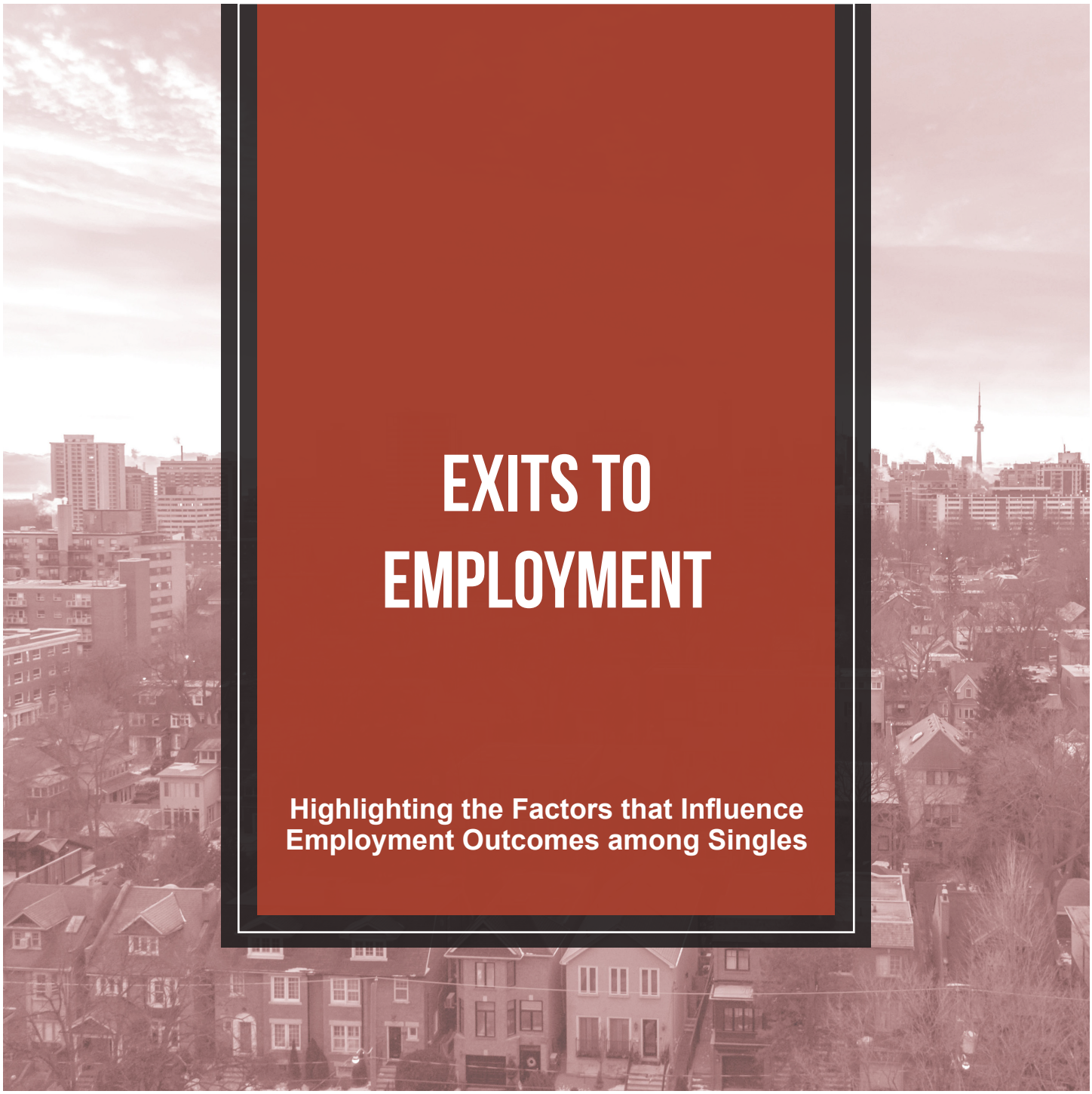

EXITS TO EMPLOYMENT

Highlighting the Factors that Influence Employment Outcomes among Singles

Improving Our Knowledge of and Responses to Singles on Ontario Works in Toronto
Working Report #4 Prepared for the Ontario Centre for Workforce Innovation

Yuna Kim, Christine Carrasco, and Dean Herd, Toronto Employment and Social Services

April 2018

TORONTO Employment & Social Services

Ontario Centre for Workforce Innovation
Centre ontarien Innovation-Emploi

ACKNOWLEDGEMENTS

From the perspective of developing more effective policies, programs and services, listening to the voices of people living on social assistance and documenting their experiences is always important. This is especially true for this study given the current absence of detailed research on singles. With this in mind, it is important to acknowledge the partnership with the Ontario Centre for Workforce Innovation (OCWI), a leading-edge centre of research and innovation, which enabled Toronto Employment and Social Services (TESS) to undertake this project. This partnership was integral to the development and completion of the study. Similarly, the study benefitted from the support and insights of several City of Toronto staff and external reviewers.

Lastly, and most importantly, we are grateful to the people who agreed to take part in the study and share their personal experiences. Given the deep levels of poverty they face, it was important that we were able to provide an honorarium to thank them for their time, insights and expertise. Over and above any financial benefit, however, the majority expressed an even more compelling reason for participating: to have their voices heard. They welcomed the chance to tell their own story, and hoped that their contributions would lead to changes that both reflected and respected their lived experience.

