

Catalogue no. 11F0019M — No. 365
ISSN 1205-9153
ISBN 978-1-100-25497-5

Analytical Studies Branch Research Paper Series

Source-country Female Labour Force Participation and the Wages of Immigrant Women in Canada

by Kristyn Frank and Feng Hou

Release date: January 28, 2015



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- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
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- 0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- ^P preliminary
- ^r revised
- X suppressed to meet the confidentiality requirements of the *Statistics Act*
- ^E use with caution
- F too unreliable to be published
- * significantly different from reference category ($p < 0.05$)

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January 2015

Analytical Studies Branch Research Paper Series

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Abstract

Previous studies have found a strong association between source-country female labour force participation rates and immigrant women's labour market activity in the host country. This association has been interpreted as the lasting influence of source-country gender role attitudes. These studies, however, do not measure gender-role attitudes directly and examine labour market activities only in terms of labour force participation in the host country. Employing data from the 2006-to-2012 Labour Force Survey and the 1994-2007 World Values Survey, this analysis includes both source-country female labour force participation rates and an explicit measure of source-country gender role attitudes to account for group differences in immigrant women's labour market outcomes in Canada across several measures. The results indicate that the effect of source-country gender role attitudes on immigrant women's labour market participation in Canada works through its relationship with source-country female labour force participation rates. Moreover, source-country female labour force participation rates are positively correlated with immigrant women's wages in Canada independent of source-country gender role attitudes. This is mostly accounted for by occupational and industry differences, as immigrant women from countries with high female labour force participation rates are more concentrated in higher-paying industries and occupations in Canada than immigrant women from countries with low levels of female labour force participation.

Executive summary

Previous studies have found a strong association between source-country female labour force participation rates and immigrant women's labour force participation in the host country. This relationship is interpreted as the enduring influence of source-country gender-role attitudes on immigrant women's labour market activity. However, the assumption that source-country female labour force participation levels closely capture cultural gender-role attitudes has not been carefully examined. Furthermore, little is known about how source-country characteristics might be correlated with immigrant women's labour market outcomes after entering the host country's labour market.

This paper extends the current literature by addressing three questions: What is the relationship between source-country gender-role attitudes and source-country female labour force participation? Does the relationship between the source-country female labour force participation rates and immigrant women's labour force participation in the host country persist when source-country gender-role attitudes are taken into account? Are source-country female labour force participation rates and source-country gender-role attitudes associated with immigrant women's wages in Canada?

Data from the Labour Force Survey and the World Values Survey are used. The combined May and November files of Statistics Canada's 2006-to-2012 Labour Force Survey provide information on the labour market outcomes of women who immigrated to Canada as adults and who, at the time of the survey, were aged 25 to 64 and had been living in Canada for at least one year. The data for the source-country gender-role attitudes are derived from the World Values Survey and source-country labour force participation rates are obtained from the World Bank Data Indicators on social development.

The results indicate that source-country female labour force participation rates and source-country gender-role attitudes are only moderately correlated. Moreover, although both of these source-country variables are correlated with immigrant women's labour force participation in Canada when entered separately into a regression model, only the source-country female labour force participation rate remains statistically significant when both are included. This suggests that the relationship between source-country gender-role attitudes and immigrant women's labour force participation in the host country functions through the moderate correlation between source-country gender-role attitudes and source-country female labour force participation rates.

The wage analysis, however, indicates that source-country gender-role attitudes and source-country female labour force participation influence immigrant women's labour market performance through different pathways. Women from countries with more egalitarian gender-role attitudes have higher wages in Canada than immigrant women from nations with less egalitarian attitudes. Additionally, a positive relationship is observed between the source-country female labour force participation rate and immigrant women's wages in the host country. This relationship is largely explained by occupational and industrial allocation: women from countries with higher levels of female labour force participation are more concentrated in higher paying occupations and industries. These results suggest that women from nations with high female labour force participation rates may navigate the host country's labour market differently than other immigrant women, resulting in higher-paying employment. These findings indicate that the relationship between the source-country female labour force participation rate and immigrant women's labour market outcomes extends beyond cultural gender-role attitudes.

1 Introduction

Immigration research consistently shows that labour market outcomes differ between immigrants from different source countries or source regions (Boyd and Thomas 2002; Picot 2004; Reitz and Sklar 1997; Thompson 2000). Often such studies measure these effects using country- or region-of-origin dummy variables, obscuring the varying influences that a range of national characteristics may have (Preston and Giles 2004). This study moves beyond country-of-origin indicator variables to assess specific measurements of source-country characteristics, providing a more nuanced understanding of the association between national characteristics and immigrant women's labour market activities in Canada.

The importance of national level characteristics is central in cross-national comparative studies of women's paid and unpaid work. Such studies have investigated the potential effects of national attributes, such as the level of economic development, the quality of education, and various cultural factors on women's housework, paid labour, and marital gender equality across countries (e.g., Batalova and Cohen 2002; Fortin 2005; Fuwa 2004; Kan, Sullivan and Gershuny 2011; Knudsen and Wærness 2008; Nieuwenhuis, Need and Van der Kolk 2012; Yodanis 2005). These studies suggest that cultural factors play a significant role in explaining women's paid and unpaid labour activities.

Studies examining the relationship between national characteristics and immigrant women's labour activities conclude that source-country female labour force participation levels closely capture gender-role attitudes, and that the observed association between source-country female labour force participation and immigrant women's subsequent labour market activities in the host country primarily reflects the long-lasting effect of gender-role attitudes formed early in life. However, this assumption has not been carefully examined. An important feature of this study is the inclusion of both source-country female labour force participation rates and an explicit measure of source-country gender-role attitudes. The inclusion of both allows us to assess how each of these variables is correlated with immigrant women's subsequent labour market outcomes in Canada across several measures.

The results indicate that source-country female labour force participation rates and source-country gender-role attitudes are only moderately correlated. Moreover, although both of these source-country variables are correlated with immigrant women's labour force participation in Canada when entered separately into a regression model, only the source-country female labour force participation rate remains statistically significant when both are included. This suggests that the relationship between source-country gender-role attitudes and immigrant women's labour force participation in the host country functions through the moderate correlation between source-country gender-role attitudes and source-country female labour force participation rates.

The wage analysis, however, indicates that source-country gender-role attitudes and source-country female labour force participation influence immigrant women's labour market performance through different pathways. Women from countries with more egalitarian gender-role attitudes have higher wages in Canada than immigrant women from nations with less egalitarian attitudes. Additionally, a positive relationship is observed between the source-country female labour force participation rate and immigrant women's wages in the host country. This relationship is largely explained by occupational and industrial allocation: women from countries with higher levels of female labour force participation are more concentrated in higher paying occupations and industries. These results suggest that women from nations with high female labour force participation rates may navigate the host country's labour market differently than other immigrant women, resulting in higher-paying employment. These findings indicate that the relationship between the source-country female labour force participation rate and immigrant women's labour market outcomes extends beyond cultural gender-role attitudes.

This paper is organized into six sections. Section 2 surveys the research literature that is relevant to assessing the relationship between source-country characteristics and immigrant women's labour market outcomes. Section 3 addresses the data, measures and methods. Section 4 provides the descriptive and multivariate analysis results for the study. Section 5 discusses the findings and concludes.

