

THE INTRODUCTION OF FORMAL CHILDCARE SERVICES IN INUIT COMMUNITIES AND LABOUR FORCE OUTCOMES

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March 26, 2019

Abstract

We study the impacts of the introduction of formal childcare services to 28 Inuit communities in Canada's North. We use geographical variation in the timing of the introduction of childcare services in the late 1990s and early 2000s to estimate the impact of increased access to childcare. We combine the 1996, 2001, and 2006 long-form census files with data on the opening dates of childcare centres and the number of childcare spaces in each of the 28 communities over time. We find evidence of impacts on female labour force participation driven by multi-adult households in Quebec. Point estimates also suggest possible improvements in high school graduation rates and increased participation of men in childcare. We do not find evidence that formal childcare decreases the ability of children to speak Inuktitut. We suggest plausible explanations for these findings and avenues for future research.

Keywords: Inuit, childcare, labour force participation

JEL classification: J13, J15, J18

Disclaimer: This paper reflects the views of the authors and no responsibility for them should be attributed to the Department of Finance Canada or the Federal Reserve Bank of Minneapolis. Jasmin Thomas was a graduate student at the University of Toronto when this article was written.

Acknowledgments: We would like to thank the Canadian Research Data Centre Network (CRDCN) from the Social Sciences and Humanities Research Council (SSHRC), the Canadian Institute for Health Research (CIHR), the Canadian Foundation for Innovation (CFI), and Statistics Canada. Although the research and analysis are based on data from Statistics Canada, the opinions expressed do not represent the views of Statistics Canada. We would also like to thank Maggie Jones, Kevin Milligan, Krishna Pendakur, our anonymous referees, and all other participants at the Unsettling Economics Workshop at the University of Victoria and seminar participants at the Department of Finance Canada.

1 Introduction

The engagement of Indigenous peoples in the labour force is broadly recognized as an important aspect of Indigenous well-being ([Barrington-Leigh and Sloman, 2016](#); [Gitter and Reagan, 2002](#); [Gordon and White, 2014](#); [Gray and Hunter, 2002](#); [Pauktuutit Inuit Women of Canada, 2016](#)). In countries like Canada, where the Indigenous population makes up a young and rapidly growing proportion of the population, the engagement of Indigenous peoples in the labour force is seen more broadly as important for economic growth ([Howard et al., 2012](#)). Many Indigenous people currently participating in the labour force have had to overcome significant barriers, one of which is accessing reliable and affordable childcare services ([Pauktuutit Inuit Women of Canada, 2016](#)). For some individuals, lack of childcare services still presents a barrier to labour force participation and training ([Burke, 2018](#); [Sponagle, 2016](#)). In fact, ([Statistics Canada, 2008a](#)) reports that pregnancy and/or taking care of children was the barrier to completing high school for 24 percent of women without a high school diploma in 2006.

In this paper we investigate the extent to which increased access to formal childcare services during the late 1990s may have reduced the cost of work for Inuit parents and subsequently increased labour force participation in 28 Inuit communities in Canada. During the late 1990s and early 2000s there was a substantial increase in licensed childcare facilities as part of the First Nations and Inuit Childcare Initiative and Aboriginal Head Start in Urban and Northern Communities programs. Despite having differing objectives, it is plausible that these programs had a positive effect on the ability of parents to participate in the labour force given much of the previous evidence on labour supply and the availability of childcare ([Baker et al., 2008](#); [Berlinski and Galiani, 2007](#); [Brilli et al., 2016](#); [Goux and Maurin, 2010](#); [Nollenberger and Rodriguez-Planas, 2015](#)). However, family policies that increase the availability of childcare services may have no effect on labour supply depending on the context: for example, parents may opt out of using childcare services for cultural or social reasons; childcare may not be affordable; or other

forms of non-parental care may simply be crowded out (Vuri, 2016).

Traditionally, Inuit children are brought up by the entire community, with grandparents playing a key role in child rearing (Ekho and Ottokie, 2000; NCCAH, 2010). Inuit children are also more likely to live in households with extended family or with other families (Statistics Canada, 2014). For these reasons, we might expect that the introduction of childcare services into Inuit communities would have a limited impact on labour force participation because both the cultural importance of extended family involvement in raising children and the availability of low cost childcare would result in parents not using formal services. Alternatively, the introduction of childcare services may simply crowd out previously used informal services, such as grandparents and older female siblings, resulting again in no change in labour force participation.

Even if extended family care has become less important, as implied by Collings (2000), it is not clear that Inuit and non-Indigenous people would show similar responses to policy changes. Aside from the importance of grandparents in Inuit cultures, we might also expect responses to differ between these groups because the Inuit tend to live in remote, rural locations in Canada's north; have their own unique cultural, linguistic and political history (Bonesteel, 2006; Uribe, 2006); a significantly different economic environment (Duhaine and Caron, 2006); a complex, and often challenging, relationship with the Government of Canada (Bonesteel, 2006; Uribe, 2006); and, on average, worse socio-economic outcomes (NAEDB, 2012).¹

To estimate the impact of the introduction of childcare in Inuit communities on labour force participation, we use a difference-in-differences framework, similar in spirit to Baker et al. (2008) except we focus on variation in the timing of access to childcare within communities within provinces. We use repeated cross-sectional data from the 1996, 2001, and 2006 confidential long-form census files and data we have compiled on the introduction of formal childcare services in Inuit Nunangat, in part driven by the First Nations and

¹For the same reasons, we cannot expect the three constitutionally recognized Indigenous identity groups in Canada, namely the Indians (or First Nations), Inuit and Metis, to show similar responses to policy change (NAEDB, 2012, p. 3).

Inuit Childcare Initiative and Aboriginal Head Start in Urban and Northern Communities. We compare outcomes of those individuals aged 15-45 years in households with children who were young enough to have access to the childcare services (the “treatment group,” i.e., those potentially affected by policy) with outcomes of those individuals aged 15-45 years in households with children who were too old to have access to the childcare services or with no children at all (the “control group,” i.e., individuals who could not have been affected by the policy) before and after the introduction of formal childcare in their communities. We adapt this estimation strategy to the Inuit context by focusing on households rather than nuclear families as has been done in non-Indigenous contexts.

To take into account the fact that gender plays an important role in allocating work and assigning economic roles in Nunavut ([Quintal-Marineau, 2017](#)), we perform analyses separately by gender. In addition, since the increase in formal day care centers occurs simultaneously with changes in childcare policies in Quebec, whose impacts have been broadly studied ([Baker et al., 2008, 2015](#); [Kottelenberg and Lehrer, 2013, 2018](#); [Lefebvre and Merrigan, 2008](#); [Lefebvre et al., 2009](#); [Stalker and Ornstein, 2013](#)), we discuss how the impacts of the two Indigenous early childhood education programs may differ between Nunavut and Nunavik (the Inuit region within Quebec). We also consider the possible effects on the number of children, individuals within a household and time spent in unpaid childcare. Finally, given the history of government supported programs and policies to assimilate Indigenous children ([Feir, 2016](#); [Truth and of Canada, 2015](#)), we also consider the impact of access to childcare on children’s use of Inuktitut at home.

We find that the introduction of formal childcare services in the Inuit communities included in this study increased labour force participation for women in multi-adult households in Quebec by about seven percentage points, which is equivalent to roughly a 12 percent increase in labour force participation. While the point estimates for Nunavut suggest a small positive increase in labour force participation among the treatment group, there is a significant amount of uncertainty. Even though there is a large and significant increase in labour force participation among the treatment group for women in multi-

adult households in Quebec, there is only a small, statistically insignificant increase in employment (a point estimate of a two percentage point increase) with even smaller effects for similar women in Nunavut. We also find some evidence that the policy may have led to increases in high school graduation rates among women, and increases in the percentage of men in multi-family households spending over 60 hours in unpaid childcare. In addition, we find no statistically strong evidence that the program has decreased Indigenous language use in the home, and the point estimate suggests that it may have, in fact, increased Indigenous language use in the home for children in single adult households.

This paper will proceed as follows. Section 2 provides a brief background on the Inuit in Canada and the Indigenous early childhood education policies that helped to introduce childcare in many northern communities. Section 3 discusses previous literature. Section 4 provides an overview of the data sources and methods. Section 5 presents the results. Section 6 discusses some of the limitations in this work and directions for future research.

2 Background on the Inuit Peoples in Canada, and Childcare Provision in the North

2.1 Inuit Peoples in Canada

Canada’s Constitution recognizes three Indigenous heritage groups: “Indians”, Inuit, and Metis. These are three distinct groups with unique cultural practices, languages, histories, and spiritual beliefs, as well as diverse economic conditions and developmental needs (NAEDB, 2012). There were 1,673,785 Indigenous people in Canada in 2016, or about 4.9 percent of the total Canadian population. Of this, 977,230 people identified as First Nations, 587,545 as Metis, and 65,025 as Inuit.

This paper focuses on the Inuit, descendants of the Indigenous people of Inuit Nunangat, which is located in the Canadian arctic and subarctic, including northern Quebec and Labrador (Feir and Hancock, 2016). There are 53 Inuit communities recognized by

the Canadian state in Inuit Nunangat ([Bird, 2011](#)), which is composed of four regions based on land claims agreements: Nunavik in northern Quebec, Nunatsiavut in Labrador, the Inuvialuit region in the Northwest Territories, and Nunavut. [Figure 1](#) shows a map of the Inuit Nunangat regions of Canada.

We have received consent to use data on the opening dates of childcare centres in Nunavik (northern Quebec) and Nunavut, and thus this work focuses explicitly on these regions. According to Statistics Canada, these two regions comprised about 89 percent of the population in Inuit Nunangat in 2016, with the Inuit representing at least 85 percent of their respective total populations.

The Inuit have traditionally lived in family groupings, and there continues to be a high share of multi-family and multi-generational households with as many as five generations in one home ([Knotsch and Kinnon, 2011](#); [Statistics Canada, 2014](#)). In 2006, 18 percent of the Inuit lived in multi-family or multi-generational dwellings, compared with 4 percent of the non-Indigenous population ([Statistics Canada, 2014](#)). Multi-generational households are most common in Nunavik, where 21 percent of Inuit children less than 6 years of age lived in households that included their parents and grandparents ([Statistics Canada, 2008a](#)).

In addition, Inuit families are typically much larger than non-Indigenous families. In 2006, 31 percent of Inuit children lived in families with at least three other children in the household, while only eight percent of non-Indigenous children did ([Statistics Canada, 2008a](#)).² Inuit families also differ from non-Indigenous families in the importance of country food: according to [Statistics Canada \(2008b\)](#), in 2005, 68 percent of adults in Inuit Nunangat harvested country food, and 65 percent of Inuit lived in homes where at least half of the meat and fish consumed was country food.

In Inuit society, gender is also an important determinant in “work allocation and economic roles” ([Quintal-Marineau, 2017](#)). In particular, wage employment is an in-

²This is relatively unsurprising given that Inuit women had significantly higher fertility rates than the Canadian average over the 1996-2001 period: 3.4 children per Inuit woman, compared to 1.5 children per Canadian woman.

creasingly “important element of Inuit female identity and roles, whereas men show a preference for a mix of subsistence and wage work.” This change has arisen because of significant transformations in Nunavut’s economy that have largely benefited women. In particular, in the 1980s and 1990s, since most employment opportunities were in typically male-oriented unskilled or semi-skilled blue collar positions, women were primarily considered housewives while their partners were employed. Starting in the late 1990s, however, women began to enter the wage-work labour force as the main source of employment shifted to the public sector, with positions in fields perceived as female-oriented “such as health care, education, and old-age care.”

Finally, in traditional Inuit culture, extended family members, and often the entire community, participate in raising children, with grandparents playing a key role in their upbringing (Ekho and Ottokie, 2000; NCCAH, 2010). As Collings (2000) noted, there are forces playing against traditional Inuit culture. In particular, we might expect that settlement life has diminished the role of grandparents and the community in raising a child and increased the importance of peers. Even if this is the case, the 2006 Aboriginal Peoples’ Survey suggests that there is still a significant amount of involvement from grandparents and the community, with 71 percent of Inuit children receiving focused attention from their grandparents at least once a week, and 35 percent receiving focused attention from Elders at least once a week (Statistics Canada, 2008a).

For the reasons outlined above, it is unclear whether the introduction of childcare services will have an effect on labour force participation in Inuit communities. It is entirely possible that the services simply crowded out previous forms of childcare from grandparents, elder children, extended family members, or other household members. It is also entirely possible that the childcare services are not widely used because of the cultural importance of grandparents and Elders in raising children. However, given the growing importance of women in the wage-work labour force in Nunavut, it is also possible that the introduction of childcare services came at a crucial moment, and permitted a larger number of women to join the labour force.