TABLE OF CONTENTS

Executive Summary....4

1. Introduction....5

    1.1. The Singles Study....5

    1.2 How to Read this Report....6

2. Data....7

3. Key Findings....8

4. Discussion....11

    4.1 Caveats, Limitations, and Future Research....12

5. Conclusion....14

Appendix A: Data Sources and Data Cleaning....19

Appendix B: Methods and Analytic Approach – Competing Risks Analysis....21

EXECUTIVE SUMMARY

Despite representing nearly two-thirds of Toronto's Ontario Works (OW) caseload, singles are often on the margins of policy and research. The singles study was designed to address this gap with a deliberate focus on documenting the characteristics and experiences of singles in receipt of OW in Toronto. Part of a series of four working reports, this report focuses on better understanding the probability of exiting OW for employment among singles on assistance in Toronto.

Using administrative data for the singles who were on assistance in Toronto in 2016, this report presents a descriptive analysis of the combination of personal attributes and local social and economic conditions that play key parts in determining the likelihood of exiting assistance for employment.

In particular, higher levels of educational attainment increased the rate of exit from assistance for employment, but only among young singles under 30 years of age. That is, educational attainment by itself did not improve the chances of finding employment and leaving assistance among prime working age adults and mature workers, suggesting other broader factors may be at play.

With regard to social and economic conditions, higher unemployment rates were associated with a lower probability of securing employment and leaving the caseload, especially for prime working age adults.

Mental and physical health were key determinants of employment success. Other barriers, such as a need for a record suspension and transportation barriers, also had significant impacts on the probability of leaving OW for employment. Overall, the findings confirm that there is no one path towards employment for singles and demonstrate the importance of holistic approaches with a broad range of supports, in addition to those focused on employment and training.

1. INTRODUCTION

At the time the Ontario Works Act was introduced in 1997, singles without dependents on assistance were viewed as largely self-sufficient. Characterized as short-term recipients, and comprising just under 40% of the Ontario Works (OW) caseload in Toronto at the end of 1999, singles without dependents were thought of as requiring fewer supports in their journey back to work.[1] In contrast, families with children (i.e. lone and two parent households) made up nearly 60% of Toronto's OW caseload and were staying on assistance for longer durations than singles. The result was a heightened policy and research focus on supporting parents with children in their efforts to re-enter the labour market, while singles were often overlooked.

Following the 2008 recession, the proportion of new singles without dependents entering the caseload reached a point that singles (largely consisting of young males) were identified as the "new face of social assistance in Ontario."[2] By 2016 in Toronto, singles made up approximately two-thirds of all cases served. The stark rise in singles on Toronto's OW caseload, corresponding with a decline in the proportion of lone parents, was partly the result of federal and provincial child benefits outside of Ontario Works, which were, by design, not accessible to single persons with no dependents. Moreover, changes to the economy resulted in a growth in service jobs that largely went to women at the expense of traditionally male, blue collar jobs. With fewer job opportunities and other sources of financial benefits, singles, particularly males, inevitably made up a bulk of the OW caseload.[3] These trends suggest that increased policy attention to singles is timely and necessary.

1.1. The Singles Study

Unlike lone parents, who have benefitted from federal and provincial child benefits and more generous tax credits, singles have limited options for financial support and unless they fit into specific categories such as youth and newcomers, they are often outside the focus of targeted programs and services. As well as being on the margins of policy discussions, singles are rarely the specific focus of research examining social assistance. The singles study was designed to address this gap with a deliberate focus on documenting the characteristics and experiences of singles in receipt of OW in Toronto. The study used a combination of quantitative and qualitative approaches to better understand:

- the characteristics of singles on the OW caseload in Toronto;
- how the singles caseload is changing over time;
- the factors that predict exits to employment; and
- the service experiences and needs of singles.

1 Social Services Division. (1999). Ontario Works Caseload Profile. *City of Toronto Council and Committees.* Retrieved from https://www.toronto.ca/legdocs/1999/agendas/committees/cms/cms990909/it007.htm

2 Stapleton, J., & Bednar, V. (2011). *Trading Places: Single Adults Replace Lone Parents as the New Face of Social Assistance*. Retrieved from Toronto: https://mowatcentre.ca/wp-content/uploads/publications/40_trading_places.pdf

3 Ibid.

Building on Working Report #1, this working report primarily addresses the third aim by using regression analysis to estimate the relationship between various individual-level factors and neighbourhood conditions, and the probability of leaving OW for employment in 2016.

The results from this analysis suggest that solutions should consider a number of personal mental and physical health factors as well as systemic barriers to employment, such as local unemployment conditions, need for record suspensions, and transportation barriers, in order to adequately support clients on their journey towards employment.

1.2 How to Read this Report

Section 2 briefly describes the data sources and analytic approach for this report. Section 3 then discusses the results of a multivariate regression analysis examining factors associated with the probability of exiting OW for employment reasons. Specifically, the analysis looks at individual factors and neighbourhood factors, including barriers to employment disclosed by clients. Given initiatives aimed at both youth and individuals 45 and older, the analysis also presents results for youth (under 30), prime working age adults (30 to 44), and mature workers (45 and over). Section 4 discusses the implications of these results and Section 5 concludes.

2. DATA

Data for this study were obtained primarily from administrative data sources collected by Toronto Employment and Social Services (see Appendix A for more information on data sources). For the purpose of this study, the population of interest were singles without dependents who were on the OW caseload in Toronto for any amount of time in 2016.[4] For each individual, caseworkers record key demographic characteristics and, through conversation with clients, make a determination of any barriers to employment the client may be facing. The administrative data also included the number of employment programs clients had completed, the length of time clients had been on OW in Toronto (in months), whether clients had left the caseload at any point in time in 2016, and their reason for exit (where applicable).

