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Does Higher Education Make a Difference? The Influence of Educational Attainment on Women's and Men's Employment Outcomes

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by

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ABSTRACT

Scholars agree that precarious employment is growing across and within all occupations and industries, but little is known on the educational attainment of precarious workers. Some studies suggest that recent graduates, women, and the less educated are more likely to be employed in precarious work. Other research contends that involuntary precarious employment is rising among all groups and educational levels. Using the May 2018 Labour Force Survey, this study explores whether higher education protects men and women from precarious employment, and if higher education has a protective effect on men's and women's wages within precarious employment. Findings suggest that women, regardless of their educational attainment, are more likely to be precariously employed. Further, the study shows that higher education does not improve wage earnings for men and women within precarious work. For men, higher levels of education resulted in a wage penalty, whereas women earned a wage premium at lower levels of educational attainment.

Keywords: precarious employment; nonstandard employment; educational attainment; gender; Canada

INTRODUCTION

Over the past several decades, changes in the Canadian labour market has led to the rise of various types of precarious employment (Kalleberg and Hewison 2013; Flink 2017; Campbell and Price 2016; Full and Vosko 2008). Precarious work is employment conditions often found in part-time, seasonal, contract, and self-employment, and is characterized by its limited employee protection, poor pay and employment benefits (Cranford, Vosko, and Zukewich 2003; Fuller and Stecy-Hildebrandt 2015; Kalleberg 2009). Moreover, precarious work is risky to employees (Kalleberg 2009). This employment has consequences on individuals' living conditions, health and wellbeing (Ek et al. 2014; Kalleberg 2009; Menéndez et al. 2007; Tompa et al. 2007). Countless studies have reported employment precarity leading to high amounts of occupational stress and psychological disorders (Ek et al. 2014; Menéndez et al. 2007; Tompa et al. 2007).

Higher education traditionally protected individuals from exposure to precarious employment, as investments in postsecondary education are promised to provide work that is secure and higher paid (Becker 1994). However, shifts towards market deregulation, privatization, and an intensification in international competition have diffused precarious employment across educational groups (Branch and Hanely 2018). Recent research by the Canadian Centre for Policy Alternatives (Hennessey and Tranjan 2018) indicate that precarious employment is rising among highly skilled occupations with 22% of Canadian professionals reporting employment in part-time or contract work. Employment conditions that were only common in secondary and low-wage sector are now seen across industries, occupations, educational groups, and wage levels, creating new employment standards (Branch and Hanely 2018; Kalleberg 2011). Standard employment, which is permanent, full-time work with regular pay that includes benefits (Campbell and Price

2016; Full and Vosko 2008; Flink 2017; Kalleberg and Hewison 2013), has been more difficult to secure for new graduates entering the labour market (Means 2017).

These situations are highly gendered, as women have higher representation in temporary and part-time work (Worth 2016). There are two main explanations for women's overrepresentation in precarious employment. First, gender inequalities and societal norms, such as the breadwinner model, have feminized precarious employment causing women to experience barriers in attaining standard employment (Young 2010). At the same time, women typically demand greater flexibility in the workplace to balance their roles as caregiver and worker. Women may choose to enter into precarious employment to lighten their paid work duties (Tézli and Gauthier 2009). Yet few studies have analyzed if women's educational attainment changes their representation in precarious employment. So while it is known that women are overrepresented in precarious work, there is a lack of research that analyzes if highly educated men and women are equally represented in precarious employment.

This study uses the Canadian Labour Force Survey (LFS) data from May 2018 to answer three questions regarding higher education, gender, and precarious employment. First, does higher education protect individuals from entering precarious employment? Second, does higher education protect men and women equally from entering precarious employment? Lastly, does higher education have a protective effect on men's and women's wages within precarious employment? This last research question arises to address the protective effects of education within precarious employment. Earning a postsecondary education may lessen the negative aspects of precarious employment, such as poor pay.

To answer these research questions, I use nationally representative Canadian data that looks at men's and women's highest level of educational attainment and their likelihood of precarious

employment. Surprisingly few studies view standard employment as a return to higher education, and even fewer examine the gendered association between education and employment outcomes. Moreover, this is one of few studies to investigate the protective effects of education within precarious employment. Countless research has demonstrated that precarious work leads to poorer wages, but no study has examined if there are educational differences in pay among precarious workers.

