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The Disparate Effect of Nudges on Minority Groups

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Abstract

We use an experiment in Israel to compare the effect of short text messages sent via mobile phones on the actions of minority groups versus the general population regarding the "Savings for Every Child" program. Financial institutions and regulators are increasingly using digital text messages to raise awareness or encourage participation in programs and initiatives. We study the effect of these messages on individual behavior, and the size of this effect for different segments of the population. Our unique setting and proprietary data reveal that the text message had an overall positive effect, but a significantly smaller effect on minority groups. By combining our proprietary data with a dedicated survey, we provide additional insights on potential barriers (low digital literacy, low financial literacy, and low trust) that contribute to the differential effect. The research points to the importance of using specific measures that focus on minorities in order to raise the success of government initiatives.

1. **Introduction**

Policy makers are testing different kinds of nudges and choice architectures to raise the saving rate.[1] Sending text messages via mobile is an attractive channel for communication because it is relatively simple and cheap. Theoretically, text messages and reminders raise the salience of an issue and hence increase the probability that individuals will take action.

While some text messages and other prompts may be effective for the population overall, our understanding of their effect on specific, less privileged populations is still very limited. Additionally, as technology innovations and Fintech applications emerge, some costs might be mitigated, but other costs may emerge and exacerbate some limitations. Hence, it is important to investigate the sensitivity of the effect of mobile text messages on different sections of the population, to avoid exacerbating disadvantages.

To better understand the effect of reminders on minority groups, we base our empirical investigation on the new child development account (CDA) program in Israel.[2] In 2017 the Israeli National Insurance Institute (NII) introduced the Savings for Every Child Program (SECP). Under this program the government deposits NIS 50 ($16)[3] per month into a savings account for every Israeli child under the age of 18. The government pays the fees on the account until the child reaches age 21. Our focus is on a sub period of the opening period of the campaign. Initially there were 6 months before program defaults (explained below) went into effect. During these 6 months parents could actively choose to enrol in the program and to (a) transfer an additional NIS 50 to the SECP account, (b) to select an investment provider where the funds can be saved (several banks or investment funds), and (c) to choose among several investment options. In addition to high or low yield/risk alternatives, options include halakhic and Sharia-based investment tracks that are consistent with Jewish and Islamic religious strictures. All of the large banks and many of the leading financial institutions in Israel participate in the program. As all the related fees are paid by the government and parents can choose their level of risk and investment fund or bank, the program is an attractive saving vehicle.

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[1] For example: Benartzi et al. 2017, Madrian (2014), Datta and Mullainathan (2014), Thaler and Sunstein (2009). Specifically, there are also many papers on nudges aimed at increasing savings, for example: Carroll et al. (2009), Ashraf et al. (2006), Thaler and Benartzi (2004), Madrian and Shea (2001).

[2] CDAs are a tool that aims to help households save using a designated government sponsored program that allows to easily open a saving account. These programs can be accompanied by other government incentives to save that range from tax incentives, matching, and governmental deposits (e.g. Sherraden (1991), Clancy et al. (2016), Loke and Sherraden (2009)).

[3] 3.1 exchange rate.

The program was launched with a major media campaign. As the campaign wound down, on February 6th and 7th the NII sent mobile phone text messages to a sub-set of Israeli households in two specified geographical areas that have relatively high concentrations of Israel's most notable two minority groups. The text message asked whether parents had enrolled in the program and included a hyperlink to the NII SECP enrolment page. There followed a two-week period of zero measures to encourage enrollment. Our investigation focuses on this text message campaign.

Our main contribution is to determine whether text messages have a disparate impact on different sub-groups in the population. In particular, we ask whether text messages have a disparate impact on designated minority groups with distinct characteristics (Arab and Ultra-orthodox)?

The mobile text messages were expected to increase the salience of the issue and hence lower the observation costs and to possibly affect digital transaction costs because they contain a direct link. However, certain individuals that have characteristics correlated with frictions might have been less receptive to the digital text message. For instance, individuals might have had higher observation costs (such as lower financial literacy) that mitigated the digital text message salience and effect or they might have had higher transaction costs (such as lower digital literacy) that prevented them from taking action. Furthermore, some may experience financial constraints that affected their ability to take advantage of the information in the text message.

Minority groups in general and in Israel specifically have distinct characteristics that are correlated with having higher specific frictions. The Arab population and the Ultra Orthodox Jewish population (19% and 10% of the 2019 population, respectively) are two minority groups with low socio-economic status and additional distinct characteristics. The Arab population is a religious and ethnic minority with cultural and language barriers; it is a minority with similar features to many other minority groups around the world. The Ultra Orthodox population is an ultra-religious united community with lower literacy levels and a strong internal network.