2.2 Indigenous Early Childhood Education

The introduction of childcare services in Inuit communities in Canada can be partly traced back to two important federal programs concerning Indigenous early childhood education, namely the First Nations and Inuit Childcare Initiative and Aboriginal Head Start in Urban and Northern Communities.³ In this paper, we do not distinguish between the two programs. Future research that separately identifies the impact of each of these programs would be useful.

2.2.1 First Nations and Inuit Child Care Initiative

The federal government introduced the First Nations and Inuit Child Care Initiative (FNICCI) in 1995 “to support labour market development in Indigenous communities through licensed childcare” (ITK, 2014, p. 5). The program is currently housed under the umbrella of the Aboriginal Skills and Employment Training Strategy (ASETS). The main goal was to establish a level of childcare accessibility for First Nations and Inuit communities comparable to that of other Canadian children under the age of six, with the childcare spaces available to children whose parents are starting a new job or participating in a training program. To achieve this goal, FNICCI “aimed to create 6,000 quality childcare spaces in Inuit and First Nations communities within a three-year transitional phase (between 1995 and 1998) by improving the quality of existing spaces, creating new spaces, and supporting the operation of these spaces.” Of these 6,000 spaces, “625 were to be opened in Inuit communities.” The initiative “provided \$72 million dollars for the three-year transitional phase, and \$36 million per year afterward” (Thomas, 2016, p. 61).

In 1999-2000, FNICCI gave support for childcare centres in 390 communities (Government of Canada, 2014). This fell slightly to 389 communities in 2000-2001 through 2002-2003, and then increased between 2003-2004 and 2005-2006 to 407 communities. Over this time frame, the total number of spaces offered increased from less than 7,000 in

³There are other Indigenous childcare programs offered at the provincial level in Ontario, Alberta and New Brunswick. However, these programs are not relevant for Inuit communities in Quebec and Nunavut.

1999-2000, to about 7,000 in 2000-2001, and 7,500 in 2003-2004. By 2008-2009, FNICCI “provided support to more than 450 childcare facilities located on-reserve or in Inuit communities across Canada” amounting to 8,500 spaces or more, with most of these childcare spaces available to children under six years of age (HRSDC, 2012). One year later, in 2010, Bird (2011) states that FNICCI supported 462 sites for 8,538 children.⁴

2.2.2 Aboriginal Head Start in Urban and Northern Communities

Aboriginal Head Start in Urban and Northern Communities (AHSUNC), funded by the Public Health Agency of Canada, launched in 1995 as a “comprehensive early childhood development program for First Nations, Inuit, and Metis children and their families living in urban centers and large northern communities. The primary goal of the program is to mitigate inequities in health and developmental outcomes for Indigenous children by supporting early intervention strategies that cultivate a positive sense of self, a desire for learning, and opportunities to develop successfully as young people. Sites typically offer the programming for Indigenous children aged 2 to 6 years, focusing on Indigenous culture and language, education and school readiness, health promotion, nutrition, social support, and parental involvement. There were 129 AHSUNC sites across Canada in 2008-2009 providing about 4,800 children with childcare services” (HRSDC, 2012), while in 2010, there were 140 preschool programs (Bird, 2011). In Nunavut, in particular, there were about 150 spaces in 7 AHSUNC programs in 2012.⁵

However, despite these programs, there are still concerns over insufficient childcare supply in Inuit Nunangat. For example, in 2018, there were roughly 700 people on wait lists in Iqaluit and wait lists for a licensed daycare were at least two years (Burke, 2018). If the roll-out of these programs is small relative to the size of the population of children eligible for them, it is possible that we may see no effect of the program on labour force

⁴These are the most detailed data we could obtain. We were unable to obtain data on the number of childcare spaces that were opened in Inuit communities through FNICCI.

⁵These programs were in Arctic Bay, Arviat, Coral Harbour, Gjoa Haven, Igloodik, Kugluktuk, and Taloyoak. We were not able to obtain data on whether there were AHSUNC programs in the other regions of Inuit Nunangat.

participation or employment even if there is an unmet demand for them.

3 Literature Review of Childcare and Labour Force Participation

The current evidence concerning the impact of the availability and price of childcare on labour supply is mixed. Some research finds that the introduction of childcare services or the reduction of prices simply crowds out previously used non-parental forms of childcare, resulting in no increase in labour supply. Other research finds quite significant increases in labour supply in response to an increase in the availability or a reduction in the price of childcare services.

Table A1 summarizes the empirical literature and presents the estimated effects of the price and availability of childcare on labour supply.⁶ It can be seen from the table that the estimated effects from various childcare policy interventions vary substantially. For example, Bettendorf et al. (2015) find a treatment effect of 2.3 percentage points (3.2 percent) on mothers' labour force participation as a result of a reform in the Netherlands that reduced childcare fees, extended subsidies, and increased earned income tax credits, while Havnes and Mogstad (2011) find a treatment effect of 1.1 percentage points (4.4 percent) after a large-scale expansion of subsidized childcare in Norway. This compares to 7.1 percentage points for Arab mothers in Israel after an increase in the availability of free public preschool for 3-4 year olds (Schlosser, 2005) and 6.5 percentage points (14.1 percent) after the introduction of a legal claim to kindergarten in Germany (Bauernschuster and Schlotter, 2015). Lefebvre and Merrigan (2008), exploiting the universal low-fee childcare in Quebec, also find similarly large estimates of 8.1 percentage points or 13.3 percent for mothers in 2002. On the other end of the spectrum, Berlinski and Galiani (2007) find insignificant effects from an expansion of preschool for 3-5 year olds

⁶To construct this table, we used Table 8 from Bettendorf et al. (2015) as our benchmark, adding additional research and information on subgroups.

in Argentina, as do [Felfe et al. \(2016\)](#) in their study of differences in the regulation of after-school care across cantons in Switzerland.

Unsurprisingly, the results also vary quite significantly for different subgroups. For example, one study finds that the effect for single mothers is larger than that of married mothers ([Bettendorf et al., 2015](#)), while other studies find no effect for married mothers at all ([Cascio, 2009](#); [Fitzpatrick, 2012](#); [Goux and Maurin, 2010](#)). In contrast, [Baker et al. \(2008\)](#) find a significant effect for married women from the introduction of universal low-fee childcare in Quebec, but insignificant effects for single mothers. This is arguably because of previously available social support programs for single mothers.

Research has also shown that the size and the extent of the treatment effects depend on the number of children. In particular, some studies find insignificant effects for mothers with one child, but significant effects for mothers with two or more children ([Givord and Marbot, 2015](#); [Nollenberger and Rodriguez-Planas, 2015](#)). This may be because women with two or more children have reached their optimal family size, and are therefore more responsive to the introduction of universal childcare for their youngest child. Other studies find that the presence of more (younger) children eliminates the significant effects that were previously found for single mothers ([Cascio, 2009](#); [Fitzpatrick, 2012](#); [Gelbach, 2002](#)). This is not surprising if there are no childcare options for younger children.

There also appears to be additional variation in treatment effects depending on the age of the youngest child, with studies finding that women with younger children have the strongest treatment effects ([Baker et al., 2008](#); [Bettendorf et al., 2015](#)). This may be because older children are less likely to go to childcare.

The age of the mother appears to be another important determinant. [Nollenberger and Rodriguez-Planas \(2015\)](#) find significant effects for mothers aged 30 and over, but not for mothers aged younger than 30. This may relate to the fact that older women are more likely to have completed their fertility or reached their optimal family size. In contrast, [Havnes and Mogstad \(2011\)](#) find only minimal differences in treatment effects between married mothers aged 19-30 years and 31-49 years.

Treatment effects by educational attainment present conflicting results as well. In some cases, the strongest effects are found among mothers with less education ([Cascio and Schanzenbach, 2013](#); [Goux and Maurin, 2010](#)). This supports the argument that poor families have less access to childcare and are thus more responsive to reduced costs. In other cases, treatment effects are stronger for more educated women ([Baker et al., 2008](#); [Havnes and Mogstad, 2011](#)).

Given this variability, it is not surprising that the prevailing consensus is that the estimated impact depends heavily on the details of the policy change, the population under examination, existing labour market conditions, the institutional and cultural context, and the characteristics of both formal and informal childcare arrangements ([Cascio et al., 2015](#); [Givord and Marbot, 2015](#); [Havnes and Mogstad, 2011](#); [Vuri, 2016](#)).

Since contextual factors appear to play such a key role in determining policy responses to the introduction of childcare, we cannot expect that the response in communities in northern Canada, which have a unique cultural, social, and economic environment, can be easily mapped to non-Indigenous responses ex-ante. For this reason, this paper explores whether or not the particular contextual factors in Inuit Nunangat, including multi-family households and the importance of Elders in raising children, led to increases, decreases, or no changes in labour supply in response to the introduction of childcare services. Given also that the roll-out of the FNICCI and AHSUNC occurred simultaneously with extension of the universal childcare program in Quebec, we investigate whether the effect of the FNICCI and AHSUNC varies based on the province in which the Inuit community is located. Thus our contribution fits more broadly with the literature examining the effect of increased access to childcare in Quebec ([Baker et al., 2008, 2015](#); [Kottelenberg and Lehrer, 2013, 2018](#); [Lefebvre and Merrigan, 2008](#); [Lefebvre et al., 2009](#); [Stalker and Ornstein, 2013](#)).

4 Data and Methods

4.1 Data

To evaluate the effect of the introduction of formal childcare centers in Inuit communities we combine data on the roll-out of FNICCI and AHSUNC from provincial government records with the 1996, 2001, and 2006 confidential long-form census files. For 26 communities in Nunavut, we obtained data on the opening dates of childcare centres and their respective number of childcare spaces from the Government of Nunavut.⁷ For 14 communities in northern Quebec, we obtained the same data from the Government of Quebec.⁸ Note that we only use data on 16 communities in Nunavut and 12 communities in Quebec. Some Inuit communities have been excluded because the opening date of the first childcare centre was prior to the introduction of the two programs, because the community was no longer populated at the end of the period, or because of issues of inconsistent licensing.⁹ It is worth noting that for each of the communities for which we have data, the census subdivision (CSD) exactly overlays the community’s political and population boundaries so CSDs and communities are statistically equivalent. For this reason, we are comfortable using CSDs as equivalent to communities and we use the terms interchangeably. Figure 2 depicts the locations of the communities that we include in our sample or are excluded for the reasons discussed above.

Although we were able to obtain detailed information for Nunavut on the type of program (daycare, preschool, Aboriginal Head Start, family day home or school-age) and

⁷We corresponded with the Early Childhood Development Manager in the Department of Education.

⁸We corresponded with the Aboriginal Affairs Coordinator in the Accessibility and Quality of Child-care Branch of the Ministry of the Family.

⁹Note that we drop only one community, Nanisivik, because it was not populated. This community was a mining town. The mine was closed in 2002 and left for reclamation in 2003. By the 2006 Census, the population of Nanisivik was zero. We drop two additional communities because of inconsistent licensing: Resolute Bay and Hall Beach. They received formal childcare in 2002, only to lose it again in 2005. Since this is between two of our observation years, 2001 and 2006, we exclude these communities to ensure our control group remains valid. We exclude nine communities because they had formal childcare prior to the introduction of the two Indigenous early learning and childcare programs. Finally, note that Chesterfield Inlet lost childcare for one year in 2005. Since Chesterfield Inlet is part of the treatment group, we continue to include it in our sample. However, the results are robust to the exclusion of Chesterfield Inlet.

the type of space (infant, full-time, preschool and Head Start, or out of school), we treat all spaces as identical in the main analysis due to sample size concerns. Future research on the impacts of the different types of programs and spaces, especially the differences between AHSUNC and non-AHSUNC programs and spaces, would be valuable but it is not pursued here.

In Figure 3 we present the number of communities with childcare centers over time and the average number of spaces by community. The data for both Nunavut and Quebec suggest that the introduction of childcare occurred in the late 1990s to early 2000s in the majority of communities.

We were not able to obtain data for the Inuit communities in the Northwest Territories and in Newfoundland and Labrador. This is not a large concern given that these regions account for only a small portion of the population of Inuit Nunangat (about 11 percent in 2016).

There are three main challenges with these data. First, the opening dates for the childcare centres and the number of childcare spaces are provided by single years in northern Quebec (e.g., 1999), while the opening dates for childcare centres and the number of childcare spaces are provided by school years in Nunavut (e.g., 1997-1998). To convert school year data to single year data, we chose to use the date the school year ends. Given that the census is conducted in May but the school year starts in September, the impact of the childcare centre will likely not be captured if we use the former year.

