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A HELPING HAND GOES A LONG WAY:  
LONG-TERM EFFECTS OF COUNSELLING AND  
SUPPORT TO WORKFARE PROGRAM PARTICIPANTS

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A Helping Hand Goes a Long Way: Long-Term Effects of Counselling and Support to Workfare Program Participants

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**ABSTRACT**

We study the long-run impacts of the Canada Self-Sufficiency Project (SSP) Plus program, which randomly offered intensive employment support services for up to three years to long-term welfare recipients eligible for temporary work subsidies. We examine whether this intervention – aiming to address both economic and psycho-social barriers faced by the poor in finding and retaining desirable employment – led to long-run changes in individuals’ socioeconomic trajectories. We link study participants to their federal tax and employer-employee matched records for up to 20 years after random assignment. The intensive services treatment led to a 20-27 percent increase in participants’ annual earnings over the 20-year period, or approximately 26,000 CAD in present discounted real 2010 terms. As possible mechanisms, individuals experience increases in full-time employment throughout the first decade post-intervention, a greater retention of jobs in higher paying firms, and an improvement in non-cognitive skills.

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# 1 Introduction

The rise in wage inequality over past decades has seen the emergence of a large economic divide between educated workers and those with less education (Goldin and Katz 2008; Autor 2019; Goldin et al. 2020). Across both North America and Europe, highly-educated workers are ever more likely to sort into firms offering earnings premiums while less-educated workers in general—and those from disadvantaged backgrounds in particular—are increasingly shut out of opportunities for better pay and wage growth (Song et al. 2019; Dostie et al. 2021; Card et al. 2013). As a result of these trends towards greater inequality, there is increasing interest among policymakers to understand whether and how active labor market programs can help disadvantaged workers find and keep "good jobs" (Katz et al., 2022).

Practitioners who work with disadvantaged populations argue that for labour market interventions to succeed they must take into strong consideration individuals' beliefs and non-cognitive skills, which in turn can affect individuals' focus, their ability to set and achieve goals, and their engagement while looking for work and while on the job (Babcock et al., 2012).<sup>1</sup> Consistent with the understanding that it is necessary to address the psychosocial barriers disadvantaged individuals face, previous research finds that access to intensive support services can substantially improve a host of labor market outcomes, notably employment and earnings, in the short-run (Kahn 2012; Crépon and Van Den Berg 2016; Card et al. 2018).<sup>2</sup> However, we have a limited understanding of how highly intensive support for welfare program participants can affect individuals' lives in the long run, and whether these types of interventions lead to persistent or permanent changes in individuals' socio-economic trajectories. To the extent that intensive case management improves individuals' attitudes, behaviour, and decision-making, which in turn increases the rates of job-finding and retention, it may help induce sustained long-term gains for disadvantaged participants in welfare-to-work settings.

This paper advances the literature on the consequences of decreasing non-financial barriers to individuals' self-sufficiency. We study the long-run impacts of the Self-Sufficiency Project (SSP) Plus program, one of the randomized controlled trials implemented as part of the Canadian federal government's Self-Sufficiency Project. The SSP was an innovative experimental demonstration conducted in the 1990s to test whether time-limited financial incentives for work and other supports could help long-term income assistance recipients

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<sup>1</sup>Recent evidence highlighting that less-educated workers with soft skills are better able to find and keep employment at high-paying firms point to the importance of these attributes in the workforce (Aghion et al. 2019; Heller and Kessler 2022).

<sup>2</sup>This growing awareness that it is necessary to address the psychosocial barriers faced by disadvantaged households represents a departure from earlier "welfare-to-work" initiatives with their narrow focus on financial incentives and job search assistance. A recent *New York Times* reporting summarizes the view that conventional employment services may not do enough and highlights the advantages of wraparound services offered to participants in sectoral training programs (Lohr, 2021).

achieve a permanent break from welfare.<sup>3</sup> The SSP Plus study was designed to test whether intensive employment support services provided for an extended period of time by specialized personnel could complement the offer of an earnings supplement. Carried out in the province of New Brunswick, the experiment assigned single parents who were long-term welfare recipients to one of three experimental groups: the “Plus” treatment arm, which offered a generous—but time-limited—three-year earnings supplement and the offer of intensive employment and support services throughout this period; the “Regular” treatment arm, which offered the same earnings supplement but no intensive support services; or a control arm that remained subject to the provincial welfare system’s rules regarding the treatment of earnings and had no access to intensive services.<sup>4</sup>

To measure individuals’ socioeconomic trajectories over a long time horizon, we link study participants to their federal tax and employer-employee linked records for the period 1992 to 2015 using individuals’ Social Insurance Numbers. This allows us to measure employment, earnings, and social assistance benefits receipt from two years before random assignment to 20 years afterwards, along with a rich set of additional socioeconomic information for each participant. To estimate long-run effects of the intensive employment support services offered, we compare outcomes between the SSP Plus and SSP Regular treatment arms; comparisons between these two groups, both of which were eligible to receive the earnings supplement, allow us to isolate the incremental effect of employment services on our outcomes of interest.

The intensive employment and support services of the SSP Plus program led to substantial and long-lasting increases in participants’ earnings over the 20-year period following the intervention. Participants’ annual earnings increase between 21 to 27 percent in proportional terms; in levels, the annual average increase ranges from \$1,638 to \$2,634 (2010 constant CAD) in the first decade following random assignment and these effects increase to \$2,816 well into the second decade. Consistent with the increase in earnings, we find that participants experienced a large 4.5 to 7.4 percentage point increase in the full-time employment rate relative to the earnings supplement-only Regular group up to 12 years following the start of the intervention. Finally, the improved economic trajectories of the SSP Plus program participants are mirrored by a 4.8 to 11.0 percentage point decrease in their receipt of cash welfare throughout the first decade following random assignment. Taken together, our findings reveal that the intensive employment services offered through the program considerably transformed the lives of these individuals.

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<sup>3</sup>Welfare programs are typically referred to as income assistance or social assistance in Canada. We use all terms synonymously.

<sup>4</sup>The other trials estimated the impact of the earnings supplement alone on long-term welfare recipients and recent applicants to welfare, respectively. These demonstration projects have been the subject of multiple studies. See e.g., Blank et al. (2000); Robins and Michalopoulos (2001); Blundell (2001); Blundell (2006); Blundell and Hoynes (2004); Card and Hyslop (2005); Ferrall (2012)

To understand these long-lasting impacts on employment and earnings, we explore whether the intervention helped individuals obtain more desirable employment at jobs offering wage growth and further career progression. First, we estimate a substantial increase in the number of jobs held by participants during the first four years of the intervention, consistent with the program’s ability to aid individuals in moving to “better” jobs over time or to find employment more quickly after experiencing job loss. Second, we find the support services induced individuals to work in higher-paying firms in the medium term measured by the earnings distribution of workers employed at such firms, consistent with the retention of higher paying jobs or employment with better employers.<sup>5</sup> Finally, we find suggestive evidence that the Plus treatment led to short-run improvements in measures of individuals’ grit – a non-cognitive skill shown to be conducive to labour market success.

This paper’s findings offer several important contributions to the literature. A consensus of prior studies summarized in Kahn (2012), Crépon and Van Den Berg (2016), and Card et al. (2018) is that job search assistance and other employment services for individuals from disadvantaged households are effective at increasing employment rates and earnings in the first three years following program participation.<sup>6</sup> Due to data limitations there is very limited evidence on earnings, employment, and other dimensions of individuals’ socioeconomic trajectories more than five years after services are delivered.<sup>7</sup> Our study provides compelling evidence that intensive employment support services offered to long-term welfare recipients can have substantial effects on individuals’ employment and earnings for up to two decades. The positive long-term impacts of SSP Plus services suggest that intensive, time limited interventions may have long-lasting impacts by affecting the quality of employment matches.<sup>8</sup>

Our findings also contribute to the literature regarding the role of caseworkers in the

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<sup>5</sup>Robins, Michalopoulos, and Foley (2008) show in the four-year follow-up of the SSP Plus demonstration that SSP Plus participants were 9.4 percentage points more likely to have jobs with wage rates \$2 above the minimum wage than regular SSP participants, a 42-percent difference in proportional terms.

<sup>6</sup>Card, Kluve, and Weber (2018) undertake a meta-analysis of estimates of the impacts of active labor market programs (ALMPs) on employment drawn from more than 200 studies using experimental and observational methods, although only a handful of these studies report impacts from more than five years after program completion. A takeaway from studies assessing the long-term effects of employment services is that program impacts may change in magnitude and significance over time, which in turn has important implications for assessments of programs’ benefits and cost-effectiveness. See Manoli and Patel (2019) for a summary of recent evidence for the U.S.

<sup>7</sup>Couch (1992), Hotz et al. (2006), Schochet et al. (2006), and Manoli et al. (2018) assess the impacts of active labour market programs up to 10 years following program participation. Schochet (2021) examines the impacts of the U.S.’s Job Corps program up to 20 years and finds modest positive long-term employment impacts but no effects on earnings for cohorts who were in their early twenties at the time of participation.

<sup>8</sup>Our results also parallel Price and Song (2018)’s assessment of the long-term impacts of the Seattle/Denver Negative Income Tax experiment in the US. They find that individuals reduced their work effort while the experiments were ongoing and subsequently went back to work in jobs that were worse in terms of non-pecuniary amenities and possibly were less cognitively demanding but more physically taxing. Working in “worse” jobs ultimately resulted in higher rates of disability applications and earlier retirement.

provision of services to low-income households. Many government agencies rely on caseworkers to support the labor market reintegration of out-of-work individuals; these caseworkers play an important role in shortening the duration of joblessness (e.g., Huber et al. 2017; Michaelides and Mueser 2020; Schiprowski 2020; Schmieder and Trenkle 2020). There are relatively few studies, however, that consider whether certain caseworker practices produce better outcomes for individuals receiving services.<sup>9</sup> Our study points to the role of intensive case management provided both during and after job search in sustaining positive employment and earnings effects that might otherwise have faded, confirming earlier findings of the SSP Plus demonstration’s impacts in the short- and medium-term (Quets et al. 1999; Robins et al. 2008).<sup>10</sup>

Finally, the paper also informs the literature on welfare reform and the financial incentives for work faced by low-income households. A large literature examines earnings supplements delivered through the personal income tax system as refundable tax credits, the archetypal example of which is the United States’ Earned Income Tax Credit (EITC) (Eissa and Liebman 1996; Meyer and Rosenbaum 2001; Hotz and Scholz 2006; Chetty et al. 2013; Hoynes and Patel 2018; Bastian 2020; Schanzenbach and Strain 2021). The consensus from this literature is that the EITC has large extensive margin effects—inducing single mothers to enter the labour force—but small intensive margin responses due to information or adjustment frictions.<sup>11</sup> Our findings indicate that intensive case management provided both during and after job search are influential in addressing these information and adjustment frictions in a sustained manner, consistent with the earlier literature examining the SSP Plus program.

The article is organized as follows. Section 2 provides contextual information of the study population and describes the intervention. We follow with a description of our data sources in Section 3. Section 4 discusses the experimental design and empirical methodology. Section 5 presents the central empirical results of our study. Section 6 considers potential explanation for our findings, and Section 7 assesses the costs of service provision in relation to its impacts. Finally, Section 8 concludes with a discussion of findings and their broader implications.

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<sup>9</sup>Riccio et al. (1994) and Scrivener and Walter (2001) are exceptions. Both analyze experiments that vary inputs into the case management production function (the caseworker-to-client ratio and the degree of caseworker specialization, respectively).

<sup>10</sup>Riddell and Riddell (2020) also show that the experimental evidence of the broader SSP demonstration should be reassessed as Social Assistance policy changes implemented during the SSP evaluation period implied that the control group’s behavior did not provide an appropriate counterfactual.

<sup>11</sup>Kleven (2021) challenges this consensus, arguing that welfare reforms implemented in the 1990s are responsible for much of the increase in single mothers’ employment rates that has incorrectly been attributed to the effects of EITC.

## 2 Context and Program

The Self-Sufficiency Project (SSP) was a welfare-to-work demonstration project funded by the Canadian government starting in the early 1990s, a period which saw sharp increases in the size of Social Assistance caseloads and reciprocity rates peaking in 1994 with 12% of all Canadians under 65 on welfare (Kneebone and White, 2014). The Self-Sufficiency Project was devised by federal policymakers to test whether changes to financial incentives could help single parents on welfare find work and reduce their reliance on Social Assistance. Policymakers assumed that most long-term welfare recipients had low earnings potential because of extended absences from the workforce and limited educational attainment. For many single parents, leaving welfare for a minimum wage job would not result in any meaningful increase in their net household income since welfare benefits were reduced dollar-for-dollar with employment earnings beyond a small monthly exemption; leaving welfare for work also meant having to pay for childcare and transportation, which further reduced any increase in net income resulting from employment.

To overcome the disincentives facing long-term welfare recipients, the Self-Sufficiency Project would offer a generous, time-limited earnings supplement to randomly selected single parents in the provinces of British Columbia and New Brunswick who entered the workforce and stopped participating in Social Assistance. It was hoped that welfare leavers' wages would increase over time, thereby making work more attractive than welfare even after the supplement had ended. The Self-Sufficiency Project featured three distinct studies: the "Recipient" study carried out in New Brunswick and British Columbia, which examined the impact of the supplement offer on long-term welfare recipients; the "Applicant" study, which took place in British Columbia and assessed whether a supplement reserved for long-term recipients would incentivize new welfare applicants to stay in the caseload for longer to become eligible; and the "Plus" study in New Brunswick, which estimated the incremental effects of adding intensive employment support services to the offer of the earnings supplement. The Self-Sufficiency Project was overseen by a non-profit contracted by the federal government, the Social Research and Demonstration Corporation (SRDC), which was responsible for the design and implementation of the intervention, data collection and analysis, and the dissemination of official reports.

Recruitment into the SSP Plus experiment began in November 1994 and ended in March 1995. A total of 892 single parents who were long-term welfare recipients (defined as receiving Social Assistance benefits for at least 11 of the 12 preceding months at the time of the baseline survey) were recruited into the experiment: 293 were randomly assigned to the Plus treatment group, 296 to the Regular treatment group, and the remaining 303 to the control group. The offer of the supplement was made following random assignment, after which time Plus and Regular group members had 12 months to initiate the supplement by finding

full-time work and leaving welfare<sup>12</sup>. Once the supplement payments had started, “initiators” in the Plus and Regular groups were eligible to receive the earnings supplement in any of the subsequent 36 months in which they worked full-time. The SSP earnings supplement was calculated on a monthly basis to be equal to half the difference between actual earnings and a targeted level of earnings. For the SSP Plus study, the targeted level of earnings was equivalent to \$30,600 (current CAD) per year in 1994; an individual working 35 hours a week for 52 weeks at the then-minimum wage of \$5 per hour would receive an earnings supplement of \$10,750, which added to the actual earnings of \$9,100 would result in a gross annual income of \$19,850. “Non-initiators”—those Plus or Regular group members who were unable to find full-time work within 12 months following random assignment—became ineligible to receive the supplement and reverted to the standard treatment of earnings within Social Assistance.