THE NEW EMPLOYMENT STANDARD

The proliferation of precarious employment has occurred in an era of globalization in which neoliberal policies have been the guiding force behind its expansion (Harvey 2005). Beginning in the mid-to-late 1970s, the process of globalization intensified economic integration, increased market competition, and exposed companies to experiencing economic shocks from around the world (Fuller and Stecy-Hildebrandt 2015). At the same time, legal institutions that provided employee protections were eroded, as were government regulations that mediated the effects of globalization (Kalleberg 2009). In the 1980s and 1990s, policies that provided employees with security were dismantled through employers' efforts to expand labour practices of union busting, subcontracting, and layoffs (Branch and Hanely 2018; Smith 1997). For instance, union representation was weakened in the workplace with the introduction of back-to-work legislation in 1986. This legislation took labour power away from employees and abled governments to end labour disputes (Godard 2013). These practices, which have traditionally been confined to the secondary labour market, expanded across all occupations to adapt to intensified global competition (Branch and Hanely 2018).

Companies have also adopted a new set of hiring practices to be advantageous in the global labour market (Kalleberg and Hewison 2013). Employers have reduced the number of jobs that

follow the standard employment relationship; that is, employment that is permanent, full-time work facilitated by an employer at their place of business and with regular pay that includes benefits (Kalleberg and Hewison 2013; Flink 2017; Campbell and Price 2016; Full and Vosko 2008). Supplementing this labour is precarious employment. These are employment conditions that are unpredictable, uncertain, and risky from the point of view of the employee (Kalleberg 2009). Researchers on precarious work have deemed this as the new employment standard or the shift towards precarious nonstandard work (Campbell and Price 2013).

The growth of precarious employment raises several concerns. Precarious work is related to adverse living outcomes, such as increased economic inequality, unstable and uncertain living conditions, and poor physical and mental wellbeing (Campbell and Price, 2016; Menedez et al. 2007; Kalleberg 2009). Specifically, the experience of constant precarity can result in poor living situations, such as not having stable pay to meet monthly expenses (Kalleberg 2009). In addition to poor living arrangements, the strain experienced by unstable working conditions can lead to psychiatric disorders, such as chronic depression and anxiety, and physiological concerns like a compromised immune system (Tompa et al. 2007). Embedded within precarious employment is several dimensions of precarity. The different dimensions include workplace flexibility, inadequate income, labour insecurity, and a lack of control over wages, hours, and working conditions (Vosko et al. 2003). The following paragraphs will discuss these four dimensions in greater detail.

DIMENSIONS OF PRECARIOUSNESS

The first dimension of precarious employment is workplace flexibility. This is an employer's ability to decrease or increase employment or wages without repercussions (Arnold

and Bongiovi 2013). Companies utilize flexible labour to reduce their fixed labour costs, ease expenses, and exploit contract and temporary workers from third-party agencies to surpass labour regulations tied to permanent work. This helps companies avoid risk during periods of economic uncertainty as well as improves productivity for employers. Additionally, flexible labour falls outside of the scope of employment legislation. As a consequence, those employed in flexible forms of labour are not protected from harmful labour practices, such as wrongful dismissals (Fudge 1991).

The second dimension of precarious employment is poor wages. A job may be secure in the sense that it provides stable and long-term employment; however, it still may be precarious because workers are unable to live on their wages (Cranford et al. 2003). In Canada, for instance, full-time full-year minimum wage jobs push workers into a standard of living that is well below the poverty level (Fudge 1991). Thus, wage levels are considered precarious if they are at an insufficient level for an individual to support themselves or dependents (Cranford et al. 2003). Work is also considered precarious if it does not provide non-wage benefits that help cover contingency risks (i.e., medical emergencies, economic recessions, pregnancy). Workers that lack non-wage benefits take on the burden of contingency risks, and as a consequence, can experience setbacks in their future.

Another dimension of precious work is labour insecurity, such as employment that has high turnover rates or employment that has arbitrary regulations on dismissals (Smith 2013). Mainly, precarious employment does not have statutory regulations. In labor market terms, statutory regulations include: (1) protective regulations that prevent abuse of power; (2) fiscal regulations which taxes and subsidies to encourage a specific form of labor activity and discourage other forms; (3) regulations that prevent something that the state does not want to occur; (4) promotional

regulations put in place to promote the interests of the workers; and (5) facilitating regulations that permit specific activities to take place, if the worker desires to do so (Standing 1997). Statutory regulations exist to protect employees; however, they are often eroded or non-existent in precarious work situations (Standing 1997).

The last dimension of precarious employment is a lack of control over the labour process. This dimension is highly linked to unionization. Unions give employees' collective representation and bargaining power, and thus allow employees to have a say in their working conditions (Standing 2011). Those that are not covered under union representation are left to rely on Canadian employment and labour legislation, which usually provide limited workers' rights (Gleeson 2016). Without collective bargaining power, employees have a small amount of control over their wages, hours, and employment (Standing 2011).