2 Source-country characteristics and immigrant women's labour market outcomes

Research examining the integration of immigrant women indicates that gender-related source-country factors are correlated with immigrant women's labour force participation in the host country. Studies examining this relationship conclude that a "permanent, portable" cultural factor continues to influence women's decision to participate in paid labour after migration (Antecol 2000, p. 419; Blau, Kahn and Papps 2011; Frank and Hou 2013). This is attributed to the enduring influence of source-country gender role attitudes. However, the assumption that female labour force participation levels closely capture cultural gender role attitudes has not been carefully examined.

These findings also raise additional questions regarding the impact of source-country gender-role attitudes and female labour force participation rates on other labour market outcomes of immigrant women, such as occupational attainment and wages in the host country. These outcomes have not received attention in the research literature. If source-country female labour force participation not only reflects gender-role attitudes but also contributes to human capital and job search skills, its influence may extend beyond labour force participation and also affect the occupational attainment and wages of immigrant women in Canada.

Previous research suggests that women who grow up in nations with high levels of female labour force participation often have different expectations of their future involvement in the labour force than women from other nations. Individuals who expect to engage in paid labour throughout their adult lives are more likely to be "career oriented" and to invest more in training and skill development (Blau, Kahn and Papps 2008, p. 2; Polachek 2004). Women with greater labour force involvement prior to migration may also develop greater "non-tangible" human capital that facilitates access to higher paying employment, such as leadership, cooperativeness, flexibility and "re-trainability", as well as increased familiarity with effective job search methods. (Blau, Kahn and Papps 2008; David and Lopez 2001, p. 2).

Further examination of the relationship between source-country gender role attitudes and immigrant women's labour market outcomes is also needed. Research examining the association between gender-role attitudes and women's earnings typically focuses on the gender wage gap, attributing differences to sex-typed occupational choice (England 1992; Reskin and Roos 1990). However, some researchers have found that this relationship persists when controlling for occupation, reporting that more 'traditional' gender-role attitudes (i.e., male breadwinner, female caregiver) are associated with lower earnings net of occupational differences. They argue that women who demonstrate more traditional gender-role attitudes may be less assertive or less motivated to pursue raises and promotions (Christie-Mizell 2006; Firestone, Harris and Lambert 1999; Judge and Livingston 2008; Stickney and Konrad 2007) and devote less time or effort to their paid work to "conserve energy" for child-rearing and household tasks (Stickney and Konrad 2007, p. 803). This may decrease both their productivity in the workplace and their opportunities to advance to higher-paying positions, resulting in lower earnings. Furthermore, Judge and Livingston (2008) assert that women who place greater value on household responsibilities over their financial role in the family may be more satisfied with

lower pay than women with more egalitarian gender attitudes. Thus, earnings differences between women may result despite similar occupational choices.

3 Data, measures and methods

3.1 Data

This study uses the combined May and November, 2006-to-2012 files of the Labour Force Survey (LFS) collected by Statistics Canada. The LFS is Canada's official source of monthly estimates of total employment and unemployment. It collects information on the labour market activities of the population aged 15 and older, excluding residents of collective dwellings, Aboriginal settlements, and full-time members of the Canadian Forces. It also provides monthly information on the wages of employees since 1997 and immigration status since 2006. The monthly survey contains information on more than 120,000 individuals, or close to one half of 1% of the Canadian population aged 15 and older. In any given month, the LFS sample is divided into six rotation panels that were recruited into the survey one month apart. Each rotation panel remains in the survey for six consecutive months, so up to five-sixths of the sample respondents overlap in two consecutive months. It is only when they are six months apart that the two monthly surveys have no overlap of sample respondents. Therefore, the combined May and November data used in this study contain all unique respondents in a given year.

The selected sample for the study consists of individuals who immigrated to Canada as adults (aged 20 or over at the year of landing) to ensure a long period of exposure to their source country's culture and labour market before emigration. Immigrants who arrived before the 1990s were excluded from the sample because most of them had passed their prime working age by the end of the 2000s. Immigrants who had been living in Canada less than one year were also excluded so that immigrant respondents had at least one year to adjust to the Canadian labour market. Additional sample selection criteria were that immigrants were aged 25 to 64 at the time of the survey and were not permanently unable to work. Finally, to merge individual-level data with the source-country gender-role attitudes data derived from the World Values Survey (WVS), immigrants from source countries that did not participate in the WVS over the 1994-to-2007 period were excluded (see Subsection 4.2 for details). This exclusion reduced the LFS sample size of immigrant women by about 4,900, or 14%.¹ The final immigrant sample in the study comprises 29,811 women. This sample is used to study immigrant labour force participation. A subsample of 17,089 immigrant women who were paid employees and had positive wages in the LFS reference week is used to model immigrant wages.

Source-country attributes were appended to the individual-level data for the immigrant sample selected from the LFS through the use of detailed country of birth.² As a result, immigrants in the LFS were assigned a set of source-country attributes measured at their year of arrival in Canada.

3.2 Measures

Two outcome variables are examined in this study: the first is labour force participation. It is coded as 1 if a respondent is either employed or unemployed, or 0 if the respondent is not in the labour force. Previous studies generally use this outcome to examine the association between

1. In models without source-country gender roles, the estimated coefficients for source-country female labour force participation and other key variables from this reduced sample are similar to those from the sample including immigrant women from all source countries. Thus, the sample reduction does not lead to biased estimates.

2. The source-country gross domestic product (GDP) per capita data were merged with the individual-level data through the use of both country of birth and year of arrival.

source-country gender roles and immigrant women's labour market activities in the host country. While a significant relationship has been consistently reported between these variables, we re-examine this outcome to ensure that it is replicated in our data.³ The second outcome variable is log hourly wages that workers usually received in their main job. Hourly wages are calculated from the information on weekly wages/salary and usual paid work hours per week.

The focal explanatory variable is the source-country female labour force participation rate. These rates are calculated for individuals aged 15 and older.⁴ An alternative measure is the ratio of the female labour force participation rate to the male rate. This relative measure can mitigate the impact of possible cross-country differences in the definition and measurement of labour force participation, as such issues affect women's and men's labour force participation rates similarly within countries (Antecol 2000; Blau, Kahn and Papps 2011). The relative measure can also alleviate the effects of cross-country differences in socio-demographic and institutional labour market factors that affect the overall labour force participation rates for both women and men. However, model estimates based on these two alternative measures yield the same findings. Since the coefficient of female labour force participation rates can be interpreted more intuitively than the alternative, only the results using the former measure are presented here.

The key control variable is an explicit measure of source-country gender-role attitudes derived from the World Values Survey (WVS). The WVS collects measures of people's beliefs, values, and attitudes from nationally representative samples. The questions related to gender-role attitudes are available for 83 countries that participated in at least one of waves 3 to 5 of the WVS over the 1994-to-2007 period.⁵ Three questions are used to derive the gender-role attitudes scale:⁶

- (1) Do you agree or disagree with the following statement?
When jobs are scarce, men should have more right to a job than women.
- (2) Do you agree strongly, agree, disagree, or disagree strongly with this statement?
A university education is more important for a boy than for a girl.
- (3) Do you agree strongly, agree, disagree, or disagree strongly with this statement?
On the whole, men make better political leaders than women do.⁷

These statements reflect beliefs about whether women should have equal access to jobs and higher education, and whether they have the ability for leadership roles. The values of the gender-role attitudes scale range from 1.83 to 3.59, with a mean of 2.70. Only one unique value

3. An alternative indicator is 'usual hours worked'. When hours worked is used as the dependent variable, the effects of source-country variables are in the same direction as when labour force participation is used as the dependent variable. The only differences found are with the significance levels for the source-country gender-role indicator and GDP per capita. These two variables are not significant in the model for labour force participation, but they are significant in the model for hours worked.