SSP Plus services were delivered by a non-profit organization, Family Services Saint John, Inc., that was subcontracted by SRDC to run the SSP program in New Brunswick. Shortly after random assignment, Plus and Regular group members were invited to separate information sessions held at the SSP offices in the cities of Saint John and Moncton that were staffed by employees of Family Services Saint John, Inc. The purpose of the information sessions was to explain how the earnings supplement worked and to encourage attendees to take advantage of the supplement offer by finding a full-time job and leaving welfare within one year of random assignment. SSP office staff followed up separately with study participants who did not attend the information sessions to provide information one-on-one at home or over the phone. The designers of the SSP experiment wanted to ensure that individuals who were offered the earnings supplement correctly understood the incentives they faced so that labour supply responses were not attenuated by information frictions. To that end, study participants were surveyed to assess their knowledge of the supplement: 90.5% of Plus group members and 87.5% of Regular group members understood that with the earnings supplement they would be better off financially by leaving welfare for full-time work (Quets et al., 1999).

During the first year following random assignment, SSP staff occasionally contacted Regular group members over the telephone to encourage them to take advantage of the supplement offer. SSP staff could and did refer Regular group members to the services available to all welfare recipients that were offered by government agencies and community organizations; many of these referrals happened following information sessions about the earnings supplements. Provincial welfare office caseworkers could likewise refer any of the study participants who were receiving welfare to the same set of services (Quets et al., 1999).<sup>13</sup>

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<sup>12</sup>Full-time work is defined as an average of 30 hours per week during a month. In any 12-month period, supplement initiators could work less than full-time in up to two months and have their supplement reduced proportionately.

<sup>13</sup>Subsidized childcare was one program available to all low-income parents in the province of New Brunswick; childcare was not provided through SSP Plus.



Plus and Regular group members who found a full-time job within a year of random assignment would visit the SSP offices and meet with a staff person to confirm their eligibility and initiate the supplement. Ongoing payments of the earnings supplement was handled by an out-of-province contractor that processed paystubs mailed in by study participants.

Plus group members received employment support services directly from SSP staff at the SSP offices, as well as at home, and over the phone. Participation in these employment services was voluntary, and Plus group members could choose to participate in all, some, or none of the activities. In the first year after random assignment, all Plus group members could access the employment services through the SSP offices. Plus group members who initiated the earnings supplement could continue to receive services for the duration of the 36 months for which they were eligible to receive the supplement. Those who did not initiate the supplement stopped receiving SSP Plus services when the supplement offer expired 12 months after random assignment and thereafter could only access the same services available to all welfare recipients in the community.

Table 1: Participation in SSP Plus activities

Activity	Percentage	Number
Completed employment plan	94.2	276
Used resume service	68.6	201
Attended job club	25.3	74
Received job coaching	71.3	209
In person	31.7	93
By phone	63.8	187
Received job leads	61.4	80
In person	10.6	31
By phone	57.3	168
By mail	22.5	66
N		293

Because of the availability of other employment services delivered through government agencies and non-governmental organizations in the community, SSP staff undertook considerable efforts to encourage Plus group members to participate in the SSP Plus services available to them and to ensure that those services were qualitatively superior to offerings available elsewhere. A survey administered 18 months after random assignment confirmed that SSP staff had been successful in creating a “service differential” between Plus group

members on the one hand and Regular group members on the other: 47.9% of Plus group members reported participating in job search activities, compared to 31.9% of Regular group members (Quets et al. 1999; Robins et al. 2008).

The employment services on offer for Plus recipients through the SSP offices included group activities, such as job club workshops, and personalized offerings, such as employment planning and resume drafting. Individuals' participation in activities was recorded in the SSP case management IT system. Table 1, which is reproduced from Quets et al. (1999), details the share of Plus group members who participated in different SSP Plus service offerings: nearly all Plus group members completed an employment plan, and approximately two-thirds received resume help, job coaching, and job leads; only one quarter of Plus group members participated in a job club workshop, which was a one- to two-week long in-person group activity.

A service uniquely available to Plus group members (for which there was no substitute available through the Social Assistance system) was the one-on-one job coaching provided by SSP staff. Following the first information session, every Plus group member was assigned to a job coach. In program documents, the role of the job coach was described as serving as a "counsellor, advisor, advocate, and motivator" (Price, 1995) who provided proactive intensive case management to those SSP Plus members. When Plus group members were looking for work, job coaches could help prepare them for interviews, update their resumes, and provide encouragement and feedback before and after meetings with prospective employers.

Once full-time work was secured and the earnings supplement initiated, job coaches continued their outreach to Plus group members, offering advice for retaining employment and advancing careers. Job coaches helped earnings supplement initiators to navigate conflicts with coworkers or bosses and provided encouragement to ask for promotions or raises. Job coaches stayed in touch with Plus group members who had initiated the earnings supplement, having regular check-ins and responding to phone calls. "Any time they called, we called them back", said the former director of the SSP offices.<sup>14</sup> Job coaches sought better employment opportunities for Plus group members by canvassing businesses in the community; leads for jobs were shared with all Plus group members.

Although job coaches provided emotional support and informal counselling to help boost Plus group members' self-esteem and confidence, they did not formally provide mental or behavioural health services; Plus group members who reported serious issues involving mental illness, domestic violence, or substance use were referred to specialized providers in the community.

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<sup>14</sup>Interview with the authors, 2021.

## 3 Data

### 3.1 Data Sources and Construction

To estimate the long-run effects of SSP Plus services, the baseline survey of study participants was linked using an anonymized unique identifier derived from individuals' Social Insurance Numbers (SINs) to federal tax records. Specifically, the data were linked to the Longitudinal Worker File (LWF), an administrative dataset containing information from four sources: T1 personal income tax filings, T4 statement of remuneration paid forms issued by firms to their employees each year, records of employment submitted by firms to the federal government when there is an interruption of earnings, and the Longitudinal Employment Analysis Program (LEAP) database which contains annual employment information for each employer in Canada. The records were also linked to T5007 statement of benefits forms submitted by provincial governments to the federal government on behalf of welfare recipients. Whenever possible, linkages are made for the two calendar years preceding random assignment and up to 21 years afterwards. The baseline survey, which was administered by Statistics Canada enumerators prior to random assignment, collected information about respondents' demographics, family backgrounds, employment histories, use of childcare, and attitudes towards work and welfare. The baseline survey was completed by all study participants. Further information about the administrative data and the linkage process can be found in the Online Appendix.

A concern with linking study participants to their tax filings is the possibility of bias arising from differential rates of tax filing across the Plus, Regular, and control groups, particularly if tax filing is correlated with employment status or earnings. Table 2 lists the linkage rates for study participants to records in Statistics Canada's T1 historical personal master file, which includes all T1 income tax forms filed by study participants: each estimate represents the average annual filing rate over four-year time periods. The average annual matching in the first four years following random assignment is above 98% for the Plus, Regular, and control groups. The high rates of tax filing among lone parent welfare recipients is attributable to the fact that tax filing is required to receive generous federal child benefits and other refundable tax credits. The average annual match rate declines over time for all three groups, although the rate remains high—between 87% and 90%—even 17 to 20 years after random assignment. There are no statistically significant differences in the match rates between the Plus, Regular, and control group members during any four-year period following random assignment.

To investigate whether the services offered through SSP Plus affected the quality of employment found by Plus group members, additional variables were constructed either from T1 filings or from Statistics Canada's linked employer-employee database. The first em-

Table 2: Linkage Rates to T1H Personal Master File

	SSP Plus (1)	Regular SSP (2)	Control (3)	Regular SSP - Control [(1)-(3)] (4)	Regular SSP - Control [(2)-(3)] (5)	SSP Plus - Regular SSP [(1)-(2)] (6)
Years 1-4	0.987	0.987	0.993	-0.006 (0.006)	-0.006 (0.007)	0.000 (0.007)
Years 5-8	0.964	0.972	0.976	-0.012 (0.012)	-0.004 (0.012)	-0.008 (0.013)
Years 9-12	0.946	0.947	0.949	-0.003 (0.015)	-0.002 (0.016)	-0.001 (0.016)
Years 13-16	0.892	0.914	0.903	-0.012 (0.022)	0.010 (0.021)	-0.022 (0.022)
Years 17-20	0.871	0.873	0.893	-0.022 (0.024)	-0.021 (0.024)	-0.001 (0.026)
N	293	296	303			

Notes: Columns 1-3 report linkage rates for each experimental arm across time periods. Columns 4-6 report differences in linkage rates across experimental arms are estimated based on regressions that adjust for year fixed effects; standard errors clustered at the individual level are reported in parentheses. n/a = estimates suppressed for privacy protection.

employment quality variable under consideration is an indicator for paying union dues, which is equal to one if study participants deduct annual fees paid to a union or a professional membership organization from the income on their T1 filing. The second is a variable that records the number of firms that a study participant works for over the course of a calendar year; this variable is derived from summing the number of unique firm identifiers associated with a study participant each year in the linked employer-employee database (the LWF). The third, the length of job tenure, is a variable that records the number of calendar years that a study participant is employed by a firm. Finally, employer size, mean log earnings and the earnings levels at the 25th-, 50th-, and 75th-percentiles of each firm's payroll distribution are constructed using the linked employer-employee database. Further information about the construction of these variables is included in the Online Appendix.

## 3.2 Descriptive Statistics

For the purposes of illustrating the typical employment, earnings, and Social Assistance trajectories of individuals who were single parents on welfare in the early 1990s, Figure 1 shows the average rates of full-time employment, real earnings, and welfare receipt in the control group over the approximately 20-year time period in our study. Consistent with the conditions for participation in the program, the population of long-term welfare recipients (defined as receiving Social Assistance benefits for at least 11 of the 12 preceding months at the time of the baseline survey) had very low full-time employment rates even two years following the start of the intervention, but their employment trajectories improved considerably over the following years: the full-time employment rates of these long-term welfare participants were already 38 percent ten years later, and increased moderately in subsequent years (Figure 1, Panel A). Similarly, we observe substantial increases in the average earnings of these individuals over this long-term period (Panel B), as well as a large reduction in their Social Assistance participation rate (Panel C).

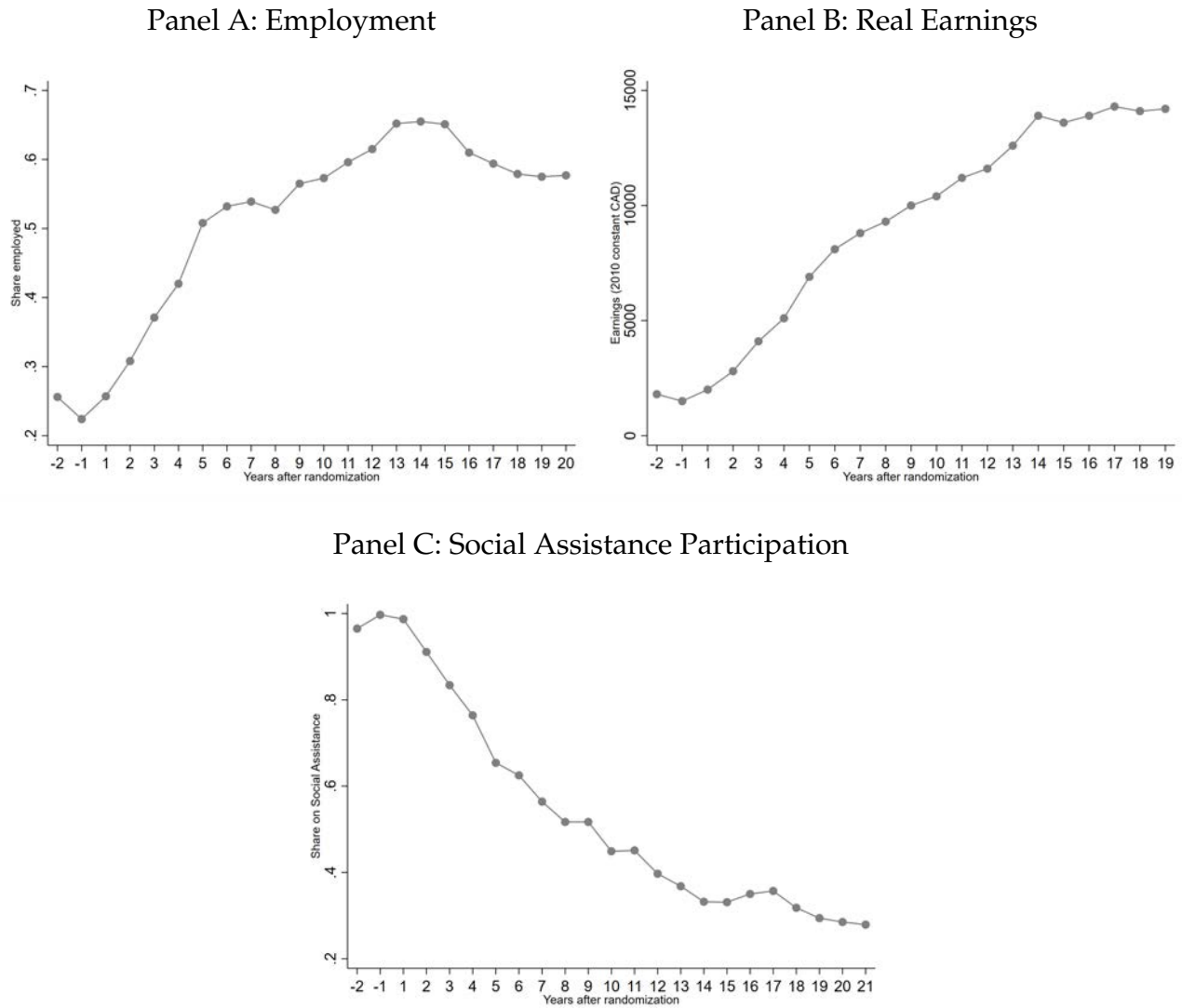
For the main outcome variables considered in this paper, there are no statistically significant pre-treatment differences between study groups in the unadjusted averages in the two years preceding random assignment (see Table 3).

Table 3: Baseline Balance in Main Outcomes of Interest

	SSP Plus	Regular SSP	Control	Regular SSP - Control [(1)-(3)] (4)	Regular SSP - Control [(2)-(3)] (5)	SSP Plus - Regular SSP [(1)-(2)] (6)
	(1)	(2)	(3)			
Employment	0.177	0.214	0.224	-0.047 [0.153]	-0.010 [0.765]	-0.037 [0.262]
Earnings (in 2010 CAD)	1,100	1,400	1,500	-321 [0.142]	-51 [0.831]	-300 [0.228]
Social Assistance	0.997	1.000	0.997	0.000 [0.985]	0.003 [0.318]	-0.003 [0.318]
N	293	296	303			

Notes: Columns 1-3 report baseline (year  $t = -1$ ) mean share employed, mean earnings, and mean share on Social Assistance for each experimental group. Columns 4-6 report differences in means between experimental groups; p-values of tests of significance are reported in parentheses.