Under these dimensions, part-time work; contract; self-employment; or outsourced and temporary employment can all fall under the scope of precarious employment (Branch and Hnaely 2018). Overall, the literature agrees that these forms of employment have a degree of workplace flexibility, low wages and statutory benefits, and job insecurity (Vosko et al. 2003).

While most scholars interchange nonstandard and precarious work with each other, there are differences (Campbell and Price 2016). Nonstandard work is not always in favor of the employer, and if it is voluntary, nonstandard work can benefit employees (Kretos and Livanos 2016). For example, a student may want to work part-time hours to balance school and work. In fact, governments have implemented flexibility policies to benefit employees. For example, the 2016 right to request flexible work arrangements allow employees to request flex work (e.g., move from full-time employment to part-time employment) at their discretion. This legislation is framed

by the Canadian federal government as allowing employees to balance their work and personal lives (Social Development Canada 2017).

EDUCATION AND PRECARIOUS EMPLOYMENT

There is reason to suspect that higher education will improve access to standard forms of employment. Becker's (1994) human capital theory suggests that investments in human capital, which is an employee's skillset, knowledge, and experience, give employees greater employability in the labour market. Human capital theory also proposes that employee's educational attainment is matched to the appropriate jobs and rewards, and that investments in education provides higher returns. Employers are more likely to reward highly educated employees with higher wages, benefits and better working conditions because they produce greater productivity in the workplace (Becker 1994). Such rewards reduce the precariousness of a job position (Young 2010). Under this perspective, standard employment is another type of reward that employers use to compensate employees for their productive labour.

The highly educated may also avoid entering precarious employment because lower-skilled occupations are precarious in essence. For instance, blue-collar occupations, which do not require much education and skill, are more precarious than white-collard jobs (Kretos and Livanos 2016). These occupations are more likely to be contract, seasonal, or self-employed. Therefore, the less educated may filter into precarious employment because of limited occupational choices.

However, recent research contends both these ideas. Standing's (2011) theory of the precariat arguably describes precariousness as a class condition for recent university graduate cohorts. He argues that the intensification of global competition for jobs and resources has caused

even the most educated to be at risk of unemployment[1] or precarious employment. Mounting evidence shows that global education systems are producing a global surplus of credentialed, highly skilled workers at faster rates than they can be effectively integrated into the labour market (Means 2017). According to Statistics Canada (2015) the average youth unemployment rate (15-24) was 13.7% in 2013. This was 2.3 times that of workers aged 25-54 (5.9%) and is the second largest gap recorded since 1977.

Concepts such as underemployment and over-schooling have been used to explain the mismatch of education and employment. Underemployment, for instance, has caused shortages of careers that provide fulfilling work for the overly educated, and recent graduates find themselves in work they are overqualified to perform (Livingstone 1998). The Canadian Labour Congress predicts that the underemployment rate of Canadians is near 12%. This rate is pronounced for youth (15-24) with their rate standing at 28% (Canadian Labour Congress [CLC], 2015). In many circumstances, those that are underemployed are placed into involuntary part-time or contract positions (Livingstone 1998). A recent report by the Canadian Center for Policy Alternatives (2018) discusses that 45% of young professionals say a full-time, permanent job is almost non-existent for anyone entering a profession, and 58% said jobs used to be more secure.

Likewise, over-schooling – i.e., the vast supply of overly educated youth with an unequalled demand for their talent in the labour market – has caused an overabundance of highly educated individuals who compete for the few careers that match their skillset (Van de Werfhost and Anderson 2005). As a consequence of this competition, many highly educated workers are

[1] Some studies note that precarious work and unemployment are highly related. For example, Kretos and Livanos (2016) found that precarious workers were more likely to experience longer periods of unemployment. In this sense, precarious employment and unemployment are interrelated.

allocated to mid-level jobs. It proceeds logically that those with low levels of education are pushed into low quality, precarious employment (Van de Werfhost and Anderson 2005).

Recent graduate students and postdoctoral fellows can provide as an excellent case example of the above concepts. Academia holds a "publish or perish" attitude for incoming academics. That is, doctoral students and postdoctoral fellows are continuously reminded of the oversupply of people with a doctorate in relation to the available, secure positions in academia and are pressured to improve their CV to attain a nonprecious position (Neilson, 2015). The introduction of a tenure-track position has created a race for academics to secure the very few standard employment positions (De Weert 2009; Leišytė 2016). Those who are unable to be hired as a tenure-track professor will either be trapped in contract academic positions or are pushed into a non-academic career that they are highly overqualified to perform (Leišytė 2016).