This analysis also explored the local social and economic conditions that might have impacted exits from OW due to employment. Using neighbourhood-level data from the 2016 Canadian Census, the analysis controlled for neighbourhood-level unemployment rate, the percentage of neighbourhood residents below the poverty line (defined as the Low-income measure, after tax or LIM-AT), and the percentage of neighbourhood residents in receipt of government transfers.[5]

The final sample used for analysis only contained singles on OW in Toronto in 2016 that had no missing information on any of the variables used for analysis (i.e. complete case analysis). Appendix A contains more detail on how the analytic sample was constructed. The final analytic sample contained 54,318 singles.

4 Per the Ontario Works regulations (i.e. Ontario Regulation 134/98), a single person is defined as an applicant or recipient with no dependents.

5 The 2016 Census data were cleaned and obtained from the City of Toronto, Social Development Finance & Administration, Research and Information Management Unit. Note that since income variables were collected through tax return data, the percentage of residents below LIM-AT and the government transfer data reflect 2015 information and were used to proxy for 2016 neighbourhood information. The unemployment rate data were collected for the Census in May 2016. According to Statistics Canada, government transfers include all cash benefits received from federal, provincial, territorial or municipal governments during the reference period. It includes: Old Age Security pension, Guaranteed Income Supplement, Allowance or Allowance for the Survivor; retirement, disability and survivor benefits from Canada Pension Plan and Québec Pension Plan; benefits from Employment Insurance and Québec parental insurance plan; child benefits from federal and provincial programs; social assistance benefits; workers' compensation benefits; working income tax benefit; goods and services tax credit and harmonized sales tax credit; other income from government sources. For more information, see: Statistics Canada. (2017). *Toronto, CDR [Census division], Ontario and Ontario [Province]* (table). *Census Profile*. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed February 14, 2018).

3. KEY FINDINGS

For the entire sample (Table 1), the average length of time on assistance was 30.3 months, or approximately 2.5 years. On average, mature workers had been on assistance for the longest period of time (40.8 months) while youth had the shortest average spell duration at 18.8 months. Among the singles who were on assistance in 2016, 13.7% left OW for employment. Just under 15% of youth left OW for employment in 2016, compared to 15.6% of prime working age adults, and 11.2% of mature workers aged 45 and older.

The characteristics of singles on Toronto's OW caseload was discussed extensively in Working Report #1. The sample used in this analysis looks very similar to the overall sample that was described in Working Report #1. Descriptive statistics for the analytic sample are provided in Table 1. For more details on the composition of singles on OW in Toronto in 2016, refer to Working Report #1.

Individual Demographic Characteristics

To understand which factors were associated with the probability of exit from OW for employment over time, we turn to the regression analysis. Among all singles on the caseload in 2016, higher levels of education increased the probability of exiting OW for employment (Table 2 column 1). However, this effect appeared to be driven primarily by youth (Table 2 column 2). Compared to a young single who did not finish high school, a young person with a high school diploma was significantly more likely to exit OW for employment. A young single with post-secondary credentials was even more likely to exit OW for employment relative to a youth who did not complete high school.

This association between educational attainment and probability of leaving the caseload for employment did not hold true for prime working age adults and mature workers. Instead, for singles 30 and over, higher levels of educational attainment (i.e. high school diploma or post-secondary training) did not significantly improve the chances of exiting the caseload for employment compared to their counterparts who had not finished high school. That is, educational attainment seemed to matter less for the employment and exit prospects of prime working age singles and mature workers (Table 2 columns 3 and 4).

Relative to Canadian-born singles, being born outside of Canada did not significantly impact the probability of exiting OW due to employment. Looking at all singles, non-Canadian-born singles (including naturalized citizens, permanent residents, refugee claimants, and Convention Refugees) each did not experience a statistically significant difference in their likelihoods of exiting OW for employment relative to Canadian-born singles, after taking into account other factors.[6]

6 The coefficients on immigration status were especially sensitive to changes in model specification. Consequently, we encourage further research and consideration of the relationship between immigration status and exits for employment.

Local Context

Successfully finding employment and exiting OW is not only a function of personal characteristics. The social and economic context in which a person operates deserves equal consideration when studying employment prospects. Accordingly, this section discusses the potential impacts of local economic and social conditions on the probability of exiting OW for employment among singles.

Singles living in neighbourhoods with higher unemployment rates had a significantly lower probability of exiting OW for employment (holding all other factors constant). This association was largely driven by the experience of prime working age adults. The association between neighbourhood unemployment rates and the probability of exit for employment was negative but not statistically significant for youth or mature workers, suggesting that other factors played a larger role in determining employment success for these age groups.

The other neighbourhood characteristics did not play a strong role in the probability of exiting OW for employment. The percentage of residents living below the poverty line (i.e. LIM-AT) and the percentage of residents in receipt of government transfers were not significantly associated with the probability of leaving OW for employment.

While the inclusion of neighbourhood characteristics did not render individual factors insignificant, the significance of unemployment rates suggests that context plays some role in whether singles find employment and leave OW.