Figure 1: Employment, Earnings, and Social Assistance Participation Rate among Control Group Members



Notes: Panel A presents the fraction employed among the SSP Plus control group (where employment is an indicator for having earned over  $3 \times 30 \times 4.33 \times$  minimum wage). Panel B presents earnings (in 2010 constant Canadian dollars). Panel C presents the rates of participation in Social Assistance.

Additional descriptive statistics and baseline balance on a broader set of baseline individual and household characteristics is presented in Online Appendix Table A1. Mean values for the Plus, Regular, and Control groups are shown, as well as differences in means and standard errors of these differences.<sup>15</sup> Over 95% of study participants were women; all participants were parents, with 61% having 1 child, 29% having two children, and the remainder having 3 or more children. Close to half of study participants were between the

<sup>15</sup>Although baseline survey responses are available for all study participants and held by Statistics Canada, many averages cannot be reported due to Statistics Canada's rules for small cell suppression. Accordingly, we reproduce the summary statistics table from Quets et al. (1999). 286 of 293 Plus group members, 288 of 296 Regular group members, and 288 of 303 control group members responded to the 18-month survey.

ages of 19 and 29 at the time of random assignment, another third were 30-39 years old, 14% were 40-49 years old, and the small remainder were 50 or older. 55% of participants had never been married; another 42% reported being separated, divorced, or widowed; a small number of study participants, around 2%, responded they were married or in a common-law relationship although they reported being single to the welfare authorities and were thus included in the SSP study. More than 90% of study participants had no more than a high school education, and two-thirds reported having a mother or a father who did not finish high school. With respect to participation in Social Assistance, approximately 20% of respondents had received welfare for 10-23 of the previous 36 months; 25% had received welfare in 24-35 of the previous 36 months, and 44% had received welfare in each of the 36 months prior. More than 90% of study participants reported they had ever held a paid job, with an average of almost 7 years worked. Around a quarter of study participants reported working at baseline, with 8% working 30 hours per week or more.

Consistent with the evidence reported on the short-run effects of the SSP program (e.g., Robins, Michalopoulos, and Foley 2008), there are some statistically significant differences in baseline characteristics across the Plus and Regular groups. Plus group members were less likely to have grown up in single family households or in households that received welfare. They were less likely to report not being able to find work because of limited educational attainment and were more likely to be confident about finding trustworthy childcare. In some instances, these differences might imply that Plus group members were less disadvantaged than Regular group members. Other statistically significant differences in baseline characteristics pointed in the direction of being less able to take advantage of the supplement offer: Plus group members were more likely to have three or more children and to have children of younger ages compared to Regular group members. An F-test of the joint hypotheses of significance fails to reject the null hypothesis that all differences are zero. This test implies that randomization was successful at achieving statistically similar treatment and control groups at baseline.

## 4 Empirical Methodology

We estimate the average effects of the offer of employment support services on individuals' short and long-term socioeconomic outcomes. First, we graph means for every treatment arm in each year post-randomization to compare outcomes and describe patterns in the data. In line with previous studies, we show that the impacts for the SSP Regular group fade out after about five years, as labor market outcomes for the control group catch up. Second, to focus on the additional impact of the intensive support services, we estimate intent-to-treat (ITT) impacts of the SSP Plus group relative to the Regular SSP group offered the time-limited financial incentives only. These effects are estimated using the linear speci-

fication:

$$Y_{it} = \beta_{Plus,\tau} T_{Plus,i\tau} + \beta_{Reg,\tau} T_{Reg,i\tau} + \delta_t + \epsilon_{it} \quad (1)$$

where  $Y_{it}$  is the outcome of interest for study participant  $i$  in year  $t$ ; is  $\beta_{Plus,\tau}$  is the coefficient on an indicator variable  $T_{Plus,i\tau}$  for whether the participant is assigned to the Plus group in post-randomization year  $t$  belonging to a year grouping  $\tau$ ;  $\beta_{Reg,\tau}$  is the analogously defined coefficient on an indicator variable for assignment to the Regular group,  $T_{Reg,i\tau}$ ; and  $\delta_t$  are year fixed effects. We report estimates for groupings of 4-year intervals  $\tau$  post-random assignment (i.e., years 1-4, 5-8, 9-12, 13-16, and 17-20); this allows us to effectively summarize the longitudinal patterns in the data and increase statistical precision.<sup>16</sup> We cluster standard errors at the individual level.

The specification above is estimated using observations from all three treatment arms, such that  $\beta_{Plus,\tau}$  and  $\beta_{Reg,\tau}$  respectively represent the impacts of the SSP Plus and Regular treatments relative to the control group over each four-year period. The incremental impact of access to SSP Plus services is calculated by subtracting the impact of receiving only the offer of the earnings supplement from the impact of receiving both the offers of services and the supplement:  $\beta_{Services,\tau} = \beta_{Plus,\tau} - \beta_{Reg,\tau}$ .<sup>17</sup> We compute standard errors for the difference based on the estimated coefficients and covariance matrices.

We do not make any attempt to convert our ITT estimates into treatment-on-the-treated (TOT) estimates. As was noted in Section 2, usage of SSP Plus services, including involvement in job coaching, was voluntary: the intensity of treatment therefore varied based on individual Plus group members' willingness to participate and on whether they initiated the earnings supplement (as services continued to be provided only to supplement initiators one year after random assignment). In the absence of a way to meaningfully scale the ITT estimates by the intensity of services received, we err on the side of caution by not attempting to calculate any TOT effects.

A concern that is commonly raised in the context of randomized evaluations of labour market interventions is the existence of displacement effects that violate the stable unit treatment value assumption (see Crépon et al. 2013). The experimental design of the SSP Plus study does not allow us to separately identify the direct effects of the offer of employment services from the displacement effects that might arise from Plus group members taking job opportunities away from Regular group members.<sup>18</sup> The estimation of the general equilib-

<sup>16</sup>The grouping of years 1 through 4 following random assignment covers the 12-month supplement initiation window and most of the 36-months for which the supplement was available to initiators in the Plus and Regular groups.

<sup>17</sup>Comparisons between the Plus group and the control group generate estimates of the combined effects of the offer of the earnings supplement and the offer of employment services; these estimates are included in the Online Appendix.

<sup>18</sup>Crépon et al. (2013) vary the share of jobseekers who are randomly assigned to receive an offer of intensive employment counselling across different regions in France; comparisons across regions reveal that control group members were unemployed for longer in regions where the share of jobseekers assigned to treatment



rium effects of the widespread provision of intensive employment services is also beyond the scope of this paper.<sup>19</sup>

Recognizing the degree of imbalance in a small set of baseline characteristics (see Section 3.2), we test whether regression adjustment affects the balance in pre-treatment employment and earnings outcomes.<sup>20</sup> Conditioning on baseline characteristics actually leads to an increase in pre-treatment differences in the main outcomes of interest. As a result of this analysis, our preferred specification is one without regression adjustment for baseline differences; we report estimates from the adjusted specification in the Online Appendix.

## 5 Results

### 5.1 Effects of SSP Plus on Employment

A central objective of the SSP Plus demonstration was to determine whether combining the offer of a time-limited earnings supplement with intensive employment services would do more to help lone parents on Social Assistance find and keep jobs than offering the supplement alone. To that end, this section considers the long-term incremental impacts of SSP Plus support services on employment, full-time employment, and real earnings.

Figure 2 provides an illustration of the trends in the annual rates at which Plus, Regular, and control group members were employed (defined as having total employment income equivalent to at least three months' earnings from full-time work at minimum wage). As shown in Panel A, individuals in both Plus and Regular groups were employed at higher rates than those in the control group in the first two calendar years after random assignment, which corresponds to the 12 month period during which time it was necessary to secure a full-time job in order to become eligible to receive supplement payments over the subsequent 36 months.<sup>21</sup> Throughout the first decade post-randomization, the Plus group's em-

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was higher.

<sup>19</sup>Lise et al. (2004) use estimates from the SSP Recipients study to parameterize a dynamic general equilibrium model and simulate the effects of expanding the offer of a time-limited earnings supplement to all welfare recipients, not just single parents. They report general equilibrium effects on wages for workers who are not welfare recipients.

<sup>20</sup>In the original SSP Plus reports published by the Social Research and Demonstration Corporation, estimates were adjusted using a linear regression specification that included as covariates study participants' average monthly earnings in the four quarters prior to random assignment, average monthly welfare payments in the four prior quarters, age, age squared, and indicators for being female, having less than a high school education, working at baseline, whether liking work, whether expected to be married in a year, and indicators for missing responses for any of the preceding variables.

<sup>21</sup>For most SSP Plus study participants, the 12-month window for initiating the earnings supplement spans part of year 1 and part of year 2 in our data. This is because our years after random assignment variable uses calendar years and most study participants' 12-month initiation windows spanned two calendar years. For

ployment rate is higher than the Regular group's; by the second decade post-randomization, the rates of employment for both the Regular and control groups catch up to the Plus group such that the employment rates for all three groups overlap from year 14 onward.

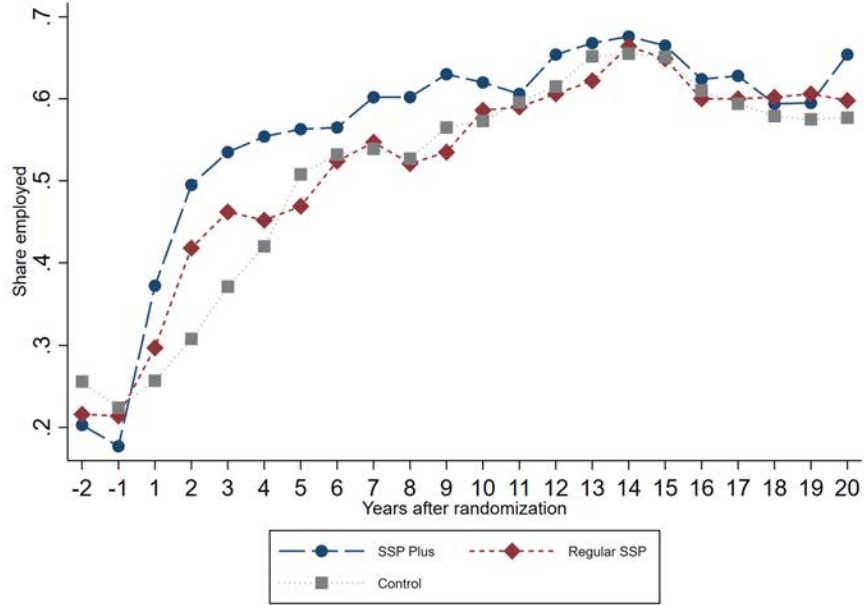
Panel B of Figure 2 presents the four-year average estimates of the incremental impact of SSP Plus services as horizontal dashed line segments spanning four-year periods; 90% confidence intervals for these estimates are represented by transparent grey bars, and the difference in the annual rates of employment are overlaid as a solid black line with statistically significant annual differences at the 90% level denoted by a cross marker. As noted in column 1 of Table 4, in years 1-4, Plus group members are on average 8.2 percentage points more likely to be employed (a 20% increase relative to Regular group members, of whom an average of 40% are employed over the four-year period). For years 5-8, Plus group members are 6.8 percentage points more likely to be employed (a 13% increase over the Regular group average of 52%). For years 9-12, 13-16, and 17-20, the estimates of the incremental employment impacts of SSP Plus services are positive in sign but smaller in magnitude and not statistically significant.

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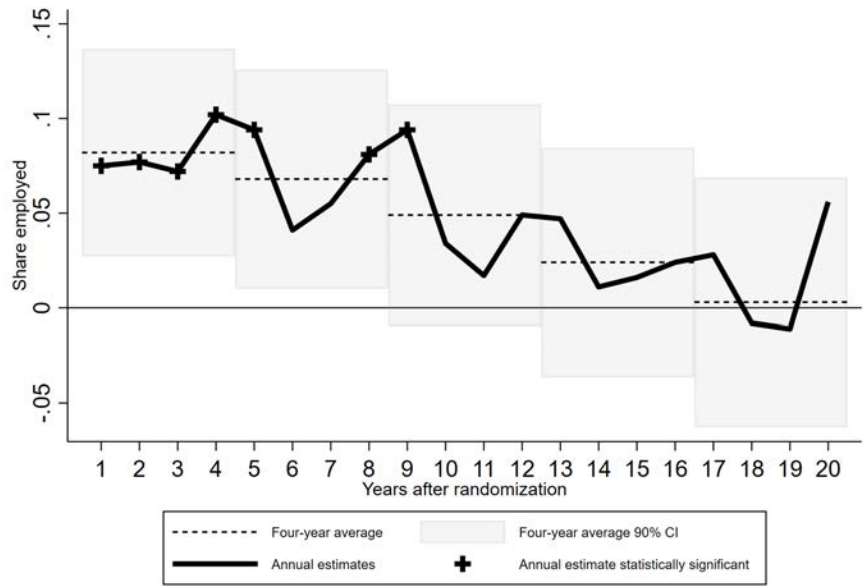
study participants randomized in the last two months of 1994, 1994 is designated year 1 and 1995 is year 2; for study participants randomized in the first three months of 1995, 1995 is year 1 and 1996 is year 2.

Figure 2: Effects of the Self-Sufficiency Plus Program on Any Employment

Panel A: Trends by Experimental Arm



Panel B: Treatment Effect Estimates

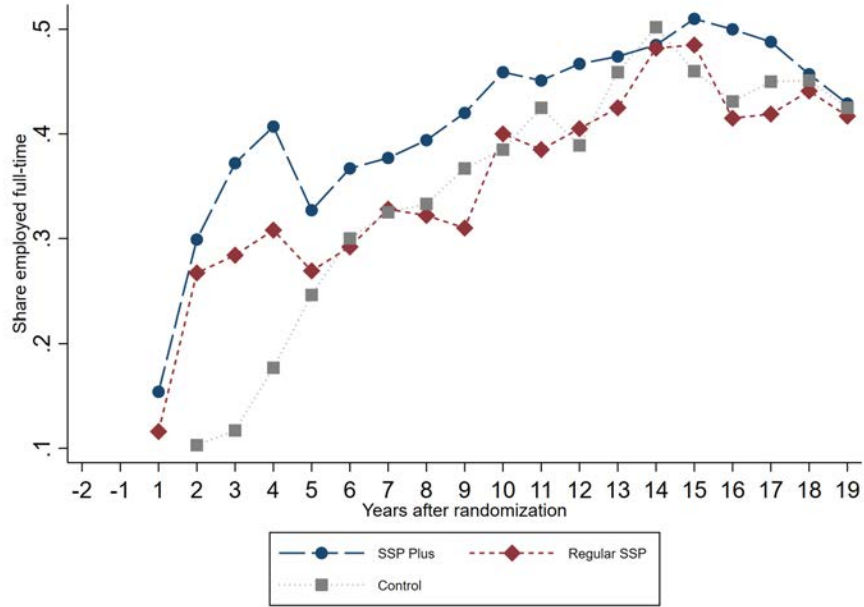


Unadjusted specification, comparison of SSP Plus to Regular SSP

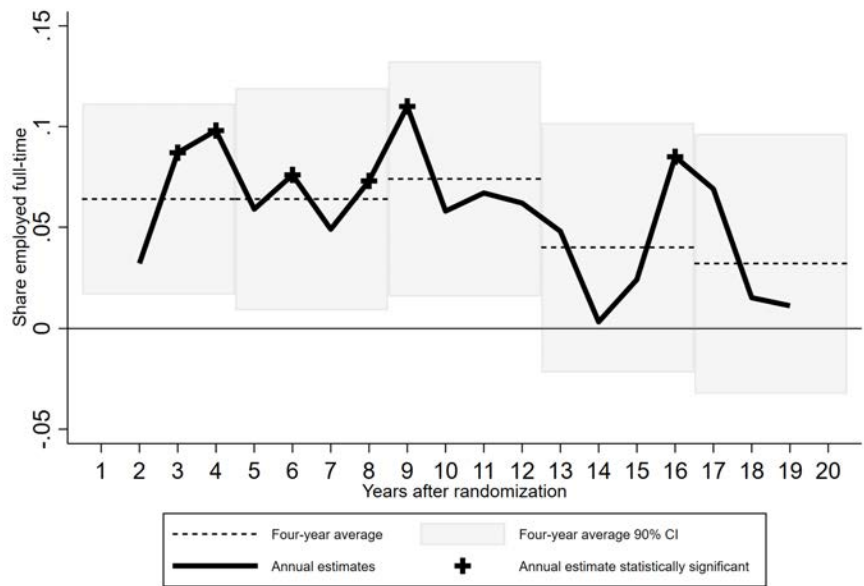
Notes: Panel A reports means for every treatment arm in each year pre- and post-randomization. Panel B reports annual (solid line) and 4-year group-specific (horizontal dashed line segments) intent-to-treat (ITT) impact estimates of the SSP Plus program relative to the Regular SSP group based on estimates of equation (1). 90% confidence intervals for four-year group specific estimates are represented by transparent grey bars. Annual differences are overlaid as a solid black line with statistically significant annual differences at the 90% level denoted by a cross marker.