4. These rates were downloaded from this World Bank online database: <http://data.worldbank.org/indicator/>.

5. Fifty-four countries participated in Wave 3 of the WVS over the 1994-to-1998 period; 40 countries in Wave 4, from 1999 to 2004; and 57 countries in Wave 5, from 2005 to 2007.

6. Several studies examining gender-role attitudes use a similar method, employing several survey questions regarding attitudes toward women's roles in the household and labour force to create an index measuring gender ideology (e.g., Fortin 2005, Fuwa 2004). Others also include survey questions that address individuals' beliefs in women's role in the political sphere in their index (e.g., Firestone, Harris and Lambert 1999). The inclusion of several survey questions that measure various aspects of gender-role ideology increases the reliability of the index.

7. The first question is coded as 1: agree, 3: disagree, 2: neither agree nor disagree. The other two questions are coded as 1: agree strongly, 2: agree, 3: disagree, 4: strongly disagree. In constructing the scale, the coding of the first question is changed to 1: agree, 2.5: neither, and 4: disagree.

of gender-role attitudes is assigned to each source country.⁸ This scale has good reliability, with a Cronbach Alpha of 0.65.

Three additional source-country characteristics are included as controls for factors that may be related to immigrants' readiness for participating in the host-country labour market. The first is gross domestic product (GDP) per capita (in 2005 U.S. dollars) for immigrants' year of landing in Canada. This is used as an indicator of the source country's overall level of economic development.⁹ Immigrants from more developed countries are more likely to participate in Canada's labour market because of similarities in economic structure between their source country and Canada. The second is a dummy variable indicating whether either English or French is an official language in the source country.¹⁰ The third variable is a dummy variable indicating whether the source country is a Western country. These three variables are likely correlated with source-country female labour force participation rates and with immigrants' preparedness for work in the host-country labour market.

At the individual level, the following demographic variables are included: level of education, age at immigration, years since landing and its squared term, geographic region of residence, and survey years. Levels of education are coded as four dummy variables: less than high school, high school graduation, some postsecondary education, and graduate degree, with bachelor's degree as the reference group. The geographic region variable distinguishes the eight largest metropolitan areas in Canada (Toronto, Montréal, Vancouver, and the next five largest metropolitan areas combined—Ottawa, Calgary, Edmonton, Winnipeg, and Hamilton); the Atlantic region; Quebec, excluding Montréal; Ontario, excluding Toronto, Ottawa and Hamilton; Saskatchewan and Manitoba combined, excluding Winnipeg; Alberta, excluding Calgary and Edmonton; and British Columbia, excluding Vancouver. Toronto is the common reference category. Survey years are coded as a series of dummy variables for the LFS years used in this study. Marital status, spouse's employment status if married, and number of children younger than age 6 are also included in the model predicting labour force participation. Full-time/part-time status (1 = full time; 0, part time) and job tenure (in years) with the current employer are additional variables in the models for wages.

In addition to the above variables, industrial and occupational distributions are included as key variables in the wage model to test whether part of the association between source-country female labour force participation levels and immigrant wages works through immigrants' abilities to navigate job opportunities in a modern economy. Industrial distribution, based on the North American Industry Classification System, is coded into five categories: agriculture; primary industries, utility, construction and manufacturing; trade and transportation; finance, professional and business services; and other services. Occupational distribution is based on the first two digits of the 2006 National Occupational Classification for Statistics (NOC-S) after combining a few groups with very small sample sizes for immigrant women in the data.¹¹ There are 41 categories in the occupational distribution variable used in the model.

8. For countries that have taken part in two or three waves of the WVS, the average score from these time points is used. For countries with just one wave of the WVS, the value of gender-role attitudes is taken from the year when the WVS was collected. The limitation of the data sources prevents us from capturing the possible changes in gender-role attitudes within a given country.

9. GDP per capita data were extracted from the following United Nations Statistics Division National Accounts Aggregates Database: <http://unstats.un.org/unsd/snaama/>.

10. This variable is compiled from the World Almanac and Book of Facts (2000) and Wikipedia http://en.wikipedia.org/wiki/list_of_official_languages_by_state.

11. H0 (contractors and supervisors in trades and transportation) is combined with H1 (construction trades). H2 (stationary engineers, power station operators and electrical trades and telecommunications occupations), H3 (machinists, metal forming, shaping and erecting occupations), H4 (mechanics) are combined. H6 (heavy equipment and crane operators) is combined with H7 (transportation equipment operators and related workers). I1 (occupations unique to forestry operations, mining, oil and gas extraction, and fishing) is combined with I2 (primary production labourers). A0 (senior management occupations) is combined with A1 (specialist managers).

3.3 Methods

For all working-age immigrant women, three probit models are estimated to predict the likelihood of labour force participation. The models are specified as

$$P(Y_{ij} = 1|x) = \Phi(\alpha_g X_j^g + \beta X_j^c + \gamma X_i) \quad (1)$$

$$P(Y_{ij} = 1|x) = \Phi(\alpha_1 X_j^1 + \beta X_j^c + \gamma X_i) \quad (2)$$

$$P(Y_{ij} = 1|x) = \Phi(\alpha_1 X_j^1 + \alpha_g X_j^g + \beta X_j^c + \gamma X_i) \quad (3)$$

where $P(Y_{ij} = 1|x)$ is the probability of immigrant i from source country j participating in the labour force given a set of characteristics (X); Φ is the standard normal cumulative density function. X_j^g represents source-country gender-role attitudes, X_j^1 represents source-country female labour force participation rates, and X_j^c represents the other three source-country control variables.¹² X_i are individual-level socio-demographic variables and survey year fixed effects, as discussed in the previous section. Model 1 examines the effect of source-country gender-role attitudes in the absence of the source-country female labour force participation rate; Model 2 examines the effect of the source-country female labour force participation rate in the absence of source-country gender-role attitudes; Model 3 examines the effects of the two factors in the presence of each other.

Similar models are estimated for immigrant female paid employees, using log hourly wages as the dependent variable. An additional model is examined for this group, in which industrial and occupational distribution variables are included with source-country female labour force participation rates, gender-role attitudes and other control variables. The purpose of this additional model is to test whether the observed effect of source-country female labour force participation decreases substantially after taking into account differences in industrial and occupational distributions. A large decrease in the source-country female labour force participation coefficient would imply that any earnings advantages among immigrants from source countries with high levels of female labour force participation are at least partly attributable to their favourable allocation in the industrial and occupational structures.

Since source-country attributes are measured at the group level, regression models with cluster-robust standard errors are estimated to correct for within-cluster correlation and heteroscedasticity (Angrist and Pischke 2009; Wooldridge 2003). This differs from the Hierarchical Linear Model (HLM) approach, which assumes homoscedastic errors both at the individual and cluster levels. Cluster-robust standard errors assume no particular forms of within-cluster correlation and heteroscedasticity. The cluster in this study is based on the combination of source country (83 countries) and year at landing (a total of 22 years). There are 1,459 clusters in the data, as some year–country combinations offer no observations.

