The Effect of Labour Market Characteristics on Canadian Immigrant Employment in Precarious Work, 2006-2012

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Abstract
Using data from the Canadian Labour Force Survey for 2006 through 2012, I examine the effects of characteristics of Census Metropolitan Areas (CMAs) on the likelihood of recent and established immigrants and the Canadian born to be employed in precarious work. Using multi-level models, I find that employment in temporary jobs and multiple jobs by both recent and established immigrant males is affected by a CMA's median hourly earnings as well as the immigrant representation in a CMA. Also, cross-level interactions reveal recent male immigrants to be less likely to be employed in multiple jobs in CMA in which the median wage is higher.

Keywords: Immigrants, census metropolitan areas, precarious work, Canada, sex

Résumé
À partir des données de l'Enquête sur la population active du Canada de 2006 à 2012, j'examine les effets des caractéristiques des régions métropolitaines de recensement (RMR) sur la probabilité que les immigrants récents et établis et les Canadiens nés soient employés dans un travail précaire. À l'aide de modèles à niveaux multiples, je constate que l'emploi dans les emplois temporaires et les emplois multiples, tant chez les immigrants récents que chez les immigrants établis, est affecté par le salaire horaire médian de l'AMC et la représentation des immigrants dans une RMR. De plus, les interactions croisées révèlent que les nouveaux immigrants de sexe masculin sont moins susceptibles d'être employés dans de multiples emplois en RMR où le salaire médian est plus élevé.

Mots clés: Immigrants, régions métropolitaines de recensement, travail précaire, Canada, sexe

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Introduction

The labour force participation rate of a country reflects not only that nation's economic opportunities but also its ability to successfully integrate immigrants (both established and recent). Gainful employment, therefore, is a key component of economic integration into the host country. Unfortunately, individuals employed in precarious jobs often fall short of becoming economically viable. In this paper, I will highlight the shortcomings experienced by Canadian newcomers engaged in three types of precarious employment: involuntary part-time work, temporary job holders and multiple job holders and how they are affected by local labour market conditions.

Local labour markets determine varying immigrant experiences depending on the type of industry that is predominant within that Census Metropolitan Area (CMA) or province. For example, Alberta is known for its oil and gas industry, forestry, and agriculture, while eastern Canadian provinces incorporate the majority of manufacturing industries. In fact, according to Citizenship and Immigration Canada (CIC, 2011), Ontario and Quebec together produce more than three-quarters of all Canadian manufactured goods. Unfortunately, underutilization of highly educated and highly skilled immigrant men and women is preventing Canada from replacing its "near retirement" workers whose numbers are growing at a rapid pace (Lochhead and Mackenzie, 2005). In fact, 90 percent of business leaders describe Canada's impending labour shortage problem as either moderate or serious (Lochhead and Mackenzie, 2005).

In order to further address looming labour shortages in Canada, it is also imperative to highlight the existence of sex differences within precarious work. According to Fuller and Vosko (2007) existing research suggests that temporary employment is organized in highly gendered and racialized ways in industrialized countries. Furthermore, Vosko, Zukewich, and Cranford (2003) contend that a majority of workers in the part-time forms of paid work are women. In fact, in 2002, women made up the majority of casual temporary employees, most of whom work part time, while men dominated seasonal forms of temporary paid work, most of which is full-time (Vosko et al. 2003). In addition, Vosko et al. (2003) identify "casualization" as a term to define the use of casual workers to replace permanent full-time labour. Vosko et al. further suggest that the casualization of the workforce results partly in young men, especially those who are immigrants or visible minorities, "experience[ing] downward pressure on earnings and conditions of work as they increasingly take jobs in occupations where women have traditionally been employed" (Vosko et al, 2003). Hence, it is vital to conduct a gender-based analysis of precarious work.

To facilitate an understanding of precarious jobs within the Canadian context, I utilize the theoretical approaches of labour market segmentation theory. A major variant of labour market segmentation theory, called dual labour market theory, divides labour markets into two largely non-overlapping sectors identified as primary and secondary sectors. A primary market consists of jobs that offer "high wages, good working conditions, employment stability and job security, and chances for advancement" (Snyder, Hayward, Hudis, 1978, p.709). The secondary sector, according to Piore, has jobs with low wages, poor working conditions, considerable variability in employment, "harsh and often arbitrary discipline", and not much opportunity for advancement (Piore, 1970, p.55). I focus on the secondary sector, identified by Piore as the arena where precarious employment flourishes. For example, involuntary part-time work provides many employees with low wages and little job security. Whereas multiple job holders earn more due to holding down more than one job but often have little job security or few company benefits, including medical, dental and pension plans. The last outcome variable I examine, temporary job holding, is also found in similar working environments. Piore also suggests that complex factors generate the dual market structure and determine access to primary vs. secondary sector employment. Important to the present study is what Piore refers to as behavioural traits such as race, demeanour, accent, and educational credentials. He refers to these traits as being statistically correlated with job performance but not causally related to it. Therefore, argues Piore, many qualified individuals are rejected because they possess these irrelevant traits (Piore, 1970). Since these traits are not causally correlated with job performance, asserts Piore, many qualified applicants are therefore rejected because they possess the wrong "traits". As such, primary sector jobs require employment stability, and some workers are therefore excluded because of unstable behaviour. There is a "fit" between job and worker characteristics in both segments. However, many persons qualified for primary employment are confined to secondary jobs because of attributes (especially immigrants) that employers associate with unstable work (Snyder, Hayward, Hudis, 1978, p.709). Although I acknowledge that not all newcomers possess all of the traits Piore refers to, it is vital to recognize that the majority of immigrants arriving in Canada since the late 1960s have been from non-European countries and