Figure 3: Effects of the Self-Sufficiency Plus Program on Full-Time Employment

Panel A: Trends by Experimental Arm



Panel B: Treatment Effect Estimates



Unadjusted specification, comparison of SSP Plus to Regular SSP

Notes: Panel A reports means for every treatment arm in each year pre- and post-randomization. Panel B reports annual (solid line) and 4-year group-specific (horizontal dashed line segments) intent-to-treat (ITT) impact estimates of the SSP Plus program relative to the Regular SSP group based on estimates of equation (1). 90% confidence intervals for four-year group specific estimates are represented by transparent grey bars. Annual differences are overlaid as a solid black line with statistically significant annual differences at the 90% level denoted by a cross marker.

Table 4: Effects of the SSP Plus Program on Employment, Earnings, and Welfare Receipt

Incremental impacts of SSP Plus services in:	Dependent variables:			
	Employment (1)	Full-Time Employment (2)	Earnings (2010 \$) (3)	Welfare Receipt (4)
Years 1-4	0.082** (0.033)	0.064** (0.029)	1,683*** (651)	-0.059*** (0.023)
Years 5-8	0.068* (0.035)	0.064* (0.034)	2,010** (845)	-0.110*** (0.036)
Years 9-12	0.049 (0.036)	0.074** (0.036)	2,634** (1,048)	-0.059 (0.037)
Years 13-16	0.024 (0.037)	0.040 (0.038)	2,998** (1,358)	-0.022 (0.035)
Years 17-20	0.003 (0.040)	0.032 (0.039)	2,816* (1,494)	-0.003 (0.037)

Notes: Intent-to-treat (ITT) impact estimates of the SSP Plus program relative to the Regular SSP group based on equation (1); standard errors clustered at the individual level. Statistically significant at \*\*\* 99 percent, \*\* 95 percent, and \* 90 percent confidence levels, respectively. n/a = estimates suppressed for privacy protection.

Trends in the rates of annual full-time employment in the Plus, Regular and control groups are depicted in Panel A of Figure 3. In the first four years following random assignment, Plus and Regular group members are more likely to be employed full-time than are control group members, consistent with the effects of the incentive for full-time work provided by the earnings supplement. In the fifth year after random assignment, the rates of annual full-time employment drop steeply for both Plus and Regular groups but not for the control group: the timing of the decline corresponds to the termination of the earnings supplement and the reversion to the status quo treatment of earnings within the federal and provincial tax-and-transfer systems. From year 6 until year 15, the trend in the rates of full-time employment is increasing for all three groups, although there is little difference in the level of full-time employment between the Regular and control groups. The SSP Plus group experiences consistently greater full-time employment rates throughout most of this period.

Table 4, column 2 reports the point estimates and standard errors for the four-year impacts of SSP Plus services on the rates of full-time employment. The point estimates indicate that the full-time employment rate in the Plus group is higher than the Regular group's by 6.4 percentage points in years 1-4 (a 27% increase relative to the Regular group's four-year

average of 24%), by 6.4 percentage points in years 5-8 (a 21% increase relative to the Regular group's four-year average of 30%), and by 7.4 percentage points in years 9-12 (a 19% increase relative to the Regular group's four-year average of 38%). The year-specific estimates show robust evidence of differential increases in employment between the third and ninth years post-randomization (Figure 3, Panel B). Point estimates of the incremental effects of SSP Plus services for years 13-16 and 17-20 post-random assignment are positive in sign but not statistically significant.

## 5.2 Effects of SSP Plus on Earnings

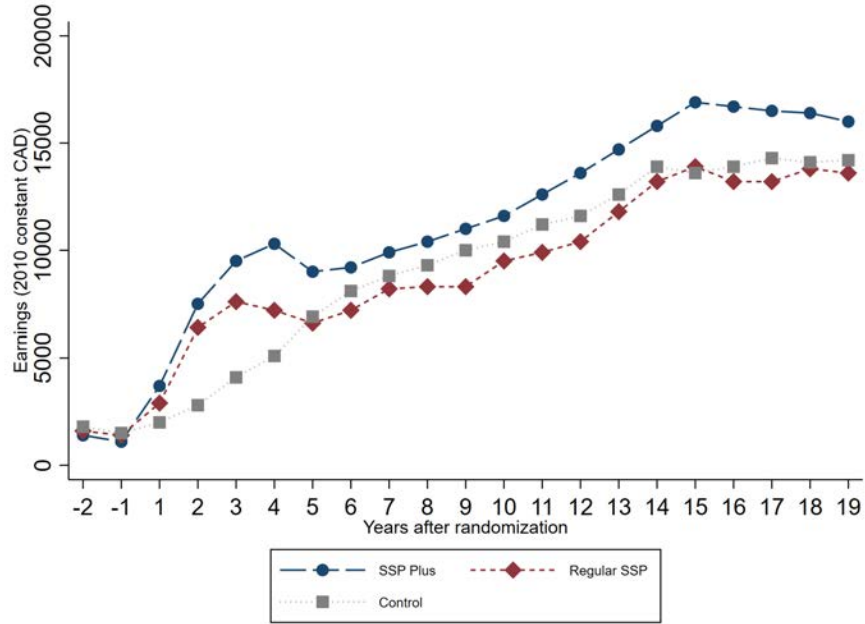
Panel A of Figure 4 depicts trends in the level of earnings for the SSP Plus, Regular, and control groups. During the time that the SSP demonstration was ongoing, average earnings for the Plus group were higher than the Regular group, and average earnings for both the Plus and Regular groups were higher than for the control group. Both the Plus and Regular groups experience a decline in average earnings between years 4 and 5, which as noted above corresponds to declines in employment and the termination of the SSP earnings supplement. After year 5, average earnings for the Regular group are no higher than the average earnings in the control group; the Plus group, however, continues to have robust higher average earnings compared to both the Regular and control groups throughout the 20-year follow-up period.

Turning to the estimates of the incremental impact of services presented in Table 4, the average effect of SSP Plus services leads to an increase in real annual earnings in years 1-4 by \$1,638 compared to the Regular group annual average of \$6,025, or a 27% relative increase. For years 5-8, Plus group members earn on average \$2,010 more per year than Regular group members who have average annual earnings of \$7,575, again a 27% relative increase. And for years 9-12, 13-16, and 17-20, the estimates of the average earnings effects are \$2,634, \$2,998, and \$2,816, respectively, representing increases of approximately 27%, 23%, and 21% relative to the average annual earnings of Regular group members.

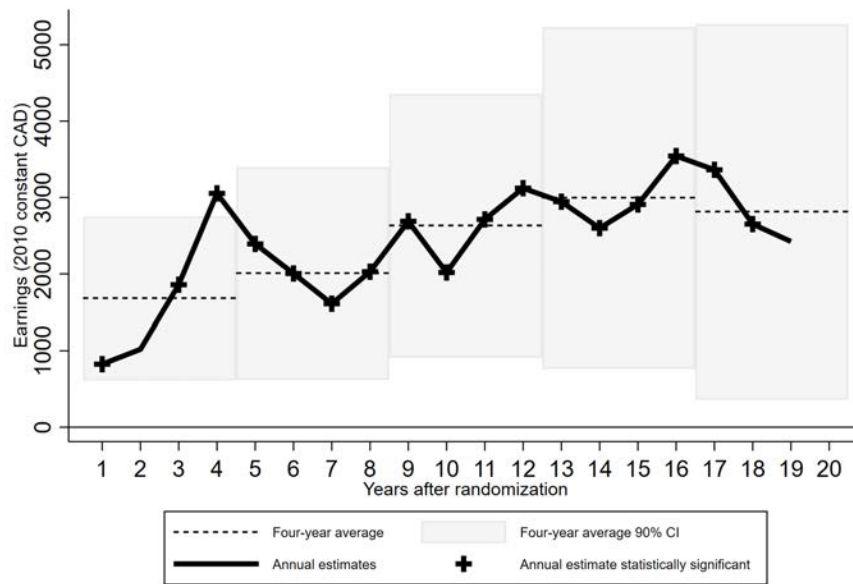
The long-term increase in average earnings for Plus group members may be attributable to a combination of extensive and intensive margin labour supply effects and to impacts on wages earned. In earlier years post-random assignment, the incremental impacts of Plus services on the probability of having any employment are larger in magnitude than the impacts on the probability of full-time employment, which implies that extensive margin responses may explain at least some of the higher average earnings for the Plus group. Later in the post-randomization period, Plus group members are no more likely than Regular group members to have any employment but are still significantly more likely to be employed full-time; this implies that a combination of additional hours worked and higher wages—but not higher rates of labour force participation—may explain the observed earnings differen-

Figure 4: Effects of the Self-Sufficiency Plus Program on Individual Earnings

Panel A: Trends by Experimental Arm



Panel B: Treatment Effect Estimates



Unadjusted specification, comparison of SSP Plus to Regular SSP

Notes: Panel A reports means for every treatment arm in each year pre and post-randomization. Panel B reports annual (solid line) and 4-year group-specific (horizontal dashed line segments) intent-to-treat (ITT) impact estimates of the SSP Plus program relative to the Regular SSP group based on estimates of equation (1). 90% confidence intervals for four-year group specific estimates are represented by transparent grey bars. Annual differences are overlaid as a solid black line with statistically significant annual differences at the 90% level denoted by a cross marker.

tial over most of the follow-up period.

### 5.3 Effects of SSP Plus on Welfare Receipt

The increase in Plus group members' rates of employment and earnings relative to Regular group members is mirrored by a decrease in welfare receipt. Annual trends in welfare receipt by experimental group are presented in Panel A of Figure 5: from year 1 through year 4 post-randomization, the rate of welfare receipt declines for the Plus and Regular groups relative to the control group, with the decline being greatest for the Plus group. After year 5, there is little difference in the rates of receipt between Regular and control groups, although Plus group members continue to receive Social Assistance at lower rates. Over time the rate of decrease in welfare participation for the Regular and control groups overtake the rate of decrease for the Plus group, resulting in convergence in the rate of welfare participation in the second decade post-randomization.

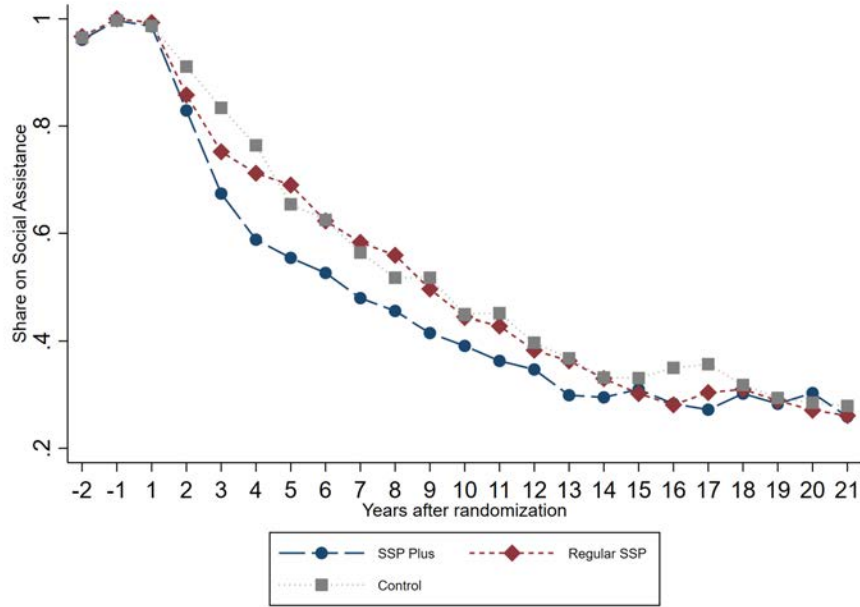
Estimates of the four-year average treatment effects associated with the incremental effects of SSP Plus services, with annual differences in welfare participation between the Plus and Regular groups overlaid, are presented in Panel B, and point estimates and standard errors are presented in column 4 of Table 4. In years 1-4, Plus group members are 5.9 percentage points less likely to participate in Social Assistance than Regular group members (of whom approximately 83% receive welfare, a relative difference of 7%); in years 5-8, Plus group members are 11 percentage points less likely to be on Social Assistance (relative to an average of 61% in the Regular group, or a difference of 18%). Estimates of the average annual incremental effects of SSP Plus employment services on welfare receipt in years 9-12, 13-16, and 17-20, respectively, are all negative in sign but are smaller in magnitude and not statistically significant.