Barriers to Employment

The administrative data collected by TESS allowed for the examination of the personal barriers that potentially restricted employment chances. Most singles on the caseload in 2016 were ‘distant from the labour market’ and primarily had goals related to life stabilization rather than job searching. In the analytic sample, 50.5% of singles had life stabilization as their primary objective. Not surprisingly, singles with life stabilization goals were far less likely to exit the caseload for employment than singles who had an employment related goal (i.e. seeking employment, training, etc.). This was true across all age groups.

More specifically, certain barriers were significant roadblocks to exiting OW for employment among singles. The presence of poor health, transportation barriers, lack of Canadian work experience, disability, loss of motivation (i.e. depression), need for a record suspension, and addiction were all statistically significant and negatively associated with the probability of exiting OW for employment. Among these barriers, having a disability posed the largest negative effect on the likelihood of leaving OW for employment.

Different barriers varied in terms of significance across the age groups. Specifically, transportation barriers and addictions were only significantly associated with the probability of exiting OW for employment for prime working age adults. These barriers were not significant for youth or mature workers. For youth, the need for a record suspension had the largest negative impact on the probability of leaving OW for employment. For both prime working age adults and mature workers, having a disability had a greater negative impact on the probability of leaving OW for employment than the other barriers. Although not statistically significant in the analysis of all singles, poor literacy and numeracy skills significantly reduced the probability of exiting the caseload for employment among prime working age singles.

4. DISCUSSION

The results above illustrate the range of factors that play into finding employment and leaving the caseload. In particular, the lack of difference that higher levels of education had on the rate of exit for employment among prime working age adults and mature workers is noteworthy. This finding could prematurely be interpreted as suggesting that higher levels of education did not improve these singles' chances of gaining employment and leaving assistance. This result, however, did not factor in whether the education or training matched the current demand for skills in the labour market. Moreover, it did not consider where and how recently post-secondary credentials were obtained or the nature of the post-secondary degree program. Nevertheless, this finding suggests that for prime working age adults and mature workers educational attainment was not a panacea that resulted in employment success.

Poor literacy or numeracy skills were also a key barrier to exiting OW for employment among prime working age singles. While perhaps unsurprising, it is noteworthy that this finding aligns with recent research showing the importance of literacy and numeracy among post-secondary graduates in successful employment outcomes. That is, post-secondary graduates with low literacy or numeracy skills were more likely to be in positions that only required a high school diploma compared to post-secondary graduates with higher literacy and numeracy skills.[7] These results suggest that identifying and addressing low literacy and numeracy skills, even among those with higher educational qualifications, may boost chances to secure work.

Beyond education and pre-employment supports, it is evident that for many the route back to employment may first need to address personal barriers and life stabilization goals. Though life stabilization can vary from person to person, its significant association with the probability of exiting OW for employment underscores the importance of addressing these fundamental needs as a first step towards employment.

Mental and physical health and wellbeing were also critical to determining exit rates and employment. Poor health, disability, addictions, and loss of motivation were all significantly associated with reducing the rate of exit for employment.

There were also other barriers that can be classified as 'systemic' or 'policy' barriers. For instance, the need for a record suspension was a major barrier for singles, regardless of age group. Additionally, transportation barriers reduced employment chances, particularly for prime working age adults.

Beyond personal attributes, the results of the analysis demonstrated that local context played a role in determining employment success. Though the exact mechanism through which local unemployment impacted exits to employment cannot be determined through this analysis, there are a number of potential explanations. For example, local unemployment

7 LaRochelle-Côté, S., & Hango, D. (2016). *Overqualification, skills and job satisfaction*. Retrieved from Ottawa: https://www.statcan.gc.ca/pub/75-006-x/2016001/article/14655-eng.htm

rates may be a proxy for the availability of job offers and employment opportunities such that higher unemployment rates would be expected to decrease the probability of exiting OW for employment.[8] However, given the small geographic area covered by Toronto's 140 neighbourhoods and a median one-way commute distance of 9.6km for Torontonians,[9] the availability of jobs within the neighbourhood may be only part of the story (for example, for those with limited transportation options). Moreover, neighbourhood unemployment rates may provide a signal about an individual's social network. Living in an area where a higher proportion of residents are unemployed may impact a person's employment prospects given the continued importance of social networks in successful job search.[10] While the precise nature of the relationship cannot be determined by this study, the finding reaffirms the importance of considering factors beyond personal characteristics.

4.1 *Caveats, Limitations, and Future Research*

The analysis presented above should be interpreted as descriptive associations rather than causal linkages between variables. Given the above analysis, it would be premature to conclude, for instance, that higher levels of education will *cause* higher exit rates for employment or that the presence of a transportation barrier *causes* lower probabilities of employment. This interpretation would be inappropriate primarily because these conditions or interventions were not randomly assigned; consequently, these estimates should not be interpreted as definitive evidence that certain covariates will lead to a guaranteed change in exit rates for employment. The findings can be used, however, to identify patterns and trends on the Toronto OW caseload worthy of further exploration to determine why certain barriers or characteristics lead to better or worse outcomes.

Particular caution should be taken when interpreting the effect of the barriers on the outcomes of interest. More precisely, due to the nature of how the data were collected and stored,[11] it was not completely clear whether the presence of a barrier (e.g., poor health) led to unemployment, or if unemployment led to the development of a barrier (such as poor health).[12] Alternatively, a third unknown factor could explain both the presence of a barrier and reduced employment chances. Monthly panel data may help resolve this question of potential reverse

---

8 Hoynes, H. W. (2000). Local labor markets and welfare spells: Do demand conditions matter? *Review of Economics and Statistics, 82*(3), 351-368; Fortin, B., & Lacroix, G. (1997). *Welfare benefits, minimum wage rate and the duration of welfare spells: Evidence from a natural experiment in Canada*: CIRANO.