THE DEMOGRAPHICS OF PRECARITY

The relationship between educational attainment and employment is not homogenous. Women are more at risk for entering precarious employment than others despite their educational attainment. Women are more likely to be in positions of part-time, temporary, and marginal employment, and recent research argues that this trend is persisting (Young 2010). In Canada, only 44% of women work full-time, full-year, whereas 56% of men work full-time, full-year (Statistics Canada 2017). Even within standard employment, women are more likely to experience a degree of precariousness. Compared to their male equivalents, women earn less, are less likely to hold permanent job positions, and are less likely to have union protections (Young 2010).

There are two main explanations for why women are overrepresented in precarious employment. The first postulates that women make rational choices to go into precarious

employment because it allows for flexibility between work and family obligations. Women may choose to work part-time to allow them to care for their children. They may also feel pressured and burdened with child and domestic duties (Tézli and Gauthier 2009), invest less time in their human capital and chose to opt out of labour force at points throughout their lives (Becker 1994). Consequently, the demands of child rearing prevent women from long-term, stable, and successful careers.

On the other hand, some argue that precarious work is feminized due to persisting gender inequalities. Women are segregated from high paying careers and better working conditions through mechanisms that funnel them into poorly paid and insecure work (Menéndez et al. 2007). An example of a mechanism is statistical discrimination in hiring decisions, where employers discriminate based on stereotypes about women (Young 2010). According to Phelps (1972) when employers lack a direct interpretation of a particular employee's abilities, they will look at groups averages to make judgements on their productive capacity. Employers who seek to maximize profits will discriminate against women if they believe this group is less productive than others. For instance, employers may assume that women will take maternity leave at some point in their career, and place them in contract or part-time positions to lessen the loss of skilled labour during their leave (Betti 2016). Employers may also believe that women are too emotional to perform full-time, full-year work. This idea proposes that women, despite their investments in education or skillset, can be penalized across and within all occupational types (Young 2010).

Gender and age interact in employment outcomes. This happens for multiple reasons. Firstly, youth and older adults use precarious work as bridging jobs to transition into and out of the labour force. Particularly for youth, some use precarious employment as a way to gain experience and eventually transition into better employment (Watson 2013). Secondly, women

and men who received their education in different years may have different employment outcomes due to the macro changes in labour market. For instance, in recent times there is an oversupply of highly skilled and educated youth entering the labour market with a lack of demand for their talent. In previous decades, highly skilled workers would have an easier time transitioning into the labour market (Means, 2017; Watson 2013). Younger cohorts entering the labour market may start in positions of precarious employment due to the lack of available permanent, full-time careers (Standing 2011). Lastly, women at certain ages are more likely to opt out of standard employment to balance family obligations and work. For example, women in their 30s are more likely to have children than women in their early 20s.

Despite the research that has been conducted, the existing literature has gaps. It remains unclear whether higher education protects men and women equally from precarious employment. Moreover, previous studies on precarious employment often use American data that is not nationally representative and yields small sample sizes. Therefore, The proceeding paper contributes to the existing literature by using nationally representative Canadian data that looks at men's and women's highest level of educational attainment and whether they are in standard or precarious employment. This paper also contributes to the existing literature through exploring the protective effects of higher education on men's and women's wages.

DATA AND METHODS

Data

This study uses the May 2018 cycle of the Canadian Labour Force Survey (LFS). The LFS is a nationally representative sample of the non-institutionalized population aged 15 to 64 conducted monthly by Statistics Canada since 1976. The May 2018 LFS is the most recently

available labour force survey. The LFS uses a rotating panel sample design that interviews the same respondents for six consecutive months while rotating six different groups that are surveyed at different times. More specifically, at each month about one-sixth of the LFS sampled dwellings are in their first month of the survey, while another one-sixth is in their second month of the survey, and so on. Responding to the LFS is mandatory and generates a non-response rate of less than ten percent. All respondents are interviewed using computer-assisted telephone interviews (CATI). The sample size of the 2018 LFS was 103,328.

The LFS is ideal for this study because it includes questions on employment, unemployment, work arrangements, and sociodemographic characteristics. In particular, the survey includes questions on temporary and self-employed employment, which are essential variables for this analysis.

Sample

The analytic sample is 47,695. Exclusions were applied to those who are unemployed or currently in school. While the unemployed may represent a group with precarious attachment to the labour market, for the purposes of this paper I limit my analysis to those who are employed. Those in school are excluded because their attachment to the labour market may be tenuous while they are working to complete their degree. Respondent's with hourly wages lower than $1 were also excluded. Further exclusions were applied to missing cases on variables.