Taken together, the decrease in welfare receipt along with the increases in any employment, full-time employment, and earnings show that the intensive employment support services offered to the Plus group through SSP offices had impressive short- and long-term impacts on the labour force outcomes. That the SSP Plus treatment would produce sustained impacts was not a foregone conclusion while the study and earnings supplement payments were ongoing: official reports detailing results at 18 and 36 months post-random assignment noted that the difference in the monthly rate of full-time employment between the Plus and Regular groups was not statistically significant even though Plus group members had initiated the earnings supplement at a higher rate (52% of Plus group members initiated the supplement by finding full-time employment within 12 months after randomization; only 35% of Regular group members did so) (Quets et al. 1999; Lei and Michalopoulos 2001). These initial results suggested that Plus employment services may have pushed less work-ready welfare recipients into full-time jobs they could not hold on to. It was only towards the

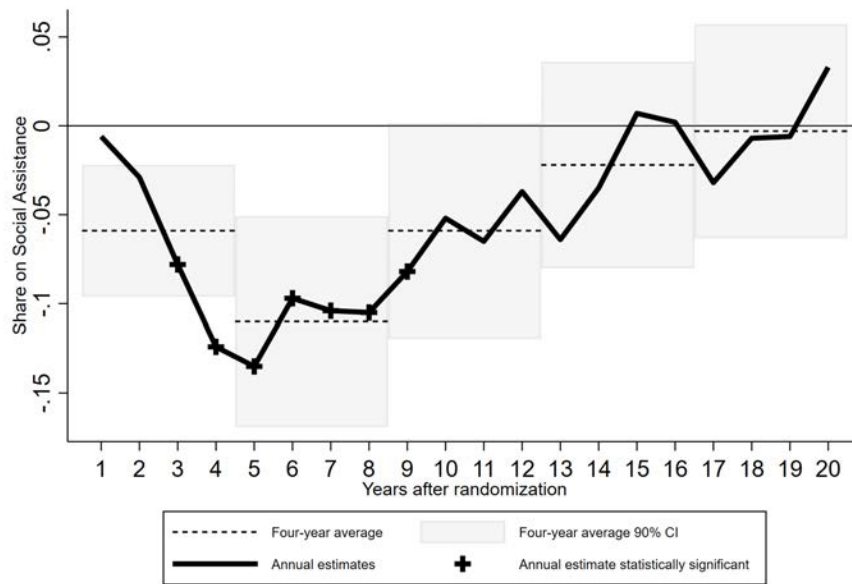


Figure 5: Effects of the Self-Sufficiency Plus Program on Welfare Receipt

Panel A: Trends by Experimental Arm



Panel B: Treatment Effect Estimates



Unadjusted specification, comparison of SSP Plus to Regular SSP

Notes: Panel A reports means for every treatment arm in each year pre and post-randomization. Panel B reports annual (solid line) and 4-year group-specific (horizontal dashed line segments) intent-to-treat (ITT) impact estimates of the SSP Plus program relative to the Regular SSP group based on estimates of equation (1). 90% confidence intervals for four-year group specific estimates are represented by transparent grey bars. Annual differences are overlaid as a solid black line with statistically significant annual differences at the 90% level denoted by a cross marker.

end of the SSP Plus study that there began to emerge differences between the Plus and Regular groups: using survey data at 54 months following random assignment Michalopoulos et al. (2002) and Robins et al. (2008) find that the Plus group had significantly higher rates of full-time employment, higher average earnings, and lower welfare receipt than the Regular group. The persistence of treatment effects for the Plus group as the earnings supplements were wound down stands in contrast to the rapid fade out of impacts for the Regular group, whose rates of full-time employment and earnings converged to the control group's shortly after the end of the supplement offer.

## 6 What Made the Plus Treatment Work

We move now to a consideration of potential mechanisms that could explain how the Plus treatment's support services generated long-term impacts on employment and earnings. First, we examine whether Plus group members were more likely to find better jobs that offered opportunities for wage growth and career progression. Second, we look at how the Plus treatment may have affected participants' non-cognitive skills by changing beliefs about agency and the ability to affect one's own circumstances in life. Finally, we present qualitative evidence documenting what Plus group members thought of the services they received and SSP staff members' explanations for the success of the program.

### 6.1 Quality of Employment and Employers

To explore whether SSP Plus services helped individuals find higher-quality, better-paying jobs, we first consider whether there are differences between the Plus and Regular groups with respect to the number of employers. Although a long-standing literature documents a positive association between longer job tenure and higher wages (Abraham and Farber 1987; Topel 1991), it may be the case that on-the-job search and more frequent job-changing can improve the quality of worker-firm matches, leading to more output and higher wages (Menzio and Shi, 2011). SSP staff encouraged working Plus group members to seek out raises and promotions with their current employers and provided job leads for better-paying positions at other firms. Quets et al. (1999) note that, among supplement initiators, Plus group members were less likely than Regular group members to be working in the same job as the one in which they started receiving the supplement and were more likely to have left a firm for a better employment opportunity elsewhere.<sup>22, 23</sup>

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<sup>22</sup>Because the share of supplement initiators was higher in the Plus group than the Regular group, differences across the two sets of initiators could be the result of treatment or differences in composition.

<sup>23</sup>Using a dynamic structural model, Ferrall (2012) argues that the Plus treatment generated a higher rate of job offers for Plus group members, which allowed them to reject unfavourable offers before accepting a better

Table 5: Effects of the SSP Plus Program on Employer Quality

Incremental impacts of SSP Plus services in:	Dependent variables:		
	Number of employers	Earnings at the 25th percentile of within-firm distribution (% change)	Earnings at the 50th percentile of within-firm distribution (% change)
	(1)	(2)	(3)
Years 1-4	0.17** (0.08)	-0.8 (4.4)	-2.4 (4.1)
Years 5-8	0.04 (0.06)	13.5** (6.5)	11.4* (5.6)
Years 9-12	-0.04 (0.06)	9.0 (6.2)	8.3 (5.3)
Years 13-16	0.01 (0.06)	1.7 (5.8)	1.1 (5.1)
Years 17-20	0.07 (0.06)	6.3 (6.2)	6.7 (5.8)

Notes: Intent-to-treat (ITT) impact estimates of the SSP Plus program relative to the Regular SSP group based on equation (1); standard errors clustered at the individual level. Statistically significant at \*\*\* 99 percent, \*\* 95 percent, and \* 90 percent confidence levels, respectively. n/a = estimates suppressed for privacy protection.

The estimates in the first column of Table 5 show that Plus group members work for an additional 0.17 firms over the first four years post-randomization relative to the Regular group's four-year average of 0.55 firms per year. Since the average number of employers is calculated using all study participants, including those who are not employed and therefore have zero employers, the higher number of employers per year among Plus group members may be attributable to the fact that more Plus group members were employed compared to the Regular group. Due to Statistics Canada's restrictions on the disclosure of statistics generated by dropping small numbers of observations, it is not possible to use Lee bounds to determine whether the number of employers was higher in the Plus group compared to the Regular group among those study participants who would have been employed in either treatment arm.

alternative. We do not observe job offers or rejections in our data, nor do we have evidence that the initial employment secured by Plus members was of higher quality; statistically significant differences in employer characteristics emerge only several years after random assignment.

To see if Plus group members were more likely to work for “better” employers over time, we test for differences in measures of within-firm distributions of earnings, namely earnings at the 25th-, 50th-, and 75th-percentiles of each employer’s payroll distribution.<sup>24</sup> As evidenced by point estimates in columns 2 and 3 in Table 5, in the first four years post-random assignment (corresponding to the time that the earnings supplement was available to initiators), there is no difference between the Plus and Regular groups. In years 5-8 post-random assignment, Plus group members are employed at firms whose workers at the 25th- and 50th-percentiles of the payroll distribution have earnings that are 13.5% and 11.4% higher, respectively, than workers at the 25th- and 50th-percentiles for firms at which Regular group members are employed. There is suggestive evidence of differences in these outcomes for years 9-12, although these are not statistically significant; similarly, during these years there is suggestive—but not statistically significant—evidence for differences in earnings at the 75th-percentile of the within-firm distribution (see Figure A5 in the Online Appendix). A possible interpretation of these results is that while employer quality did not initially differ between the Plus and Regular groups during the years that the earnings supplement was on offer, the skills that Plus group members learned from their job coaches about how to seek out better opportunities helped them move to higher-paying firms over time.

One caveat with respect to interpreting the results for within-firm earnings distributions is that we have observations only for those study participants who work for an employer that satisfies our definition of a firm (i.e., an organization that has 10 or more employees whose total earnings are equal to at least one quarter full-time minimum wage). Large differences in the shares of study participants who are linked to employers meeting our definition of a firm across experimental groups would make it difficult to disentangle the treatment’s effects on the quality of employment from changes in composition of study participants who are employed in firms that are included in our sample. Table A4 in the Online Appendix shows that differences in the rates of linkages between Plus and Regular group members and employers meeting our definition of firms are statistically significant only during the first four years post-random assignment. Because the magnitude of the differences in linkage rates for the Plus and Regular groups are small for most of the post-earnings supplement period (i.e., after year 4 relative to random assignment), we have greater confidence that our statistically significant increases in years 5 to 8 for mean log earnings and earnings at the 25th- and 50th-percentiles are indicative of improvements to employer quality rather than being artefacts of changes to the composition of matched employees across treatment arms.<sup>25</sup>

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<sup>24</sup>In Table A5 in the Online Appendix, we consider other correlates of employment and employer quality, including the duration of job tenure, unionization coverage, firm size, and mean log earnings at each firm; we do not, however, find any statistically significant differences for these variables.

<sup>25</sup>As noted previously, Statistics Canada’s small cell disclosure restrictions prevent us from presenting analyses using Lee bounds.

## 6.2 Non-Cognitive Skills

As mentioned above, recent evidence highlights that less-educated workers with non-cognitive skills are better able to find and keep employment at high-paying firms, pointing to the importance of these attributes in the workforce (Aghion et al. 2019; Heller and Kessler 2022).<sup>26</sup> One non-cognitive skill that has received particular attention is the “locus of control”, the set of beliefs and attitudes that individuals have regarding the causal relationship between their behaviour and its consequences (Cobb-Clark, 2015). Individuals with an internal locus of control believe that it is primarily their own actions that affect their life outcomes, whereas individuals with an external locus of control believe that factors outside themselves are what matter. With respect to the relationship between the locus of control and the labour market, studies have found that unemployed individuals with an internal locus of control search for jobs more intensely than individuals with an external locus of control (Caliendo et al., 2015), set higher reservation wages in expectation of receiving more job offers (McGee, 2015), and are more likely to participate in training (Caliendo et al., 2022).

Evidence that labour market interventions may affect the locus of control comes from Gottschalk (2005), who uses survey responses from the SSP Recipients study. Gottschalk instruments for cumulative hours worked using an indicator to the treatment group in the Recipients study (i.e., assignment to the offer of the earnings supplement) and finds that exogenous increases in hours worked increases the internality of the locus of control.<sup>27</sup>

We build on Gottschalk (2005) to determine what effect Plus services had on participants’ locus of control. To do this, we examine responses to survey questions asked while the SSP Plus study was ongoing. At the baseline, 36-month, and 54-month surveys, study participants were asked whether they strongly agreed, agreed, disagreed, or strongly disagreed with the following statements:

1. There is little that I can do to change many of the important things in my life.
2. I have little control over the things that happen to me.
3. Sometimes I feel as if I’m being pushed around in life.
4. I am often angry that people like me never get a fair chance to succeed.

We examine responses to each question using an indicator variable equal to one if the respondent agrees or strongly agrees with the statement. Affirmative responses are indicative of an external locus of control; disagreement indicates an internal locus of control. We

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<sup>26</sup>Kautz et al. (2014) as the “personality traits, goals, character, motivations, and preferences that are valued in the labour market, in school, and in many other domains.” Because non-cognitive skills are important in many facets of life, an intervention that modifies those skills may have long-lasting impacts.

<sup>27</sup>The use of assignment to treatment as an instrument for cumulative hours worked may not satisfy the exclusion restriction if other outcomes affected by treatment, such as the welfare receipt or total household income, have direct effects on the locus of control.

estimate the effect of Plus services using the following specification:

$$Y_{it} = \beta_{Plus,t} T_{Plus,it} + \beta_{Reg,t} T_{Reg,it} + \delta_t + \gamma Y_{i0} + \epsilon_{it} \quad (2)$$

where  $Y_{it}$  is agreement with a statement,  $T_{Plus,it}$  and  $T_{Reg,it}$  are indicators for being in the Plus or Regular groups, respectively,  $\delta_t$  is a time fixed effect, and  $Y_{i0}$  is the value of the response in the baseline survey. The incremental effect of Plus services at survey waves  $t = 36$  months and  $t = 54$  months is given by  $\beta_{Services,t} = \beta_{Plus,t} - \beta_{Reg,t}$ .<sup>28</sup> We compute standard errors for the difference based on the estimated coefficients and covariance matrices.

Table 6: Locus of Control

Share agreeing or strongly agreeing (in percentage points):				
Incremental impacts of SSP Plus services:	There is little I can do to change the important things in my life (1)	I have little control over the things that happen to me (2)	Sometimes I feel as if I'm being pushed around in life (3)	I am often angry that people like me never get a fair chance to succeed (4)
36-month survey	-5.52 (4.35)	-6.91* (3.89)	4.66 (4.47)	-3.42 (4.53)
54-month survey	-3.64 (3.43)	-3.64 (3.70)	-0.75 (4.25)	-1.24 (4.53)
Both surveys	-4.58 (3.12)	-5.27* (3.06)	1.95 (3.46)	-2.33 (3.68)

Notes: Intent-to-treat (ITT) impact estimates of the SSP Plus program relative to the Regular SSP group based on equation (1); standard errors clustered at the individual level are reported in parentheses. Statistically significant at \*\*\* 99 percent, \*\* 95 percent, and \* 90 percent confidence levels, respectively. n/a = estimates suppressed for privacy protection.

The substantial difference in Plus group members who agree or strongly agree with the statement, “I have little control over the things that happen to me” provides the most clear-cut evidence that Plus services shifted the locus of control in the direction of internality: compared to Regular group members, Plus group members were 6.9 percentage points less likely to agree with the statement at 36-months, and were 5.2 percentage points less likely to express agreement on both surveys post-baseline (see Table 6). Plus group members were less likely to agree to almost all the other statements as well, although none of the differences between the Plus and Regular group responses are statistically significant on their own.

The attenuation in the differences between Plus and Regular group responses at 54-

<sup>28</sup>We also estimate a variant of equation (2) that estimates average effects over both survey waves:  
 $Y_{it} = \beta_{Plus} T_{Plus,it} + \beta_{Reg} T_{Reg,it} + \delta_t + \gamma Y_{i0} + \epsilon_{it}$

months compared to 36-months may be indicative of the reversion-to-the-baseline phenomenon documented by Preuss and Hennecke. One possible explanation is that Plus services made participants feel more in control of their lives while they were available, but those effects dissipated once services ended: at the 36-month mark, Plus group members who had initiated their earnings supplement would still have been in contact with their job coaches; at the 54-month mark, however, all job coaching would have been finished for six months or longer.

### 6.3 Qualitative Evidence

Focus groups conducted with Plus group members at the time the experiment was ongoing indicate that the high-quality counseling provided through the SSP Plus program helped to address multiple barriers to finding and retaining employment.<sup>29</sup> SSP staff helped Plus group members learn the skills necessary to search for work, apply for jobs, and interview with hiring managers; SSP Plus members also gained confidence and were more motivated to find and keep employment. The responsiveness of SSP staff and ongoing support helped Plus group members overcome on-the-job challenges once they were working and encouraged them to continue progressing in their careers. Even Plus group members who were not able to initiate the earnings supplement had positive feelings towards the SSP staff and reported feeling motivated to continue looking for ways to better their circumstances in life.