therefore may be rejected due to "irrelevant traits".

Beyond these studies, Hodson and Kaufman (1982) argue that the dual economy perspective stresses the distinction between core and periphery industries. Again, a sizeable number of better jobs are found in the core which includes large corporations and government (Lowe and Lehmann, 2009). For example, large corporations provide high-quality careers for their workers, and subsequently subcontract services to smaller firms where both wages and working conditions are poor (Lowe and Lehmann, 2009). Additionally, movement to a better or *primary* labour market segment from a worse or *secondary* segment is often difficult (Lowe and Lehmann, 2009). This is especially apparent as many positions are subcontracted by the primary labour market and create nonstandard positions.

As Kalleberg (2009) argues, nonstandard employment is a shift away from standard work arrangements making labour markets and organizations more flexible. Although this flexibility has positively affected many families, it also has created exclusion of many workers who otherwise may have enjoyed "social protections previously available to them through the standard employment relationship" (Kalleberg, 2009:562). Kalleberg (2009) further argues that the use of nonstandard work has important implications for labour markets, including employment security, quality of jobs, and training and mobility opportunities (Kalleberg, 2009, p.563). All three traits are important for immigrants as they settle into their host country. Employment insecurity is detrimental to an immigrant's successful integration into the Canadian economy. This is especially true of immigrants with families who uprooted established lives in their home countries to position themselves as viable citizens of Canada. Furthermore, immigrants require quality jobs, which, along with training and mobility opportunities, will provide the necessary environment for successful integration.

The core-periphery view also recognizes the existence of a binary employment structure within employing organizations (Zeytinoglu and Cooke 2005). Hence primary labour market working conditions benefit regular full-time workers as the 'core' group. Conversely, part-time workers along with other non-standard workers exist in the 'periphery' of the organization working under secondary labour market conditions. As indicated by existing research, in order to lower labour costs and achieve flexibility, employers seek to hire non-standard workers (Kalleberg et al., 1997; Tilly, 1991; Zeytinoglu, 1991, 1992). Furthermore, several studies suggest that immigrants arriving during a recession take longer to find a job and earn lower wages throughout their careers compared to their Canadian-born counterparts (Picot, 2008; LaRochelle-Côté and Gilmore, 2009).

Therefore, I will examine the effects on precarious work of characteristics of labour markets, operationalized as Census Metropolitan Areas, using percent immigrants in their population, percent unemployment, percent employed in managerial and professional occupations, and lastly, median annual wages of all workers to provide a more comprehensive representation of the immigrant labour market experience. As argued by Harvey (1990), the system of production and consumption of the post-war boom was much too rigid and led to what Harvey refers to as "flexible accumulation". This flexibility includes, among other factors, labour processes and labour markets (Harvey, 1990). The post-war boom ended in 1973, benefiting employers with decreased union power, flexible work schedules and temporary labour contracts. As such, many first world labour markets experienced a shrinking core and a simultaneous increase in periphery jobs. The majority of low paying and short-term jobs are concentrated in the periphery and are usually the first to be lost during economic downturns. Therefore, a higher unemployment rate would lead to even fewer positions which in turn would lead to individuals engaging in precarious employment. This is also true of the percentage of immigrants residing in a CMA, as well as the percent of managerial and professional occupations. Therefore using the above mentioned labour market characteristics will allow for a better understanding of the immigrant employment experience within Canadian CMAs.

Immigrant labour market participation is also affected by when the newcomer arrives in his or her host country. For instance, newcomers entering Canada during the early 1970s, 1980s or 1990s would have experienced not only cultural barriers but also economic difficulties compounded by recessions affecting Canadian labour markets during this time period (Picot and Manser, 1997). For example, Canada's economy benefitted from high employment levels until a sudden downturn in the world's economy in late 2008 (LaRochelle and Gilmore, 2009). Hence, the outcome was a widespread loss of jobs for the first time since the last recession of 1990-1992. Consequently, a more robust market is expected to provide immigrants with more lucrative and permanent employment. In either circumstance, how the newcomer fares in the labour market may depend in part on the economic conditions of the host country.