9 Statistics Canada. (2017). *Journey to work: Key results from the 2016 Census*. Retrieved from Ottawa: https://www.statcan.gc.ca/daily-quotidien/171129/dq171129c-eng.pdf. The average one-way commute time for Torontonians in 2016 was 34 minutes.

10 Zizys, T. (2011). *Working Better: Creating a High-Performing Labour Market in Ontario*. Retrieved from Toronto: https://metcalffoundation.com/wp-content/uploads/2011/05/working-better.pdf

11 Barriers reflect whether the person ever disclosed the barrier, either in a previous service planning appointment or during their most recent service planning appointment, which may or may not coincide with the date of exit from OW

12 Examples of research examining the link between health and economic or labour market outcomes include Case, A., Fertig, A., & Paxson, C. (2005). The lasting impact of childhood health and circumstance. *Journal of health economics, 24*(2), 365-389; Smith, J. P. (1999). Healthy bodies and thick wallets: the dual relation between health and economic status. *Journal of Economic perspectives, 13*(2), 145-166; Fletcher, J. (2013). Adolescent depression and adult labor market outcomes. *Southern Economic Journal, 80*(1), 26-49; Phipps, S. (2003). *The Impact of Poverty on Health: A Scan of Research Literature*. Retrieved from Ottawa: https://secure.cihi.ca/free_products/CPHIImpactonPoverty_e.pdf

causality or omitted variable bias. Or, an in-depth qualitative analysis may help elucidate the cause and effect relationship between certain barriers and the probability of leaving OW for employment. Once this relationship is better understood, interventions can be designed that address the core issues at hand. For now, this research shows that an association exists between a number of barriers and the likelihood of exiting OW for employment, but the nature of this relationship cannot be fully understood from this regression analysis alone.

The data used in this analysis were also limited to individuals who were on OW for any amount of time in 2016. Thus the outcomes of individuals who left assistance before 2016 or joined after 2016 were not known. Future studies that use panel data that observes individuals on a monthly basis over time would allow for an expansion of the analysis presented here.

Lastly, these results should be interpreted as applicable to singles in receipt of OW in 2016 and not the whole population of singles that has ever been on OW. Precaution should be taken when applying these findings to singles on OW in other jurisdictions or at other points in time. Nevertheless, these results provide a glimpse into the recent trends and challenges singles have faced in finding employment and leaving OW in a post-recession labour market.

5. CONCLUSION

This report provides a descriptive analysis of the factors that influenced a single person's probability of finding employment and exiting the caseload in 2016. As singles are often overlooked in research and policy spheres, this analysis fills a gap by focusing on the experience of singles on OW in Toronto. A rich administrative dataset with details on personal barriers to employment, as well as neighbourhood-level data, permitted a unique analysis of the individual and contextual determinants of exiting OW for employment.

The results of this analysis demonstrate, ultimately, that there is no one pathway towards employment for singles. A number of personal and systemic factors act as barriers to employment and exiting OW. The research also identified trends and patterns that warrant further investigation, especially research to identify causal linkages between health and educational interventions and employment prospects. What can be gleaned from the present findings, though, is that the path to employment and exiting OW is multi-faceted and influenced by a number of important factors. Given the multiple factors, the research confirms the need for equally multi-faceted approaches to supporting singles on OW in Toronto.

Tables

Table 1. Descriptive statistics for all singles on OW in 2016 and by age group.

Column	(1)		(2)		(3)		(4)	
	All Singles		Youth		Prime Working Age		Mature Workers	
Variable	Mean/%	(s.d.)	Mean/%	(s.d.)	Mean/%	(s.d.)	Mean/%	(s.d.)
Left OW for employment (%)	0.14	(0.34)	0.15	(0.36)	0.16	(0.36)	0.11	(0.32)
Duration of current spell, months (mean)	30.26	(32.51)	18.83	(19.11)	28.68	(30.46)	40.77	(38.76)
Sex								
Male (%)	0.62	(0.49)	0.61	(0.49)	0.69	(0.46)	0.58	(0.49)
Age								
Average age, years (mean)	39.57	(13.58)	24.32	(3.17)	36.25	(4.38)	54.60	(6.18)
Highest level of education attained								
Less than high school (%)	0.33	(0.47)	0.39	(0.49)	0.28	(0.45)	0.32	(0.47)
High school diploma (%)	0.38	(0.48)	0.41	(0.49)	0.37	(0.48)	0.36	(0.48)
Post-secondary credentials (%)	0.29	(0.45)	0.20	(0.40)	0.35	(0.48)	0.32	(0.47)
Immigration status								
Canadian born (%)	0.42	(0.49)	0.53	(0.50)	0.41	(0.49)	0.34	(0.47)
Naturalized Canadian citizen (%)	0.28	(0.45)	0.15	(0.36)	0.23	(0.42)	0.41	(0.49)
Permanent resident (%)	0.15	(0.36)	0.13	(0.33)	0.15	(0.36)	0.17	(0.37)
Convention refugee (%)	0.03	(0.16)	0.03	(0.17)	0.03	(0.18)	0.02	(0.13)
Refugee claimant (%)	0.13	(0.33)	0.17	(0.37)	0.17	(0.37)	0.06	(0.24)
Other immigration status (%)	0.00	(0.05)	0.00	(0.04)	0.00	(0.05)	0.00	(0.04)
SAMS objective								
Life stabilization	0.50	(0.50)	0.37	(0.48)	0.45	(0.50)	0.65	(0.48)