Plus group members who spoke during focus group sessions described how the assistance they received from SSP staff helped hone their skills in applying for jobs. For instance, many Plus group members had never used formal resumes and did not know how to write one. As a focus group participant stated, “I just found there was a lot I didn’t know, just about the format of a resume. I didn’t know the proper way it should be. I was shown the proper way it should be; I was shown, just a different way to bring the qualities that I have across to somebody else where before I wouldn’t have had a clue how to do it.” Resume preparation had the additional benefit of increasing confidence while searching for work: “I was proud to have such a nice-looking, complete, resume”, said one Plus group member; another noted: “It gives you self-esteem; makes you stand out. Like, you go in with your head held high—something to show for it. Like, I mean, it’s not like everybody else’s.”

Plus group members also received instruction from SSP staff about how to interact with prospective employers while submitting resumes and during interviews. As relayed by one focus group participant: “When I applied at [company name], I asked to speak to the head guy. I would never have made a request like this before... All of a sudden, I can talk to people! I found out I wasn’t a dumb person.” Another participant described how the

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<sup>29</sup>All direct quotes from focus groups are drawn from Bancroft and Taylor-Lewis (1996)

support from SSP staff helped her navigate the interview process: “It gave me the tools that I needed to go out and do a proper interview, instead of being tongue tied and not knowing what to say. And, not knowing how to get the qualities that I had, and that I knew I had, across to them.”

Plus group members praised the dedication and empathy of SSP staff. As one Plus group member said, “. . . they made me feel very important. Each time they spoke to me, each time I called, they really made me feel glad I had called. They would do whatever they could to help. . . they made me feel that I wasn’t bothering them.” Even Plus group members who were not able to find full-time work soon enough to initiate the earnings supplement had favourable perceptions of the SSP staff:

*“They made me feel really pretty good to know that there were people out there who really and truly did care whether you got work or not, and that were there to encourage you. And, I mean, before that, you think, ‘I’m the only one who cares,’ but when you were out there with, and working with, the Self-Sufficiency people, you knew that they did care too. . . . They didn’t put you down, and they tried to encourage you. . . they were there for you. . . .”*

Plus group members reported that SSP staff boosted self-esteem and encouraged them to apply for jobs rather than assume their prospects were hopeless:

*“The staff, the way they made you feel really confident about yourself. Being on [Social Assistance], you feel like you’re nobody. You can go and put in an application, but you’re on Assistance so they’re going to take somebody who is out of college before you. That’s just the way you look at yourself. The SSP staff make you feel you’re just as good as everybody else.”*

The contrast between the supportive relationships Plus group members established with their job coaches and the impersonal interactions they had with provincial welfare office caseworkers was summarized as follows: “The [SSP] staff treat you like you’re a human being, not a number, which is a big difference from what you were on [Social Assistance]. On [Social Assistance], you were just a number.” Plus group members described difficulties they had encountered trying to in access services through Social Assistance and their perceptions of indifferent caseworkers: “I didn’t get no help from them. They didn’t seem like they wanted to help me”, was the impression of one focus group participant.

A recurring criticism of provincial welfare office caseworkers was their failure to respond to requests for referrals. A Plus group member, reflecting on her prior experiences with the Social Assistance system, said, “Anytime I’ve ever called and asked for help or for information, it’s like they’d get back to me and they’ve never got back to me. And I’ve called



again and they just never gave me any information that was helpful.” The difficulties encountered in trying to access services through Social Assistance compounded feelings of low self-esteem:

*“I found the services—if I knew about them and I tried to tap into them—for some reason there was always something that made me not qualify. Or just trying to get a hold of somebody to talk to is nearly impossible.... As for how I felt, how could I feel about something that I couldn’t get a hold of? It made me feel left out; feel bad. Because you couldn’t get a hold of it and, when you did get a hold of it, you were turned down. That’s like rejection—another disappointment on the road of recovery.”*

To supplement the contemporaneous accounts of Plus group members from the mid-1990s, and to better understand how Plus services worked, we conducted in-depth interviews in the winter of 2021 with personnel from the SSP offices. A theme that emerged from these interviews was the degree to which the intensive services offered to the Plus group were able to address the unique needs of each participant.

The former executive director of the non-profit that delivered Plus services noted the importance of establishing close working relationships with participants for the purposes of addressing barriers to employment:

*“They needed support. You’re talking about a community of people who, for the most part, had fairly low self-esteem and had other issues in their life that had really impacted them....We got to know the participants. They got to know us by name; we weren’t strangers doing their resume....When we were working with the participants, we challenged them about what they think they should do. We weren’t there to say ‘we’ll get you into this’ or ‘we’ll set you up here’ or ‘we’ll get you this extra money’. We didn’t do that. The whole purpose of this was for them not just to get a job but to get on their feet to create a career and lifestyle for themselves that was better for them and their children.”*

Encouraging Plus group members to use the services on offer was another important aspect of job coaches’ work. An SSP staff member confirmed the lengths to which job coaches went to ensure there was ongoing participation in services:

*“If they don’t show up—and in that group, a lot of them didn’t show up—then you need the time to find them to get them back on track. The focus completely was on ‘let’s have this be successful and whatever way we need to do that let’s find the way’....If they didn’t show up to an appointment, once or twice [the job coach] might give a call and get it back on track but if it wasn’t they’d go to the home. [The participants] had a lot of*

*financial incentive to continue on but even then folks had some dark days and didn't feel like moving on."*

Although helping Plus group members into full-time employment was a key objective for job coaches, the provision of ongoing supports to participants once they had found work was also very important. "It's not just a matter of getting the job; that's just the beginning. How do you keep the job? How do you get up and go everyday and feel like you're doing a good job? A lot of work was done doing that.", noted a SSP staff member. Further information about these supports comes from the former executive director:

*"We had 3-, 6-, 9-, and 12-month follow-ups with the people who were receiving [the earnings supplement] and working full-time. That was standard for everybody. There was lots of other interaction with phone calls. They knew to call us if they had issues or if they came up against something in the workplace they didn't know how to deal with. They came up against some pretty crazy stuff sometimes."*

## **7 Benefits and Costs of SSP Plus**

At the time that the SSP demonstration was conceived, a central question for policymakers was whether the offer of a generous, time-limited earnings supplement would "pay for itself" by decreasing dependence on welfare. The answer from the SSP Recipients study was "no": although welfare payments were reduced and income tax receipts increased with additional earned income, these increases to the government's net revenue were offset by the additional costs of earnings supplement payments (Michalopoulos et al., 2002). The absence of any persistent employment impacts once supplement payments ceased also meant that it was unlikely that program would cover its costs in the long run.

In contrast, the persistent incremental effects of the Plus treatment on employment and earnings suggests that the provision of intensive employment services likely reduced government expenditures over time. The cumulative increase in earnings over the 19 years post-random assignment for Plus group members relative to Regular group members is approximately \$46,100 in constant 2010 CAD. Assuming a rate of return of 3% following Chetty et al. (2014), the present discounted value of the cumulative difference in earnings in real terms is \$26,290.

Unpublished SSP Plus project reports estimate that the cost of administering the Plus program, including the costs of the staff time devoted to outreach, orientation, and employment services, worked out to \$3,090 (2010 constant CAD) per Plus group member.<sup>30</sup> The

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<sup>30</sup>From Michalopoulos et al. (2002): "The average cost per program group member was calculated first by

operating cost for the Regular SSP program, which still required staff involvement in orientation activities and to initiate supplement payments, was estimated to be \$1,376 per group member. The incremental cost of the employment services provided through the SSP Plus program was therefore \$1,714 per Plus group member.

To fully account for the effects of the Plus program on net government expenditures, it would be necessary to consider the differences in all taxes paid and transfers received by Plus group members compared to Regular group members, along with the costs of any in-kind transfers. Due to limitations on data access, these estimates are not available; based on our findings of higher earnings and lower rates of welfare receipt in the long-run, we anticipate Plus group members would have paid more in taxes and received less transfer income compared to Regular group members throughout the post-treatment period.

## 8 Conclusion

The Self-Sufficiency Project (SSP) was one of the Government of Canada's largest field experiments ever funded. Policymakers wanted to test whether offering temporary but significant financial incentives could spur single parents reliant on welfare back to full-time work and even get them to stay working after the three-year supplement eligibility period. The official report concluded that a significant share of program group members responded to the incentives by finding work sooner than the control group members, but the labor market effects faded to zero after parents were no longer eligible for the supplement. By the fifth and sixth year after randomization, members of the supplement-only program group were equally likely to be employed or on welfare and had earnings that were, on average, the same as the controls.

Anticipating that many of those lone parents offered the supplement might have difficulty finding work, a smaller experiment in the province of New Brunswick was conducted to explore whether adding intensive support services could help. Those offered the SSP Plus treatment were eligible for a range of employment services that were designed to help them find work, retain jobs, and advance in a career. Those that wanted it were matched to a job coach who proactively connected one-on-one to offer practical advice and emotional support throughout the one-year supplement initiation period and during the three-year period of subsidy eligibility, even after a parent began working full-time. The final report noted that the Plus group had higher take-up of full-time work within the first 12 months, which was required to become eligible for the longer-term subsidy, but the overall employment and

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estimating a unit cost—the cost per participant (for one-time activities) or per month of activity (for ongoing activities). The unit costs includes staff time spend operating the activity and any associated overhead costs, including office expenses and management. The unit cost was then multiplied by the participation rate (for one-time activities) or the average number of months of participation (for longer-term activities)."

earnings effects for the subsequent three years were small. It was not until near the end of the official analysis that there began to be signs that Plus group members were faring better than Regular group members who had not been eligible for support services. The results were encouraging but inconclusive.

We provide a more definitive picture of the impact of the SSP Plus program by linking participants to subsequent administrative tax records and following them for twenty years. The results point to the importance of the proactive and sustained empathetic support caseworkers in the Plus program provided that those in the Regular program did not receive. Full-time employment increased steadily by 4.5 to 7.4 percentage points relative to the SSP Regular group and these effects did not fade until after ten years. We find even longer lasting earning effects. While average earnings differences for the SSP Regular group drifted to zero shortly after the incentives ended, earnings among the SSP Plus group remained about 21 to 27 percent higher each year over the twenty-year period examined. The improved economic trajectories of the SSP Plus program participants are mirrored by a 4.8 to 11.0 percentage point decrease in their receipt of Social Assistance throughout the first decade following random assignment. Taken together, the increase in full-time employment and earnings, along with the decrease in welfare receipt, indicate that the intensive employment services offered through the program considerably transformed the lives of these individuals.

Qualitative evidence from focus group interviews indicates that the supports received by Plus group members raised self-esteem and helped them advocate for themselves while looking for work and while on the job. It is worth noting that the overwhelming majority of study participants were women and that there is a growing body of evidence that women are disadvantaged in the labour force relative to men because they are less willing to bargain over wages or to ask for promotions (Azmat and Petrongolo 2014). One interpretation of our long-term findings with respect to earnings is that the Plus treatment helped women to secure better employment by overcoming this hesitancy to demand better pay and better jobs.

While we acknowledge that the SSP Plus study comprised a relatively small number of participants served by highly motivated and capable caseworkers, the potential for intensive case management to significantly improve the socioeconomic trajectories of low-income households merits further consideration by researchers and policymakers alike. A long-standing debate in social science research revolves around the generalizability of findings from pilot studies to inform the effectiveness of policies implemented at scale (Rossi 1987; Davis et al. 2017). Future studies might consider different approaches to scaling intensive case management to effectively serve the greatest number of low-income households.<sup>31</sup> It

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<sup>31</sup>Bergman et al. (2019) analyze a program featuring caseworkers—referred to as navigators—providing intensive assistance to help families use housing rental vouchers to rent units in low-poverty neighborhoods. Qualitative evidence suggests that families relied particularly heavily on navigators to find suitable shelter and to negotiate leases with landlords. Follow-up studies have found that reducing the intensity of navigator

might also be worthwhile to assess the impact of a standalone program that offers intensive services that are not tied to “work-first”-style incentives; such services would support both the long-term unemployed who decide to look for work first and those who seek additional education and training before entering the labour force.<sup>32</sup> Finally, it would be valuable for further work in this area to improve our understanding of how intensive employment services and psychosocial interventions affect individuals’ beliefs and subsequent labor market engagement behaviours, as shown in recent studies examining assistance programs in both developed and developing country settings (Heller 2014; Heller et al. 2017; Blattman et al. 2017; Abebe et al. 2021; Bandiera et al. 2021).<sup>33</sup>

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services halves the effectiveness of the program in encouraging households to move to lower poverty neighborhoods.

<sup>32</sup>As noted by Riddell and Riddell (2014), the time-limited earnings supplement offered as part of the SSP study may have led some treatment group members to quickly enter the labour force rather than upgrade their skills through education; this may explain the smaller long-term effects of the Plus treatment relative to the control (as opposed to the Regular) group.

<sup>33</sup>There are some indications that behavioral and labor market interventions such as cognitive behavioral theory (CBT) can lead to short-term changes in behavior (e.g., Heller 2014; Heller et al. 2017; Blattman et al. 2017). CBT explicitly seeks to influence the meta-cognition of individuals—the way they “think about thinking”—in order to manage learned, automatic behaviors that may be useful in dangerous, high-risk environments but are maladaptive in more quotidian settings such as a school or a workplace. Heller (2014) finds that participation in a youth summer jobs program in Chicago led to short-term reductions in violent crime arrests among participants. A hypothesis for this finding is that the holding a summer job improved participants’ self-control, confidence, and ability to manage interpersonal conflicts.

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# Online Appendix

## Data Sources and Variable Construction

Information about study participants' annual earnings and employment status is primarily derived from Statistics Canada's T1 historical personal master file, which includes all T1 personal income tax forms filed by study participants, including prior-year tax returns filed several years later. Whenever T1 files are available, study participants' annual earnings from employment is set equal to the amount of T4 income reported on line 101 of the T1 form. In years for which a study participant's T1 is missing, annual employment earnings are calculated by summing the earnings reported by employers on all T4 slips issued on behalf of the participant. Nominal employment earnings in each year are converted to constant 2010 Canadian dollars using Statistics Canada's Consumer Price Index.

Because neither T1 forms nor T4 slips report hours worked, annual employment status is inferred based on study participants' total employment income. Total employment income is equal to the sum of all T4 earnings, net self-employment income, and other employment income, all of which are available on the T1 form. Two annual employment status variables are derived using this definition of total employment income: one variable is an indicator for having total employment income equal to or greater than the amount of gross earnings from working for three months full-time at the minimum wage. The other is an indicator for having a total employment equal to or greater than the amount of gross earnings from working twelve months full-time at the minimum wage. The statutory minimum wage used in this calculation is for the province of residence listed on each year's tax filing.<sup>34</sup>

Study participants are considered to have received welfare during the year if they or their spouses or common-law partners report income from Social Assistance on their respective T1 tax forms<sup>35</sup> or if study participants or their spouses or common-law partners (if any) are linked to T5007 statement of benefits slips issued by a provincial government. Participants were linked to the T1 Family File (T1FF), a component file in the LWF, to determine the presence of a spouse or common-law partner. Spouses were identified using information on the participant's census family and description of individuals within the census family. Linkages to the T5007 are possible only from 1994 onward, meaning that participation in welfare in the one to two years prior to random assignment into the SSP Plus study (which took place between November 1994 and March 1995) is based solely on T1 filings. Although Social Assistance benefits are not considered taxable income they do affect the amount of

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<sup>34</sup>In a small number of cases where the province of residence is not available for a given year, the information from the nearest available year is used instead.