12. An analysis of correlations between source-country characteristics revealed that there are only small to moderate correlations between these variables. For example, moderate correlations were found between the source-country log GDP and whether the source country is a Western nation (Pearson $r = 0.511$, $p < 0.0001$); source-country gender-role attitudes and whether the source country is a Western nation ($r = 0.50$, $p < 0.0001$); and the source-country female labour force participation rate and source-country gender-role attitudes ($r = 0.422$, $p < 0.0001$). The inclusion of these variables in the same regression model does not lead to collinearity as none of the variance inflation factors exceeds 3.

A potential methodological issue in estimating the models for wages is related to the selectivity of being employed among immigrant women. A large proportion of immigrant women do not participate in the labour market (about 28% in the selected sample). If the decision to take part in the labour market is correlated with the determinants of wages, then regression estimates in the wage model would be biased. This is because these estimates would be based on a non-random sample and therefore could not be generalized to the broad population (Greene 2012). To check this possibility, the Heckman selection correction procedure is used. In the selection equation, the demographic variables used in the wages equation are included, along with marital status, the spouse's employment status if married and the number of children aged 0 to 5.¹³ As seen in Table A.1, the error terms in the wage model and in the selection model are not significantly correlated, so the regression estimates from the wage model are likely unbiased.¹⁴ The coefficients in the wage models with the selection correction are almost identical to those from the ordinary least squares estimates. For simplicity, only the results without the Heckman correction are discussed in the text.

4 Results

4.1 Source-country female labour force participation and gender-role attitudes

Among the 83 source countries with data on gender-role attitudes, there is a moderate correlation between country-level female labour force participation and gender-role attitudes (Pearson $r = 0.42$, $p < 0.001$). Chart 1 plots the association between source-country female labour force participation and gender-role attitudes. This chart illustrates why the two measures are only moderately correlated. On the one hand, most of the countries with low scores in gender-role attitudes also have very low levels of female labour force participation. These countries include, in ascending order of gender-role attitudes score, Iraq, Pakistan, Saudi Arabia, Jordan, Egypt, and Morocco. On the other hand, countries with very high female labour force participation rates only rank in the middle range in the distribution of gender-role attitudes. The five countries with the highest female labour force participation rates are located in sub-Saharan Africa: Ghana, Ethiopia, Uganda, Rwanda, and Tanzania. In these countries, women traditionally provide the majority of the labour in agriculture production and processing; men are primarily involved in labour activities that generate cash income. The high female labour force participation in these countries is not closely related to gender equality in broad socio-economic aspects; rather, the gender division of non-domestic labour is shaped by patriarchal norms (Doss 1999). Furthermore, countries with the highest gender-role attitudes scores (such as Norway, Sweden, France and the Netherlands) only have moderate levels of female labour force participation.¹⁵ In short, very low scores of gender-role attitudes and very low levels of female labour force participation go in tandem, but high gender-role equalities in terms of the broad socio-economic characteristics of a society do not necessarily mean that women participate in the labour market to the same extent as men. Indeed, in countries where women

13. These variables are strong predictors of immigrant women's likelihood of engaging in paid employment. The F-test of joint significance of these instruments yields a value of 56.

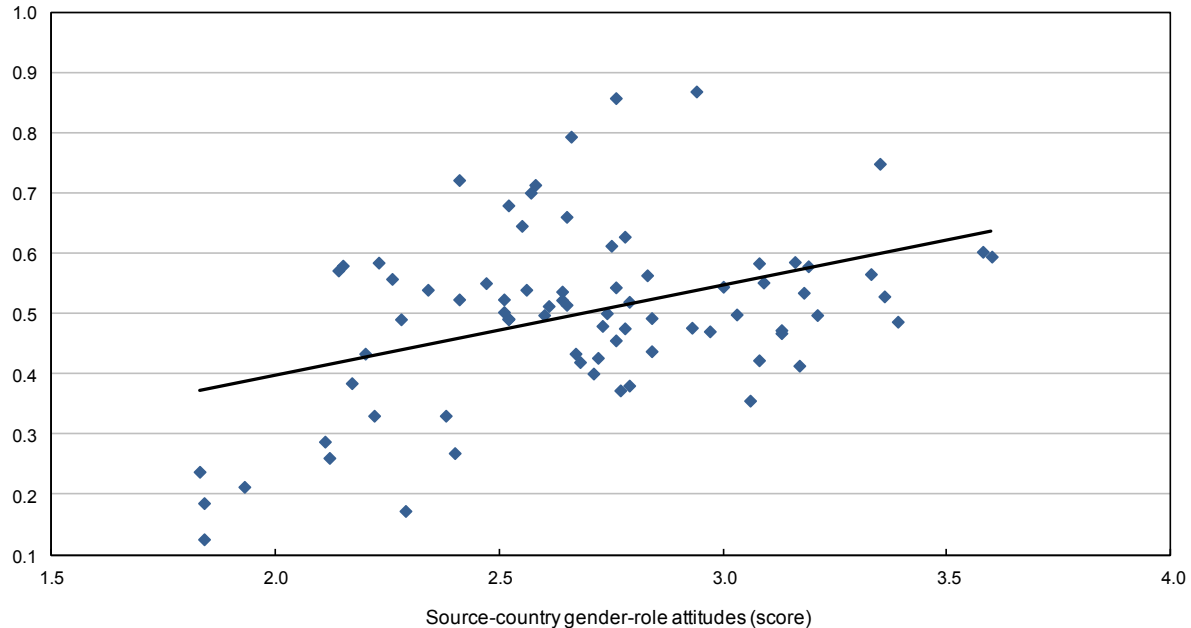
14. To examine whether the inclusion of occupation and industry affects the Heckman test, we also ran Heckman regression models excluding occupation and industry in the wage models. Again we did not find significant selection effects on our wage model estimates.

15. Jaumotte (2003, p. 7) also reports that, among European Union (EU) nations, only 1 in 10 couples with small children supported the traditional "male-only breadwinner" model. However, the results indicated that 4 in 10 of these families actually represented this traditional model. A potential explanation is related to the policies that may decrease women's participation in the labour market. For example, Jaumotte (2003) argues that higher levels of child benefits lower female labour force participation. This particularly affects women who work part-time, as the increased family income creates an incentive for them to leave the labour force. Family-based taxation is also a possible explanation since married women, as secondary earners, are taxed more heavily than single individuals in some nations of the Organisation for Economic Co-operation and Development (OECD 2004).

participate in the labour force at similar levels as men, it may often be out of necessity rather than choice (Lim 2002).

Chart 1
Source-country gender-role attitudes and female labour force participation rates

source-country female labour force participation rate



Sources: World Bank Data Indicators on social development; and World Values Survey, Waves 3 to 5.

In addition to being moderately correlated with source-country gender-role attitudes, source-country female labour force participation rates are also correlated with other characteristics that may be relevant to immigrant women’s labour market outcomes. Table 1 presents descriptive statistics for the main variables used in the subsequent multivariate models by source-country female labour force participation level. For the purpose of this table, source countries are grouped according to whether they have ‘high’ or ‘low’ female labour force participation rates. High female labour force participation rates are defined as 0.50 (or 50%) or more while low rates are less than 0.50. Note that in the multivariate models, the value of this variable remains unique to each source country in a given year of immigrant arrival, with values ranging from 0.11 to 0.87, with a mean of 0.49.