Second, we only have information on the number of childcare spaces for 2005 in northern Quebec, while we have information on the number of childcare spaces in Nunavut by community for all relevant years. Thus, for northern Quebec, we assume that, for each community, the number of childcare spaces observed in 2005 applies to all years after the opening of a legal childcare center.¹⁰ For Nunavut, we simply calculated the average

¹⁰According to the Aboriginal Affairs Coordinator in the Accessibility and Quality of Child Care Branch in the Ministry of the Family for the Government of Quebec, there were illegal non-permit holder day cares in three communities in Quebec in 1995: Puvirnituq (21 spaces), Quaqtac (21 spaces) and Tasiujaq (20 spaces). These centres were licensed in 1998, 2001 and 2003, respectively. Since we are focused on the impacts of the introduction of formal childcare, this does not affect our research design.

number of childcare spaces available from the opening date to the relevant census year.

Third, we have not been able to gain information on how the treatment was assigned to communities and thus do not know whether the assignment to treatment was related to predicted upward (or downward) changes in the labour supply of families with children of eligible age relative to families without in particular communities. While we present evidence on pre-trends and perform a number of robustness exercises, we cannot exclude this possibility.

For labour force participation and our covariates, we use repeated cross-sectional data from the 1996, 2001, and 2006 confidential long-form census files. We exclude 1991 and 2011 because of inconsistent identification of Indigenous peoples and concerns about the distance in time from the introduction of childcare. Consistent with prior literature, we focus on individuals who are between the ages of 15 and 45 and analyze the effects by gender and household structure. Because of the nature of Inuit households we do not use census definitions of families and rather focus on individuals who live either in multi-adult households or single adult households. Because of concerns with fundamental differences in pre-trends between Indigenous and non-Indigenous persons, we include only those of Indigenous identity in our sample.

Table 1 presents some basic descriptive statistics by gender and by whether an individual is identified as treated or untreated. We group variables by individual characteristics in the first panel, household level characteristics in the second, and community-level characteristics in the final panel. On average, treated women are more likely to be both daycare workers and to have arrived in the community less than five years ago. Given that these would be effects of the policy not due to access to childcare itself, we will estimate our models excluding these workers. Treated women are slightly more likely to speak Inuktitut and less likely to be employed by about five percent. Being less likely to be employed is largely due to the fact that treated women also have children less than age six in the household. For treated individuals, the average number of childcare spaces in their communities per 100 children under six is roughly 30 spaces. For untreated individ-

uals (those without children under the age of six and/or do not have a childcare center in their community), there are only roughly 11 spaces per 100 children. On average, we can see that treated women are more likely to be in communities with a higher proportion of employment in public administration, while men are less likely to be in these environments, suggesting a high degree of occupational segregation. The population under the age of six in communities for both treated men and women is larger than for untreated men and women.

4.2 Method

We follow a common empirical strategy in the literature on the effect of childcare on female labour force participation known as difference-in-difference estimation (Baker et al., 2008). We estimate models of the form:

$$Y_{ihct} = \alpha_0 + \beta \mathbf{1}(Treated)_{hct} + \alpha_1 \mathbf{1}(\text{Child} < 6)_{hct} + \alpha_2 \mathbf{1}(\text{CSD Has Formal Care})_{ct} + \rho X_{ihct} + \eta Z_{hct} + \pi W_{ct} + \omega_t + \theta_c + \epsilon_{ihct} \quad (1)$$

where i indexes the individual, h indexes the household, c indexes the census subdivision,¹¹ and t indexes time. In this specification, Y is the outcome variable (either an indicator for labour force participation, employment, or the number of adults in the household, hours of unpaid childcare, high school graduation, or whether the child speaks an Indigenous language), X is a vector of individual characteristics including age, age squared, an indicator for a high school degree or more, an indicator for Inuktitut as the mother tongue, and gender; Z is a vector of household characteristics including the number of adults in the household and household income (minus personal income); W is a vector of time varying community characteristics including the unemployment rate,

¹¹Note that in our study, community and census subdivision refer to the same unit of geography.

the population under the age of six, the proportion of people who moved to this community in the past five years, and the proportion in the government sector; and ω and θ capture year and census subdivision fixed effects. The standard errors are clustered at the household-level, but the results are qualitatively similar if we cluster at the level of the community or community-census year. We estimate a linear probability model. In this model, the main coefficient of interest is β . The variable $\mathbf{1}(Treated)$ is an indicator that a household contains a child under the age of six and is in a community-time that has access to formal childcare spaces ($\mathbf{1}(Child < 6)_{hct} \times \mathbf{1}(CSD \text{ Has Formal Care})_{ct}$).¹² As noted above, there are often many families per household in these Inuit communities, so we use a household-level treatment variable. In particular, an individual is treated if there are children in the household that are young enough to be exposed to childcare services, whether or not the children belong to that individual. By using this specification, we are trying to capture the effect of the introduction of childcare services on the labour force participation of parents, but also of relatives or roommates, who may have been constrained from participation because they were previously engaged in caring for children.

Since most of the previous work on the effect of the availability of childcare services has focused on the effects of maternal labour supply, we estimated our models separately for female and male members of the households. Most of the previous work motivated this in a non-Indigenous context because of gender norms in childcare and relatively low female labour force participation rates (for example, labour force participation of women and men between the ages of 25 and 54 was roughly 76 percent and 93 percent respectively during the 1990s (Ferrao, 2011)). However, in the Inuit context, both male and female participation rates have significant margins for adjustment: the labour force participation rate of Inuit women and men between the ages of 25 and 54 was roughly 71 percent and 81 percent respectively so it isn't ex ante obvious we should expect the

¹²Unfortunately we are unable to tell the exact ages for which childcare centers are available. However, since we know that some childcare centers are licensed to provide care to infants under 18 months and some provide full-day kindergarten programs, we chose the age range of 0 to 5.

same result.¹³ We also estimate the model separately by household structure.

For this strategy to estimate the effect of access to childcare on labour force participation, we need two assumptions to hold. First, it must be the case that in the absence of the roll-out of additional childcare centers, individuals with children young enough to have access to the childcare centers would have otherwise had similar trends in labour force participation (and the other outcome variables) as those with children too old to have had access to the childcare centers or households without children, once age differences are taken into account. This is often referred to as the common trends assumption. Note that we do not allow the trends of households with and without children under six to differ because all communities in our sample eventually receive childcare. Second, it must be the case that only those with children young enough to attend the childcare centres are affected by the availability of the childcare centres. For example, if the introduction of childcare centres provides substantially more employment in a community than would have existed otherwise, then those without children or with older children in their households could be affected by the policy, and our estimation strategy would not provide an accurate estimate since the policy would also affect our control group. This is often referred to as the stable unit treatment value assumption.

Figure 4 provides some evidence regarding the validity of the common trend assumption by gender and household structure in labour force participation using an event study design. We split the sample into treatment and control, take the year of the survey wave, and subtract the year a childcare center opened in a given community. We then average the outcomes by two year intervals. This index is on the horizontal axis. The differences and their 95 percent confidence interval is presented with a dashed line indicating the year formal childcare was introduced. For a casual interpretation, we would prefer there to be no evidence of differences in outcomes before the introduction of childcare after accounting for a fixed level difference. While this is generally the case for men in

¹³These numbers are higher than those in our sample because of the communities included and the younger age range considered.

both multi-adult and single adult households, and for women in single adult households, there is some concern that just before the introduction of childcare there is an increase in women’s labour force participation in multi-adult households. While this could be due to measurement error in our policy variable, it does suggest that caution should be used in the interpretations that follow. Figure 4 is also potentially informative about the treatment effect we estimate below. For men in both household structures, and for women in single adult households, there is no systematic pattern after childcare is introduced and the point estimates hover around zero. However, for women in multiple adult households, the point estimates are positive but estimated with a large degree of error. The estimation of Equation 1 is less demanding of the data since it does not allow the treatment effect to vary by “years since treatment”. In what follows, we estimate the average effect of the introduction of childcare for those eligible and perform a number of robustness exercises.

5 Results

Table 2 reports the results for Equation 1 with labour force participation as the outcome variable of interest. The full sample is presented in column one. The subsample of women only is presented in the next three columns: all women in column two, women in households with more than one adult in column three, and women in households with only one adult in column four. The following three columns repeat these exercises for men. All specifications reported include the full set of covariates, but the results that show the sensitivity to adding groups of co-variables can be found in Tables A2, A3, and A4. Our model generally returns the expected coefficients on the covariates. In particular, we find that being female is negatively associated with labour force participation, the coefficient on having children under the age of six is negative, the coefficient on age is positive, and the coefficient on the indicator for high school graduation is positive and large (17 percentage point difference between high school graduates and high school dropouts, on

average).

When both genders are pooled in column 1, we do not see a significant correlation between treatment and labour force participation. However, the coefficient on treatment doubles in magnitude (from 1.5 percentage points to 3.1 percentage points) when the sample is restricted to just women. The coefficients estimated in the third and fourth column suggest that this is driven by the correlation between labour force participation and treatment of women in multiple adult households. The estimated effect on labour force participation just borders on being statistically significant for women in multi-adult households at the ten percent level. The correlation between treatment and labour force participation for men is small, or negative.

The concern with splitting the sample by household structure as we have done in the above exercises is that the number of adults in the household might be endogenous. For example, after the introduction of childcare, individuals may be able to move out of multi-family, multi-generational households because they obtain employment and they can afford to live in their own dwelling, or because they no longer need childcare services, or both. Table 5 explores this possibility. The model in Table 1 is re-estimated with the dependent variables “number of adults in household” in the first column, “number of children in household” in the second, and “number of children under the age of six” in the final column. In all cases, the correlation of the treatment indicator and the variables indicating family structure is very small quantitatively, and statistically insignificant. This provides suggestive evidence that there are no major changes to Inuit household structure due to the introduction of formal childcare services.

One potential confounding factor is that some of the communities in our sample were affected by the creation of Nunavut in 1999. Because of this, and because the effects of the policy may vary based on other provincial level policies, such as the Universal Childcare Policy in Quebec, we estimate the model separately by province. We report the results of this exercise in Table 3. The first two columns report the results for Quebec and the second two for Nunavut. It becomes clear from the first and third columns that

the increase in labour supply for women in multi-adult households is driven entirely by Quebec. While it is plausible that the results for Nunavut are confounded by the political creation of Nunavut around the time of the expansion of childcare, there are also fundamental differences in the accessibility of childcare between the two provinces. In Table 4, we show the cost per day of childcare by region and as a percentage of median family income in 2010, reported from ITK (2014). On average, the cost of childcare in Nunavik was seven dollars while it ranged from 15-54 dollars in the three administrative regions of Nunavut. We also report the average number of spaces per 100 children by region from our data and show that there more than double the number of childcare spaces per 100 children in Quebec relative to Nunavut.

While the estimated coefficients contain a significant amount of noise, the magnitude of the estimated effects are economically meaningful in the context of the prior literature. Figure 5 shows the distribution of estimates of the effect of childcare policies on labour force participation in percentage terms that are reported in Table A1 and indicates our estimated effect for women in multi-adult households in Quebec. This estimated effect is relatively large, but also not out of line with other results found in the literature, particularly in the literature that focuses on the introduction of the universal childcare in Quebec (Baker et al., 2008; Lefebvre and Merrigan, 2008; Lefebvre et al., 2009). It is completely possible that the impact of the FNICCI and AHSUNC would have been much smaller if it were not for the simultaneous roll-out of the Quebec universal childcare program. We discuss this relationship further in Section 7.

We address the possibility of general equilibrium labour force effects associated with the introduction of childcare services in Table 2. The introduction of a childcare centre could create many new jobs both directly and indirectly and may also draw in new workers from other communities. We address these concern in two ways. The first way is by re-estimating the specifications in Table 3 excluding those that moved to the census division in the past five years and then excluding those whose occupation is “childcare provider”. The results of these exercises are presented in Table A5 in the first and second

panel respectively. The point estimates are very similar in magnitude to those in Table 3 suggesting that our results are not being driven by migration or direct employment at the childcare centers. We have also run specifications dropping anyone who works in a community (CSD) that does not live there with similar results.¹⁴ The second way we address the potential of general equilibrium effects is by estimating the model for a sub-population of individuals in households without children using an indicator for the presence of a childcare centre as the treatment variable. The results in Table 6 do not provide strong evidence in favour of general equilibrium effects. In the case of households with more than one adult, but still no children, the point estimate is not statistically significant and of the opposite sign of the eligible treatment group suggesting that our results are not being driven from indirect increases in labour market opportunities associated with the policy.