<sup>35</sup>In cases where an individual lives with a spouse or common-law partner while receiving social assistance payments, the person with the higher net income for the year reports those payments on his or her T1 form.

refundable tax credits received and are therefore supposed to be included in the T1 filing.

The number of employers that a study participant works for in a given year is equal to the number of firms that issue a T4 slip to the individual that year. Job tenure is equal to the number of consecutive years that a study participant receives a T4 slip from the firm that is the main employer in that year (i.e., the firm that pays the participant the most). The size of the main employer in a given year is derived from the firm's annual payroll and estimates of annual average earnings.

To generate mean log earnings at each employer and the level of earnings at the 25th, 50th, 75th percentiles of each employer's payroll distribution, we use Statistics Canada's linked employer-employee database, the Longitudinal Worker File. We limit our analysis to firms for which there are 10 or more employees aged 20-60 who report total earnings greater than or equal to one-quarter the contemporary minimum wage.<sup>36</sup> Total earnings for an employee are determined by summing over all earnings reported on all T4s issued for that employee, even if those T4s come from different firms. For workers with multiple T4s in a given year, we assign each worker to the firm that pays the largest share of total earnings; we also assign all of the worker's earnings to that firm, including earnings that are reported on other T4 slips.<sup>37</sup>

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<sup>36</sup>Limiting the analysis to firms with 10 or more more employees makes it possible to differentiate the 25th, 50th, and 75th percentile of the within-firm earnings distribution.

<sup>37</sup>Our definition of firms and employees is similar to that used by Song et al. (2019) for their analysis of firm wage premia.

Table A1: Balance Tests - Extended Set

	SSP Plus	Reg. SSP	Control	SSP Plus - Control	Reg. SSP - Control	SSP Plus - Reg. SSP
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Gender</b>						
Share female (%)	97.2	96.9	95.1	2.06	1.74	0.33
<b>Age (%)</b>						
19-24	28.3	26.1	22.6	5.75	3.56	2.19
25-29	23.1	17.4	21.2	1.90	-3.76	5.66*
30-39	37.1	36.9	35.8	1.30	1.17	0.13
40-49	8.7	16.0	19.4	-10.70***	-3.42	-7.29**
50 or older	2.8	3.5	1.0	1.76	2.44*	-0.69
<b>Marital status (%)</b>						
Married or living common law	1.4	2.4	2.4	-1.03	0.00	-1.03
Never married	57.0	54.5	55.6	1.44	-1.04	2.48
Divorced, separated, or widowed	41.6	43.1	42.0	-0.41	1.04	-1.45
<b>Education</b>						
Completed education (%)						

	SSP Plus	Reg. SSP	Control	SSP Plus - Control	Reg. SSP - Control	SSP Plus - Reg. SSP
	(1)	(2)	(3)	(4)	(5)	(6)
Less than high school education	50.0	55.2	51.7	-1.74	3.47	-5.21
Completed high school, no post-secondary education	40.2	36.8	37.5	2.71	-0.69	3.40
Some post-secondary education	9.8	8.0	10.8	-0.97	-2.78	1.80
Enrolled in school at random assignment (%)	16.1	9.7	9.0	7.06***	0.69	6.36**
<b>Family background</b>						
Mother did not finish high school (%)	69.9	72.5	70.8	-0.92	1.68	-2.60
Father did not finish high school (%)	64.7	70.1	66.1	-1.40	3.99	-5.38
One or both parents absent when growing up (%)	31.5	41.3	35.4	-3.95	5.90	-9.85**
Family received welfare when growing up (%)	26.9	34.8	30.4	-3.45	4.39	-7.84**

	SSP Plus	Reg. SSP	Control	SSP Plus - Control	Reg. SSP - Control	SSP Plus - Reg. SSP
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Recent welfare history</b>						
Number of months on SA in prior 3 year (%)						
10-23	21.3	19.4	21.2	0.15	-1.74	1.88
24-35	36.4	35.8	33.0	3.38	2.78	0.60
All 36	42.3	44.8	45.8	-3.53	-1.04	-2.48
Average SA payments in prior month	725	707	698	27.01*	9.74	17.27
<b>Work history and labour force status</b>						
Ever had a paid job (%)	92.0	95.1	91.3	0.64	3.82*	-3.18
Average years worked	6.5	6.9	7.0	-0.54	-0.05	-0.49
Labour force status at random assignment (%)						
Employed 30 hrs/week or more	8.4	6.6	9.0	-0.64	-2.38	1.75
Employed less than 30 hrs/week	13.3	14.0	17.0	-3.73	-3.03	-0.70



	SSP Plus	Reg. SSP	Control	SSP Plus - Control	Reg. SSP - Control	SSP Plus - Reg. SSP
	(1)	(2)	(3)	(4)	(5)	(6)
Looking for work, not employed	25.9	22.0	21.5	4.35	0.50	3.85
Neither employed nor looking for work	52.4	57.3	52.4	0.02	4.91	-4.90
<b>Activity-limiting conditions (%)</b>						
Reported physical problem	24.8	25.1	25.8	-0.96	-0.70	-0.26
Reported emotional problem	7.3	9.1	6.6	0.72	2.47	-1.75
<b>Children</b>						
Number of children under age of 19 (%)						
1	59.8	62.0	61.8	-2.02	0.22	-2.23
2	28.3	31.7	27.4	0.89	4.28	-3.39
3 or more	11.9	6.3	10.8	1.12	-4.49*	5.62**
Age of youngest child (%)						
0-2	30.9	31.2	25.8	5.07	5.44	-0.38
3-5	24.8	19.3	24.7	0.08	-5.44	5.52
6-11	29.1	25.6	26.8	2.25	-1.22	3.46

	SSP Plus	Reg. SSP	Control	SSP Plus - Control	Reg. SSP - Control	SSP Plus - Reg. SSP
	(1)	(2)	(3)	(4)	(5)	(6)
12 or older	15.2	23.9	22.6	-7.40**	1.21	-8.61**

**Opinions and expectations**

Said greatest need was (%)	36.8	37.5	42.0	-5.17	-4.51	-0.66
Immediated full-time employment	9.8	8.0	9.4	0.45	-1.39	1.84
Immediate part-time employment	43.5	39.2	35.4	8.09**	3.82	4.27
Education or training	8.4	12.8	11.8	-3.38	1.04	-4.43
Something else	1.4	2.4	1.4	0.01	1.04	-1.03

If I got a job, I could  
find someone I trust  
to take care of my  
children

Agree	69.8	64.6	61.3	8.50**	3.26	5.24
Disagree	13.7	12.8	17.1	-3.39	-4.23	0.84
No care required	16.5	22.6	21.6	-5.11	0.97	-6.08*

**Resident**

Share urban (%)	67.8	70.5	69.4	-1.61	1.04	-2.65
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	SSP Plus	Reg. SSP	Control	SSP Plus - Control	Reg. SSP - Control	SSP Plus - Reg. SSP
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Ethnic background</b>						
First Nations ancestry (%)	5.2	4.5	7.0	-1.72	-2.45	0.73
Asian ancestry (%)	0.3	0.0	0.7	-0.35	-0.70	0.35
French-speaking (%)	28.7	24.0	25.0	3.67	-1.04	4.71
<b>Immigration</b>						
Not born in Canada (%)	2.8	2.8	2.4	0.37	0.35	0.02
Immigrated in last 5 year (%)	0.7	0.3	0.3	0.35	0.00	0.35
N	286	288	288			

Notes: Columns 1-3 report means of baseline observable characteristics for each experimental arm. Columns 4-6 report differences in across experimental arms; standard errors clustered at the individual level are reported in parentheses. n/a = estimates suppressed for privacy protection. Statistically significant at \*\*\* 99 percent, \*\* 95 percent, and \* 90 percent confidence levels, respectively. n/a = estimates suppressed for privacy protection.

Table A2: Effects of the SSP+ and Regular SSP on Employment, Social Assistance Participation, and Earnings

	Dependent variables:					
	Employment		Social Assistance		Earnings	
	(1)	(2)	(3)	(4)	(5)	(6)
SSP Plus × Years 1-4	0.200*** (0.024)	0.197*** (0.023)	-0.105*** (0.022)	-0.101*** (0.021)	4,200*** (570)	4,000*** (540)
SSP Plus × Years 5-8	0.065** (0.033)	0.061** (0.03)	-0.087** (0.035)	-0.082** (0.032)	1,400 (900)	1,100 (840)
SSP Plus × Years 9-12	0.058 (0.035)	0.054 (0.033)	-0.075** (0.036)	-0.069** (0.034)	1,400 (1,100)	1,100 (1,100)
SSP Plus × Years 13-16	0.029 (0.038)	0.024 (0.036)	-0.049 (0.036)	-0.044 (0.034)	2,500* (1,400)	2,300* (1,300)
SSP Plus × Years 17-20	0.016 (0.04)	0.009 (0.038)	-0.023 (0.037)	-0.016 (0.035)	2,100 (1,500)	1,800 (1,400)
SSP Reg. × Years 1-4	0.136*** (0.024)	0.151*** (0.022)	-0.045** (0.021)	-0.053*** (0.019)	2,500*** (550)	2,900*** (530)
SSP Reg. × Years 5-8	0.001 (0.032)	0.016 (0.030)	0.024 (0.035)	0.016 (0.032)	-640 (820)	-310 (770)
SSP Reg. × Years 9-12	-0.017 (0.034)	0.000 (0.032)	-0.016 (0.037)	-0.022 (0.034)	-1,270 (990)	-880 (920)
SSP Reg. × Years 13-16	-0.011 (0.037)	0.004 (0.035)	-0.026 (0.03)	-0.033 (0.033)	-490 (1,200)	-100 (1,100)
SSP Reg. × Years 17-20	-0.016 (0.039)	-0.007 (0.037)	-0.02 (0.037)	-0.024 (0.035)	-730 (1,300)	-470 (1,200)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes

Notes: Intent-to-treat (ITT) impact estimates of the SSP Plus program and the Regular SSP group relative to the control group based on equation (1); standard errors clustered at the individual level. Statistically significant at \*\*\* 99 percent, \*\* 95 percent, and \* 90 percent confidence levels, respectively. n/a = estimates suppressed for privacy protection.

Table A3: Effect of SSP Plus on Receipt of Services

Outcome	SSP Plus Program Group (%)	Regular SSP Program Group	SSP Plus Program Group vs. Regular SSP Program Group
Took part in job-search program such as job club or job-search workshop	47.9	31.9	16.0***
Took part in life-skills program such as money management or parenting	27.6	28.8	-1.2
Received counseling for personal problems	26.6	29.5	-2.9
Participated in work-related training or education	16.4	16.7	-0.2
Participated in subsidized employment program	8.0	9.4	-1.3
Took courses towards completion of high school diploma, college diploma, or university degree	7.3	6.6	0.7
N	286	288	

Notes: Reproduced from Quets et al. (1999). Statistically significant at \*\*\* 99 percent, \*\* 95 percent, and \* 90 percent confidence levels, respectively.

Table A4: Share of Study Participants Linked To Firm

Year	SSP Plus (%) (1)	Reg. SSP (%) (2)	Control (%) (3)	SSP Plus - Control (4)	Reg. SSP - Control (5)	SSP Plus - Reg. SSP (6)
1	38.9	36.5	31.7	7.2*	4.8	2.4
2	53.9	44.6	33	20.9***	11.6	9.3**
3	53.9	46.6	38.6	15.3***	8.0	7.3*
4	53.2	46.2	42.2	11.0***	4.0	7.0*
5	53.6	47.6	46.2	7.4*	1.4	6.0
6	49.5	49	48.5	1.0	0.5	0.5
7	54.3	50.3	50.5	3.8	-0.2	4.0
8	54.3	51.7	50.2	4.1	1.5	2.6
9	54.6	51.3	52.1	2.5	-0.8	3.3
10	51.2	53	53.8	-2.6	-0.8	-1.8
11	52.3	53.1	53.5	-1.2	-0.4	-0.8
12	57.0	59.5	54.8	2.2	4.7	-2.5
13	54.9	56.7	55.1	-0.2	1.6	-1.8
14	54.9	58.1	55.4	-0.5	2.7	-3.2
15	55.3	55.4	54.1	1.2	1.3	-0.1
16	52.9	53	52.1	0.8	0.9	-0.1
17	51.2	54.4	50.5	0.7	3.9	-3.2
18	47.8	52.7	47.9	-0.1	4.8	-4.9
19	48.8	50.7	49.5	-0.7	1.2	-1.9
20	50.8	49.3	47.5	3.3	1.8	1.5

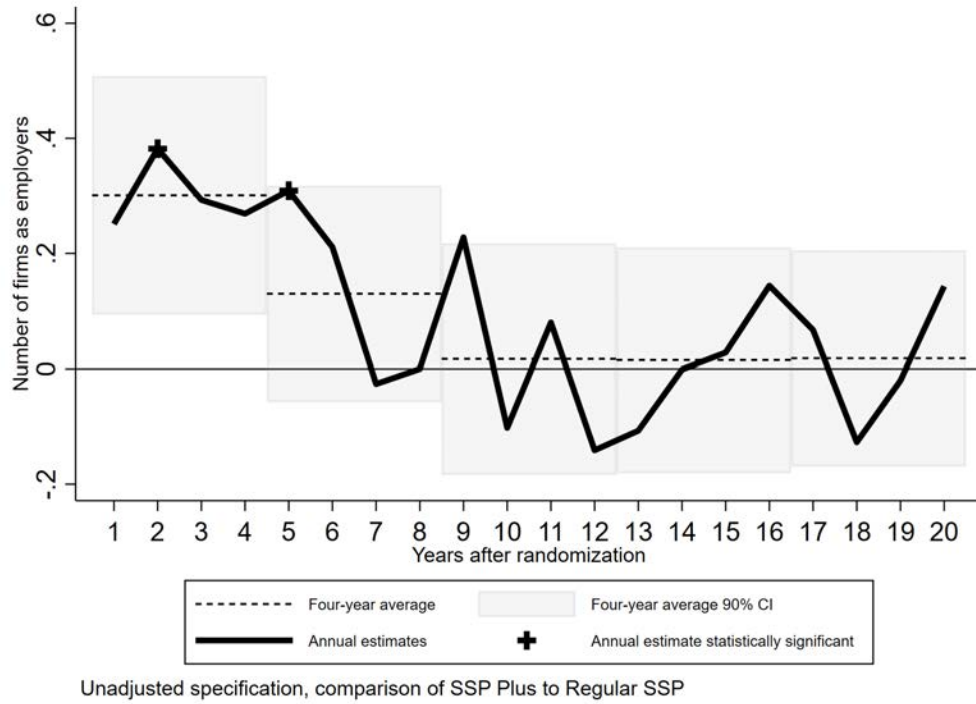
Notes: Share of participants linked to a firm that has at least 10 employees who make at least 1/4 full-time minimum wage earnings. Statistically significant at \*\*\* 99 percent, \*\* 95 percent, and \* 90 percent confidence levels, respectively.