As shown in Table 1, about 55% of immigrant women in the study sample, or 16,263 out of 29,811, come from source countries with a female labour force participation rate that is less than 50% (with an average of 38.2%). Source countries with low levels of female labour force participation also tend to have lower levels of economic development, as indicated by GDP per capita, are more likely to use English or French as the official language, and are less likely to be a Western country.

Immigrant women from countries with low female labour force participation tend to have lower labour force participation rates and lower hourly wages in Canada compared with those from countries with high levels of female labour force participation. However, the two groups of immigrant women are quite similar in their demographic characteristics—educational level, age at immigration, years since landing, full-time status, and job tenure.

Table 1
Descriptive statistics among immigrant women

	All immigrant women		Paid employees	
	Source countries with low female labour force participation rates	Source countries with high female labour force participation rates	Source countries with low female labour force participation rates	Source countries with high female labour force participation rates
Source-country characteristics				
Female labour force participation rate	0.382	0.618	0.401	0.614
Source-country gender-role attitudes (score)	2.444	2.668	2.452	2.673
Log gross domestic product per capita (2005 U.S. dollars)	7.633	7.849	7.589	7.855
English or French official language (proportion)	0.606	0.219	0.655	0.244
Western countries (proportion)	0.118	0.388	0.128	0.414
Individual-level outcomes				
Labour force participation rate	0.701	0.737	...	...
Hourly wages (dollars)	...	...	18.847	21.056
Individual-level control variables				
Less than high school (proportion)	0.091	0.072	0.050	0.058
High school graduation (proportion)	0.155	0.160	0.132	0.139
Some postsecondary education (proportion)	0.275	0.293	0.304	0.289
Bachelor's degree (proportion)	0.324	0.301	0.352	0.314
Graduate degree (proportion)	0.154	0.175	0.163	0.200
Age at immigration (mean years)	33.273	33.582	32.501	32.644
Years since landing	8.627	8.948	8.970	9.301
Divorced, separated, or widowed (proportion)	0.087	0.104	0.088	0.112
Never married (proportion)	0.089	0.063	0.113	0.076
Number of children under 6 years old (proportion)	0.338	0.293	0.253	0.243
Working full time (proportion)	...	...	0.807	0.822
Tenure in years	...	...	4.568	4.684
Sample size (number)	16,263	13,548	9,286	7,803

... not applicable

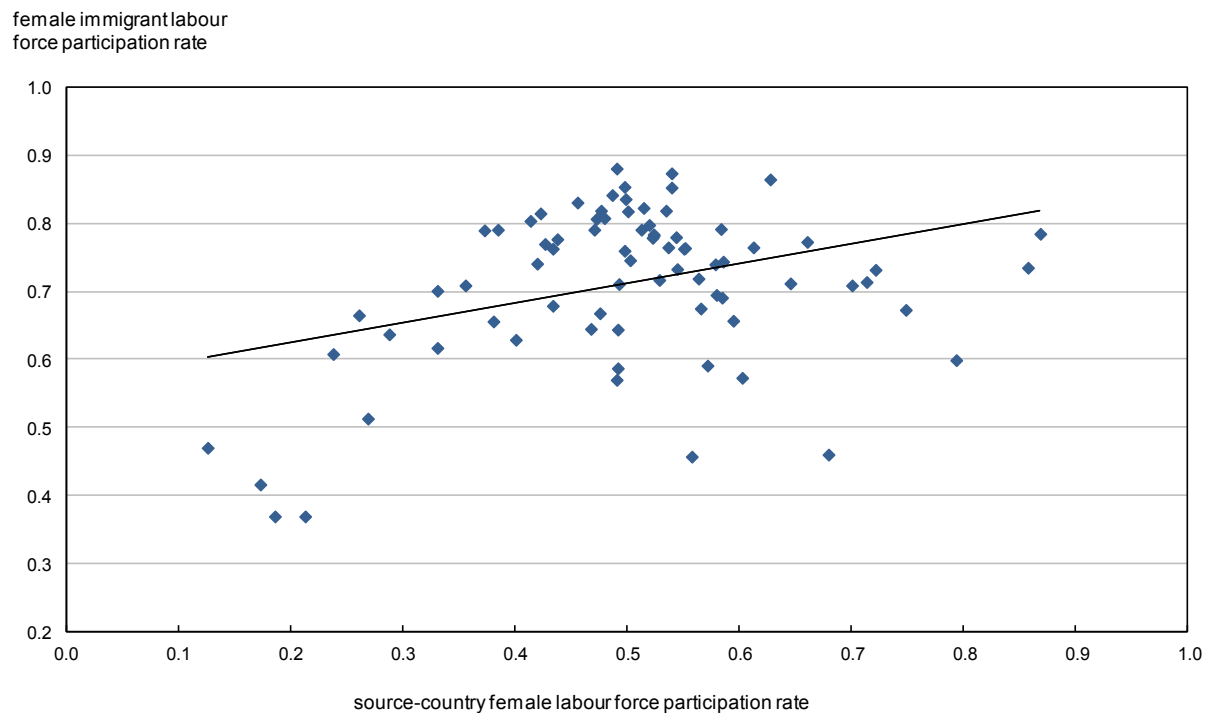
Source: Statistics Canada, Labour Force Survey, 2006 to 2012.

4.2 The association between source-country female labour force participation and immigrant women's labour force participation in Canada

Chart 2 plots the average labour force participation rates of immigrant women by female labour force participation rates in their respective source countries. The chart shows that there is a large variation in female labour force participation rates across immigrant groups in Canada. While the female labour force participation rates for most immigrant groups are in the 60% to 80% range, some groups have rates lower than 50% (e.g., those from Pakistan, Iraq, Jordan, Saudi Arabia and Taiwan) and some groups have rates higher than 85% (e.g., those from Philippines, Belarus, Romania, Albania and Zimbabwe). The chart also shows that the variation in immigrant women's labour force participation rates in Canada is positively associated with the source-country female labour force participation rate.

The bivariate associations presented in Chart 2 do not account for group differences in source-country gender-role attitudes, other source-country attributes, or variations in immigrants' socio-demographic composition. This is addressed with the probit models presented in Table 2. Table 2 presents the average marginal effects of the explanatory variables from the probit models. For dummy variables, the marginal effect is the difference in the predicted average probability of participating in the labour force between the given category and the reference category. For instance, in Model 1, the marginal effect associated with having less than a high-school education implies that immigrant women's predicted probability of participating in the labour force if they have less than a high school education is -0.243, or 24.3 percentage points lower than immigrant women with a university degree. For continuous variables, the marginal effect reflects changes in the predicted probability associated with a one unit change in the explanatory variable.

Chart 2
The association between immigrant women's labour force participation and source-country female labour force participation



Source: Statistics Canada, Labour Force Survey, 2006 to 2012.

The results for Model 1 and Model 2 in Table 2 show that, after controlling for other source-country attributes and individual-level characteristics, source-country gender-role attitudes and source-country female labour force participation are each positively associated with immigrant women's labour force participation in Canada. However, once both are in the same model (Model 3), the source-country gender-role attitudes coefficient ceases to be significant, while the effect of the source-country female labour force participation rate becomes slightly stronger. Thus, the association between source-country gender-role attitudes and immigrant women's labour force participation is accounted for by the source-country female labour force participation level. Put differently, the effect of source-country gender-role attitudes works through its moderate correlation with the source-country female labour force participation rate.