Barriers to employment								
Financial pressure (%)	0.16	(0.37)	0.14	(0.35)	0.17	(0.38)	0.17	(0.37)
Health (self) (%)	0.35	(0.48)	0.19	(0.39)	0.30	(0.46)	0.52	(0.50)
Disability (self) (%)	0.13	(0.34)	0.09	(0.28)	0.11	(0.32)	0.18	(0.39)
Addiction (%)	0.07	(0.25)	0.04	(0.20)	0.08	(0.28)	0.07	(0.25)
Transportation (%)	0.21	(0.41)	0.21	(0.41)	0.22	(0.41)	0.21	(0.41)
Loss of motivation (i.e. depression) (%)	0.11	(0.31)	0.08	(0.27)	0.11	(0.31)	0.13	(0.34)
Language barriers (%)	0.15	(0.36)	0.11	(0.32)	0.16	(0.36)	0.17	(0.38)
Need for record suspension (%)	0.11	(0.31)	0.10	(0.30)	0.15	(0.35)	0.08	(0.27)
Canadian work experience (%)	0.19	(0.39)	0.22	(0.42)	0.21	(0.41)	0.15	(0.36)
Literacy/Numeracy (%)	0.07	(0.26)	0.05	(0.22)	0.06	(0.24)	0.10	(0.30)
*Neighbourhood Variables**								
Percent of residents under LIM-AT (%)	22.12	(6.92)	22.23	(6.84)	22.15	(6.92)	22.00	(6.98)
Percent of residents unemployed (%)	4.71	(0.69)	4.76	(0.68)	4.71	(0.69)	4.67	(0.69)
Percent of residents in receipt of government transfers (%)	59.54	(3.73)	59.69	(3.55)	59.59	(3.76)	59.38	(3.83)
N	54,318		16,667		16,977		20,674	

Notes: All estimates are unweighted. Standard deviations (denoted by "s.d.") are provided in parentheses.

*The neighbourhood variables are on a scale of 0-100%, whereas all other variables in this table are reported as proportions (from a scale of 0-1). LIM-AT is the Low-income measure, after tax, which is defined by Statistics Canada as 50% of the median adjusted after-tax income of households. The percent of residents unemployed reflects the unemployment rate among persons aged 15 and older. According to Statistics Canada, government transfers include all cash benefits received from federal, provincial, territorial or municipal governments during the reference period. It includes: Old Age Security pension, Guaranteed Income Supplement, Allowance or Allowance for the Survivor; retirement, disability and survivor benefits from Canada Pension Plan and Québec Pension Plan; benefits from Employment Insurance and Québec parental insurance plan; child benefits from federal and provincial programs; social assistance benefits; workers' compensation benefits; working income tax benefit; goods and services tax credit and harmonized sales tax credit; other income from government sources.

Table 2. Subdistribution hazard ratios (and 95% confidence intervals) from subdistribution hazard model for exits from OW due to employment.

Column	(1)		(2)		(3)		(4)	
Variable	All Singles		Youth		Prime Working Age		Mature Workers	
Sex								
Male	**1.08**	**(1.02-1.13)**	1.07	(0.98-1.16)	1.06	(0.97-1.15)	1.06	(0.97-1.16)
Age								
Average age, years (mean)	**1.01**	**(1.01-1.01)**	**1.04**	**(1.03-1.06)**	1.00	(0.99-1.01)	**1.03**	**(1.02-1.04)**
Highest level of education attained								
Less than high school (ref)	--		--		--		--	
High school diploma	**1.14**	**(1.07-1.21)**	**1.34**	**(1.21-1.48)**	1.00	(0.90-1.11)	0.99	(0.88-1.10)
Post-secondary credentials	**1.29**	**(1.21-1.38)**	**1.83**	**(1.62-2.06)**	1.08	(0.97-1.20)	0.98	(0.88-1.10)
Immigration status								
Canadian born (ref)	--		--		--		--	
Naturalized Canadian citizen	0.97	(0.91-1.03)	0.97	(0.86-1.08)	0.94	(0.84-1.04)	0.97	(0.88-1.07)
Permanent resident	0.96	(0.89-1.03)	0.99	(0.87-1.12)	1.00	(0.88-1.13)	**0.86**	**(0.75-0.99)**
Convention refugee	0.99	(0.86-1.15)	0.82	(0.64-1.05)	1.13	(0.93-1.38)	0.79	(0.55-1.14)
Refugee claimant	0.92	(0.84-1.00)	0.91	(0.79-1.05)	0.91	(0.79-1.05)	**0.72**	**(0.57-0.90)**
Other immigration status	1.03	(0.62-1.71)	1.30	(0.49-3.43)	0.96	(0.46-1.98)	0.67	(0.21-2.11)
SAMS objective								
Life Stabilization	**0.34**	**(0.32-0.36)**	**0.39**	**(0.35-0.44)**	**0.32**	**(0.29-0.36)**	**0.29**	**(0.26-0.33)**