6 Extensions and Discussion

In order to better understand and contextualize the results presented above, we perform a number of extensions. First, we consider whether increases in labour force participation have led to increases in employment. The results of this exercise are presented in Table 7. We split the sample by province, household type, and gender. We report the results on the probability of employment and unemployment for each sub-sample in the first column and the second column, respectively. While there is substantial statistical uncertainty, the point estimates in the first two columns suggest that the increase in labour force participation observed in Table 3 did not fully translate into increases in employment in Quebec. The point estimates suggest that more than half of the increase in labour force participation (almost five percentage points) translated into increases in unemployment. The results for men are economically small and insignificant in the first two columns. The coefficients estimated for multi-adult households in Nunavut in the sixth and seventh

¹⁴Table A6 shows that the proportion of people who live in a CSD that do not work there is statistically equivalent between the treatment and the control group.

column are economically small and statistically insignificant for both men and women, consistent with the results on labour force participation presented in Table 3.¹⁵ We have also estimated models that look at the correlation between the introduction of childcare on households with eligible children and hours worked. We find no evidence that hours worked are strongly correlated with the available of childcare.

Second, since it has been documented that lack of childcare services has been a barrier to completing high school for Inuit women, we estimate a model with an indicator for high school completion as the outcome variable and present these results in the third panel of Table 8. We find statistically significant increases in high school graduation for women of about 4 percentage points. Considering that the portion of women in our sample who complete high school is very low (25 percent) this coefficient is economically large. There also appears to be a positive effect for women of about 8 percentage points in single family households, which is estimated with a large degree of imprecision. It is worth noting that there is a negative correlation, imprecisely estimated for men in single adult households.

In the final panel of Table 8, we consider the possibility that formal childcare services may be crowding out informal, extended family care. This would be in line with findings in the non-Indigenous population where notable crowding out of informal childcare occurs (Asai et al., 2015; Baker et al., 2008; Havnes and Mogstad, 2011; Kreyenfeld and Hank, 2000). To analyze this possibility, we use information in the census on the hours spent in informal childcare to determine whether there is a change within multi-person dwellings. Contrary to what we would have predicted if extended family care was being crowded out by formal childcare, there is no statistical evidence of household members spending less time in unpaid childcare. If anything, families are spending more time in childcare than previously. One reason why we may see an increase in time spent with children among

¹⁵The point estimates of the treatment effect for single adult households in both Quebec and Nunavut are economically large but the associated standard errors are often larger than the coefficient. This is possibly due to the small samples in these subgroups and the demands placed on our data by the basic identification strategy. Although inference is difficult in these sub-groups, we show the results for completeness.

single adult households may be through programming in many childcare centres, like Head Start, which heavily encourages parental involvement ([Aboriginal Head Start, 1998](#)). Given that traditional forms of Inuit child rearing have been seen as providing a large degree of child autonomy and independence, more highly structured time with children through activities provided through the childcare centres may increase the perceived amount of active time in childcare among parents even if they engage in the labour force ([Briggs, 1991](#)). If there are informational spillover effects on families that do not use the centres, then this could also more broadly increase the time spent in active play with children in communities. The finding that Head Start programming increases caregiver involvement with their children has been established in prior work, so these findings would not be unprecedented ([Love et al., 2005](#); [Webster-Stratton, 1998](#)). It is also possible that the expansion of childcare centers has a direct effect on the responsibility of childcare within the household as found by [Stalker and Ornstein \(2013\)](#). However, it is difficult to explain why we see similar effects among men in multi-adult households in both Quebec and Nunavut given that the scale of policy roll-out was so different. This makes us hesitant to draw any strong conclusions regarding the effect of the introduction of formal childcare centers on unpaid time spent in childcare for males.

While we have a limited set of outcomes at the child level, we can consider how Indigenous language use at home is associated with the introduction of formal childcare. Specifically, the long-form census collects information on what languages other than English or French are spoken in the home. Since roughly 72 percent of Inuit children in a childcare program in 2006 were in a program that used Indigenous languages exclusively or in combination with other languages ([Findlay and Kohen, 2010, 82](#)), there may plausibly be a positive effect on the use of Inuktitut in the home if the child comes from a household with limited capacity to speak Inuktitut. On the other hand, if the centers are less effective at teaching Inuktitut to children than other people in the household who may have cared for the children in absence of the childcare center, then extension of these formal childcare centers may lower the use of Inuktitut. Thus we have no clear prediction

of the impact of the program on language use. In Table 9 the sample is restricted to children below the age of six and the results are divided by household type. In the first two columns we condition on characteristics of the child and family income and then in the final two columns condition on community level outcomes as well as survey wave and community level fixed effects. In the first row, we present the coefficient on whether the child’s community has a childcare center. Obviously not all children below the age of six would attend a childcare center so this coefficient would pick up both direct effects of childcare centers on the children that attend and any indirect effects of childcare centers on the likelihood of children speaking an Indigenous language in the home.¹⁶ While there are essentially no effects on language use in multi-adult households, childcare centers entering a community are associated with a statistically insignificant 6 to 7 percentage point increase in the likelihood of speaking an Indigenous language in the home in single adult households. We conclude that there is no strong evidence that the provision of formal childcare centers has lowered the use of Inuktitut.

7 Conclusion

Our results suggest that the effects of the FNICCI and the AHSUNC depend heavily on the context in which they are implemented. There are also likely important interactions between Quebec’s low-fee childcare policy and the First Nations and Inuit Childcare Initiative (FNICCI) and Aboriginal Head Start in Urban and Northern Communities (AHSUNC). All of the impacts we find are concentrated in Quebec relative to Nunavut suggesting that the accessibility and affordability of childcare are extremely important for take-up of formal childcare services. It is important to make clear that the introduction of childcare services varied by community within province in our study suggesting that the impact of the FNICCI and the AHSUNC is distinct from the provincial-level policy change. However, part of the variation we use is the difference in the change within a

¹⁶We cannot identify whether a child attends one of these centers.

community between families with children of an eligible age and those households without eligible children. This part of the variation could embed differences that arise solely because of the affordability of care generated by the change in Quebec. The impacts of Quebec's universal childcare policy, absent of the FNICCI and the AHSUNC, or vice versa, cannot be addressed in the context of this study and they should be thought of as simultaneous policy changes with potentially important interactions. We see these results as suggesting that for the introduction of the formal childcare services to foster significant increases in labour force participation in Inuit communities, there must be a sufficient supply delivered at a low cost.¹⁷

We also find that while there are increases in labour force participation in Quebec, we do not find significant impacts on employment and the point estimates suggest that much of the increase in labour force participation translated into a higher unemployment rate. We take these results to suggest that constraints on finding work may still be a significant barrier facing Inuit women even when the childcare is relatively more affordable and accessible. According to [Statistics Canada \(2018\)](#), when asked what would help Inuit women most to find a job, 44 percent reported that an increase in the number of available jobs would help most; 35 percent said skills training; and 26 percent said more academic education. This suggests that the economic context surrounding Inuit women may prevent increases in labour force participation from effectively translating into employment. However, lack of childcare access, particularly in some communities where limited and expensive childcare services are available may still be a significant barrier facing women: among Inuit women who said they would like to work but did not look for work, 22 percent did so because they needed to care for their children and 19 percent of Inuit women who were looking for work said childcare assistance would help them find it.

This study has a number of limitations. First, it is strictly quantitative in nature,

¹⁷Other possible explanations for the effects being concentrated in Quebec are heterogeneous responses to the introduction of formal child care centers arising from differences in other infrastructure, and the quality of child care provided.

and given the currently available statistical information can only give broad insights that future community-engaged qualitative researchers may wish to investigate further. Second, the effect of childcare services will vary depending on several factors and our findings are specific to the context we study. Third, there may have already existed unlicensed or undocumented childcare centres before the formal childcare centre was built in each community, and thus the effect of “out of extended family” childcare may be underestimated. Fourth, if either of our assumptions (i.e., no differences in trends between those families which had children young enough to be affected by childcare and those with children too old to be affected, and no spillover effects in labour force participation rates) are violated, our findings cannot be interpreted as the causal effect of childcare on labour force participation. The evidence we present on whether these assumptions hold is somewhat mixed and thus our results should only be taken as suggestive. Finally, all our results are estimated with a substantial degree of noise. This may be rectified by including a more expansive set of communities when the data becomes available.

We believe there are many important areas for future research on the effect of the roll-out of the FNICCI and AHSUNC. Obviously, there are many important outcomes that may be affected by the roll-out of childcare services which we have not investigated. We have focused on labour force participation partially because of its importance, but also because it is consistently available. Other extremely important outcomes that may have been influenced by these two Indigenous early learning and child care programs include children’s cognitive and non-cognitive abilities, language and cultural outcomes (e.g. fishing, hunting, harvesting, arts), and parental behaviors. These are the primary forces that motivated the creation of AHSUNC and should be studied more systematically in the future ([HRSDC, 2012](#)). Finally, we have only studied the Inuit context in selected communities in Inuit Nunangat. The increase in childcare availability from the FNICCI and AHSUNC affected many other Inuit and First Nations communities not included here. Future work should expand this analysis should the data become available.

Recent work by [Pauktuutit Inuit Women of Canada \(2016\)](#) that studied the barriers

to labour force participation of Inuit women finds evidence that childcare accessibility is still a significant issue in Inuit Nunangat. While our findings suggest that increases in childcare availability, in part through FNICCI and AHSUNC, have had a significant effect on labour force participation for the Inuit in Inuit Nunangat, more may still need to be done to alleviate remaining constraints.

Tables

Table 1: Descriptive Statistics

	Women			Men		
	Untreated	Treated	Diff	Untreated	Treated	Diff
Individual Level Characteristics						
Age	27.67 (8.85)	27.32 (8.29)	0.35*	27.43 (8.75)	27.32 (8.52)	0.1
High school or more	0.25 (0.43)	0.25 (0.44)	0.00	0.28 (0.45)	0.29 (0.45)	-0.01
Speaks Inuktitut	0.75 (0.43)	0.79 (0.41)	-0.04***	0.79 (0.41)	0.79 (0.41)	0.00
Employed	0.44 (0.5)	0.40 (0.49)	0.05***	0.44 (0.5)	0.45 (0.5)	-0.01
Unemployed	0.14 (0.34)	0.16 (0.37)	-0.03***	0.18 (0.38)	0.18 (0.38)	-0.00
In labour force	0.58 (0.49)	0.56 (0.5)	0.02	0.62 (0.49)	0.63 (0.48)	-0.01
Daycare worker	0.03 (0.18)	0.08 (0.27)	-0.04***	0.00 (0.04)	0.00 (0.05)	0.00
Moved to CSD 5 years ago	0.1 (0.3)	0.07 (0.26)	0.03***	0.09 (0.29)	0.07 (0.25)	0.02***
Household Level Characteristics						
Lone mom/dad	0.13 (0.33)	0.19 (0.39)	-0.07***	0.04 (0.19)	0.07 (0.25)	-0.03***
# of children < 6 in HH	0.74 (0.94)	1.54 (0.74)	-0.80***	0.56 (0.86)	1.5 (0.72)	-0.94***
HH income – personal income	37,760 (32270)	48,450 (41450)	-10,690***	34,630 (32.48)	50,120 (42.88)	-15,500***
# adults in HH	2.75 (1.24)	3.1 (1.47)	-0.34***	2.85 (1.34)	3.28 (1.51)	-0.43***
Proportion HH with child < 6	0.47 (0.5)	1 (.)	-0.53***	0.36 (0.48)	1 (.)	-0.64***
Community Level Characteristics (Census Subdivision Level - CSD)						
CSD treated	0.31 (0.46)	1 (.)	-0.69***	0.38 (0.49)	1 (.)	-0.62***
# spaces per 100 children	11.08 (21.04)	32.36 (22.73)	-21.29***	13.73 (23.02)	32.23 (22.82)	-18.50***
# of spaces	13.54 (25.32)	40.59 (25.78)	-27.05***	16.51 (27.1)	40.62 (25.8)	-24.11***
Unemployment rate	0.08 (0.02)	0.09 (0.03)	-0.01***	0.08 (0.02)	0.09 (0.03)	-0.01***
Population < 6	128.96 (59.09)	149.68 (62.44)	-20.72***	130.27 (59.45)	150.27 (62.3)	-20.00***
Proportion moved to CSD 5 years ago	0.10 (0.03)	0.09 (0.03)	0.02***	0.10 (0.03)	0.09 (0.03)	0.01***
Proportion high school or more	0.19 (0.04)	0.20 (0.04)	-0.01***	0.19 (0.04)	0.2 (0.04)	-0.01***
Prop. works in public administration	0.22 (0.41)	0.28 (0.45)	-0.06***	0.18 (0.38)	0.06 (0.25)	0.11***
Observations	6,980	4,190	11,170	7,990	3,770	11,760