The coefficient associated with the level of female labour force participation in the source country (Model 3, Table 2) indicates that a 0.5-point increase in the source-country female labour force participation rate, which is close to the difference between Pakistan (17%) and Lebanon (20%) at the low end, and China (70%) and Vietnam (71%) at the high-middle end, is associated with a 0.177-point increase (or 17.7 percentage points) in the immigrant women's labour force participation rate (i.e., one-half of the coefficient).

Among the other three source-country attributes, immigrant women from a source country that has English or French as the official language have a higher level of labour force participation (Model 3, Table 2). Coming from a Western country is associated with a higher level of labour force participation among immigrant women in Canada; however, the level of source-country economic development is not significantly associated with their labour force participation.

Among individual-level characteristics, education and years since landing in Canada are strongly and positively associated with immigrant women's labour force participation. Older age at immigration and number of young children are negatively associated with immigrant women's labour force participation. Married immigrant women with a spouse who is not working tend to have a lower level of labour force participation than those who are married with a working spouse, likely a result of assortative mating by labour market behaviours (Ultee, Dessens and Jansen 1988).

Table 2
Probit regression predicting the probability of labour force participation among immigrants

	Model 1		Model 2		Model 3	
	marginal effect	robust standard error	marginal effect	robust standard error	marginal effect	robust standard error
Source-country gender-role attitudes	0.075 ***	0.019	...	...	-0.045	0.023
Source-country female labour force participation rate	...	...	0.313 ***	0.040	0.353 ***	0.050
Logged gross domestic product per capita	-0.019 ***	0.004	-0.011 **	0.004	-0.006	0.004
English or French official language in source country	0.051 ***	0.013	0.090 ***	0.011	0.095 ***	0.011
Western countries (reference: non-Western countries)	0.072 ***	0.010	0.072 ***	0.010	0.078 ***	0.010
Education (reference: bachelor's degree)						
Less than high school	-0.243 ***	0.017	-0.233 ***	0.016	-0.227 ***	0.016
High school graduation	-0.143 ***	0.011	-0.140 ***	0.011	-0.137 ***	0.011
Some postsecondary education	-0.028 ***	0.009	-0.032 ***	0.009	-0.031 ***	0.009
Graduate degree	0.030 **	0.011	0.035 **	0.011	0.037 ***	0.010
Age at immigration	-0.007 ***	0.001	-0.008 ***	0.001	-0.008 ***	0.001
Years since landing	0.007 ***	0.001	0.007 ***	0.001	0.007 ***	0.001
Years since landing squared	-0.001 ***	0.000	-0.001 ***	0.000	-0.001 ***	0.000
Geographic region (reference: Toronto)						
Atlantic region	0.002	0.017	0.001	0.017	0.003	0.017
Quebec (excluding Montréal)	0.008	0.018	0.026	0.017	0.033	0.017
Ontario (excluding Toronto, Ottawa and Hamilton)	-0.029 **	0.010	-0.023 *	0.010	-0.021 *	0.010
Saskatchewan and Manitoba (excluding Winnipeg)	0.046 **	0.015	0.039 *	0.015	0.038 *	0.015
Alberta (excluding Calgary and Edmonton)	0.033	0.018	0.027	0.019	0.029	0.019
British Columbia (excluding Vancouver)	0.003	0.015	-0.001	0.015	0.000	0.015
Montréal	-0.020	0.014	-0.006	0.014	-0.004	0.014
Vancouver	-0.021 *	0.010	-0.035 **	0.010	-0.036 ***	0.010
Other five large metropolitan areas	0.048 ***	0.009	0.045 ***	0.009	0.045 ***	0.009
Marital status (reference: married, spouse working)						
Married, spouse not working	-0.115 ***	0.010	-0.115 ***	0.010	-0.116 ***	0.010
Divorced, separated or widowed	0.019	0.011	0.020	0.011	0.021	0.011
Single	0.054 ***	0.013	0.048 ***	0.013	0.048 ***	0.013
Number of children under 6 years old	-0.162 ***	0.007	-0.160 ***	0.006	-0.160 ***	0.006

... not applicable

* significantly different from reference category (p<0.05)

** significantly different from reference category (p<0.01)

*** significantly different from reference category (p<0.001)

Notes: Survey year fixed effect is included in all three models. Sample size is 29,811 in all three models. Pseudo R squared values are as follows: Model 1: 0.103; Model 2: 0.110; Model 3: 0.110.

Source: Statistics Canada, Labour Force Survey, 2006 to 2012.

4.3 The association between source-country female labour force participation and immigrant women's wages

Chart 3 plots the average log hourly wages of immigrant women by female labour force participation rates in their respective source countries. A large variation is clearly apparent in log hourly wages across immigrant groups. While most have hourly wages between \$15 (log hourly wage 2.7) and \$22 (log hourly wage 3.1), nine groups of immigrant women are above this range and five groups are below.¹⁶ The variation in immigrant women's log hourly wages is positively associated with the source-country female labour force participation rate.

The regression models for immigrant women's log hourly wages are presented in Table 3. The results for Model 1 and Model 2 show that, after controlling for other source-country attributes and individual-level characteristics, source-country gender-role attitudes and source-country female labour force participation rates, in the absence of the each other, are strongly associated with immigrant women's hourly wages. When both source-country attributes are included in the same model (Model 3), their coefficients decrease in size but remain significant. This result suggests that source-country gender-role attitudes and source-country female labour force participation levels are independently associated with immigrant women's wages, even after their overlapping effects are taken into account. The source-country female labour force participation coefficient indicates that a 0.5-point increase in the source-country female labour force participation rate corresponds to an 8.5% increase in wages (i.e., one-half of the coefficient).

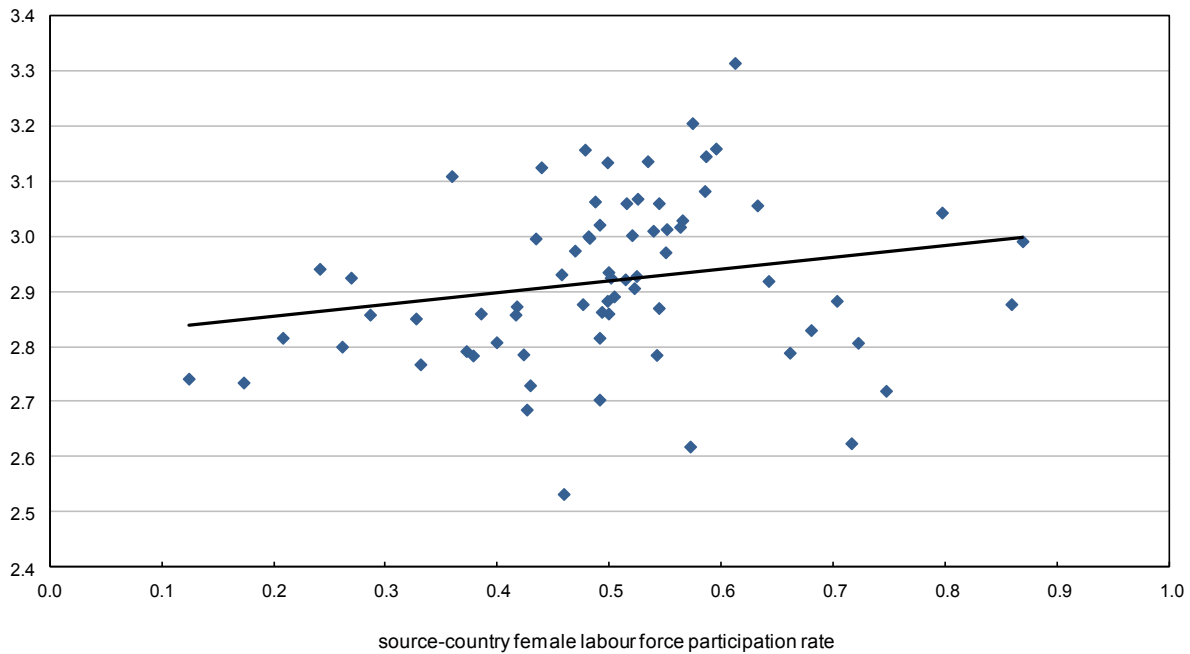
Among the other source-country attributes, GDP per capita is positively associated with the hourly wages of immigrant women (Model 3, Table 3). Coming from a Western country is also strongly associated with increased wages. This variable likely captures the wage difference between Whites and visible minority groups, as source-country economic development and individual-level demographic variables are controlled for in the model. Unfortunately, this cannot be tested here; the LFS does not collect information on visible minority status.