Barriers to employment								
Financial pressure	1.03	(0.96-1.09)	1.06	(0.95-1.19)	0.99	(0.89-1.10)	1.00	(0.90-1.12)
Health (self)	**0.79**	**(0.74-0.84)**	**0.77**	**(0.68-0.87)**	**0.69**	**(0.62-0.77)**	**0.89**	**(0.81-0.98)**
Disability (self)	**0.61**	**(0.55-0.68)**	**0.73**	**(0.61-0.89)**	**0.57**	**(0.46-0.70)**	**0.57**	**(0.49-0.67)**
Addiction	**0.81**	**(0.71-0.93)**	0.84	(0.65-1.09)	**0.77**	**(0.63-0.95)**	0.80	(0.63-1.00)
Transportation	**0.90**	**(0.85-0.96)**	0.95	(0.86-1.05)	**0.84**	**(0.76-0.92)**	0.94	(0.84-1.05)
Loss of motivation (i.e. depression)	**0.75**	**(0.68-0.84)**	**0.79**	**(0.66-0.94)**	**0.81**	**(0.68-0.97)**	**0.68**	**(0.57-0.81)**
Language barriers	1.02	(0.93-1.10)	0.97	(0.82-1.13)	0.98	(0.86-1.12)	1.02	(0.88-1.18)
Need for record suspension	**0.73**	**(0.67-0.80)**	**0.61**	**(0.52-0.72)**	**0.73**	**(0.64-0.84)**	**0.82**	**(0.68-0.98)**
Canadian work experience	**0.81**	**(0.75-0.87)**	**0.75**	**(0.67-0.85)**	**0.85**	**(0.76-0.96)**	**0.82**	**(0.71-0.96)**
Literacy/Numeracy	0.92	(0.82-1.04)	1.20	(0.98-1.48)	**0.74**	**(0.59-0.93)**	0.84	(0.69-1.02)
Neighbourhood Variables[1]								
Percent of residents under LIM-AT	1.00	(0.99-1.00)	1.00	(0.99-1.01)	1.00	(0.99-1.00)	1.00	(0.99-1.00)
Percent of residents unemployed	**0.94**	**(0.89-0.98)**	0.95	(0.88-1.03)	**0.89**	**(0.83-0.96)**	0.97	(0.89-1.05)
Percent of residents in receipt of government transfers	1.01	(1.00-1.01)	1.00	(0.99-1.01)	1.01	(1.00-1.02)	1.01	(1.00-1.03)
N	54,318		16,667		16,977		20,674	

Notes: Subdistribution hazard ratios are displayed with the 95% confidence interval for each ratio is provided in parentheses. Subdistribution hazard ratios greater than 1 indicate an increased probability of leaving OW for employment. Conversely, subdistribution hazard ratios less than 1 indicate a decreased probability of leaving OW for employment. Confidence intervals that do not include 1.00 indicate that the covariate is statistically significant at the 0.05 level. These ratios are bolded to denote statistical significance. All models include start month and start year dummies for the month and year the individual started on OW as well as a variable for the number of employment programs the individual participated in since 2002. The neighbourhood variables were multiplied by 100 for ease of interpretation of these variables in the multivariate regression models.

APPENDIX A: DATA SOURCES AND DATA CLEANING

Data for this analysis were pulled from internal administrative data sources that collect information on client demographics, employment history, and barriers to employment. The information on barriers to employment is collected through a conversation between caseworker and client about various aspects of the client's employment history and aspirations. Thus, the information on barriers is subject to some degree of interpretation by the caseworker. In 2016, information on employment barriers was available for approximately 96% of singles.

The neighbourhood-level data were derived from the 2016 Census. Neighbourhood-level data were available for each of Toronto's 140 neighbourhoods and were matched to each single based on their address.

The outcome variable of interest was the rate at which individuals left the OW caseload specifically for employment. For the purpose of this study, and to define the competing risks (see Appendix B), the reasons for exiting the caseload were grouped into 5 categories:

(1) Left OW due to employment;

(2) Left OW to attend post-secondary;

(3) No longer on the caseload because of reasons related to information not being provided or other requirements not being met;

(4) No longer on the caseload due to other sources of income/asset reasons; and

(5) No longer on the caseload due to death.

The data were set up at the spell level. That is, each row of data represented one person, which in this case also represented one spell of OW receipt (this is because we excluded information about individuals if they left the caseload in 2016, even if returned to assistance).[13] For each observation, demographic characteristics, neighbourhood variables, length of time on assistance, their exit status (i.e. 0 = censored/never left caseload in 2016; 1= left OW caseload in 2016 for employment; 2 = left OW caseload in 2016 for educational reasons; 3 = no longer on caseload because of reasons related to information not being provided or other requirements not being met; 4 = no longer on caseload due to other sources of income/asset reasons; 5 = death) were available.

The independent variables used in this analysis reflected both individual characteristics as well as local neighbourhood characteristics. The individual characteristics included were age in years; sex (0=female, 1=male); highest level of education attained (0=less than high school,

13 So, Y., Lin, G., & Johnston, G. (2014). *Using the PHREG procedure to analyze competing-risks data*. Retrieved from https://pdfs.semanticscholar.org/5166/76affdd5cfed789f992baf1471b8ba40379d.pdf

1=high school graduate, 2=post-secondary credentials);[14] and immigration status (0=Canadian born, 1=naturalized citizen, 2=permanent resident, 3=Convention refugee, 4=refugee claimant, 5=other immigration status). A variable on the number of employment programs the individual completed between 2002 and 2016 was included in the model, as was whether the individual primarily had life stabilization as a goal. Certain barriers to employment (informed by existing research and frontline experience) were included as binary covariates: poor health, transportation barriers, lack of Canadian work experience, financial pressure, language barriers, disabilities, loss of motivation (i.e.depression), need for a criminal record suspension, addiction, and poor literacy/numeracy skills. All models included OW start year and start month dummies to control for differences in length of stay due to economic conditions when a person started receiving assistance.[15]

In constructing the analytic sample, note that once an individual left the caseload for at least one month, they were classified as an "exit" even if they re-entered the caseload at some point again in 2016. That is, once individuals exited the caseload in 2016 they were no longer followed (even if they did in fact re-enter the caseload). As a result, long-term outcomes are not captured (but would be useful for a future analysis).