Notes: Only those with Indigenous identity included. The first two columns contain the mean or proportion and the standard deviation in parenthesis. The third column is the difference between the first and second column. The pattern is repeated in the following three columns. All means and proportions follow the vetting rules of Canada's Research Data Center requirements. The average community population size was computed after population sizes in each community were rounded to 100. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 2: The Introduction of Childcare Services and Labour Force Participation in Inuit Communities

	Both		Women		Men		
		All	HH > 1 Adult	HH 1 Adult	All	HH > 1 Adult	HH 1 Adult
Treated	0.01462 (0.01288)	0.03109 (0.01843)	0.03155 (0.01955)	0.00845 (0.05991)	-0.00669 (0.01649)	0.00972 (0.01767)	-0.11032 (0.09393)
HH has child 0 to 5	-0.00901 (0.00979)	-0.06804*** (0.01424)	-0.06813*** (0.01512)	-0.05904 (0.0438)	0.04696*** (0.01261)	0.03033* (0.01353)	0.08464 (0.07565)
CSD treated	-0.01136 (0.01602)	-0.01837 (0.02304)	-0.02557 (0.02451)	0.10581 (0.0715)	-0.00251 (0.02034)	-0.02517 (0.02182)	0.11302 (0.06064)
Age	0.08937*** (0.0025)	0.07774*** (0.00372)	0.07744*** (0.00389)	0.06095*** (0.01607)	0.10246*** (0.00327)	0.10157*** (0.00343)	0.10053*** (0.0129)
Age squared	-0.00124*** (0.00004)	-0.00108*** (0.00006)	-0.00108*** (0.00007)	-0.00079** (0.00026)	-0.00143*** (0.00006)	-0.00141*** (0.00006)	-0.00143*** (0.00021)
High school or more	0.16691*** (0.00666)	0.18977*** (0.00996)	0.19050*** (0.01051)	0.18833*** (0.03207)	0.13749*** (0.00864)	0.13654*** (0.00905)	0.14277*** (0.02999)
Speaks Inuktitut	-0.05175*** (0.01072)	-0.05662*** (0.01508)	-0.05569*** (0.01582)	-0.05103 (0.0527)	-0.03995** (0.01385)	-0.04362** (0.0149)	-0.03323 (0.03814)
Female	-0.04949*** (0.00562)						
# adults in HH	-0.00878** (0.00302)	-0.00837* (0.0041)	-0.01001* (0.00432)		-0.01161** (0.00398)	-0.01544*** (0.0042)	
HH income – personal income	0.00003 (0.00011)	0.00028 (0.00015)	0.00027 (0.00015)	-0.0022 (0.00159)	-0.00013 (0.00015)	-0.00017 (0.00015)	-0.00093 (0.00158)
CSD unemployment rate	1.08794*** (0.23264)	1.13532*** (0.32324)	1.32481*** (0.337)	-2.00954 (1.17084)	1.05492*** (0.29924)	1.12957*** (0.31193)	0.35575 (1.04855)
CSD pop < 6	-0.00031 (0.00025)	-0.00052 (0.00034)	-0.00044 (0.00036)	-0.0023 (0.00123)	-0.00008 (0.00032)	0.00004 (0.00033)	-0.0013 (0.00111)
CSD moved 5 years ago	0.43380* (0.202)	0.46355 (0.2788)	0.45077 (0.29354)	0.691 (0.90315)	0.41468 (0.25826)	0.47621 (0.26828)	-0.46799 (0.89252)
CSD public workers	0.0234 (0.07571)	0.12795 (0.10257)	0.17121 (0.10808)	-0.52437 (0.33655)	-0.07722 (0.09698)	-0.07102 (0.10182)	-0.11885 (0.33997)
Survey Year FE	X	X	X	X	X	X	X
CSD FE	X	X	X	X	X	X	X
Observations	22,940	11,170	10,290	880	11,760	10,810	950
Adjusted R^2	0.213	0.173	0.169	0.22	0.261	0.262	0.256

Notes: HH stands for household. All data from the 1996, 2001, and 2006 Census, except data on childcare centers within the 28 census subdivisions (CSDs), which comes from the Government of Nunavut and Quebec. CSD stands for census subdivision. “CSD pop < 6” is the proportion of the population in a CSD that was under the age of six. “CSD moved 5 years ago” is the proportion of individuals living in a CSD at the time of the census who lived in a different CSD five years ago. “CSD public workers” is the proportion of individuals whose occupation was in the public sector in that CSD. All specifications include census year and census subdivision fixed effects and standard errors are clustered at the household level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: The Introduction of Childcare Services and Labour Force Participation by Province

	Quebec		Nunavut	
	HH > 1 Adult	HH 1 Adult	HH > 1 Adult	HH 1 Adult
Women				
Treated	0.07160*	-0.19227	0.00412	0.11125
	(0.03206)	(0.09973)	(0.02466)	(0.0748)
HH has child 0 to 5	-0.07100**	0.07823	-0.06412***	-0.12521*
	(0.02473)	(0.06726)	(0.019)	(0.05643)
CSD treated	0.00777	0.34803**	-0.03934	0.0347
	(0.04366)	(0.12699)	(0.03072)	(0.09154)
Observations	3,730	310	6,570	570
Adjusted R^2	0.149	0.141	0.139	0.196
Men				
Treated	0.01699	0.02402	0.00635	-0.21465
	(0.03021)	(0.14629)	(0.02171)	(0.12679)
HH has child 0 to 5	0.05282*	0.00426	0.0145	0.14922
	(0.02269)	(0.12149)	(0.01672)	(0.10063)
CSD treated	-0.00875	0.03205	-0.03558	0.13687
	(0.04086)	(0.1175)	(0.02672)	(0.07466)
Observations	3,930	360	590	6,880
Adjusted R^2	0.166	0.130	0.213	0.102

Notes: HH stands for household. All data from the 1996, 2001, and 2006 Census, except data on childcare centers within the 28 census subdivisions (CSDs), which comes from the Government of Nunavut and Quebec. CSD stands for census subdivision. All specifications include a quadratic in age, an indicator for having high school or more, an indicator for an Indigenous language (Inuktitut), number of adults in the household, household income minus personal income, census subdivision (CSD) unemployment rate, CSD proportion of the population under the age of six, CSD proportion who moved to the CSD in the previous 5 years, and the CSD proportion of people who work in government and census year and census subdivision fixed effects. Standard errors are clustered at the level of the household. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Comparison of Childcare Environments for Inuit Families in Nunavut and Quebec

Childcare Prices by Region		
Region	Family Fees per Day (2014)	Estimated Annual Family Fees as a % of 2010 Median Personal Income
Nunavik	\$7	7%
Nunavut		
Qikiqtaaluk	\$15-54	58%
Kivalliq	\$15-40	45%
Kitikmeot	\$25-50	57%
Average Number of Spaces per 100 Children by Region		
	Quebec	Nunavut
1996	0	0
2006	60	20

Notes: Data on fees from [ITK \(2014\)](#). Estimates of average number of childcare spaces are from our data described in Section 4.1.

Table 5: Is the Policy Correlated with Changes in HH structure?

	# Adults in HH	# of Children in HH	# Children Under 6
Treated	0.01493 (0.05402)	0.06283 (0.05549)	-0.02438 (0.02258)
HH has child 0 to 5	0.19018*** (0.03888)	1.58764*** (0.04172)	1.50455*** (0.01664)
CSD treated	-0.03 (0.07)	0.00 (0.07)	0.00 (0.03)
Age	0.04081*** (0.00804)	0.01637 (0.00866)	0.04728*** (0.00398)
Age squared	-0.00076*** (0.00013)	0.00011 (0.00015)	-0.00082*** (0.00007)
High school or more	-0.17524*** (0.01900)	-0.15605*** (0.02083)	-0.02010* (0.00986)
Speaks Inuktitut	0.36505*** (0.03849)	0.18662*** (0.04243)	0.00437 (0.01965)
Female	-0.16711*** (0.01291)	0.11916*** (0.01221)	0.02017*** (0.00516)
HH income – personal income	0.02042*** (0.00051)	0.00673*** (0.00049)	0.00098*** (0.00026)
CSD unemployment rate	-0.32182 (1.00143)	-1.44969 (1.09499)	-0.14374 (0.56618)
CSD pop < 6	0.00044 (0.00124)	0.00139 (0.00120)	0.00260*** (0.00064)
CSD moved 5 years ago	-0.03907 (0.84845)	2.27556* (0.90449)	0.20126 (0.43706)
CSD public workers	-0.61767 (0.32380)	-1.01723** (0.37625)	-0.12701 (0.20212)
Survey Year FE	X	X	X
CSD FE	X	X	X
Observations	22,930	22,930	22,930
Adjusted R^2	0.345	0.349	0.628

Notes: HH stands for household. All data from the 1996, 2001, and 2006 Census, except data on childcare centers within the 28 census subdivisions (CSDs), which comes from the Government of Nunavut and Quebec. CSD stands for census subdivision. “CSD pop < 6 ” is the proportion of the population in a CSD that was under the age of six. “CSD moved 5 years ago” is the proportion of individuals living in a CSD at the time of census who lived in a different CSD five years ago. “CSD public workers” is the proportion of individuals whose occupation was in the public sector in that CSD. The column headers indicate the dependent variable in each specification. Standard errors are clustered at the household level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Labour Force and Employment Outcomes: Policy Spillovers on Households without Children Under the Age of Six

	Women			Men		
	All	Quebec	Nunavut	All	Quebec	Nunavut
CSD treated	-0.04061 (0.03232)	0.00801 (0.06134)	-0.07193 (0.04010)	-0.01841 (0.02771)	-0.08085 (0.05291)	0.00994 (0.03354)
Observations	3,670	1,320	2,350	5,080	1,910	3,170
Adjusted R^2	0.228	0.226	0.235	0.256	0.210	0.290

Notes: All specifications include a quadratic in age, an indicator for having high school or more, an indicator for an Indigenous language (Inuktitut), number of adults in the household, household income minus personal income, census subdivision (CSD) unemployment rate, CSD proportion of the population under the age of six, CSD proportion who moved to the division in the previous 5 years, and the CSD proportion of people who work in government and census year and census subdivision fixed effects. HH stands for household. Standard errors are clustered at the level of the household. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: The Introduction of Childcare Services and Employment and Unemployment by Province

	Quebec				Nunavut			
	HH > 1 Adult		HH 1 Adult		HH > 1 Adult		HH 1 Adult	
	Employed	Unemployed	Employed	Unemployed	Employed	Unemployed	Employed	Unemployed
<i>Women</i>								
Treated	0.02412 (0.03334)	0.04747 (0.02523)	-0.07699 (0.11657)	-0.11528 (0.09256)	0.0184 (0.02519)	-0.01429 (0.019)	0.13698 (0.07768)	-0.02573 (0.06526)
HH has child 0 to 5	-0.06151* (0.02539)	-0.00949 (0.01879)	-0.00579 (0.08324)	0.08401 (0.06643)	-0.08856*** (0.01946)	0.02445 (0.01438)	-0.20372*** (0.05675)	0.07852 (0.04663)
CSD treated	0.03819 (0.04542)	-0.03042 (0.03433)	0.25803 (0.14778)	0.09 (0.12043)	-0.0452 (0.03108)	0.00586 (0.02367)	-0.07842 (0.09389)	0.11313 (0.07914)
Observations	3,730	3,730	310	310	6,570	6,570	570	570
Adjusted R^2	0.149	0.016	0.141	-0.029	0.139	0.022	0.196	0.021
<i>Men</i>								
Treated	0.00895 (0.03108)	0.00804 (0.02589)	-0.11418 (0.15926)	0.1382 (0.10841)	-0.01372 (0.02242)	0.02006 (0.02023)	-0.06857 (0.13131)	-0.14608 (0.12546)
HH has child 0 to 5	0.07821** (0.02389)	-0.02538 (0.01883)	0.10919 (0.12583)	-0.10493 (0.07091)	0.05823*** (0.01732)	-0.04373** (0.01556)	0.0944 (0.10788)	0.05481 (0.10488)
CSD treated	0.00326 (0.04088)	-0.01201 (0.03496)	0.09149 (0.13493)	-0.05944 (0.10966)	-0.03008 (0.02848)	-0.0055 (0.02583)	0.05612 (0.08503)	0.08074 (0.0807)
Observations	3,930	3,930	360	360	6,880	6,880	590	590
Adjusted R^2	0.166	0.026	0.13	0.071	0.213	0.036	0.102	0.029