Along with where the newcomers reside and when they arrive in their host country, how viably they are employed also impacts their economic integration. A previous study (Hira-Friesen, 2014), shows that the odds of recent immigrants being employed in involuntary part-time work are much higher than that of their Canadian-born counterparts for both sexes. In fact, recent immigrant males are more than three times as likely to be employed in involuntary part-time work in comparison to their Canadian-born counterparts, and recent immigrant females are almost two and a half times as likely to be employed in similar jobs. Furthermore, this trend of over-representation of recent immigrants is increasing over time. I include labour market characteristics along with individual characteristics to determine the extent to which the place chosen by immigrants to settle influences their risk of being relegated to precarious employment.

Data and Methods

Data and Variables

I use data from the Canadian Labour Force Survey (LFS) master file from 2006 to 2012. It is worth noting that Statistics Canada did not add questions to the LFS to identify the Canadian immigrant population until January 2006. Therefore, prior LFS waves cannot be used to study precarious labour market outcomes among immigrants and their Canadian born counterparts. The Canadian immigrant questions in the 2006 LFS included: country of birth of the respondent, whether or not the respondent was a "landed immigrant" (i.e. permanent resident), the month and year the respondent became a landed immigrant, and the country in which the respondent received his or her highest level of education (Statistics Canada, 2013).

I have chosen to restrict the analysis to the month of March for each survey year (2006-2012). The month of March is significant as this is the time of year when very few workers are on holidays or in the process of changing jobs, making it the most stable month for labour market analysis. The LFS is a monthly household survey involving approximately 56,000 Canadian households. The sample used is restricted to respondents who are 20-59 years of age and either Canadian-born or landed immigrants. In order to further examine labour market differences between newcomers and their Canadian-born counterparts, I further divide immigrants into recent immigrants (immigrants who have resided in Canada for five years or less) and established immigrants (immigrants who have lived in Canada for more than five years).

The three outcome variables in this study (involuntary part-time work, multiple job holder, and temporary job holder) are measured dichotomously. Involuntary part-time work is defined as those seeking full-time employment but forced to work part-time. Involuntary part-time work is measured only among respondents who are employed in part-time jobs. The second outcome variable, multiple job holders, includes respondents who hold more than one job. Some studies also identify these individuals as "moonlighters" (Kimmel and Powell, 1999). The final outcome variable, temporary job holder is comprised of employment in seasonal, temporary, term or contract employment, including work done via a temporary help agency, a casual job, and other temporary work. All three variables are coded as dummy (indicator) variables. If a respondent held these types of employment they equal 1, if not they equal 0.

The explanatory variables at level 1 of the multilevel model used here include immigrant status (as the focal variable), survey year, sex, age, education, number of children, country of birth and marital status. Immigrant status, as mentioned above, is measured by two dummy variables, one equalling 1 if an immigrant has been in Canada five years or less, the other equalling one if an immigrant has been in the country for more than five years. Canadian-born is the reference category. Survey year is a continuous variable, assuming that any change over time in the likelihood of a respondent being in precarious employment is linear. Education is divided into six categories: less than high school (used as reference category), high school graduate, some post-secondary education, trades, bachelor's degree, and graduate degree. Marital status is coded as: married (married and common-law), single, never married and other (separated, widowed or divorced) with other as the reference category. Additionally, the number of children is coded as: no children (reference), 1-2 children, and 3 or more children. Finally region of birth is measured by means of a set of dummy variables, including indicators for birth in the US, Central or South America, the Caribbean, Europe, Africa, South Asia, the rest of Asia, and Oceania. The reference category is Canadian birth. Finally, the level-2 variables are characteristics of CMAs and consist of: percent immigrant, percent unemployed, median hourly wages, and percent occupations that are managerial or professional. The CMA-level variables were computed from the 2006 Canadian Census. Additionally, I added interaction terms of the immigrant dummy variables with each CMA characteristic as cross-level interactions

which determine whether or not the CMA effects are different for recent and/or established immigrants.

I examine how several factors add to the change in immigrant and Canadian-born employment in the types of precarious work by appending the data from the March LFS in the 2006 through 2012 survey periods into one data file. The data are measured at two levels using level 1 (individual level) and level 2 (CMA level). Two models are estimated for each precarious employment outcome: one including all the background variables, immigrant dummies, and the CMA characteristics, and a second that adds cross-level interactions between the immigrant dummies and CMA characteristics, to test for differences in the effects of CMA among recent immigrants, established immigrants, and the Canadian born. All models are run separately for males and females.

