour market outcomes. *Statistics Canada Research Paper 11FF0019MIE No. 234*.
- Swidinsky, R., & Swidinsky, M. (2002). The relative earnings of visible minorities in Canada: New evidence from the 1996 census. *Relations industrielles*, 57, 630-659.
- Thornton, G. C., III. (1992). *Assessment centers in human resource management*. New York: Addison-Wesley.



Turner, J. B. (1995). Economic context and the health effects of unemployment. *Journal of Health & Social Behavior, 36*, 213-229.

Wang, Y-W, Davidson, M. M., Yakushko, O. F., Savoy, H. B., Tan, J. A., & Bleier, J. K. (2003). The scale of ethnocultural empathy: Development, validation, and reliability. *Journal of Counseling Psychology, 50*, 221-234.

Table 1

## Summary of Findings

Hypothesis	Supported (Yes/ No)
<i>Hypothesis 1:</i> Participants will evaluate the credentials of higher qualified applicants more favorably than those of lower qualified applicants.	Yes
<i>Hypothesis 2a:</i> Participants will evaluate the credentials of native Canadians with Canadian credentials and immigrants with accredited foreign credentials more positively than the foreign credentials of immigrants that have not been accredited.	Yes
<i>Hypothesis 2b:</i> Applicant race will moderate the main effect of H2a, such that the evaluation of White and Black native Canadians or White and Black immigrants with accredited credentials will not differ, whereas only Black immigrants without accreditation of foreign credentials will receive less positive evaluations than White immigrants without accreditation of foreign credentials.	Yes (marginally significant in regression analyses)
<i>Hypothesis 3a:</i> The more participants harbor biases against immigrants, the more positively they will evaluate the credentials of native Canadians with Canadian credentials and immigrants with accredited foreign credentials relative to the foreign credentials of immigrants that have not been accredited (moderation of the main effect hypothesized in Hypothesis 2a).	Yes (correlation analyses)
<i>Hypothesis 3b:</i> The interaction effect described in 2b will be pronounced for participants who harbor ethnic biases.	Yes (marginally significant in regression analyses)

Table 2

Means, Standard Deviations and Inter-correlations among the study variables ( $N = 405$ )

	<i>Mean</i>	<i>SD</i>	2	3	4	5	6	7	8	9	10	11
<b>Participant</b>												
1. Gender <sup>a</sup>	1.52	.50	.06	-.04	-.12*	-.06	.23***	-.06	-.09	.01	.07	-.17**
2. Age (in years)	21.06	3.80		-.09	-.15**	-.71**	-.15**	-.24***	-.01	-.05	.01	.01
3. Ethnicity <sup>b</sup>	.56	.50			-.04	.11*	.08	.51***	.00	-.01	.01	-.05
4. Academic stream <sup>c</sup>	.22	.42				.22***	.00	.04	.02	.11*	-.04	.07
5. Academic level <sup>d</sup>	.86	.35					.06	.21***	.01	.04	-.05	-.03
6. Group based dominance	2.54	1.18						.19***	.05	-.02	.02	-.10
7. Ethnic bias	3.66	1.19							.02	-.02	-.05	-.00
<b>Third Applicant Profile</b>												
8. Race (0 = Black, 1 =White)	.49	.50								.05	-.03	.05
9. Credentials Dummy 1(D1) <sup>e</sup>	.31	.46									-.48***	-.00
10. Credentials Dummy 2(D2) <sup>f</sup>	.34	.47										-.12*
11. Evaluation of credentials	5.27	.95										

Note. *SD* = Standard deviation. \* $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

<sup>a</sup>1 = Female, 2 = Male; <sup>b</sup>0 = Non-white, 1 = white; <sup>c</sup>0 = Business, 1 = Psychology; <sup>d</sup>0 = Graduate, 1 = Undergraduate.

<sup>e</sup>0 = Canadian with Canadian credentials, 1 = Immigrant with unaccredited foreign credentials, 1 = Immigrant with accredited foreign credentials.

<sup>f</sup>0 = Canadian with Canadian credentials, 1 = Immigrant with unaccredited foreign credentials, 0 = Immigrant with accredited foreign credentials.

Table 3

Test of Hypotheses 2a, 2b and 3b: Summary of Hierarchical Regression Analysis for Variables

Predicting Evaluation of Educational Credentials ( $N = 405$ )

Variable	<i>B</i>	<i>SE B</i>	$\beta$	$\Delta R^2$	$\Delta F$
Step 1				.04	2.99*
Participant gender <sup>a</sup>	-.32	.09	-.17**		
Participant age <sup>b</sup>	-.01	.02	-.03		
Participant ethnicity <sup>c</sup>	-.09	.09	-.05		
Participant academic stream <sup>d</sup>	.13	.12	.06		
Participant academic level <sup>e</sup>	-.18	.19	-.07		
Step 2				.02	1.67
Applicant race (Race)	.06	.09	.03		
Applicant credentials dummy 1 (D1 <sup>f</sup> )	-.15	.12	-.07		
Applicant credentials dummy 2 (D2 <sup>g</sup> )	-.28	.11	-.14*		
(Hypothesis 2a)					
Ethnic bias (BIAS <sup>h</sup> )	.01	.05	.01		
Step 3				.02	1.47
D1 X Race	-.06	.23	-.03		
D2 X Race (Hypothesis 2b)	.41	.23	.16 <sup>+</sup>		
Race X BIAS	-.02	.08	-.02		
D1 X BIAS	.03	.14	.01		
D2 X BIAS	-.12	.09	-.10		
Step 4				.02	3.78*
D1 X Race X BIAS	-.18	.15	-.09		
D2 X Race X BIAS (Hypothesis 3b)	.32	.18	.16 <sup>+</sup>		

Note. <sup>+</sup> $p < .10$ , \*\* $p < .01$ , \* $p < .05$ .