Notes: HH stands for household. All data from the 1996, 2001, and 2006 Census, except data on childcare centers within the 28 census subdivisions (CSDs), which comes from the Government of Nunavut and Quebec. CSD stands for census subdivision. All specifications include a quadratic in age, an indicator for having high school or more, an indicator for an Indigenous language (Inuktitut), number of adults in the household, household income minus personal income, census subdivision (CSD) unemployment rate, CSD proportion of the population under the age of six, CSD proportion who moved to the CSD in the previous 5 years, and the CSD proportion of people who work in government and census year and census subdivision fixed effects. Standard errors are clustered at the level of the household. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 8: The Introduction of Childcare Services and Additional Outcomes

	Women				Men			
	Quebec		Nunavut		Quebec		Nunavut	
	HH > 1 Adult	HH 1 Adult	HH > 1 Adult	HH 1 Adult	HH > 1 Adult	HH 1 Adult	HH > 1 Adult	HH 1 Adult
	<i>Graduated High School</i>							
Treated	0.06884*	0.1581	0.02519	0.02529	0.00097	-0.18706	0.01811	-0.00804
	(0.03247)	(0.1115)	(0.02241)	(0.07783)	(0.0286)	(0.13178)	(0.02142)	(0.11404)
HH has child 0 to 5	-0.07483**	-0.10411	-0.04944**	-0.14865**	0.03095	0.04474	-0.01656	-0.04671
	(0.02506)	(0.0825)	(0.0169)	(0.05708)	(0.02165)	(0.09887)	(0.01669)	(0.09345)
CSD treated	-0.11853**	-0.03314	-0.03237	0.00127	-0.08312*	0.09494	0.03899	0.00233
	(0.04351)	(0.15263)	(0.02743)	(0.09391)	(0.03843)	(0.1288)	(0.02715)	(0.08487)
Observations	3,730	310	6,570	570	3,930	360	6,880	590
Adjusted R^2	0.069	0.11	0.106	0.173	0.1	0.185	0.135	0.122
	<i>Spending more than 60+ hours in Childcare</i>							
Treated	0.00822	0.15195	0.03317	0.13203	0.07333***	-0.01789	0.07148***	0.02863
	(0.02916)	(0.11214)	(0.02431)	(0.08115)	(0.01933)	(0.11042)	(0.01813)	(0.13112)
HH has child 0 to 5	0.19692***	0.19764*	0.23902***	0.22819***	0.07402***	0.12322	0.08074***	0.35226***
	(0.02148)	(0.07777)	(0.01903)	(0.06247)	(0.01287)	(0.06937)	(0.01322)	(0.10344)
CSD treated	-0.10773**	-0.13165	0.05426	-0.10523	-0.04333	0.03586	-0.00134	-0.08814
	(0.04077)	(0.15555)	(0.02995)	(0.09506)	(0.02572)	(0.05506)	(0.02357)	(0.04999)
Observations	3,730	310	6,570	570	3,930	360	6,880	590
Adjusted R^2	0.143	0.159	0.178	0.169	0.114	0.079	0.099	0.148

Notes: HH stands for household. All data from the 1996, 2001, and 2006 Census, except data on childcare centers within the 28 census subdivisions (CSDs), which comes from the Government of Nunavut and Quebec. CSD stands for census subdivision. All specifications include a quadratic in age, an indicator for having high school or more, an indicator for an Indigenous language (Inuktitut), number of adults in the household, household income minus personal income, census subdivision (CSD) unemployment rate, CSD proportion of the population under the age of six, CSD proportion who moved to the CSD in the previous 5 years, and the CSD proportion of people who work in government and census year and census subdivision fixed effects. HH stands for household. Standard errors are clustered at the level of the household. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 9: The Introduction of Childcare Services and Language Use Among Children

	HH > 1 Adult	HH 1 Adult	HH > 1 Adult	HH 1 Adult
CSD Treated	0.00563 (0.01596)	0.07003 (0.05592)	-0.01009 (0.01769)	0.05861 (0.05492)
Age	-0.0053 (0.00593)	-0.00005 (0.02056)	-0.00567 (0.00595)	-0.00064 (0.01973)
Age squared	0.00037 (0.00112)	-0.00139 (0.00391)	0.00049 (0.00112)	-0.00086 (0.00375)
Female	-0.00274 (0.0057)	0.0248 (0.01977)	-0.00304 (0.00566)	0.02737 (0.01948)
HH income			-0.00052***	-0.00141
– personal income			(0.00012)	(0.00098)
CSD unemployment			-0.04124	-0.38507
rate			(0.24905)	(1.06103)
CSD Pop < 6			0.00001	0.002
			(0.00027)	(0.00108)
CSD moved			-0.50416*	0.67433
5 years ago			(0.21615)	(0.92466)
CSD public workers			0.24627*	0.35285
			(0.10064)	(0.22566)
Observations	8,020	620	8,020	620
Adjusted R^2	0.59	0.709	0.593	0.713

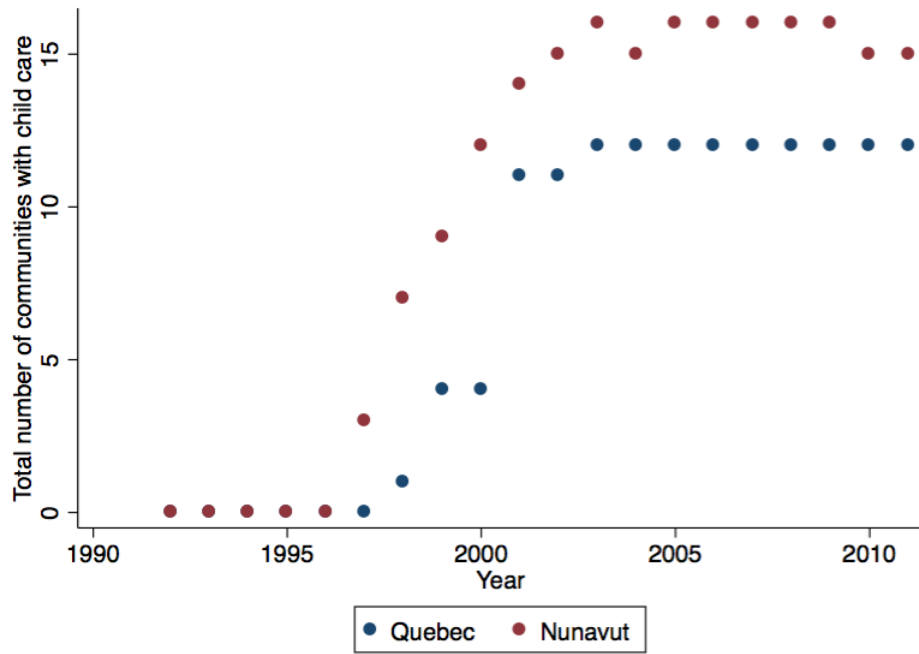
Notes: HH stands for household. All data from the 1996, 2001, and 2006 Census, except data on childcare centers within the 28 census subdivisions (CSDs), which comes from the Government of Nunavut and Quebec. CSD stands for census subdivision. The sample is restricted to children under the age of six. The dependent variable is an indicator of whether an Indigenous language is spoken at home. “CSD pop < 6 ” is the proportion of the population in a CSD that was under the age of six. “CSD moved 5 years ago” is the proportion of individuals living in a CSD at the time of the census who lived in a different CSD five years ago. “CSD public workers” is the proportion of individuals whose occupation was in the public sector in that CSD. All estimates at the CSD level are time varying, as are proportions. All specifications include census year and census subdivision fixed effects. Standard errors are clustered at the level of the household. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figures

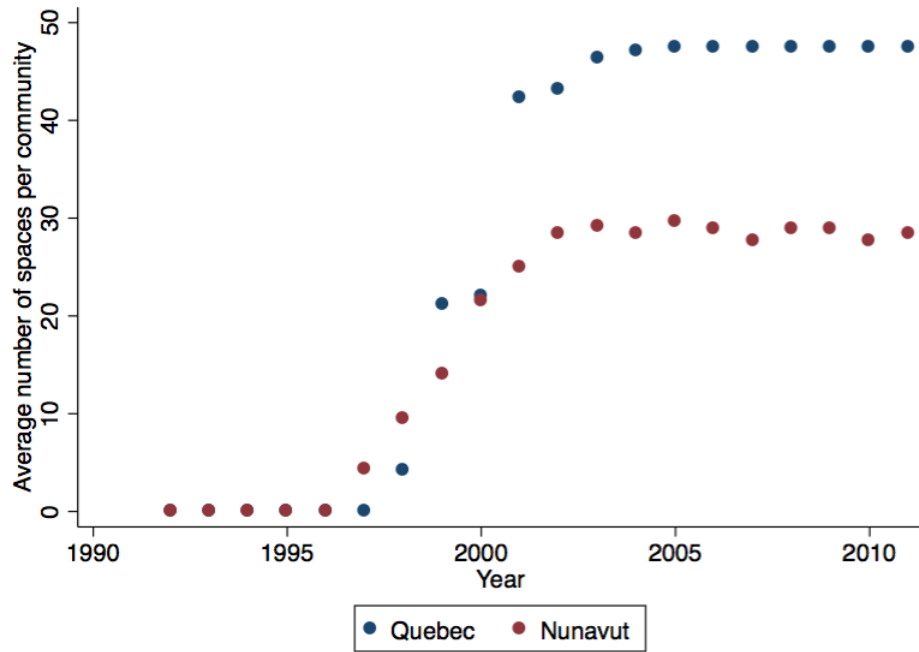
Figure 1: Map of Inuit Nunangat Regions



Notes: Source – Geography Division, Statistics Canada.

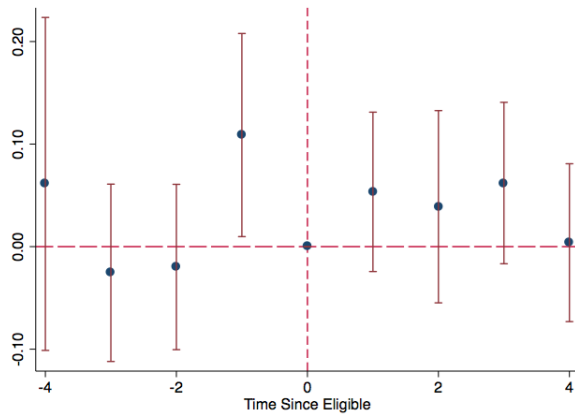


(a) Number of Communities with Formal Childcare

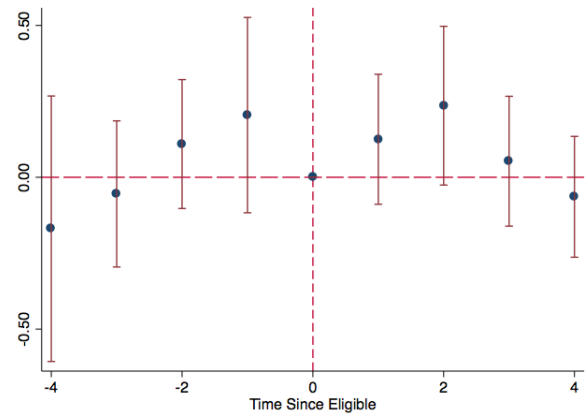


(b) Average Number of Spaces per 100 Children

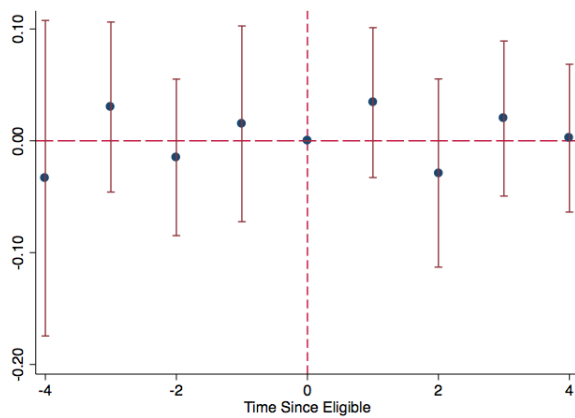
Figure 3: The first panel shows the number of communities in our sample gaining access to childcare over the 1990 to 2011 period by the province in which the community is located with 28 communities in total. The second panel provides the average number of spaces per 100 children per community.