Mixed Effects vs. Fixed Effects Only Models

Ideally, these multilevel models would be estimated by means of a mixed-effects estimator that separates fixed effects (the effects of the measured variables) from random effects (variances of the intercepts and selected slopes):

$$Y_{ij} = [\gamma_{00+}\gamma_{10}X_{ij} + \gamma_{01}W_j + \gamma_{11}W_jX_{ij}] + [u_{0j} + u_{1j}X_{ij} + r_{ij}]$$

fixed effects *random effects*

In this model, Y_{ij} is the log odds of being employed in an involuntary part-time position, multiple jobs, or a temporary job, X_{ij} represents the individual-level variables, W_j the CMA level variables, and W_jX_{ij} the cross-level interactions. In all cases, g represents the effects on the precarious employment dummy variables. In the case of the random effects,

r_{ij} = the traditional individual level error
u_{0j} is the variability of precarious employment between CMAs
u_{1j} is the variability of the relationship of immigrant status to precarious work between CMAs

However, under the mixed effects specification, all models showed very little variance in the slopes of the immigrant status dummy variables across CMAs. As a result, the Chi-square tests comparing the mixed effects models to ordinary logistic regressions (fixed effects only) failed to be significant, suggesting that the best model in each case left out the random effects. What this means in practice is that the fixed effects are very similar between the mixed-effects models and the models containing fixed effects only. Therefore Tables 2-4 show results for the latter models[1]. One advantage of this is that I was able to use both probability weights and adjustments for sample design, which is not possible with mixed effects models given the current state of software development.

Results[2]

Table 1 illustrates the characteristics of the CMAs I used. These include median hourly wages per CMA, as well as unemployment rates, the percentage of immigrants residing in each census metropolitan area and the percentage of managerial or professional jobs in the labour force of each CMA. These data show considerable variability in all these CMA characteristics, particularly in the immigrant percentage of the population, which varies from 1.2 percent in the Saguenay region of Québec to over 45 percent in the Toronto area.

Table 1. Characteristics of Census Metropolitan Areas (CMA) Used in Multilevel Model

CMA	Median Hourly Wage	Unemployment Rate	Percent Immigrants	Percent Managerial or Professional
St. John's	16.8	11.7	18.0	33.8
Halifax	17.1	7.6	7.4	44.4
Saint John	16.1	6.6	4.1	41.1
Saguenay	18.0	11.0	1.2	37.0
Québec	18.2	6.2	3.7	44.7
Sherbrooke	16.9	7.8	5.5	39.1
Trois-Rivières	17.3	9.3	2.2	22.2
Montréal	18.3	8.9	20.4	42.4
Ottawa-Gatineau	22.0	7.3	17.9	48.7
Kingston	18.9	8.3	12.1	42.4
Oshawa	21.7	8.1	16.3	37.3
Toronto	19.9	8.9	45.4	42.7
Hamilton	19.7	7.6	24.0	38.6
StCath-Niag	17.3	9.8	2.9	45.2
Kitchener-Waterloo	19.1	7.3	22.8	37.3
London	18.6	7.8	19.1	38.6
Windsor	20.5	10.3	23.1	32.9
Sudbury	19.2	9.6	6.6	38.9
Thunder Bay	19.1	9.4	10.3	38.3
Winnipeg	16.7	6.4	17.5	41.2
Regina	17.9	6.1	7.6	42.9
Saskatoon	16.8	9.0	7.6	38.7
Calgary	19.6	5.3	23.4	44.0
Edmonton	18.8	5.8	18.3	39.9
Abbotsford	17.4	6.8	23.3	30.6
Vancouver	19.2	7.3	39.3	42.2
Victoria	19.2	5.6	18.8	44.1

Source: Computed from 2006 Census of Canada microdata.

According to Table 2, recent immigrant females are almost three times as likely to be employed in involuntary part-time work and recent immigrant males are 2.2 times as likely compared to their Canadian-born counterparts. Established immigrant females are also much more likely than Canadian-born females to be employed in involuntary part-time work, but less so than the recent immigrants. This table also shows that for every one dollar increase in median hourly earnings for a CMA, the odds of being employed in involuntary part-time work increases by a factor of approximately 1.10 ($p<0.001$) for both males and females. These results are mirrored in the unemployment rate. Specifically, for every 1 percent increase in unemployment rate for a CMA, the odds of being employed in involuntary part-time work increases by a factor of also approximately 1.11 for both sexes. There is little sign of any difference in the effects of the CMA-level variables between

immigrants and the Canadian born, as reflected in the cross-level interactions in Model 2 for either men or women. Established immigrant men are less likely than the Canadian born to be in involuntary part-time work, but this effect is only marginally significant.

Table 2. Multilevel Logistic Regression Models Predicting Involuntary Part-time Work, Canadian Part-time Employees 2006-2012