For our primary investigation, we used two data sources. First, we obtained rich and unique administrative data from the NII on all the children in Israel, including almost 40,000 parents who received the text message. The data includes information on enrollment choices and household characteristics such as parent's income, education, age, number of children, and minority affiliation. The data also includes the device used to

enroll in the program (such as mobile phone or computer, among others). Second, we also gathered information from an NII telephone survey on parents' additional characteristics, giving further insight into the potential effects of different frictions. The NII performed the survey and integrated it with their proprietary data and parents' choices in the program. The survey sample includes 4,838 parents (11,215 children) who answered the complete survey with a high response rate of nearly 50% and had a relatively high representation from the Ultra-Orthodox and Arab communities. These characteristics include trust in government, objective financial literacy (actual knowledge) and subjective financial literacy (confidence in one's knowledge).

To mitigate selection biases we created the main database using a matching technique using parents' personal characteristics, including socio-economic status indicators. The main matched administrative sample has a high rate of minority population: 41% Arab population and 22% Ultra-Orthodox as these populations were targeted in the intervention. The average family income is NIS 9.66 thousand, 33% of mothers have academic attainment (college or university attainment) and 15% of fathers. The average child age is 7.3 and parents have on average 3 children. We perform several tests on the general population in the database, and then do the same matching exercises and tests only on the minority populations. Similarly, for the survey data we matched the subsample that answered the survey and received the text message intervention (around 600 observations) to the subsample that answered the survey and did not receive a text message (and did not make a choice before the intervention).

We first check whether the text message motivated parents to enroll in the program. We initially focus on this outcome, as any specific choice might be affected by choice architecture (Sethi-Iyengar et al. (2004), Thaler and Sunstein (2009)) or money constraints (such as choosing an investment provider and level of investment risk). Second, we investigate two particular choices aimed at raising the child's level of savings from the program: choosing to add an additional NIS 50 to the program and choosing a high yield/risk level of investment.[4] Third, we investigate the relative effect of the two previous examinations on minority populations compared to the general population.

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[4] As shown by Grinstein-Weiss et al. 2019a adding the funds doubles the child's funds at age 21 for a low yield/risk investment track from NIS 12,650 which is about one year of university tuition, and can reach NIS 61,700 when a high yield/risk track is chosen, which is six years of tuition.

We find that the text messages raised the proportion of parents enrolling in the program. This result is consistent with the literature that documents that text messages can influence individuals' behavior. However, the effect was significantly smaller for minority populations. Specifically, we find that during a period of two weeks following the reacceptance of the text message, the text reminder effect for any enrolment choice was significant and positive for the general population, but significantly lower for the Arab and Ultra-Orthodox populations (all p<0.01). Among the general population, the coefficient for the text message dummy is significant and positive for both depositing additional funds and for choosing a higher yield/risk investment track (all p<0.01). In the Arab population the coefficients were much smaller yet remained significant for depositing additional funds and for choosing a higher yield/risk investment track. In the Ultra-Orthodox population the coefficient dropped and remained significant for depositing additional funds but was not significant for choosing a higher yield/risk investment track.

The text messages had a positive effect, but it was significantly lower among minority populations. Based on the academic literature, we propose and test several possible channels for an explanation. First, we test the text messages' effect on lowering digital transaction costs. The text message was sent via mobile phones. For those with digital literacy, the option to use the embedded link in the message may have lowered transaction costs and increased the number of people who used their phone to actively enroll in the program. The minority groups in Israel have low digital literacy that might have affected whether they used their phone to respond to the text message. Next, we look at trust, which is found to affect financial behavior,[5] and it is documented in the literature that minority groups have low levels of trust.[6] Hence, we hypothesize that trust might have affected responses to the text message. Third, we consider financial literacy – both objective knowledge and a subjective measure of confidence in one's financial knowledge. Previous research demonstrated that both financial literacies could affect financial behavior.[7] The

[5] e.g Sapeinza and Zingales (2011), Guiso et al. (2009), Guiso et al. (2004), Glaeser et al. (2000)
[6] Gupta at el. (2018), Guiso et al. (2004), The Arab minority in Israel has been found to have low levels of trust with respect to the general population (e.g. Malul (2010)) but the literature also provides examples of when they had similar or even higher levels of trust in survey data (e.g. Hermann et al. (2012) and (2020).
[7] For a review, see Lusardi and Mitchell (2014) as well as for example: Bucher-Koenen et al. (2021), Anderson and Robinson (2019), Allgood and Walstad (2012), Van Rooij et al. (2012), Lusardi and Mitchell (2011a). There is also literature presenting evidence that non-cognitive abilities such as self-efficacy and optimism effect financial behavior: Das et al. (2020), Kuhnen and Meltzer (2018), Kuhnen and Miu (2017).