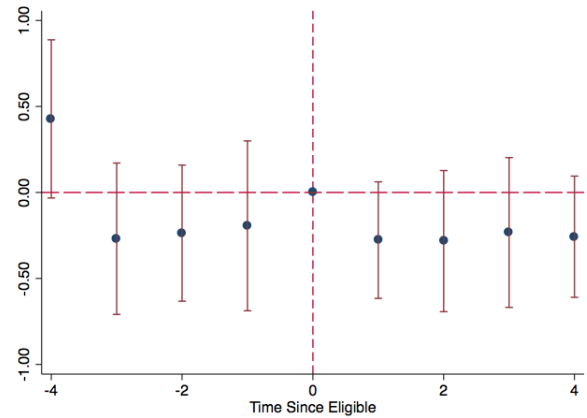
(a) Women in Multi-Adult Households



(b) Women in Single Adult Households



(c) Men in Multi-Adult Households



(d) Men in Single Adult Households

Figure 4: This figure reports the estimated coefficients and their 95 percent confidence intervals from a set of interaction variables between the years since childcare was introduced in a community and whether the individual was eligible for treatment. The years since time of establishment of the childcare center are averaged over every two years. The specifications control for age, age squared, an indicator for a high school degree or more, an indicator for Inuktitut as the mother tongue, the number of adults in the household and household income (minus personal income), as well as the time varying community characteristics, namely the unemployment rate, the population under the age of six, the proportion of people who moved to this community in the past five years, and the proportion in the government sector. All specifications also include census year and census subdivision fixed effects. The standard errors are clustered at the household-level, but the results are qualitatively similar if we cluster at the level of the community or community-census year.

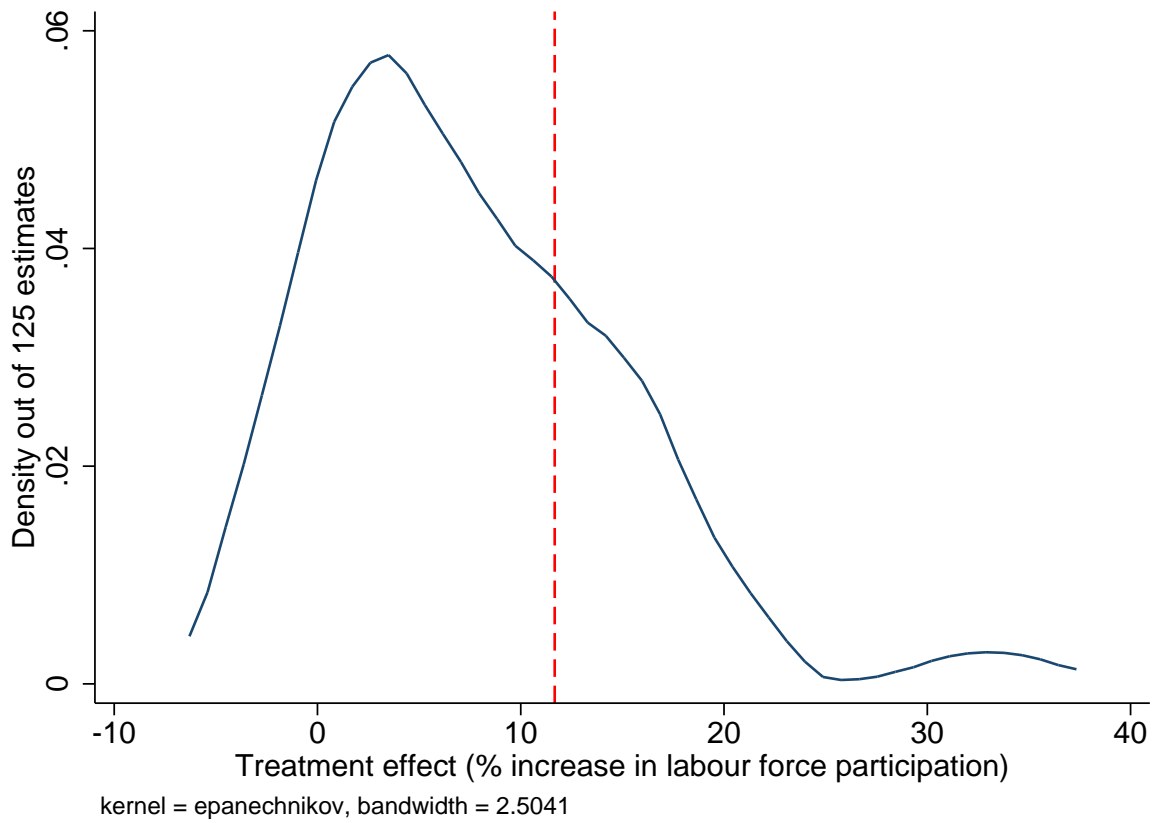


Figure 5: This figure depicts the distribution of the treatment effect estimates from the literature summarized in Table A1. The value represented by the red dashed line is the treatment effect for women in multi-adult households in Quebec (0.07/0.6) from Table 3.

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Appendix Tables

Table A1: Summary and Comparison of Existing Literature

Study	Country	Reform/instrument	Treatment group	Emp./Part. Rate (Control)	Sample Period	Treatment Effect (% Points)	
Baker et al. (2008)	CAN	Québec Expansion	Wo. in cps, ch. 0-4 years	53	1994-2002	7.7***	
			Wo. in cps, ch. 0-2 yrs	-	1994-2002	9.0***	
			Wo. in cps, ch. 3-4 yrs	-	1994-2002	5.5***	
			Single Mo.	-	1994-2002	4	
			Wo. in cps, hs or less	-	1994-2002	3	
			Wo. in cps, some p.s.	-	1994-2002	9.5***	
Bauernschuster & Schlotter (2015)	GER	Intro. of legal claim to kg, 2SLS	Mo.	-	1991-2001	6.5*	
			DiD, c.g: wo. with 10-11 yrs children	Mo.	-	1996-2001	5.0***
			DiD, c.g: wo. 29-36 with no children	Mo.	-	1996-2001	8.2***
			DiD, c.g: wo. 18-60 with no children	Mo.	-	1996-2001	7.2***
Berlinski & Galiani (2007)	ARG	Staggered increase pre-school	Mo.	39	1992-2000	7.4	
Bettendorf et al. (2015)	NL	Parental fee from 37 to 18%	Mo.	71	1995-2009	2.3***	
			Mo. in cps	72	1995-2009	2.0***	
			Single Mo.	56	1995-2009	4.7***	
			Extens. to guestparent care	Mo. y. ch. 0-3 yrs	70	1995-2009	2.5***
		Increase EITC work. parents	Mo. y. ch. 4-7 yrs	69	1995-2009	2.8***	
			Mo. y. ch. 8-11 yrs	74	1995-2009	1.5**	
			Fathers	94	1995-2009	0.3	
			Cascio (2009)	US	Staggered intro. public school	Ma. Mo.	36
Single Mo.	58	1950-1990				6.9**	
Single Mo., with y. children	-	1950-1990				-2.2	
Ma. Mo., with y. children	-	1950-1990				2.2	
Cascio & Schanzenbach (2013)	US	Eligibility for pre-kg	Mo., hs or less	-	1977-2011	4.7***	
			Mo., some p.s	-	1977-2011	-1.1	
Dujardin et al. (2018)	BEL	Expansion formal childcare in Wallonia	Mo.	56	2005-2009	0.75***	
Felfe et al. (2016)	SWI	Difference in after-school care by cantons	Mo.	70	2010	0.6	
			Fathers	97	2010	0.6	
Finseraas et al. (2017)	NOR	School start age lowered from seven to six	Mo.	67	1996-1997	5.0***	
Fitzpatrick (2010)	US	Eligibility for pre-kg using date of birth	Mo.	70	2000	-0.5	
			Single Mo., with y. children	-	2000	-0.3	
			Single Mo., with no y. children	-	2000	-0.2	
			Ma. Mo., with y. children	-	2000	-0.8	

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Table A1 – continued from previous page

Study	Country	Reform/instrument	Treatment group	Emp/Part. Rate	Sample Period	TE (PP)
Fitzpatrick (2012)	US	Eligibility for public school using date of birth	Ma. Mo., with no y. children	-	2000	-0.5
			Ma. Mo.	60	2000	2.7
			Single Mo.	68	2000	12.2**
			Single Mo., with y. children	-	2000	0.2
Gelbach (2002)	US	Eligibility for public school using quarter of birth	Ma. Mo., with y. children	-	2000	1.4
			Ma. Mo.	41	1980	5.0***
			Single Mo.	52	1980	5.1**
			Single Mo.	-	1980	-1.9
Givord & Marbot (2015)	FRA	Discontinuities in family allowances by child's year of birth	Ma. Mo.	-	1980	3.7***
			Mo.	74	2005-2009	1.1***
			Mo., one child	-	2005-2009	0.17
			Mo., two children	-	2005-2009	1.57***
Goux & Maurin (2010)	FRA	Eligibility for pre-school	Mo., ≥ 3 children or more	-	2005-2009	1.63***
			Wo. in cps	78	1999	0.4
			Single Mo.	80	1999	3.6**
			Mo., hs graduate	-	1999	0.2
Haeck et al. (2015)	CAN	Québec Expansion	Mo., hs dropout	-	1999	5.1***
			Mo. in 98-99	61	1994-2008	0
			Mo. in 00-01	65	1994-2008	5.0**
			Mo. in 02-03	65	1994-2008	8.0***
			Mo. in 04-05	69	1994-2008	13.0***
			Mo. in 06-07	70	1994-2008	10.0***
			Mo. In 08-09	72	1994-2008	12.0***
			Mo. in 98-99, some ps or less	-	1994-2008	2
			Mo. in 00-01, some ps or less	-	1994-2008	4
			Mo. in 02-03, some ps or less	-	1994-2008	5
			Mo. in 04-05, some ps or less	-	1994-2008	14.0***
			Mo. In 06-07, some ps or less	-	1994-2008	9.0**
			Mo. in 08-09, some ps or less	-	1994-2008	10.0***
			Mo. in 98-99, ps or more	-	1994-2008	-2
			Mo. in 00-01, ps or more	-	1994-2008	6.0*
			Mo. in 02-03, ps or more	-	1994-2008	10.0***
			Mo. in 04-05, ps or more	-	1994-2008	10.0***
Mo. in 06-07, ps or more	-	1994-2008	9.0***			
Mo. in 08-09, ps or more	-	1994-2008	11.0***			
Hardoy and Schøne (2015)	NOR	Variation in childcare prices	Mo.	85	1999-2007	4.1***

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Table A1 – continued from previous page

Study	Country	Reform/instrument	Treatment group	Emp/Part. Rate	Sample Period	TE (PP)
			Mo., no other ch. of ch. care age	-	1999-2007	2.7***
			Mo., 1 other ch. of ch. care age	-	1999-2007	4.7***
			Mo., ≥ 2 ch. of ch. care age	-	1999-2007	5.4***
			Mo., low ed	-	1999-2007	6.5***
			Mo., high ed	-	1999-2007	2.2***
			Mo., low hh income	-	1999-2007	6.5***
			Mo., high hh income	-	1999-2007	2.1***
			Mo., native born	-	1999-2007	4.0***
			Mo., non-western	-	1999-2007	3.6
Havnes & Mogstad (2011)	NOR	Staggered intro. childcare	Ma. Mo.	25	1976, 1979	1.1***
			Ma. Mo., 19-30 yrs	-	1976, 1979	1.2**
			Ma. Mo., 31-49 yrs	-	1976, 1979	1.3**
			Ma. Mo., attended hs	-	1976, 1979	1.8***
			Ma. Mo., no hs	-	1976, 1979	0.9**
			Ma. Mo., 1 child, 3-6 yrs	-	1976, 1979	1.1***
			Ma. Mo., 2+ children, 3-6 yrs	-	1976, 1979	1.0*
			Ma. Mo., 1-2 children, 3-15 yrs	-	1976, 1979	1.0**
			Ma. Mo. 3+ children, 3-15 yrs	-	1976, 1979	1.1**
Kottelenberg & Lehrer (2013)	CAN	Québec Expansion	Mo. in couples	53	1994-2007	11.0***
Lefebvre & Merrigan (2008)	CAN	Québec Expansion	Mo. in 2002	61	1993-2002	8.1***
			Mo. in 2001	-	1993-2002	8.3***
			Mo. in 2000	-	1993-2002	5.3*
			Mo. in 1999	-	1993-2002	7.6***
			Mo. in 2002, hs or less	-	1993-2002	8.1
			Mo. in 2001, hs or less	-	1993-2002	6.9
			Mo. in 2000, hs or less	-	1993-2002	3.3
			Mo. in 1999, hs or less	-	1993-2002	10.8*
			Mo. in 2002, more than hs	-	1993-2002	6.7*
			Mo. in 2001, more than hs	-	1993-2002	7.7
			Mo. in 2000, more than hs	-	1993-2002	5.9*
			Mo. in 1999, more than hs	-	1993-2002	5.9*
Lefebvre, Merrigan & Verstraete (2009)	CAN	Québec Expansion	Mo. in 2002		1996-2004	3.4**
			Mo. in 2003		1996-2004	6.1***
			Mo. in 2004		1996-2004	5.7***
			Mo. in 2002, hs or less	52	1996-2004	8.3***

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Table A1 – continued from previous page