	Female		Male	
	Model 1	Model 2	Model 1	Model 2
Age of respondent	0.995	0.995	1.012**	1.012**
	(-1.63)	(-1.64)	(3.07)	(3.12)
Recent Immigrant	2.830***	4.312	2.203*	102.6
	(3.67)	(0.52)	(2.22)	(1.70)
Established Immigrant	2.437***	1.656	1.236	51.71*
	(3.51)	(0.39)	(0.63)	(2.38)
Survey year	1.089***	1.088***	1.085***	1.084***
	(5.40)	(5.34)	(4.19)	(4.11)
One or two children	0.842*	0.843*	1.409**	1.420**
	(-2.18)	(-2.17)	(3.02)	(3.07)
Three or more children	0.640**	0.638**	2.064***	2.070***
	(-2.98)	(-3.00)	(3.29)	(3.35)
High school graduate	0.890	0.887	0.969	0.969
	(-1.36)	(-1.38)	(-0.29)	(-0.29)
Trades certificate	1.271*	1.273*	1.248	1.256
	(2.11)	(2.12)	(1.50)	(1.54)
Some post-secondary	0.411***	0.412***	0.512***	0.511***
	(-7.10)	(-7.07)	(-4.65)	(-4.66)
Bachelor's degree	1.158	1.160	0.899	0.898
	(1.80)	(1.81)	(-0.86)	(-0.86)
Advanced degree	1.143	1.150	0.828	0.809
	(1.12)	(1.17)	(-1.19)	(-1.34)
Married or common-law	0.671***	0.671***	0.937	0.943
	(-4.80)	(-4.79)	(-0.57)	(-0.51)
United States	0.598	0.615	0.663	0.636
	(-1.34)	(-1.24)	(-0.75)	(-0.85)
Central or South America	1.225	1.259	0.901	0.836
	(0.67)	(0.76)	(-0.25)	(-0.43)
Caribbean	0.752	0.759	1.053	1.013
	(-0.85)	(-0.82)	(0.11)	(0.03)
Europe	0.656	0.675	1.075	1.008
	(-1.57)	(-1.45)	(0.20)	(0.02)

Africa	1.069	1.123	1.396	1.233
	(0.22)	(0.38)	(0.90)	(0.57)
South Asia	1.389	1.407	1.301	1.379
	(1.38)	(1.42)	(0.86)	(1.07)
Rest of Asia	0.648	0.656	0.880	0.877
	(-1.77)	(-1.71)	(-0.41)	(-0.43)
Oceania	1.044	1.100	2.733	2.596
	(0.08)	(0.17)	(1.67)	(1.59)
CMA median hourly earnings	1.113***	1.123***	1.081*	1.135***
	(4.57)	(4.30)	(2.55)	(3.68)
CMA unemployment rate	1.119***	1.112***	1.069*	1.073*
	(5.09)	(4.26)	(2.29)	(2.04)
CMA % immigrants	0.997	0.996	1.006	1.010*
	(-1.11)	(-1.17)	(1.60)	(2.39)
CMA % managers or professionals	0.982**	0.980**	0.978*	0.976*
	(-2.58)	(-2.66)	(-2.53)	(-2.44)
Recent X CMA earnings		0.789		0.832
		(-1.45)		(-1.30)
Recent X CMA unemployment		0.802		1.028
		(-1.93)		(0.22)
Recent X CMA immigrants		1.020		0.994
		(1.34)		(-0.41)
Recent X CMA % man-prof		1.131		0.992
		(1.55)		(-0.15)
Established X CMA earnings		0.980		0.821*
		(-0.34)		(-2.41)
Established X CMA unemployment		1.069		1.014
		(1.18)		(0.18)
Established X CMA immigrants		1.001		0.985
		(0.20)		(-1.92)
Established X CMA % man-prof		1.004		1.010
		(0.22)		(0.43)
Number of Cases	22816	22816	8833	8833
Pseudo-R^2	0.0389	0.0398	0.0368	0.0392
Likelihood Ratio Chi^2	521.7	534.2	260.0	276.6

Exponentiated coefficients; t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table 3 illustrates the outcomes for multiple job holders. For both men and women, as education level increases, so does the likelihood of being employed in multiple jobs. For example, females and males with

advanced degrees are 1.3 times as likely to be employed in multiple jobs compared to those who never completed high school. Additionally, Caribbean born women are 1.7 times as likely to be employed in more than one job and males born in the United States are more than twice as likely to be employed in multiple jobs. Finally, Table 3 shows that for every 1 percent increase in the unemployment rate for a CMA, the odds of being employed in multiple jobs declines by a factor of 0.90 ($p<0.01$) for women and 0.96 ($p<0.001$) for men. For every one 1 percent increase of managerial and professional positions in a CMA, the odds of being employed in multiple jobs increases by a factor of 1.01 ($p<0.001$) for men and declines by a factor of 0.98 for women, though these are both quite small effects. As for the cross-level interactions, recent immigrant men are nearly 28 percent less likely to hold multiple jobs for every one dollar increase in the average wage in their CMA of residence and are 9 percent more likely to hold multiple jobs for every one percent increase in managerial and professional jobs in their CMA. The only CMA effect for women involves a decline in multiple job holding related higher unemployment rate among established immigrants, but this is only marginally significant.