literature shows that generally minority groups, including minority groups in Israel, have low levels of financial literacies.[8] Hence, we hypothesize that Israel's minority groups' low financial literacies might have affected their response to the text messages. Fourth, other cultural barriers. Beyond the mechanism stated above there could have been cultural barriers and frictions that affected recipients' response to the text message (including language barriers).[9] Our conjecture is that multiple channels contributed to the different reactions we observe.

We find that minority populations have a lower probability of using a smartphone digital platform (or computer) to enroll, compared with the overall population. This hints at the role of digital literacy in the response to the text message. Using the survey data, we also find an interaction effect between the text message and parents' trust as well as financial literacies (objective knowledge and subjective confidence). We show that parents who have lower financial literacies are less affected by the text message while those with higher levels of trust are more affected. Even after controlling for these potential explanations, and adding additional controls for liquidity constraints, we still find a mitigated effect of the text message on minority populations. We interpret this to mean that minority populations, and especially the Arab population, have additional cultural frictions. Using additional robust specifications, we also find that those coming from more peripheral and rural localities are less affected by the text message. We interpret this outcome to mean that those with more cultural frictions as captured by living in less central rural localities are less affected by the text message. Interestingly we also find that minority populations were not more likely to choose the religious investment tracks offered, suggesting that providing religious options did not do much to reduce cultural frictions.

We contribute to the academic literature on minorities and finance. Our finding that some segments of the population have a lower response rate to text messages, especially minority groups with low socio-economic backgrounds, suggests that potentially well-intentioned interventions may end up exacerbating rather than mitigating disparities.

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[8] e.g. Haran Rosen and Sade (2019), Lusardi and Mitchell (2011b). Low socioeconomic status and minority groups have been found to have low levels of non-cognitive ability: Das et al. (2020), Kuhnen and Meltzer (2018), Kuhnen and Miu (2017).

[9] As messages were sent in Hebrew, the Arab minority, which has relatively low Hebrew literacy, might have been less receptive to the message. It should be noted that Strawczynski and Myronichev (2015) argue that differences that they observed in economic behavior of Israeli Arabs in another context were not stemming from language barriers alone.

The paper is organized in the following way: Section 2 provides a literature review on reminders, section 3 describes the setting of the program and experiments, section 4 presents the data, section 5 provides the methodology of the investigation, section 6 shows our results, section 7 shows additional investigations and robustness checks and section 8 concludes.

2. Literature Review –Text Messages and Reminders

Text messages and reminders can be used to intervene in household financial choices. Theoretically text messages and reminders should affect attention by reducing observation costs, as they raise the salience of the issue and can mitigate forgetfulness and procrastination (e.g. Karlan et al. (2016a), Gabaix 2019, Ericson (2017)).

There is a vast academic literature on the effect of text messages and reminders. Research projects differ in several dimensions including: (a) The economic and financial decisions that the intervention is focusing upon; (b) The channel of communication by which the text message or reminder is sent, and (c) The specific characteristics of the groups that the reminders were sent to. We elaborate on each of these dimensions and relate it to our work and hypothesis.

2.1. Text message reminders' effect on economic decisions and the interventions setting characteristic

Empirically there is large evidence of a positive effect of text messages and reminders for many financial actions.[10] Examples include: payment of fees and credit (e.g Medina (2021), Ben-David et al. (2019), Laudenbach at al. (2018), Heffetz et al. (2017), Bracha and Meier (2014), Cadena and Schoar (2011)), retirement savings (e.g. Bauer et al. (2018), Choi et al. (2017), Benartzi at al. (2017), Dolls et al. (2018)), take-up of social benefits (e.g. Finkelstein and Notowidigdo (2019), Guyton et al. (2017), Bhargava and Manoli (2015), Strawczynski and Myronichev (2015)), and attendance at financial education programs (Chande et al. 2015).[11] Of direct relevance, reminders have been found to have

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[10] The size of the effect of the reminders can differ by the setting characteristics of the intervention and different manipulations of the messages. Examples include nudges incorporated in the message (include behavioral nudges and monitory incentives), and which information is being highlighted by the text message or reminder (e.g Loibl et al. (2018), Bauer et al. (2018), Clark et al. 2017, Choi et al. (2017), Karlan et al. (2015)).