<sup>a</sup>1 = Female, 2 = Male; <sup>b</sup>Age in years.

<sup>c</sup>0 = Non-white, 1 = white; <sup>d</sup>0 = Business, 1 = Psychology; <sup>e</sup>0 = Graduate, 1 = Undergraduate.

<sup>f</sup>Canadian/Accredited condition dummy: 0 = Canadian with Canadian credentials, 0 = Immigrant with unaccredited foreign credentials, 1 = Immigrant with accredited foreign credentials.

<sup>g</sup>Canadian/Foreign condition dummy: 0 = Canadian with Canadian credentials, 1 = Immigrant with unaccredited foreign credentials, 0 = Immigrant with accredited foreign credentials.

<sup>h</sup>Centered continuous predictor.

Table 4

Means and Standard Deviations of the Evaluation of Educational Credentials as a Function of Applicant Race and Participants' Ethnic Bias ( $N = 405$ )

	Evaluations of Educational Credentials			
	Participants with low ethnic bias		Participants with high ethnic bias	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<b>Applicants</b>				
<b>Immigrant with unaccredited foreign credentials</b>				
Black (n = 72)	5.29 <sub>a</sub>	1.01	4.55 <sub>b</sub>	1.09
White (n = 64)	5.24 <sub>c</sub>	.77	5.36 <sub>c</sub>	.87
<b>Canadians with Canadian credentials</b>				
Black (n = 76)	5.30 <sub>d</sub>	.90	5.48 <sub>d</sub>	.96
White (n = 68)	5.55 <sub>e</sub>	.85	5.33 <sub>e</sub>	.81
<b>Immigrant with accredited foreign credentials</b>				
Black (n = 59)	5.22 <sub>f</sub>	.79	5.44 <sub>f</sub>	.86
White (n = 66)	5.29 <sub>g</sub>	1.11	5.18 <sub>g</sub>	1.03

*Note.* Means in the same row (i.e. 5.29 and 4.55 in the first row) that do not share subscripts differ at  $p < .01$ .

Table 5

Means, Standard Deviations and Inter-correlations among the study variables ( $N = 405$ )

	<i>Mean</i>	<i>SD</i>	2	3	4	5	6	7	8	9
Participant										
1. Gender <sup>a</sup>	1.56	.50	.04	-.12	-.06	-.01	-.05	-.04	.01	-.23**
2. Age (in years)	21.11	3.97		-.14*	-.16*	-.71***	-.27***	-.02	.00	.07
3. Ethnicity <sup>b</sup>	.56	.50			-.04	.16*	.56***	-.00	-.03	-.09
4. Academic stream <sup>c</sup>	.21	.41				.21**	-.03	.06	-.03	.14*
5. Academic level <sup>d</sup>	.86	.35					.27***	.02	-.05	-.09
6. Ethnic Bias	3.64	1.23						-.07	-.07	.01
Third Applicant Profile										
7. Credentials Dummy 1(D1) <sup>e</sup>	.29	.45							-.46***	.06
8. Credentials Dummy 2(D2) <sup>f</sup>	.35	.48								-.20**
9. Evaluation of credentials	5.23	.99								

Note. *SD* = Standard deviation. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

<sup>a</sup>1 = Female, 2 = Male; <sup>b</sup>0 = Non-white, 1 = white; <sup>c</sup>0 = Business, 1 = Psychology; <sup>d</sup>0 = Graduate, 1 = Undergraduate.

<sup>e</sup>0 = Canadian with Canadian credentials, 1 = Immigrant with unaccredited foreign credentials, 1 = Immigrant with accredited foreign credentials.

<sup>f</sup>0 = Canadian with Canadian credentials, 1 = Immigrant with unaccredited foreign credentials, 0 = Immigrant with accredited foreign credentials.

Table 6

## Follow-up Tests: Summary of Hierarchical Regression Analysis for Variables Predicting

Evaluation of Educational Credentials for Black Applicants ( $N = 207$ )

Variable	<i>B</i>	<i>SE B</i>	$\beta$	$\Delta R^2$	$\Delta F$
Step 1				.09	4.10**
Participant gender <sup>a</sup>	-.47	.14	-.24***		
Participant age <sup>b</sup>	.01	.02	.02		
Participant ethnicity <sup>c</sup>	-.18	.14	-.09		
Participant academic stream <sup>d</sup>	.34	.17	.14*		
Participant academic level <sup>e</sup>	-.26	.27	-.10		
Step 2				.05	3.81*
Applicant credentials dummy 1 (D1 <sup>f</sup> )	-.12	.16	-.05		
Applicant credentials dummy 2 (D2 <sup>g</sup> )	-.46	.16	-.22**		
Ethnic bias (BIAS <sup>h</sup> )	.08	.07	.10		
Step 3				.03	3.28*
D1 X BIAS	-.01	.13	-.01		
D2 X BIAS	-.29	.13	-.22*		

Note. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ .

<sup>a</sup>1 = Female, 2 = Male; <sup>b</sup>Age in years.

<sup>c</sup>0 = Non-white, 1 = white; <sup>d</sup>0 = Business, 1 = Psychology; <sup>e</sup>0 = Graduate, 1 = Undergraduate.

<sup>f</sup>Canadian/Accredited condition dummy: 0 = Canadian with Canadian credentials, 0 = Immigrant with unaccredited foreign credentials, 1 = Immigrant with accredited foreign credentials.

<sup>g</sup>Canadian/Foreign condition dummy: 0 = Canadian with Canadian credentials, 1 = Immigrant with unaccredited foreign credentials, 0 = Immigrant with accredited foreign credentials.

<sup>h</sup>Centered continuous predictor.