Study	Country	Reform/instrument	Treatment group	Emp/Part. Rate	Sample Period	TE (PP)
Lundin et al. (2008)	SWE	Price cap childcare prices, 55% drop in parental fee	Mo. in 2003, hs or less	52	1996-2004	16.1***
			Mo. in 2004, hs or less	52	1996-2004	17.3***
			Mo. in 2002, more than hs	70	1996-2004	-0.2
			Mo. in 2003, more than hs	70	1996-2004	-0.2
			Mo. in 2004, more than hs	70	1996-2004	-0.8
			Mo. in cps	70	2001, 2003	-0.2
			Mo. in cps	-	2001, 2003	0.3
			Mo. in cps	-	2001, 2003	-0.2
			Mo. in cps	-	2001, 2003	-0.5
			Mo. in cps, low ed.	-	2001, 2003	1.2
Mo. in cps, high ed.	-	2001, 2003	-0.5			
Martínez and Perticará (2017)	CHI	Free childcare for school-age children	Mo.	61	2012-2013	4.3*
Nollenberger & Rodríguez-Planas (2015)	ESP	Expansion of subsidized childcare	Mo.	29	1987-1997	2.8*
Schlosser (2011)	ISR	Staggered intro. preschool	Mo., hs dropout	20	1987-1997	3.8
			Mo., hs graduate	33	1987-1997	2.1
			Mo., college	69	1987-1997	1.6
			Mo., < 30	26	1987-1997	-0.7
			Mo., > 30	31	1987-1997	4.7**
			Mo., one child	36	1987-1997	1.1
			Mo., ≥ 2 children	26	1987-1997	3.9**
			Arab Mo.	6	1998-2003	7.1**
			Arab Mo.	-	1998-2003	11.7***
			Arab Mo., more than hs	-	1998-2003	20.9***
Arab Mo., less than hs	-	1998-2003	2.2			

Notes: This table was constructed using Table 8 from Bettendorf et al. (2015) as a benchmark and adding additional research and information on sub-groups. Short-hand definitions: "y. child" = "youngest child"; "Wo. in cps" = "Women in couples"; "Mo. in cps" means "Mothers in couples"; "Mo." = "Mother"; "Ma" means "Married"; "hs or less" = "high school or less"; "some p.s." = post-secondary or more; "low ed." = "low education"; "more than h.s." = "More than hs"; "hh" = "Household"; "ch. of ch. care age" = "children of childcare age"; "kg" = "kindergarten". For the identification strategies: "Québec Expansion" = "Expansion childcare in Québec, parental fee from 50% to 20%"; "c.g." = "control group".

Table A2: The Introduction of Childcare Services and Labour Force Participation in Inuit Communities: Both Genders

	(1)	(2)	(3)	(4)
Treated	0.00696 (0.01417)	0.01029 (0.01290)	0.01092 (0.01289)	0.01462 (0.01288)
HH has child 0 to 5	0.00191 (0.01078)	-0.00912 (0.00980)	-0.00692 (0.00980)	-0.00901 (0.00979)
CSD treated	-0.01936 (0.01680)	-0.01300 (0.01526)	-0.01322 (0.01524)	-0.01136 (0.01602)
Age		0.08973*** (0.00243)	0.08919*** (0.00251)	0.08937*** (0.00250)
Age squared		-0.00125*** (0.00004)	-0.00124*** (0.00004)	-0.00124*** (0.00004)
High school or more		0.16877*** (0.00667)	0.16731*** (0.00667)	0.16691*** (0.00666)
Speaks Inuktitut		-0.05469*** (0.01063)	-0.05210*** (0.01071)	-0.05175*** (0.01072)
Female		-0.04838*** (0.00563)	-0.04958*** (0.00562)	-0.04949*** (0.00562)
# adults in HH			-0.00884** (0.00302)	-0.00878** (0.00302)
HH income – personal income			0.00003 (0.00011)	0.00003 (0.00011)
CSD unemployment rate				1.08794*** (0.23264)
CSD pop < 6				-0.00031 (0.00025)
CSD moved 5 years ago				0.43380* (0.20200)
CSD public workers				0.02340 (0.07571)
Survey Year FE	X	X	X	X
CSD FE	X	X	X	X
Observations	22,930	22,930	22,930	22,930
Adjusted R^2	0.019	0.211	0.212	0.213

Notes: HH stands for household. All data from the 1996, 2001, and 2006 Census, except data on childcare centers within the 28 census subdivisions (CSDs), which comes from the Government of Nunavut and Quebec. CSD stands for census subdivision. “CSD pop < 6 ” is the proportion of the population in a CSD that was under the age of six. “CSD moved 5 years ago” is the proportion of individuals living in a CSD at the time of the census who lived in a different CSD five years ago. “CSD public workers” is the proportion of individuals whose occupation was in the public sector in that CSD. All specifications include census year and census subdivision fixed effects and standard errors are clustered at the household level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A3: The Introduction of Childcare Services and Labour Force Participation in Inuit Communities: Women

	(1)	(2)	(3)	(4)
Treated	0.02901 (0.02003)	0.02509 (0.01841)	0.02581 (0.01838)	0.03109 (0.01843)
HH has child 0 to 5	-0.06146*** (0.01533)	-0.06573*** (0.01423)	-0.06494*** (0.01422)	-0.06804*** (0.01424)
CSD treated	-0.02704 (0.02361)	-0.01217 (0.02189)	-0.01312 (0.02183)	-0.01837 (0.02304)
Age		0.07688*** (0.00362)	0.07738*** (0.00372)	0.07774*** (0.00372)
Age squared		-0.00107*** (0.00006)	-0.00108*** (0.00006)	-0.00108*** (0.00006)
High school or more		0.19127*** (0.00997)	0.19012*** (0.00997)	0.18977*** (0.00996)
Speaks Inuktitut		-0.06083*** (0.01497)	-0.05680*** (0.01506)	-0.05662*** (0.01508)
# adults in HH			-0.00849* (0.00409)	-0.00837* (0.00410)
HH income – personal income			0.00029 (0.00015)	0.00028 (0.00015)
CSD unemployment rate				1.13532*** (0.32324)
CSD pop < 6				-0.00052 (0.00034)
CSD moved 5 years ago				0.46355 (0.27880)
CSD public workers				0.12795 (0.10257)
Survey Year FE	X	X	X	X
CSD FE	X	X	X	X
Observations	11,170	11,170	11,170	11,170
Adjusted R^2	0.022	0.172	0.172	0.173

Notes: HH stands for household. All data from the 1996, 2001, and 2006 Census, except data on childcare centers within the 28 census subdivisions (CSDs), which comes from the Government of Nunavut and Quebec. CSD stands for census subdivision. “CSD pop < 6 ” is the proportion of the population in a CSD that was under the age of six. “CSD moved 5 years ago” is the proportion of individuals living in a CSD at the time of the census who lived in a different CSD five years ago. “CSD public workers” is the proportion of individuals whose occupation was in the public sector in that CSD. All specifications include census year and census subdivision fixed effects and standard errors are clustered at the household level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A4: The Introduction of Childcare Services and Labour Force Participation in Inuit Communities: Men

	(1)	(2)	(3)	(4)
Treated	-0.02160 (0.01840)	-0.00998 (0.01649)	-0.00896 (0.01649)	-0.00669 (0.01649)
HH has child 0 to 5	0.07236*** (0.01406)	0.04391*** (0.01258)	0.04834*** (0.01262)	0.04696*** (0.01261)
CSD treated	-0.01047 (0.02179)	-0.01163 (0.01945)	-0.01125 (0.01945)	-0.00251 (0.02034)
Age		0.10301*** (0.00317)	0.10234*** (0.00328)	0.10246*** (0.00327)
Age squared		-0.00143*** (0.00005)	-0.00143*** (0.00006)	-0.00143*** (0.00006)
High school or more		0.14069*** (0.00867)	0.13791*** (0.00866)	0.13749*** (0.00864)
Speaks Inuktitut		-0.04403** (0.01375)	-0.04104** (0.01383)	-0.03995** (0.01385)
# adults in HH			-0.01160** (0.00398)	-0.01161** (0.00398)
HH income – personal income			-0.00014 (0.00015)	-0.00013 (0.00015)
CSD unemployment rate				1.05492*** (0.29924)
CSD pop <6				-0.00008 (0.00032)
CSD moved 5 years ago				0.41468 (0.25826)
CSD public workers				-0.07722 (0.09698)
Survey Year FE	X	X	X	X
CSD FE	X	X	X	X
Observations	11,760	11,760	11,760	11,760
Adjusted R^2	0.025	0.259	0.260	0.261

Notes: HH stands for household. All data from the 1996, 2001, and 2006 Census, except data on childcare centers within the 28 census subdivisions (CSDs), which comes from the Government of Nunavut and Quebec. CSD stands for census subdivision. “CSD pop <5 ” is the proportion of the population in a CSD that was under the age of six. “CSD moved 5 years ago” is the proportion of individuals living in a CSD at the time of the census who lived in a different CSD five years ago. “CSD public workers” is the proportion of individuals whose occupation was in the public sector in that CSD. All specifications include census year and census subdivision fixed effects and standard errors are clustered at the household level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A5: The Introduction of Childcare Services and Labour Force Participation in Inuit Communities: Robustness

	Women				Men			
	Quebec		Nunavut		Quebec		Nunavut	
	HH > 1 Adult	HH 1 Adult	HH > 1 Adult	HH 1 Adult	HH > 1 Adult	HH 1 Adult	HH > 1 Adult	HH 1 Adult
	<i>Excluding Childcare Workers</i>							
Treated	0.06115 (0.03315)	-0.18925 (0.10219)	0.00292 (0.02496)	0.10983 (0.07611)	0.01863 (0.03026)	0.02705 (0.14652)	0.006 (0.02172)	-0.21465 (0.12679)
HH has child 0 to 5	-0.07071** (0.02512)	0.07825 (0.06716)	-0.06666*** (0.01913)	-0.12931* (0.05721)	0.05259* (0.0227)	0.00344 (0.12153)	0.01462 (0.01672)	0.14922 (0.10063)
CSD treated	0.0052 (0.04594)	0.37830** (0.12877)	-0.03642 (0.03118)	0.02056 (0.09309)	-0.01141 (0.04087)	0.03796 (0.11779)	-0.03425 (0.02675)	0.13687 (0.07466)
Observations	3,400	290	6,380	560	3,920	360	6,880	590
Adjusted R^2	0.186	0.252	0.167	0.208	0.223	0.23	0.288	0.275
	<i>Excluding Those that Moved to the CSD in Past Five Years</i>							
Treated	0.06581 (0.03371)	-0.25733* (0.10563)	0.00878 (0.02618)	0.14254 (0.08236)	0.01033 (0.03145)	0.08257 (0.15637)	0.02314 (0.02276)	-0.11992 (0.13641)
HH has child 0 to 5	-0.06097* (0.02607)	0.08662 (0.07246)	-0.05871** (0.02027)	-0.14923* (0.06351)	0.06466** (0.0238)	-0.02852 (0.13221)	0.0096 (0.01756)	0.0438 (0.11096)
CSD treated	0.01842 (0.04582)	0.40647** (0.12645)	-0.03138 (0.03267)	0.00657 (0.10088)	-0.00788 (0.04239)	0.01896 (0.12778)	-0.04797 (0.02773)	0.14767 (0.07927)
Observations	3,450	280	5,930	500	3,680	320	6,280	510
Adjusted R^2	0.172	0.244	0.163	0.197	0.224	0.246	0.286	0.294

Notes: HH stands for household. All data from the 1996, 2001, and 2006 Census, except data on childcare centers within the 28 census subdivisions (CSDs), which comes from the Government of Nunavut and Quebec. CSD stands for census subdivision. All specifications include a quadratic in age, an indicator for having high school or more, an indicator for an Indigenous language (Inuktitut), number of adults in the household, household income minus personal income, census subdivision (CSD) unemployment rate, CSD proportion of the population under the age of six, CSD proportion who moved to the CSD in the previous 5 years, and the CSD proportion of people who work in government and census year and census subdivision fixed effects. Standard errors are clustered at the level of the household. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A6: Descriptive Statistics on the Proportion of Commuters among the Employed

	Women			Men		
	Untreated	Treated	Diff	Untreated	Treated	Diff
Works in CSD of residence	0.93 (0.25)	.94 (0.23)	0.01	0.89 (0.31)	0.89 (0.31)	0.0
Observation	2,510	2,690		2,600	2,280	

Notes: Only those with Indigenous identity and those employed are included. The first two columns contain the mean or proportion and the standard deviation in parenthesis. The third column is the difference between the first and second column. The pattern is repeated in the following three columns. All means and proportions follow the vetting rules of Canada's Research Data Center requirements. The average community population size was computed after population sizes in each community were rounded to 100. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.