Table 3. Multilevel Logistic Regression Models Predicting Multiple Job Holders, Canadian Employees 2006-2012

	Female		Male	
	Model 1	Model 2	Model 1	Model 2
Age of respondent	0.989***	0.989***	0.987***	0.987***
	(-7.09)	(-7.10)	(-7.04)	(-7.01)
Recent Immigrant	0.804	0.897	1.027	5.542
	(-0.98)	(-0.04)	(0.13)	(0.92)
Established Immigrant	0.812	1.318	0.863	1.092
	(-1.08)	(0.37)	(-0.76)	(0.12)
Survey year	1.014	1.014	0.984	0.984
	(1.73)	(1.70)	(-1.71)	(-1.75)
One or two children	0.874***	0.873***	0.997	0.997
	(-3.47)	(-3.48)	(-0.06)	(-0.07)
Three or more children	1.039	1.038	1.101	1.102
	(0.49)	(0.48)	(1.16)	(1.17)
High school graduate	0.698***	0.699***	0.883*	0.884*
	(-7.01)	(-6.97)	(-2.10)	(-2.09)
Trades certificate	0.881	0.881	0.881	0.882
	(-1.86)	(-1.88)	(-1.89)	(-1.87)
Some post-secondary	0.912	0.913	1.057	1.056
	(-1.41)	(-1.40)	(0.78)	(0.76)
Bachelor's degree	1.116*	1.117*	1.282***	1.280***
	(2.43)	(2.46)	(4.41)	(4.38)
Advanced degree	1.359***	1.359***	1.330***	1.329***
	(5.37)	(5.37)	(4.14)	(4.13)
Married or common-law	0.703***	0.703***	0.921	0.922
	(-9.33)	(-9.34)	(-1.70)	(-1.67)
United States	1.542	1.541	2.305***	2.234**
	(1.73)	(1.70)	(3.31)	(3.17)

Central or South America	1.379	1.415	1.021	0.992
	(1.38)	(1.48)	(0.08)	(-0.03)
Caribbean	1.624*	1.708*	1.163	1.143
	(2.11)	(2.30)	(0.56)	(0.49)
Europe	1.152	1.172	1.248	1.216
	(0.70)	(0.77)	(1.08)	(0.95)
Africa	1.041	1.064	0.946	0.902
	(0.17)	(0.26)	(-0.23)	(-0.42)
South Asia	0.829	0.835	1.331	1.344
	(-0.99)	(-0.95)	(1.61)	(1.67)
Rest of Asia	1.197	1.186	1.094	1.075
	(0.92)	(0.87)	(0.49)	(0.39)
Oceania	1.365	1.299	1.613	1.583
	(0.91)	(0.76)	(1.31)	(1.26)
CMA median hourly earnings	1.003	1.002	0.969*	0.981
	(0.25)	(0.16)	(-2.21)	(-1.24)
CMA unemployment rate	0.926***	0.943***	0.958**	0.957**
	(-6.32)	(-4.44)	(-2.94)	(-2.85)
CMA % immigrants	0.999	0.999	0.997	0.998
	(-0.48)	(-0.44)	(-1.86)	(-1.04)
CMA % managers or professionals	0.981***	0.982***	1.011*	1.007
	(-4.81)	(-4.39)	(2.33)	(1.45)
Recent X CMA earnings		0.983		0.726***
		(-0.14)		(-3.36)
Recent X CMA unemployment		0.861		1.065
		(-1.95)		(0.77)
Recent X CMA immigrants		1.009		1.010
		(0.84)		(1.00)
Recent X CMA % man-prof		1.026		1.090*
		(0.66)		(2.08)
Established X CMA earnings		1.002		0.961
		(0.05)		(-1.08)
Established X CMA unemployment		0.912*		0.998
		(-2.55)		(-0.05)
Established X CMA immigrants		1.002		0.995
		(0.47)		(-1.21)
Established X CMA % man-prof		1.004		1.017
		(0.27)		(1.21)
Number of Cases	100387	100387	102633	102633
Pseudo-R^2	0.0135	0.0140	0.00858	0.00894
Likelihood Ratio Chi^2	646.5	670.9	326.3	340.0

Exponentiated coefficients; t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Finally, Table 4 shows that recent immigrant females are 2.5 times as likely to be employed in temporary jobs as Canadian-born women. Recent immigrant males are 1.5 times more likely in comparison to their Canadian-born counterparts, though this effect is considerably smaller than that for females The effect of education on precarious employment is also reflected here, as education increases so does the chance of being employed in temporary positions. African and South Asian males appear to have the highest likelihood of being employed in temporary work among foreign born men in the sample compared to the Canadian-born. Males born in Central or South America are slightly less likely at 1.5 times to be employed in temporary work.

Finally, for every 1 percent increase in immigrants in a CMA, the odds of being employed in temporary jobs increases by a factor of approximately 1.1 for both males and females. In addition, for every one 1 percent increase of managerial and professional positions in a CMA, the odds of being employed in temporary jobs increases by a factor of 1.01 ($p<0.001$) for both sexes. Although the cross-level interactions exhibit no significant effects for women, there are several CMA characteristics that influence the effect on precarious employment of being a recent or established immigrant for men. Specifically, for each dollar increase in a CMA's median earnings, the likelihood that a recent immigrant will be holding a temporary job increases by a factor of 1.18, or about 18 percent. In contrast, for each one percent increase in the representation of immigrants in a CMA's population, the likelihood of a recent male immigrant holding a temporary job declines by a factor of 0.98. A similar, though smaller, effect is found for established immigrants.