Table A5: Effects of the SSP Plus Program on Other Job and Employer Outcomes

Incremental impacts of SSP Plus services in:	Dependent variables:			
	Job tenure (1)	Union dues (2)	Firm size (3)	Mean log earnings at firm (4)
Years 1-4	-0.11 (0.11)	n/a n/a	-399 (1284)	0.003 (0.032)
Years 5-8	-0.03 (0.18)	-0.006 (0.016)	-599 (1402)	0.079 (0.045)
Years 9-12	-0.05 (0.24)	-0.005 (0.020)	3262 (3748)	0.068 (0.044)
Years 13-16	0.18 (0.32)	-0.001 (0.023)	6104 (4531)	0.000 (0.047)
Years 17-20	0.40 (0.44)	0.001 (0.024)	8540 (6402)	0.047 (0.049)

Notes: Intent-to-treat (ITT) impact estimates of the SSP Plus program relative to the Regular SSP group based on equation (1); standard errors clustered at the individual level. Statistically significant at \*\*\* 99 percent, \*\* 95 percent, and \* 90 percent confidence levels, respectively. n/a = estimates suppressed for privacy protection.

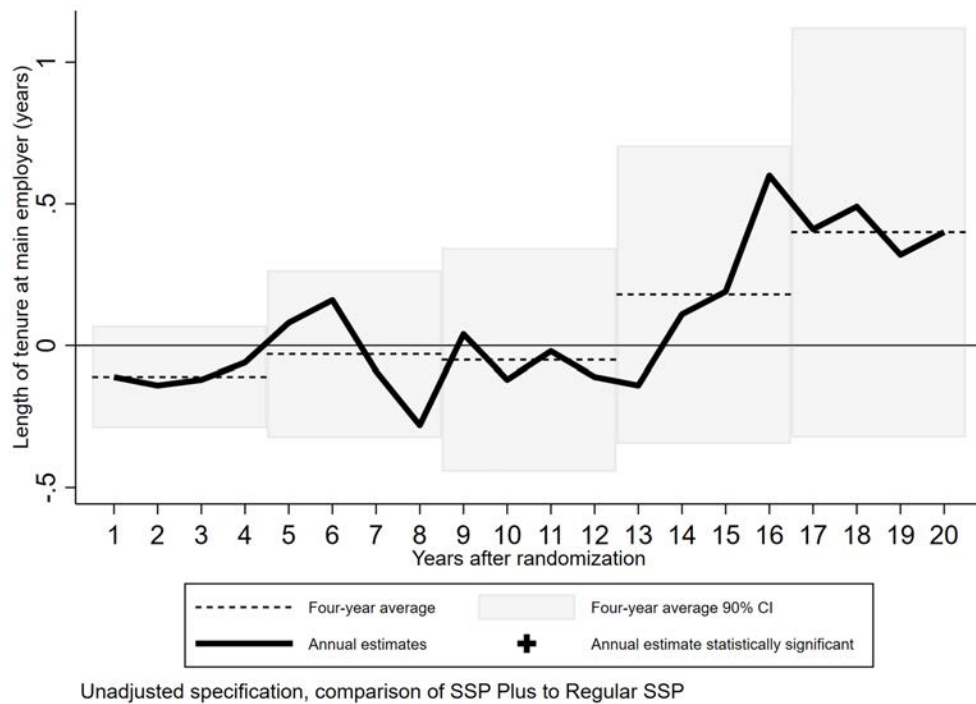
Figure A1: Effects of the Self-Sufficiency Plus Program on the Number of Employers



Notes: The figure reports annual (solid line) and 4-year group-specific (horizontal dashed line segments) intent-to-treat (ITT) impact estimates of the SSP Plus program relative to the Regular SSP group based on estimates of equation (1). 90% confidence intervals for four-year group specific estimates are represented by transparent grey bars. Annual differences are overlaid as a solid black line with statistically significant annual differences at the 90% level denoted by a cross marker.

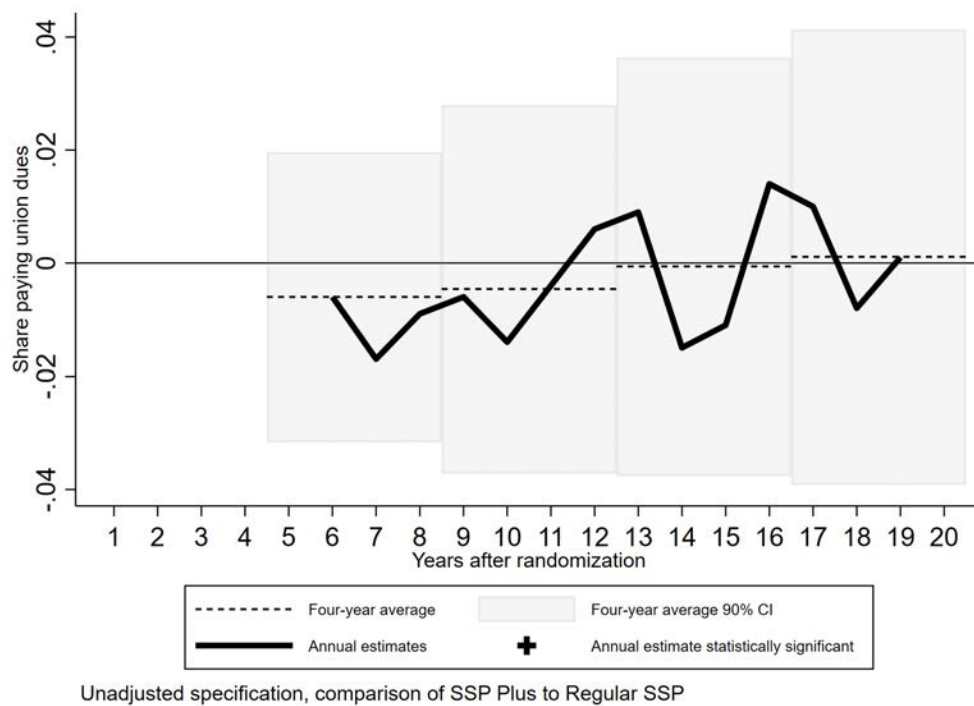


Figure A2: Effects of the Self-Sufficiency Plus Program on Job Tenure



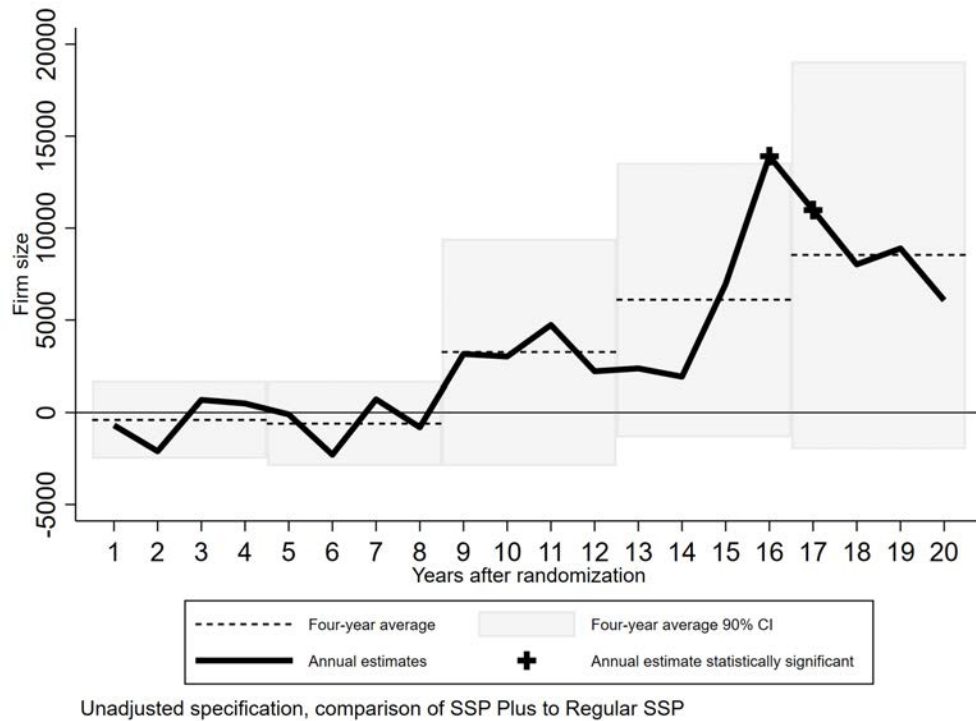
Notes: The figure reports annual (solid line) and 4-year group-specific (horizontal dashed line segments) intent-to-treat (ITT) impact estimates of the SSP Plus program relative to the Regular SSP group based on estimates of equation (1). 90% confidence intervals for four-year group specific estimates are represented by transparent grey bars. Annual differences are overlaid as a solid black line with statistically significant annual differences at the 90% level denoted by a cross marker.

Figure A3: Effects of the Self-Sufficiency Plus Program on Share Paying Union Dues



Notes: The figure reports annual (solid line) and 4-year group-specific (horizontal dashed line segments) intent-to-treat (ITT) impact estimates of the SSP Plus program relative to the Regular SSP group based on estimates of equation (1). 90% confidence intervals for four-year group specific estimates are represented by transparent grey bars. Annual differences are overlaid as a solid black line with statistically significant annual differences at the 90% level denoted by a cross marker.

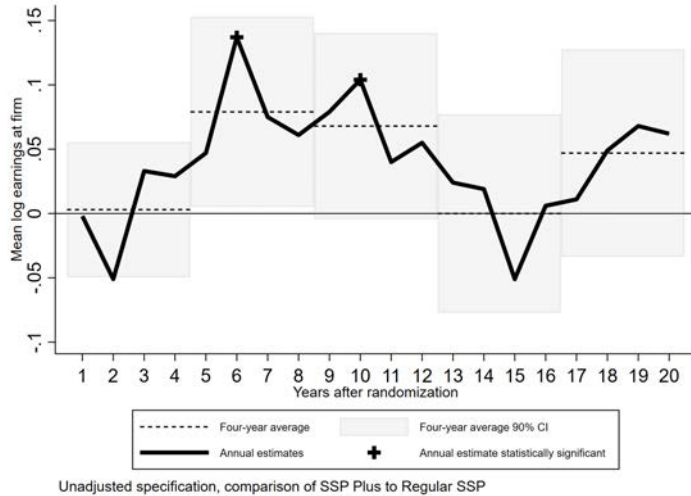
Figure A4: Effects of the Self-Sufficiency Plus Program on Size of Main Employer



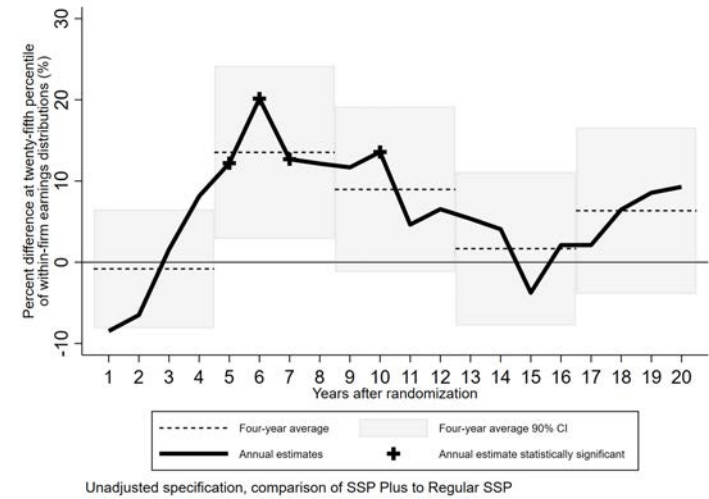
Notes: The figure reports annual (solid line) and 4-year group-specific (horizontal dashed line segments) intent-to-treat (ITT) impact estimates of the SSP Plus program relative to the Regular SSP group based on estimates of equation (1). 90% confidence intervals for four-year group specific estimates are represented by transparent grey bars. Annual differences are overlaid as a solid black line with statistically significant annual differences at the 90% level denoted by a cross marker.

Figure A5: Effects of the Self-Sufficiency Plus Program on Within-Firm Earnings

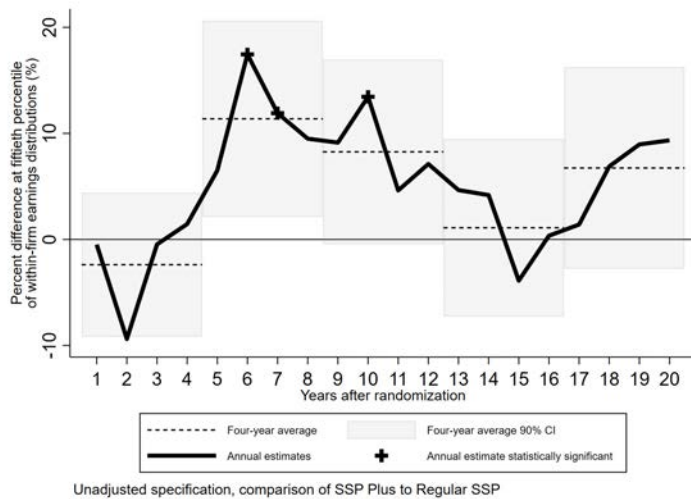
(a) Mean Log Earnings



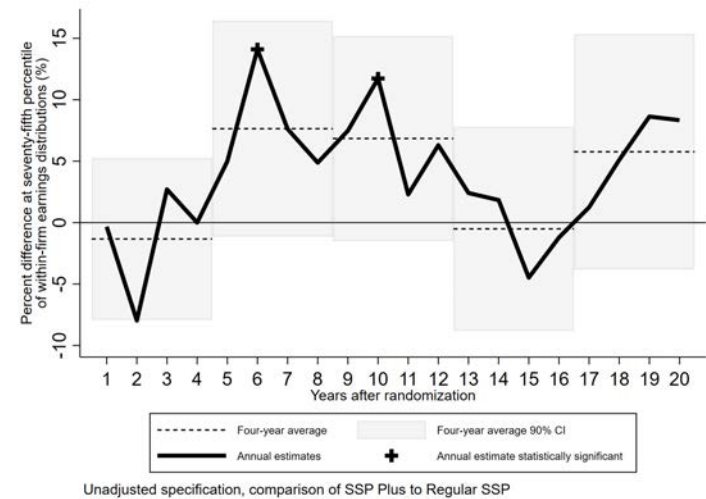
(b) 25th Percentile of Within-Firm Earnings Distributions



(c) 50th Percentile of Within-Firm Earnings Distributions



(d) 75th Percentile of Within-Firm Earnings Distributions



Notes: Panels A-D report annual (solid line) and 4-year group-specific (horizontal dashed line segments) intent-to-treat (ITT) impact estimates of the SSP Plus program relative to the Regular SSP group based on estimates of equation (1). 90% confidence intervals for four-year group specific estimates are represented by transparent grey bars. Annual differences are overlaid as a solid black line with statistically significant annual differences at the 90% level denoted by a cross marker.