16. The former nine groups include immigrants from Zambia, New Zealand, Sweden, Argentina, the United States, the United Kingdom, Germany, South Africa, and Italy. The latter five groups include immigrants from the Dominican Republic, Bangladesh, Vietnam, Guatemala, and South Korea. A similar group variation in wages is also found when the analysis is replicated with the 2006 Census 20% sample microdata. For instance, the weekly wages in 2005 of immigrant women by source country were \$752 for Sweden; \$707 for Zambia; \$684 for South Africa; \$644 for the United Kingdom; \$640 for New Zealand; and \$613 for the United States. At the lower end, the weekly wages were \$330 for the Dominican Republic; \$392 for Bangladesh; and \$398 for South Korea.

Chart 3

The association between immigrant women's hourly wages and source-country female labour force participation

female immigrant log
hourly wages



Source: Statistics Canada, Labour Force Survey, 2006 to 2012.

When industrial and occupational distributions are included, the coefficient for source-country female labour force participation decreases by three-quarters and ceases to be significant (Model 4, Table 3). This result implies that the higher wages of immigrant women from source countries with higher female labour force participation are primarily attributable to their greater concentration in higher-paying industries and occupations. That is, differential allocation of industries and occupations account for the association between source-country female labour force participation and wages of immigrant women. In comparison, the coefficient of source-country gender-role attitudes decreases by about one-quarter, and remains statistically significant when industry and occupation are controlled for (Model 4, Table 3). The relationship between source-country gender-role attitudes on immigrant women's wages does not seem to act primarily through industrial/occupational allocation, but rather through career advancement within the same industry/occupation.

Table 3

Ordinary least squares regression predicting log hourly wages of immigrant women

	Model 1 ¹		Model 2 ¹		Model 3 ¹		Model 4 ²	
	coefficient	robust standard error	coefficient	robust standard error	coefficient	robust standard error	coefficient	robust standard error
Intercept	2.297 ***	0.054	2.349 ***	0.051	2.286 ***	0.054	3.014 ***	0.044
Source-country gender-role attitudes	0.106 ***	0.020	...	...	0.058 **	0.022	0.042 *	0.017
Source-country female labour force participation rate	...	...	0.218 ***	0.038	0.170 ***	0.044	0.038	0.031
Logged gross domestic product per capita	0.032 ***	0.005	0.045 ***	0.004	0.038 ***	0.005	0.013 **	0.004
English or French official language in source country	0.000	0.011	0.023 *	0.011	0.018	0.011	0.018 *	0.008
Western countries (reference: non-Western countries)	0.053 ***	0.013	0.065 ***	0.013	0.057 ***	0.013	0.043 ***	0.011
Education (reference: bachelor's degree)								
Less than high school	-0.409 ***	0.017	-0.400 ***	0.017	-0.407 ***	0.017	-0.130 ***	0.014
High school graduation	-0.312 ***	0.014	-0.305 ***	0.014	-0.310 ***	0.014	-0.074 ***	0.011
Some postsecondary education	-0.154 ***	0.011	-0.155 ***	0.011	-0.155 ***	0.011	-0.041 ***	0.008
Graduate degree	0.172 ***	0.014	0.177 ***	0.014	0.175 ***	0.014	0.072 ***	0.012
Age at immigration	-0.003 ***	0.001	-0.003 ***	0.001	-0.003 ***	0.001	-0.001	0.000
Years since landing	0.008 ***	0.001	0.008 ***	0.001	0.008 ***	0.001	0.005 ***	0.001
Years since landing squared	-0.001 ***	0.000	-0.001 ***	0.000	-0.001 ***	0.000	-0.001 ***	0.000
Working full time (reference: working part-time)	0.126 ***	0.011	0.122 ***	0.011	0.122 ***	0.011	0.042 ***	0.008
Tenure in years	0.020 ***	0.001	0.020 ***	0.001	0.020 ***	0.001	0.015 ***	0.001
Geographic region (reference: Toronto)								
Atlantic region	-0.090 ***	0.021	-0.086 ***	0.021	-0.090 ***	0.021	-0.116 ***	0.018
Quebec (excluding Montréal)	-0.039	0.026	-0.017	0.025	-0.027	0.025	-0.045 *	0.020
Ontario (excluding Toronto, Ottawa and Hamilton)	-0.017	0.012	-0.013	0.012	-0.016	0.012	-0.009	0.010
Saskatchewan and Manitoba (excluding Winnipeg)	0.005	0.019	0.003	0.019	0.003	0.019	-0.006	0.015
Alberta (excluding Calgary and Edmonton)	0.061 *	0.024	0.060 *	0.024	0.059 *	0.024	0.067 **	0.020
British Columbia (excluding Vancouver)	0.002	0.018	0.003	0.018	0.001	0.018	0.024	0.014
Montréal	-0.065 **	0.017	-0.055 ***	0.017	-0.058 ***	0.017	-0.070 ***	0.013
Vancouver	-0.034 ***	0.012	-0.040 **	0.012	-0.039 **	0.012	-0.021 *	0.010
Other five large metropolitan areas	0.065 ***	0.011	0.063 ***	0.011	0.062 ***	0.011	0.050 ***	0.009

... not applicable

* significantly different from reference category (p<0.05)

** significantly different from reference category (p<0.01)

*** significantly different from reference category (p<0.001)

1. The survey-year fixed effect is included in this model. The industry and occupation fixed effects are not included.

2. The survey-year, industry and occupation fixed effects are included in this model.

Notes: Sample size in all four models is 17,089. Adjusted R squared values are as follows: Model 1: 0.245; Model 2: 0.246; Model 3: 0.247; Model 4: 0.499.

Source: Statistics Canada, Labour Force Survey, 2006 to 2012.