Table 4. Multilevel Logistic Regression Models Predicting Temporary Job Holders, Canadian Employees 2006-2012

	Female		Male	
	Model 1	Model 2	Model 1	Model 2
Age of respondent	0.965***	0.965***	0.964***	0.964***
	(-26.18)	(-26.30)	(-21.07)	(-21.03)
Recent Immigrant	2.531***	0.224	1.536*	0.107
	(5.77)	(-1.15)	(2.55)	(-1.80)
Established Immigrant	1.318	0.347	0.947	0.857
	(1.80)	(-1.66)	(-0.33)	(-0.24)
Survey year	1.018*	1.019**	1.041***	1.041***
	(2.51)	(2.61)	(5.03)	(5.03)
One or two children	0.832***	0.833***	0.764***	0.763***
	(-5.67)	(-5.66)	(-6.29)	(-6.30)
Three or more children	1.071	1.074	0.798**	0.797**
	(1.07)	(1.11)	(-2.72)	(-2.75)
High school graduate	0.954	0.954	0.878**	0.879**
	(-1.09)	(-1.10)	(-2.75)	(-2.71)
Trades certificate	1.001	1.000	1.048	1.050
	(0.01)	(0.00)	(0.88)	(0.92)
Some post-secondary	1.288***	1.287***	1.368***	1.366***
	(5.23)	(5.21)	(5.74)	(5.71)
Bachelor's degree	1.348***	1.347***	1.166**	1.163**
	(7.83)	(7.80)	(3.27)	(3.22)
Advanced degree	1.699***	1.695***	1.781***	1.765***
	(10.93)	(10.84)	(9.77)	(9.62)

Married or common-law	0.762***	0.762***	0.671***	0.673***
	(-9.40)	(-9.39)	(-10.60)	(-10.53)
United States	0.818	0.814	1.381	1.305
	(-0.91)	(-0.93)	(1.27)	(1.04)
Central or South America	1.008	0.997	1.534*	1.474*
	(0.04)	(-0.02)	(2.24)	(2.02)
Caribbean	0.635*	0.622*	1.433	1.389
	(-2.33)	(-2.42)	(1.70)	(1.55)
Europe	0.787	0.779	1.158	1.103
	(-1.48)	(-1.55)	(0.83)	(0.55)
Africa	1.045	1.042	1.730**	1.625**
	(0.25)	(0.23)	(2.97)	(2.62)
South Asia	1.089	1.072	1.731***	1.735***
	(0.58)	(0.46)	(3.67)	(3.71)
Rest of Asia	0.887	0.890	1.248	1.227
	(-0.81)	(-0.78)	(1.43)	(1.32)
Oceania	0.978	1.016	0.559	0.553
	(-0.08)	(0.06)	(-1.19)	(-1.21)
CMA median hourly earnings	0.988	0.979*	1.004	0.994
	(-1.20)	(-2.00)	(0.33)	(-0.51)
CMA unemployment rate	1.070***	1.056***	1.083***	1.083***
	(6.84)	(5.08)	(7.40)	(6.71)
CMA % immigrants	0.991***	0.991***	0.990***	0.992***
	(-7.78)	(-6.56)	(-7.12)	(-4.59)
CMA % managers or professionals	1.016***	1.014***	1.009*	1.009*
	(4.76)	(4.00)	(2.28)	(2.13)
Recent X CMA earnings		1.035		1.182**
		(0.53)		(2.65)
Recent X CMA unemployment		1.090		1.067
		(1.62)		(1.24)
Recent X CMA immigrants		1.012		0.984*
		(1.92)		(-2.57)
Recent X CMA % man-prof		1.016		0.987
		(0.66)		(-0.52)
Established X CMA earnings		1.045		1.010
		(1.50)		(0.34)
Established X CMA unemployment		1.050		1.001
		(1.76)		(0.03)
Established X CMA immigrants		0.995		0.991**
		(-1.52)		(-2.69)

Established X CMA % man-prof		1.006		1.004
		(0.58)		(0.40)
Number of Cases	90549	90549	85998	85998
Pseudo-R^2	0.0436	0.0439	0.0508	0.0511
Likelihood Ratio Chi^2	2792.8	2817.9	2624.9	2638.0

Exponentiated coefficients; t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Conclusions and Discussion

A noteworthy change in Canadian immigration over the past few decades has been the arrival of increasingly well-educated migrants. This shift has transpired, in part, due to Canada's immigration policies adopted after 1967. This policy now allows primarily highly educated individuals, under the 'economic class', from non-European nations into this country. From that time on, the Government of Canada aimed its immigration policies to reflect labour market conditions, particularly occupational demand, as well as "characteristics that are deemed important for long term success of immigrants" (Aydemir, 2002). Therefore, given that points are awarded for education in the Canadian 'point system' (a system employed by the federal government to determine applicant eligibility of newcomers), it is important to recognize labour market participation among Canadian immigrants over generations as an integral part of immigrant employment outcomes. Thus far, however, because successful economic assimilation of immigrants is dependent on their labour market outcomes, most researchers focus on newcomer earnings profiles rather than the types of employment in which many newcomers are engaged. Consequently, an examination of precarious employment and among newcomers may illuminate sections of Canadian labour markets that currently remain understudied.