[11] Some papers find that reminders can also have a negative effect on outcomes as they may crowd out the salience of other information and considerations not highlighted by the reminders (Damgaard and Gravert (2018), Medina (2021), Bracha and Meier,(2014)) or highlight the bad behavior (Thunström et al. 2018).

a positive effect on private savings behavior (e.g. Loibl et al. (2018)[12], Karlan et al. (2016a)).

Based on literature that documents a relatively wide effect in different contexts, we hypothesize that a text message should have a positive effect on parents' active enrolment in the Israeli Savings for Every Child Program as well as on overall savings for children.

2.2. Mobile text messages and choices on digital platforms

Messages can be sent using different formats. The academic literature has investigated written messages and reminders that were sent by regular mail e.g. (Finkelstein and Notowidigdo (2019), Strawczynski and Myronichev (2015)), by e-mail (e.g Clark et al. (2017), Benartzi et al. (2017)) and recently by digital applications (e.g. Ben-David et al. (2019), Medina (2021)) and mobile text messages (e.g Karlan et al. (2015), Gurol-Urganci et al. (2013)). The text message in our setting was sent to mobile phones and included an embedded hyperlink giving easy, immediate access to a website for enrolling in, and making choices about, the Savings for Every Child Program. Mobile text messages with embedded hyperlinks should have an additional effect on costs as they lower observation costs, and reduce transaction costs, because they allow individuals to go directly to the website from the text message, without having to navigate via a web browser (e.g. Google or Safari), or to access a computer. The effectiveness of this intervention is partly a function of digital literacy. There is also some empirical evidence that text messages that lower transaction costs (by providing an embedded tool to submit forms easily) have an additional beneficial effect (e.g. Bhargava and Manoli (2015)).

The literature also informs us about the overall connection between digital platforms and actions. While, on one hand, Fintech advancements can be overwhelming for users, on the other hand, they lower information costs by allowing easy access to once costly information, thus reducing inattention. Younger people and males are more likely to use Fintech advancements (e.g. Levi and Benartzi, (2020), Benartzi and Lehrer (2015), Carlin et al. (2019), Goldfarb and Tucker (2019)).[13]

In our unique setting, participants can opt in using a digital platform or in person in an NII branch, or by phone. We expect that in our context the text message should have had

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[12] The investigation in this paper included a small sample size and programs based on voluntary periodic savings. The reminder provided an outcome with a relatively low significance and economic effect although it was mostly positive.

[13] It has also been found that individuals' decision-making processes on digital platforms are different from on non-digital platforms (Hurwitz et al. (2020), Karlan et.al (2016b)).

a larger effect on those with higher digital literacy (non-minority group) and that those people would be more likely to enroll in the program via smartphones using the embedded hyperlink.

2.3. Text messages and minorities including the Israeli minority groups' characteristics

As text messages affect observation costs (or digital transaction costs), they should have a smaller effect on those with high transaction costs (actual or expected) because these individuals still have higher costs than utility. The literature documents heterogeneity in the effect of reminders on different individuals with respect to certain characteristics. For example, Heffetz et al. (2017) found that those that are more financially illiquid or procrastinators are not affected by letter reminders. Stango and Zinman (2014) find a larger effect for survey reminders about overdrafts on those with lower education and lower subjective financial literacy (which might stem from sample selection). Bracha and Meier (2014) find that a reminder with information on credit scores sent to those with high credit scores increased their past due amounts, while it lowered past due amounts when sent to those with low credit scores.

Nonetheless, there has been very limited focus on the effect of the text messages or reminders on minority groups, which is the focus of our project. [14]

Our project was conducted in Israel, as it has two relatively large well-defined minority groups: the Arab population and the Ultra-Orthodox Jewish population (19% and 10% of the 2019 population respectively).[15] Each of these minority groups has specific characteristics that can affect their response to text messages. The Arab community is a religious and ethnic minority and speaks a different language than the majority of the population. The Ultra-Orthodox community is an insular group with a very strong leadership that affects the community's lifestyle and choices.

These two groups have a very high poverty rate. 45% of Arab households and 42% of Ultra-Orthodox households lived in poverty in 2018,[16] and both exhibit lower digital literacy than the general population.[17] Only 53% of Arabs and 33% of Ultra-Orthodox

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[14] Strawczynski and Myronichev (2015) is an example of a paper researching the effect of a reminder for EITC take-up in Israel; it finds a smaller effect of the reminder on Israel's minority groups.