Measures

There are two dependent variables in this analysis. The first is a dichotomous measure of either being employed in precarious work or not. This was created using the following three

variables: (1) if the respondent is self-employed; (2) whether the respondent works in full/part time work; and (3) the permanency of their job (permanent or temporary). These variables were used to construct eight mutually exclusive types of employment: full-time permanent, part-time permanent, full-time temporary, part-time temporary, self-employed owner full-time, self-employed owner part-time, self-employed own account full-time, and self-employed own account part-time. Next, the employment typologies were dichotomized into either standard employment or precarious employment. Table 1 presents the grouping of these employment types. Given the existing literature on precarious work, I grouped those that are in full-time permanent and full-time self-employed owner into standard work and the others into precarious work because those two forms of employment provide job security and predictability (Cranford et al. 2003).

<Table 1 about here>

The second dependent variable is the natural logarithm of hourly wages. The variable is used to measure the economic outcomes of those in precarious and standard employment. Having low hourly wages is one dimension of precarity and may vary within different types of employment.

My main independent variables are education and gender. For education, respondents were asked for their highest level of education (below postsecondary, some postsecondary, collage certificate/diploma, university bachelor's degree, graduate studies). I collapsed this from seven to five categories[2]. My multivariate models also control for immigrant status, the province of the respondent, marital status, respondent's economic family type (unattached, dual-earner family, single-earner family, single parent earner, other), and age. The fully specified models also control for occupation (11 categories) and industry of employment (11 categories).

[2] The original categories for education included 0-8 years of high school, some high school, high school graduate, some postsecondary, college diploma/certificate, bachelor's degree, and graduate studies.

Analytic Strategy

The analysis starts with weighted descriptive statistics by gender. Pearson chi-squared test was performed for testing the null hypothesis of no gender difference for each variable used in the model. Next, I use weighted logistic regression models to estimate the odds of being in standard work. Interactions between the respondent's level of education and their gender on the odds of being in standard employment and then stratify this interaction by the respondent's life stage (i.e., <24, 25-44, 45-64). In all of the models, I report the odds ratios, which represent the exponentiated value of the coefficients and the p-value. Lastly, I use weighted ordinary least squares (OLS) regression models to explore differences in log hourly wages by employment type. These models are run separately by gender. I include an interaction term between employment type and education to explore if education has a protective effect within precarious employment.

RESULTS

Table 1 presents the weighted descriptive statistics by the respondent's gender. The key dependent and independent variables of the respondent's employment and their educational attainment are presented in the first two rows and is followed by the control variables for the respondent's immigrant status, age, region, marital status, economic family type, occupation, and industry.

<Table 2 about here>

The first row reports a significant gender difference for those in standard employment. Women are significantly less likely to work in standard employment than men. This finding is consistent with the existing literature that discuss an overrepresentation of women in precarious employment than men. The second row also shows a significant finding of women attaining higher

levels of education than men. In particular, women have higher representation in postsecondary education, whereas men are significantly more likely to have below postsecondary education. These findings imply that women enter precarious forms of employment, despite attaining higher levels of education. Thus, women may be facing barriers in accessing standard employment.

Among the remanding covariates, women have significantly higher proportion of being in occupations that are more precarious in essence. For instance, women are more likely to be in sales and services, which hire seasonal, contract, or part-time workers more so than other forms of employment. Women also largely reported being in finance and administration jobs. While jobs in finance and administration are usually stable and secure, women often fall into feminized administrative work, such as office administrator, which are increasingly more likely use third-party temporary worker agencies. The occupational/industry differences might explain some of the difference in employment types between men and women. Gender differences on other covariates are nonexistent or as expected.

Table 3 presents multivariate logistic regression models. These results answer my first and second research questions which ask if higher education protects individuals from entering precarious employment and if it protects men and women equally. The main entries for all four models are odds ratios presenting the odds of being in precarious employment. Model 1 is a zero-order association model that shows estimates predicting the odds of being in precarious employment by the respondent's highest level of educational attainment and their gender. Estimates predict that individual's with lower levels of educational attainment more likely to enter precarious employment. Respondent's with some postsecondary education are two times more likely to be employed in precarious employment, while those with below postsecondary education

are 46% more likely to be in precarious work. As compared with men, women are twice as likely to perform precarious work.

< Table 3 about here >

In Model 2, which includes demographic controls, the effects of education remain about the same as in the first model. Results show that those with less education have greater odds of being in precarious employment; however, the magnitude of this effect changes. Individual's with below postsecondary education are 11% more likely to be in precarious work, and those who did some postsecondary education are 55% more likely. Women continue to show greater representation in precarious employment. They are twice as likely to enter precarious employment compared to men.

Model 3 adds controls for occupation and industry. Similar to Models 1 and 2, respondents who have some postsecondary education are 59% more likely of being in precarious employment than those with a bachelor degree. In the fully specified model, women are 87% more likely to be working in precarious employment than men. The initial findings help answer my first research question which asks if education has a protective effect against entering precarious employment.