The data used for the analysis represent all singles who were on the caseload in Toronto for any amount of time in 2016 (e.g., some individuals may have been on OW for the entire year or for as little as one month). The original dataset consisted of 72,866 observations. Start dates were available for most individuals in the sample. However, to construct the analytic sample, individuals who had start dates prior to 2002 were dropped from the analysis due to challenges in linking client identifiers to pre-2002 data systems (see the Appendix of Working Report #1 for further details). Incidentally, there were very few people on the 2016 caseload who had start dates before 2002. Sensitivity analysis was run with all start dates and the results were not substantially different from the preferred model. After cleaning the data, the final analytic sample consisted of 54,318 observations.

14 Post-secondary education was not broken down into type, i.e. college versus university.

15 Wooldridge, J. M. (2010). For instance, it may be the case that coming onto assistance during a recession may be associated with longer spells on assistance before employment is found.

APPENDIX B: METHODS AND ANALYTIC APPROACH – COMPETING RISKS ANALYSIS

Depending on each individual's situation, OW applicants at any point in time can either continue on assistance or may leave OW. Upon leaving OW, the individual's file is terminated and a reason for termination is selected such as having obtained employment, transferring to a different program (i.e. ODSP), failing to meet income reporting or other eligibility requirements, or having died.[16] For singles, they could also be terminated from OW if they chose pursue post-secondary education and were in receipt of a government loan (e.g, OSAP). The key issue is that clients are able to leave the caseload for a variety of reasons and treating all reasons for exit as the same would be analytically incorrect.[17]

Survival analysis was employed for this analysis as it incorporates the time it takes for an individual to experience an event (i.e. in this case, the "event" of interest is exiting OW for employment). However, because individuals may exit to one of a number of different states, a competing risks approach was utilized. Specifically, subdistribution hazard models were fitted, which are suitable when estimating the probability of experiencing an event over time in the face of other potential outcomes.[18] As in this case, there was one event of interest (exiting OW for employment) but it was possible for a person to experience a different or competing outcome instead.[19] Those who were still on the caseload at the end of 2016 were right censored.[20] For more information on competing risk analysis, refer to Austin and Fine (2017) or Austin et al. (2016).

A multivariate regression model was estimated to identify the factors that predicted exit from OW for employment over time. This model determined the association between various individual- and neighbourhood-level covariates (listed in the data section) and the outcome of interest (where the outcome of interest is formally expressed as a "subdistribution hazard"). The subdistribution hazard ratio for each covariate describes impacts of covariates on the *rate* of exit for employment specifically among those who have not yet experienced the event of interest (i.e. exit for employment) or who have experienced one of the competing risks (i.e. exited the caseload for other reasons).[21] For example, the subdistribution hazard of 1.29 on post-secondary credentials indicates a 29% increase in the rate of exit from OW for employment (among those still on the caseload or who have experienced a competing event) relative to those who did not finish high school. The subdistribution hazard of 0.79 on health indicates a 21% (1.00-0.79=0.21) decrease in the rate of exit from OW for employment (among

16 Terminations do not include suspensions, which temporarily halts payments due to an eligibility issue that needs to be addressed, but individuals remain on the caseload. In contrast, terminations involve removing individuals from the caseload.

17 Because of the various reasons for exit, this rules out Kaplan-Meier approaches to estimating survival functions, which only consider the possibility of one event (i.e. one reason for "exit"); this approach would result in a biased coefficient estimates when competing events are in fact present (Lin, So and Johnston, 2012; Austin et al., 2016)

18 Austin, P. C., & Fine, J. P. (2017). Practical recommendations for reporting Fine-Gray model analyses for competing risk data. *Statistics in medicine, 36*(27), 4391-4400; Austin, P. C., Lee, D. S., & Fine, J. P. (2016). Introduction to the analysis of survival data in the presence of competing risks. *Circulation, 133*(6), 601-609.

19 Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*. Cambridge: MIT press.

20 Ibid.

21 Austin, P. C., & Fine, J. P. (2017).

those still on the caseload or who have experienced a competing event) relative to those who did not disclose a health issue.

More generally, these coefficients can also provide the direction of a covariate's effect on the *probability* of a person leaving the caseload for employment before a given time, but not the magnitude.[22] For simplicity, only the direction and significance of each covariate are described in this report, rather than the magnitude of the effect.

The models were estimated for the entire analytic sample as well as for the three age groups (youth, prime working age adults, and mature workers). Analysis was done using SAS version 9.4.

22 Austin, P. C., & Fine, J. P. (2017).

The views expressed in this publication are those of Toronto Employment and Social Services and do not necessarily reflect the views of the Ontario Centre for Workforce Innovation, Ryerson, or the Ministry of Advanced Education and Skills Development.