[15] All data on Israel's demographics is from Israel's Central Bureau of Statistics (CBS).

[16] Less than half of the median household income.

[17] The Program for the International Assessment of Adult Competencies (PIAAC) 2014–2015 survey of workers' competence in a digital environment shows that Israeli adults have a slightly lower than average

Jews have a personal Internet subscription, compared with a 75% national average (Israel's Expenditure Survey for 2018). The Ultra-Orthodox community also has a cultural aversion to digital media. They try to minimize their use of digital media and most cannot access internet connections or receive text messages on their phones (they instead receive a voice mail that reads aloud the text message). Low socio-economic attributes and low digital literacy may affect the response to mobile text messages because of higher liquidity constraints and higher transaction costs.[18]

The literature provides evidence that beyond socio-economic attributes, liquidity constraints and low digital literacy that are associated with certain types of minority groups other characteristics might affect the populations' response to the text message. We start by focusing on trust. Trust has been found to affect financial behavior (Sapeinza and Zingales (2011), Guiso et al. (2009), Guiso et al. (2004), Glaeser et al. (2000). The literature shows that in many cases, minority groups have low levels of trust (Guptaa at el. (2018), Guiso et al. (2004)). In our context, with respect to the Arab minority, the literature suggests that the relationship is more complex. Malul (2010) documents that the Arab community in Israel has low levels of trust. The Arab minority in Israel also has low civic voting rates,[19] which are strongly related to trust (Guiso et al. (2004), Putnam (1993)). Yet, interestingly, the literature also documented that the measured level of trust that the Arab minority exhibits in surveys is usually similar or even larger than that of the general population (e.g. Hermann et al. 2012, Hermann et al. 2020). Pe'er et al. (2019) show that the Arab population had higher trust in the government's ability to act but had lower levels of trust that the government will act to help their community. Related to this, in terms of measuring trust via surveys, there are potential sample selection issues because those responding to the survey might be doing so because they have higher levels of trust (minority groups have been known to have low response rates to surveys (Ahlmark et al. (2015)). Nonetheless, this potential bias should affect those that received the text message and those that did not.

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[18] Additional to digital transaction costs as described above, "take-up" literature documents that underprivileged populations often fail to request, and thus do not receive, the benefits they are entitled to in programs such as the US Earned Income Tax Credit and the State Health Insurance Program (Finkelstein and Notowidigdo (2019), Bhargava and Manoli (2015), and Currie et al. (2006)). These papers point to a cognitive load factor affecting the ability to pay attention to the issue.

grade (274) than the OECD average (279). Further, the Jewish population's grade is 280, while the Arab population's is 238.

[19] https://bechirot22.bechirot.gov.il/election/English/Committees/Pages/Overview_eng.aspx

Another channel is financial literacy – both objective knowledge and a subjective measure of one's confidence in one's financial knowledge. We know from previous research that financial literacies (objective knowledge and subjective confidence) can affect financial behavior (for a review, see Lusardi and Mitchell (2014), as well as examples in Lusardi and Mitchell (2017), Van Rooij et al. (2012), Bucher-Koenen et al. (2011), Lusardi and Mitchell (2011a), Lusardi and Mitchell (2011b), Lusardi and Mitchell (2008) and Hilgert et al. (2003)), and that low financial literacy, and specifically confidence in financial knowledge, affected financial behavior and responses to financial consumer regulations (e.g. Bucher-Koenen at al. (2021), Haran Rosen and Sade (2019), Allgood and Walstad (2012) and Barber and Odean (2001)). The literature shows that generally those with low socio-economic status, which includes most minority groups, have low levels of financial literacy and confidence (e.g. Bucher-Koenen et al. (2021), Lusardi and Mitchell (2014), Atkinson and Messy (2012), Lusardi and Mitchell (2008))[20]. There are also papers showing directly that minority groups have low financial literacy (e.g. Lusardi and Mitchell (2011b)). Specifically it was also demonstrated that the minority groups in Israel have low objective and subjective financial literacy compared to the general population (CBS financial literacy survey and in Haran Rosen and Sade (2019)).[21] Hence, Israel's minority groups' level of financial literacies might have had an adverse effect on how they responded to text messages.

Given the specific characteristics of the minority groups described above, we expect to find that minority populations have a different level of response to the text messages, relative to the general population. We expect digital literacy, trust, objective financial literacy, and subjective financial literacy to be significant factors in the decision to act or not.