To answer my second research question, which asks if higher education protect men and women equally from entering precarious employment, model 4 adds an interaction between gender and education. In this model, I include the same covariates that are included in Model 3. Instead of analyzing the coefficients for education and gender separately, I add an interaction between the two variables. The model's findings show that across all levels of education there is no significant relationship between the level of educational attainment for women and whether they are in precarious forms of employment. Although when looking at the main effects of gender, women still significantly report having greater likelihood of employment in precarious work. For men, the

results indicate that having some postsecondary education increases the odds of employment in precarious work.

To investigate the relationship among education, gender, and employment outcomes further, Table 4 presents multivariate logistic regression models that are stratified by the respondent's life stage. Model 1 is the full specified model including that same covariates as the previous tables. Model 2 is the full specified model with an interaction between the respondent's education and gender.

<Table 4 about here>

In Model 1, across all life stages women have significantly greater odds of being in precarious employment than men. Education also shows no effect on employment outcomes across all life stages expect for young adults (under 25 years of age) with some postsecondary education. Younger adults have twice the likelihood of entering precarious employment if they have not completed their postsecondary education.

In Model 2, with the interaction added, only women aged 25 to 44 with a diploma are more likely to enter precarious employment than men with a bachelor's degree. The table's results also indicate that younger men are highly dependent on higher education to avoid precarious employment. Accordingly, men younger than 25 have three times the odds of being in precarious employment if they did not complete postsecondary schooling. The finding suggests that education is important for men's employment outcomes.

Table 5 explores if higher education has a protective effect on men's and women's wages within precarious employment. Results present weighted OLS regression estimates by the respondent's employment category and education. Separate models are run by gender. Table 5 first presents a zero-sum model analyzing the association between employment type and gender on

hourly wages (model 1). Model 2 adds demographic controls. Model 3 further controls for occupation and industry, and Model 4 adds an interaction between education and employment type.

<Table 5 about here>

The results show that there is a significant wage penalty for entering precarious employment. Men in precarious employment earn 24% less than men in standard employment[3], and women in precarious employment earned 16% less than women in standard employment. As predicted by human capital theory, hourly wages increase with education. Results show that while men make higher wages at each level educational attainment, women benefit more from added levels of education. Relative to a bachelor's degree, men have a 13% wage premium if they completed a graduate degree, whereas women have a 15% wage premium if they completed a graduate degree. In the full specified models, the overall association between employment, gender, and wages remains the same; however, the magnitude of the association changes. Those in standard employment continue to make higher wages than those in precarious employment, but the difference in earnings is attenuated. For men the gap in wages is halved, whereas for women it is only slightly reduced. A similar result is shown for education. Those with higher levels of educational attainment still make higher wages, but the differences are lessened with added controls.

In Model 4, with the interaction added, men at higher levels of education experienced a wage penalty for being precariously employed. Men who earned a graduate degree have an 8% wage penalty compared to standard employed workers with a bachelor. For women, having lower levels of education increased wage earnings within precarious employment. Accordingly, women

[3] Coefficients transformed into percentages using exp(b)-1 (see Thorton and Innes 1989).

within precarious employment have a significant wage premium of 4% if they have below postsecondary education, 8% if they completed some postsecondary education, and 3% if they earned a college diploma. The findings have little support to show the education has a protective effect on wages within precarious employment.

DISCUSSION AND LIMITATIONS

The current study set out to answer three specific questions: 1) does higher education protect individuals from entering precarious employment?; 2) does higher education protect men and women equally from entering precarious employment?; 3) does higher education have a protective effect on men's and women's wages within precarious employment? To answer the first question, the findings of the study present evidence that education plays a role in employment outcomes. The results suggest that those without a postsecondary education are more likely to be in precarious employment. While the results do not demonstrate that earning a postsecondary education grants individuals standard employment, it does imply that having lower levels of education can increase their risk to entering precarious employment. Secondly, when investigating the gendered results of the relationship between education and employment, women have a greater representation in precarious employment compared to men. Upon analyzing how gender and education interact, the relationship becomes more complex. The results show little support that women's educational attainment has an effect on their employment outcomes. When it comes to men, the results reveal that for young males, there is higher representation in precarious employment if they did not complete postsecondary education. The final outcomes of the study are consistent with the existing literature (see Cranford et al. 2003). The results indicate that precarious work provides lower wages than standard employment. Hourly wage improves with

higher levels of education, but education does not improve wages for those within precarious employment. While precarious work may provide benefits, such as flexibility, these results demonstrate that it does not provide other economic benefits, such as higher wages. Consequently, lower wages may lead to precarity in other domains of life, such as being unable to cover the costs of living (Kalleberg 2009).