Comparing the top 10 occupations (based on the first two digits of the 2006 NOC-S codes) for immigrant women from countries with low and high levels of female labour force participation yields a more detailed account of differences in their occupational distribution, and of how these differences are related to their wages (Table 4). Variations in the types of occupations held are apparent. Clerical and Elemental sales and service occupations are the top two groups for women from both sets of source countries; however, a greater share of women from countries with low female labour force participation hold these jobs than the share of women from countries with high female labour force participation. Furthermore, several occupational categories differ between the two groups. Most notably, although 7% of women from countries with high female labour force participation rates work in professional occupations in the natural and applied sciences—highly paid occupations—this group is not among the top 10 occupations of women from countries with low female participation rates. Moreover, two low-paying groups appear only in the top occupations of immigrant women from low female labour force participation countries: Childcare and home support workers and Cashiers. Within the same occupation, women from countries with high female labour force participation tend to have higher wages than women from low female labour force participation countries; however, the gap is generally small. For instance, the wage gap in the top two occupations is about 4% to 6%. Overall, these results suggest that the lower average wages of women from countries with low female labour force participation is owing to their relative concentration in low-paying occupations.

The allocation of industries and occupations is also an important mechanism through which several other variables affect immigrant women's wages. This is evident from the large decreases in the coefficients of these variables (Model 4, Table 3). In particular, the inclusion of industrial and occupational distributions reduces the size of the coefficients associated with GDP per capita, coming from a Western country, education, age at immigration, and years since landing. These results suggest that immigrant women who emigrated from developed economies and Western countries, have higher educational levels, arrived at a younger age, and have resided in Canada longer are more likely to work in higher-paying industries and occupations.

Table 4**Percent share and hourly wages of the top 10 2-digit occupations¹ among employed immigrant women**

	Share	Hourly wage
	percent	dollars
Source countries with low female labour force participation rates		
Clerical occupations	13.8	17.3
Elemental sales and service occupations ²	11.1	12.9
Assisting occupations in support of health services	6.0	19.3
Childcare and home support workers	4.6	13.9
Paralegals, social services workers	4.6	18.3
Teachers and professors	4.2	28.2
Machine operators in manufacturing	3.8	14.2
Professional occupations in business and finance	3.7	26.8
Cashiers	3.7	11.6
Retail salespersons and sales clerks	3.7	12.3
Source countries with high female labour force participation rates		
Clerical occupations	12.2	18.4
Elemental sales and service occupations	10.0	13.4
Professional occupations in natural and applied sciences	7.3	33.3
Professional occupations in business and finance	6.2	27.6
Teachers and professors	4.2	31.3
Assisting occupations in support of health services	4.2	18.0
Machine operators in manufacturing	4.0	14.1
Paralegals, social services workers	3.8	19.1
Technical occupations related to natural and applied sciences	3.7	25.2
Retail salespersons and sales clerks	3.0	13.0

1. Based on the first two digits of the 2006 National Occupational Classification for Statistics (NOC-S) codes.

2. Elemental sales and service occupations includes barbers and hairstylists, cleaners and janitors, food counter and kitchen helpers, butchers and bakers.

Source: Statistics Canada, Labour Force Survey, 2006 to 2012.

5 Conclusion

This study contributes to the literature in two ways. First, the association between source-country female labour force participation—assumed to represent a country's gender attitudes—and an explicit measure of source-country gender-role attitudes is examined in detail. Second, the relationships between source-country female labour force participation and the labour market participation and wages of immigrant women in Canada are investigated. In particular, this study examines whether the relationship between source-country female labour force participation rates and immigrant women's labour market outcomes is limited only to the influence that cultural gender-role attitudes have on women's participation in the host country's labour market—or if this characteristic is also associated with their wages.

This paper finds that high levels of attitudes favouring gender equality do not necessarily translate into high levels of female labour force participation. Only a moderate correlation is found between the source-country female labour force participation rate and source-country gender-role attitudes. And when both of these variables are included in a model of labour force participation in Canada, only the source-country female labour force participation rate is statistically significant. This suggests that the effect of source-country gender-role attitudes works through its relationship with the source-country female labour force participation rate.

These findings are consistent with those of previous studies that observe a positive relationship between source-country female labour force participation rates and immigrant women's labour supply in the host country (e.g., Antecol 2000; Blau, Kahn and Papps 2011; Frank and Hou 2013).

The analysis of immigrant women's wages shows that immigrant women from nations with high levels of female labour force participation receive higher wages than women from other nations. This is largely attributable to their concentration in higher-paying industries and occupations. One interpretation is that high female labour force participation in the source country may contribute to the acquisition of specialized skills, labour market knowledge or other unobserved human capital that is useful in obtaining higher paying employment in the host country (e.g., more work experience, greater familiarity with high-paying firms or industries, better understanding of qualifications needed to enter high-paying occupations). These factors may be particularly beneficial for immigrants from countries with a labour market similar to that of the host country.

Unlike the results for the source-country female labour force participation variable, the statistically significant and positive relationship between source-country gender-role attitudes and immigrant women's wages persists when occupation and industry are taken into account. This finding indicates that gender-role attitudes affect immigrant women's wages through a different mechanism and supports previous research that finds a direct relationship between gender-role attitudes and women's wages. Whether this is due to higher salary expectations, greater assertiveness or greater motivation to pursue promotions and raises among women with more egalitarian gender-role attitudes cannot be determined from the data used for this study.

6 Appendix

Table A.1
Regression model predicting log hourly wages of immigrant women with Heckman correction for selection into employment

	Regression results	
	coefficient	robust standard error
Earnings model		
Intercept	3.023 ***	0.049
Source-country female labour force participation rate	0.028	0.461
Source-country gender-role attitudes	0.044 *	0.011
Log gross domestic product per capita	0.013 **	0.002
English or French official language in source country	0.015	0.148
Western countries (reference: non-Western countries)	0.040 ***	0.001
Education (reference: bachelor's degree)		
Less than high school	-0.124 ***	0.000
High school graduation	-0.071 ***	0.000
Some post secondary education	-0.040 ***	0.000
Graduate degree	0.072 ***	0.000
Age at immigration	-0.001	0.157
Years since landing	0.005 ***	0.000
Years since landing squared	-0.001 ***	0.000
Working full time (reference: working part time)	0.042 ***	0.000
Tenure in years	0.015 ***	0.000
Selection model (probit)		
Intercept	0.967 ***	0.152
Source-country female labour force participation rate	1.224 ***	0.160
Source-country gender-role attitudes	-0.156 *	0.077
Log gross domestic product per capita	-0.008	0.014
English or French official language in source country	0.361 ***	0.041
Western countries (reference: non-Western countries)	0.249 ***	0.035
Education (reference: bachelor's degree)		
Less than high school	-0.658 ***	0.043
High school graduation	-0.391 ***	0.031
Some postsecondary education	-0.105 ***	0.028
Graduate degree	0.086 *	0.037
Age at immigration	-0.024 ***	0.002
Years since landing	0.022 ***	0.003
Years since landing squared	-0.003 ***	0.000
Marital status (reference: married, spouse working)		
Married, spouse not working	-0.308 ***	0.029
Divorced, separated or widowed	0.051	0.038
Single	0.140 **	0.045
Number of children under 6 years old	-0.462 ***	0.020

* significantly different from reference category (p<0.05)

** significantly different from reference category (p<0.01)

*** significantly different from reference category (p<0.001)

Notes: Location of residence and survey year fixed effects are included in both models. Industry and occupation fixed effects are included in the earnings model. Sample size is 31,741.

Source: Statistics Canada, Labour Force Survey, 2006 to 2012.

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