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[20] There is also literature presenting evidence that non-cognitive abilities such as self-efficacy and optimism effect financial behavior and are lower for those coming from low socio-econ status such as: Das et al. (2020), Kuhnen and Meltzer (2018), Kuhnen and Miu (2017), Bénabou and Tirole (2002).

[21] Among other things, the latter shows that the proportion of the Arab and Ultra-Orthodox community with high objective financial literacy (14% and 10% respectively) and high subjective financial literacy (15% and 11% respectively) is lower than their representation in the survey (18% and 15% respectively).

3. Setup

3.1. The Savings for Every Child Program

The Savings for Every Child Program (SECP) came into effect in January 2017. The government program grants an account to every Israeli child under the age of 18 and deposits NIS 50 each month into the account. The program is administered by the National Insurance Institute of Israel (NII). The account has default settings, but parents can actively choose to enrol in the program and to transfer an additional NIS 50 from their monthly child allowance to the SECP account, select an investment provider to manage their children's SECP funds, and choose an investment track. Parents can choose between deposits into lower-yield bank savings accounts or managed investment funds that tend to have higher average rates of return, although returns may vary depending on the fund selected. Parents can choose between low-, medium-, and high-yield investment tracks, as well as religious investment accounts (Sharia and Halakhic) that are compliant with Islamic or Jewish religious principles, and typically have lower rates of return. Except in the case of a child's severe illness or death, accumulated savings in SECP accounts can be accessed when the child is 18, with parental permission. From the age of 21, parental permission is not required. The government pays the fees on the savings account until the child reaches age 21. Additionally, several bonuses embedded in the program at different points in the child's life until the age of 21 provide additional increases in savings and encourage children and their parents to keep funds in the SECP accounts.

Eligibility for the funds started in May 2015 but the funds were transferred by the government starting January 2017 (Figure 1). At the outset, for children born before 2017 parents could make an active enrolment choice between mid-December 2016 and the beginning of June 2017, until automatic defaults were set in place. The default savings vehicle was a low-return investment fund for children under the age of 15 and a bank savings account for those 15 years old or older. For infants born after January 2017 the defaults come into effect after 6 months. Active enrolment in the SECP program can be done online, via phone, or in-person. In the first 6 months of the program in 2017, before defaults came into effect, a widespread media campaign to launch the program was followed by high active enrolment rates throughout January. From the end of January until May active enrolment rates dropped, and then the media campaign and lobbying activity resumed. Despite general high levels of program enrolment (active enrolment choice in two thirds of accounts) and participation, economically vulnerable households—minority

groups and especially the Arab minority, less-educated, and less-employed households—tended to engage less with the program while usually opting out of depositing extra funds (Haran Rosen et al. (2020) and Grinstein-Weiss et al. (2019a, 2019b)).

3.2. The text message campaign

During February 6th and 7th 2017 (Figure 1), a sample of parents served by two large NII branches[22] who did not make an active choice up until that point received an SMS text reminder from the NII. These parents were chosen from two geographical areas in the country but not by any other attribute.

In 90% of cases, it was the father who received the text message. The message was: "Did you hear about the SECP program? If you haven't enrolled yet you can use the attached link or call *2637." The message included a hyperlink to the SECP enrollment website.

On February 20[th,] the NII continued to send text messages to parents who had not made an active choice about their children's savings and were not a part of the sample from the beginning of the month. This means that the period of 6-19 February (Figure 1) offers a natural experiment where only a relatively random sample of families received a reminder about actively enrolling in the SFEC program. We know that until 19 February, the NII issued no other prompts to increase enrollment, giving us a two-week period to cleanly investigate the effect of the reminders.

Figure 1 - SECP timeline

The two NII branches were chosen for the text messages because they service a large proportion of Arab and Ultra-Orthodox families. These branches were picked because of initial low enrolment rates of these minority groups into the program. Hence, the investigated population probably had more frictions enrolling in the program compared to the overall population, as they did not enroll during the initial phase of the program.

Many Ultra-Orthodox parents received the message as a voice message and were unable to use the embedded link because of this community's aversion to smartphones.[23]

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[22] The Beer-Sheva branch and the Bnei-Brak branch. The Beer-Sheva branch is more peripheral, includes more rural localities, and serves a large Arab community as well as a large Jewish community. The Bnei-Brak branch provides service to a large Ultra-Orthodox Jewish community as well as other urban communities in Israel's geographical center.