These results imply that the social, political and economic changes in employment overlap with existing inequalities. This study provides little support that education has a protective effect against precarious employment. Additionally, the study also confirms previous research indicating that certain groups of workers, and in particular women, have higher above-average risk of being in precarious employment. Regardless of earning a higher education, women are still more likely to be in work that is either part-time, seasonal/contract, or self-employed. In fact, within precarious employment lower levels of education are showed to improve women's wages. Two explanations for why this may be come to mind: 1) women may be choosing to opt out of standard employment because precarious employment offers the flexibility that fits the needs of childcare and domestic responsibilities; and 2) women may experience inequalities in the labour market that prevent them from entering stable and secure work. Regardless, the overrepresentation of women in precarious work raises concerns. Consequences of being in precarious employment may cause precarity and instability in living arrangements and additive stress of having insecure employment (Tompa et al. 2007).

There are some limitations to this study. The Canadian Labor Force Survey (LFS) does not ask about race/ethnicity or number of children. These characteristics may affect the relationship between the level of educational attainment and employment in precarious work. Past literature has demonstrated that visible minorities are more likely to be in precarious work (Fuller and Vosko

2008; Kalleberg 2009). Another limitation of the study is that the analysis does not address explanations for why women may be in precarious employment. As stated earlier, women may fall into precarious employment because of the pressures to take on more flexible work to balance family obligations or they may be experiencing discrimination in the labour market; however, the analysis cannot choose one as the primary explanation for why women are more likely to be in precarious employment. Further studies are needed to address this questions, and perhaps, qualitative data is better suited to answer this question. Lastly, the following research uses a single cross-sectional data which restricts knowledge in when participants are choosing to go into precarious employment and would be more useful if longitudinal data was used to track respondent's flows in and out of precarious employment. Women may be choosing to exit standard employment due to childcare responsibilities, and are mostly entering precarious work at ages when it is common to raise children. Additionally, younger and older workers may choose precarious work as a bridge job into future careers or retirement. Longitudinal research is warranted to further address these questions.

Regardless of the limitations, the present study adds to existing literature by exploring the protective effects of higher education against precarious employment. By highlighting the gender differences, researchers can see that the changes in work and employment asymmetrically effect different groups. Unfortunately, this study is unable to analyze the mechanisms for women's employment outcomes; although, it does serve as a promising future research question. Deeper sociological investigation is encouraged on gender, education, and precarious work. It is recommended that future research should focus on the longitudinal patterns of women going into precarious employment to find explanations for the feminization of precarity.

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Table 1 Standard vs. Precarious Employment

Standard Employment	Precarious Employment
Full-Time Permanent	Full-Time Temporary
Full-Time Self-Employed Owner	Part-Time Permanent
	Part-Time Temporary
	Part-Time Self-Employed Owner
	Full-Time Self-Employed Own Account
	Part-Time Self-Employed Own Account

Table 2 Weighted Descriptive Statistics

Variables	Men	Women
Employment Type		
Standard Employment	84.2	73.2***
Precarious Employment	15.7	26.1***
Education		
Below Postsecondary	29.2	21.5***
Some Postsecondary	6.0	5.4***
Diploma/Certificate	37.3	37.7***
Bachelors	18.4	25.1***
Graduate Studies	8.8	10.1***
Immigrant Status		
Yes	23.8	24.2
No	76.1	75.7
Age		
<25	7.8	6.8
25-44	48.2	48.1
45+	43.9	44.9
Region		
Atlantic	6.1	6.5
Central Canada	62.1	62.0
The Prairie Provinces	19.1	18.4
The West Coast	12.5	12.9
Marital Status		
Common law/Married	62.8	63.3***
Previously Married	6.1	8.0***
Single	31.0	26.1***
Economic Family Type		
Single	18.2	13.6***
Dual-Earner Family	52.9	59.0***
Single-Earner Family	15.4	10.3***
Non-Earners	1.1	0.9***
Single Parent Earner	4.2	9.5***
Single Parent Non-earner	0.4	0.3***
Other	7.4	8.0***

Continued

Table 2 Continued

Occupation		
Management	8.1	5.5***
Finance and Administration	10.0	26.1***
Applied Sciences	13.2	4.4***
Health	2.3	13.3***
Education, Law, and Social work	6.7	17.3***
Art, Culture and Recreation	1.4	2.0***
Sales and Service	19.8	25.7***
Trades, Transport, and Equipment	26.8	1.8***
Natural Resources and Agriculture	3.5	0.7***
Manufacturing	7.8	2.8***
Industry		
Natural Resources and Agriculture	4.2	1.3***
Manufacturing and Construction	29.2	8.7***
Trade and Transportation	22.9	17.3***
Finance and Insurance	3.8	5.9***
Real Estate and Rental Services	1.3	1.1***
Professions and Sciences	6.9	6.3***
Business and Administration	10.3	10.2***
Educational Services	4.5	11.5***
Health Care and Social Services	4.1	22.8***
Information, Culture, and Recreational Services	4.1	3.6***
Accommodation, Food, and Other Services	8.1	10.9
N	23937	23758