It is worth mentioning that in the process of trying to succeed in their new country, immigrants collectively exude resilience and determination that sets them apart from their Canadian-born counterparts. Newcomers to Canada not only represent a possible solution for labour force shortages for the Canadian economy but also, because they are younger, they provide potential population growth for Canada's aging workforce. Furthermore, immigrants represent a diverse group of individuals with a common goal of successfully integrating into Canadian society, an endeavor not needed by the host population. Therefore, male and female immigrants will collectively strive to overcome barriers and integrate into Canadian society. This communal struggle includes autonomous immigrant decisions to seek out and locate in regions with labour shortages to not only secure their own futures, but also ensure higher learning and subsequent gainful employment opportunities for their children.

The results of this examination clearly indicate that male immigrants struggle the most in terms of economic integration through employment. Recent immigrant men are almost 28 percent less likely to hold multiple jobs for every one dollar increase in the average wage in their CMA of residence. Hence, it is possible that the more economically prosperous the CMA the better the odds of recent immigrant males in attaining core-type employment. Therefore, these individuals are less likely to be employed in multiple positions. The only CMA effect for women involves a decline in multiple job holding related to a higher unemployment rate among established immigrants, but this is only marginally significant. With respect to temporary employment, the cross-level interactions show that there are several CMA characteristics affect this form of precarious employment. For example, for each dollar increase in a CMA's median earnings, the likelihood that a recent immigrant will be holding a temporary job increases by a factor of about 18 percent. This may be attributed to contract work such as sessional and lecturer positions being the main hiring practices by universities and colleges. In contrast, for each one percent increase in the representation of immigrants in a CMA's population, the likelihood of a recent male immigrant holding a temporary job declines by a factor of 0.98. A similar, though smaller, effect is found for established immigrants. This decline may be the result of accumulated social capital as more and more residents choose to reside in Montreal, Toronto and Vancouver. These communities provide existing social programs and established immigrant communities which, in turn, may aid newcomers in seeking and obtaining more permanent employment.

This struggle is also apparent among recent immigrant women, namely those employed in involuntary part-time work and temporary jobs. As shown above, women who have been residing in Canada for five years

or less are almost three times more likely to be employed in involuntary part-time work than their Canadian-born counterparts. This effect is slightly less but still significant for immigrant women who have lived in Canada for more than five years. These labour market outcomes confirm what researchers have been arguing for in the examination of precarious work. As mentioned earlier, Vosko (2007) and Vosko et al. (2003) put forth the necessity of a gender based analysis of precarious labour. I also found that female recent immigrants are 2.5 times as likely to be employed in temporary work in contrast to Canadian-born females.

Immigrant men are also over represented in precarious jobs. The fact that recently arrived males are 1.5 times as likely to be employed in temporary jobs speaks to the challenges that continue to confront Canadian newcomers. Furthermore, males belonging to this category are more than twice as likely to be employed in involuntary part-time work. An interesting finding is that males who were born in Africa or South Asia are almost twice as likely to be employed in this type of work, whereas males born in Central or South America are slightly less likely at 1.5 times to be employed in temporary work in comparison to their Canadian-born counterparts. I also found it surprising that males born in the United States are more than twice as likely to be employed in more than one job.

The effect of education on precarious employment is also reflected in my results. I found that as education increases so does the chance of being employed in temporary positions as well as multiple jobs. It is possible that many individuals with graduate degrees are working as sessional instructors or research assistants. A well known fact regarding university and college hiring practices have shifted from tenure track employment to temporary work which includes sessional work as well as other forms of teaching. These new "flexible" positions allow higher learning institutions such as universities to employ individuals with graduate degrees without having to offer them permanent full-time employment. These new positions fail to offer job security, health and dental benefits and pension plans making them the quintessential precarious jobs.

The results of the present study suggest some policy implications with respect to gainful fulltime employment for Canadian newcomers. Given that the majority of Canadian immigrants are highly educated and many have foreign work experience, the lack of credential recognition remains a critical determinant of immigrant economic success. Future immigration policies reflecting such programs or methods of testing might offset immigrant struggles to be employed in core rather than periphery jobs. Additionally, CMAs with prosperous economies may offset their own impending labour shortages by attracting and retaining new immigrants. This is supported by my finding that immigrant men are 28 percent less likely to be employed in precarious work if the CMA has higher median wages.

Notes

[1] After running mixed-effects models I found no variation at the second level. Therefore, the variance and random effects were not significantly different from zero.

[2] Crosstabs between all three types of precarious employment (involuntary part-time work, multiple job holders, and temporary job holders) indicate the following:

- 12% overlap between the involuntary part-time workers and multiple job holders
- 26% overlap between involuntary part-time workers and temporary job holders
- 10.% overlap between multiple job holders and temporary job holders

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