[23] The Ultra-Orthodox community's strong network raised participation levels, but only toward the end of the default period. Religious leaders sent out a recommendation to choose specific religious "Kosher" funds that led to high enrollment rates for this community following lobbying activity (Grinstein-Weiss et al (2019b). It should be emphasized, that during our investigated period, no recommendation was

4. The Data

Data for this research comes from the NII administrative data on all eligible accounts. The data covers all children under the age of 18 in Israel. It includes information on choices made in the SECP, the platform used to register choices (digital/non-digital), the date on which choices were made, whether a family member received a text message, the date the text message was sent, and administrative data on the household's characteristics and attributes. Household attributes include marital status of the parents,[24] number of children, age of each child, parents' ages,[25] parents' income, parents' education[26], and minority affiliation.[27]

We only considered choices made for the first-born children, so choices between observations are not co-dependent. We partitioned on children's age and only considered children aged less than 15 at the beginning of 2017. This means that the same default option applied – a low risk investment fund. We focused on the period 6-19 February when the natural experiment occurred, and the population was split between those who received a text message in that period and those that did not (but we know they received one later on). The sample includes 886,920 accounts that had not made an active choice before 6 February for first born children under the age of 15. Out of those for 39,286 accounts, the parents of the child received a text message and for 23,771 accounts, an active enrolment choice was made by 19 February. 21.5% of the parents are Arab and 9% are Ultra-Orthodox Jews. The average family income in the sample is NIS 17,000 (around $5,000) a month, 40% of mothers and 28% of fathers are with academic education (university or college attainment). 80% of parents are married, both parents have together an average of 2.3 children, and the average child age is 7.5 (additional statistics and variable description are presented in Appendix 1). In addition to administrative data, between July and December of 2017, the NII administered a telephone survey to a random sample of parents of SECP-eligible children. Parent's information from the telephone survey was added to the children's (and households') administrative data. It is a relatively large survey, conducted under the guidance of experts in sampling methods. The survey was conducted using a stratified random sample of the population with over sampling of

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offered and the Ultra-Orthodox community did not have high enrollment rates before and during the investigated period.

[24] If the child's parents are married to each other.
[25] Parents average age.
[26] Indicator if parents studied at a university or college.
[27] Classified using an NII classification based mostly on residential address.

minority groups. This was done to make sure Arab and Ultra-Orthodox minority groups are represented in the sample and these populations can be investigated. Of approximately 10,000 families that were invited to participate in the survey, 4,838 parents completed it (11,215 children), a response rate of nearly 50%.

The survey includes additional information on households including the parents' objective and subjective financial literacy. We use the term *objective financial literacy* to describe *objective* knowledge regarding general financial issues and we based our measure on a common measure in the academic literature (an index of the number of correct answers to three financial questions first presented by Lusardi and Mitchell (2007)). The basic questions in the index have been shown to accurately differentiate naïve from sophisticated respondents.[28] Given that it was a telephone survey the wording of the questions was adapted to the method used and included fewer calculations.[29] We use the term *subjective* financial literacy to refer to confidence in one's own knowledge of financial issues. People with high subjective financial literacy answered that they feel they understand financial issues to a very large extent/large extent.[30] This question was asked at the beginning of the survey so that the answer would not be affected by how individuals answered the other questions.

The survey also includes questions about households' trust in the government. The trust variable is calculated as a dummy for those that had a high level of agreement with the following statements: 1) "When the government makes important decisions, it takes into consideration the needs of people like me." 2) "The government can be trusted to keep its promises." Level of agreement was calculated by coding answers from 1-5 (5 for those who highly agree with the sentence) and taking an average of both questions. Those with an average of 4 and above were classified as having high levels of trust. While we present the measure discussed above, we conducted several robustness tests for this measure and our results remain.[31]

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[28] And are stable over time: Stango and Zinman (2020)

[29] Wording of the questions: I would like to know if you agree or disagree with the following statements (or: Don't know, refused):
1. It is usually possible to reduce the risk of the investment in the stock market by buying a wide range of different stocks and shares.
2. The higher the interest rate, the bigger will be your savings next year
3. High inflation means that the cost of living is increasing rapidly

[30] Bucher-Koenen et al. (2021) present evidence of the importance of subjective financial literacy. They measure it by looking at those answering that they do not know the answers to the objective financial literacy questions and we measure it directly using a designated question.

[31] For robustness, we used different trust variables. Outcomes remain similar and the trust coefficient sign is positive when statistically significant using all the different trust variables. The measures used were 1.