Source: May 2018 Labour Force Survey
**p-value<0.05; ** p-value <0.01; *** p-value <0.001.*

Table 3 Odds ratios from logistic regression predicting the odds of being in precarious employment

Variables	Model 1	Model 2	Model 3	Model 4
Education (Bachelors)				
Below Postsecondary	1.46***	1.11*	1.11	1.08
Some Postsecondary	2.61***	1.55***	1.59***	1.71***
Diploma/Certificate	1.06	1.01	1.01	0.91
	0.92	1.02	0.98	1.12
Sex (Male)				
Female	2.04***	2.15***	1.87***	1.83***
Education X Gender (Bachelors X Male)				
Below Postsecondary X Female				1.02
Some Postsecondary X Female				0.83
Diploma X Female				1.17
Graduate Studies X Female				0.81
Constant	2.04***	0.57***	0.73***	0.75***
N	47,695	47,695	47,695	47,695

Source: May 2018 Labour Force Survey
Note: Model 2 also control for immigrant status, region, age, marital status, and economic family. Models 3 and 4 add to model 2 by controlling for occupation and industry.
**p-value<0.05; ** p-value <0.01; *** p-value <0.001.*

Table 4 Odds ratios from logistic regression predicting precarious employment by life stage

	Under 25		25 to 44		45 to 64	
Variables	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Education (Bachelors)						
Below Postsecondary	1.25	1.67	1.08	0.89	1.05	1.04
Some Postsecondary	2.24***	3.03***	1.50	1.31	1.06	0.97
Diploma	0.90	1.23	1.01	0.76*	1.07	0.98
Graduate Studies	2.07	1.99	1.00	1.04	0.98	1.29
Gender (Male)						
Female	1.27**	1.88*	1.99***	1.63***	2.28***	2.28***
Education X Gender (Bachelors X Male)						
Below Postsecondary X Female		0.64		1.40		0.99
Some Postsecondary X Female		0.60		1.07		1.13
Diploma X Female		0.63		1.48**		1.12
Graduate Studies X Female		1.57		0.94		0.64
Constant	0.29***	0.28***	0.73***	0.16***	0.17***	0.39***
N	5075	5075	21921	21921	20699	20699

Source: May 2018 Labour Force Survey
Note: All models control for immigrant status, age, region, marital status, economic family type, occupation, and industry
**p-value<0.05; ** p-value <0.01; *** p-value <0.001.*

Table 5 OLS regression models predicting log hourly wages

Variables	Model 1	Model 2	Model 3	Model 4
Men				
Employment Type (Standard Employment)				
Precarious Employment	-0.27***	-0.17***	-0.13***	-0.14***
Education (Bachelors)				
Below PS	-0.07	-0.33***	-0.17***	-0.18***
Some PS	0.19***	-0.28***	-0.13***	-0.14***
Diploma	0.35***	-0.17***	-0.08***	-0.08***
Graduate Studies	0.49***	0.12***	0.06***	0.75***
Employment Type X Education (Standard X Bachelors)				
Precarious Employment X Below PS				0.03
Precarious Employment X Some PS				0.30
Precarious Employment X Diploma				0.12
Precarious Employment X Graduate Studies				-0.09*
Constant	3.13***	3.04***	2.75***	2.65***
N	23937	23937	23937	23937
Women				
Employment Type (Standard Employment)				
Precarious Employment	-0.18***	-0.13***	-0.11***	-0.14***
Education (Bachelors)				
Below Postsecondary	0.00	-0.40***	-0.22***	-0.23***
Some Postsecondary	0.19***	-0.34***	-0.18***	-0.21***
Diploma	0.41***	-0.24***	-0.17***	-0.18***
Graduate Studies	0.56***	0.14***	0.09***	0.08***
Employment Type X Education (Standard X Bachelors)				
Precarious Employment X Below Postsecondary				0.04*
Precarious Employment X Some Postsecondary				0.08***
Precarious Employment X Diploma				0.03*
Precarious Employment X Graduate Studies				0.01
Constant	2.96***	2.94***	2.68***	2.68***
N	23758	23758	23758	23758

Source: May 2018 Labour Force Survey
Note: Model 2 also control for immigrant status, region, age, marital status, and economic family. Models 3 and 4 add to model 2 by controlling for occupation and industry.
**p-value<0.05; **p-value<0.01; ***p-value<0.001.*