Among the respondents, 17.5% are Arab and 15% are Ultra-Orthodox Jews (a relatively high proportion). The average family income is NIS 19,000 and is higher for the Arab population and lower for the Ultra-Orthodox Jews; 44% of mothers and 30% of fathers have academic attainment (university or college). These rates are much lower for the Arab population and the father's academic attainment is much lower for the Ultra-Orthodox population (men in this minority undertake religious studies exclusively). The average rate of married parents is high and stands at 90%, and is even higher for both minority populations; both parents have together an average of 3.3 children (higher for the Ultra-Orthodox population), and the average child age is 8 (lower for the Ultra-Orthodox population). 53% of the sample has low objective financial literacy (answering correctly 1 or less objective knowledge questions). For the subsamples of the Arab population and Ultra-Orthodox Jews this rate is higher at 63% and 61% respectively. 14% of the full sample have low subjective financial literacy (low confidence) compared to 16% in the Arab population sample and 22% in the Ultra-Orthodox population sample. 13% of the full sample have a high level of trust in the government. This rate goes up to 40% for the Arab population[32] and down to 8% in the Ultra-Orthodox population. Nonetheless the variable shows that the majority of parents including minority parents have low levels of trust (additional statistics and variable description are presented in Appendix 2).

5. Methodology

5.1. Matching procedures and resulted databases

The parents targeted with a text message were affiliated to two NII branches that provide services to a relatively large proportion of minority parents. This means that comparisons between parents who received a text message and those who did not might be affected by sample selection. To mediate this, we use a matching exercise to make sure the comparison is between similar groups of parents.

The average level of agreement to the trust in government questions (the average score between the two questions leads to an index between 0-5). 2. A measure of trust in the NII (average score of level of agreement to two questions: "NII treats people like me fairly and justly" and "NII does not mislead people like me", index between 0-5). 3. Dummy variable for having high trust in the NII (average index score over 4 for attitude towards two trust in NII questions). 4. Average measure of both trust in the NII and trust in government measures (index between 0-5).

[32] Although the Arab populations has in general lower trust in the government, as presented in the literature review their measured level of trust in surveys is not always lower than that of the general population (Hermann at al. (2012)). Additionally, it has been found that the Arab population have a higher level of trust in the NII (Hermann at al. (2020)) which might be affecting survey answers in this survey.

We used propensity score nearest neighbour matching for our main method (Imbens and Wooldridge (2009)). The propensity score from the matching exercise is the probability that a parent with given characteristics (that are used in the matching process) received a text message from the NII. For the main specification we allowed the matching to be done with replacements which lowers bias and leads to better matches, although it increases variance (Abadie and Imbens (2011)) and we used 1:1 matching.

The main matching exercise uses the following eight variables to match between the treatment group (received a text message in early February) and the non-treatment group (did not receive a text message until February 20th): mother's wage, father's wage, mother's academic attainment, father's academic attainment,[33] marital status of parents, parents' number of children, age of child, and minority affiliation dummies.[34] The final matched database on the general population has 60,363 observations with 37,293 treated observations and 23,070 non-treated observations. The matched dataset has a high rate of minority population – 41% Arab population and 22% Ultra-Orthodox – which makes sense because these populations were targeted in the intervention. Relative to the unmatched dataset, the high level of minority population leads to a sample with relatively low income, low academic attainment, and relatively more children. The average family income is NIS 9.66 thousand, 33% of mothers have academic attainment and 15% of fathers. The average child age is 7.3 and parents have on average 3 children. Appendix 3 provides evidence of common support and shows that treated and control units were taken from throughout the propensity score range. Appendix 4 shows the balance between treatment and control groups for the matched databases.[35] Appendix 5 provides statistics of the main variables in the matched data sets.

We partitioned the original database for minority affiliation and redid the matching exercise (without the minority dummies) to build three additional data sets: matched Arab population dataset, matched Ultra-Orthodox Jews dataset and matched non-minority population dataset. The observations for each data set are 23,560 (14,659 treated +8,901

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[33] The quality of the academic attainment dummy drops for individuals over the age of 50 (less than 4% of observation). As we investigate choices for first born child, the variables quality is high. Nonetheless for robustness tests we limit the data to individuals under the age of 45 and outcomes are very similar.

[34] Dummy variables for Arabs and Ultra-orthodox Jews.

[35] The absolute standardized mean differences between treated and control variables are very small post-matching and all less than 0.5 a standard deviation, a rule of thumb for good balance in matched data sets (Rubin (2001)). All are also lower than a stricter rule of thumb of a difference of 0.1 standard deviation (Austin (2009)). Appendix 4 also presents t-test and proportion test differences between variables means but because of the large sample size the differences between treated and control observation are mostly statistically significant.

control) for the Arab population, 13,329 (10,275 treated + 3,054 control) for the Ultra-Orthodox population and 25,780 for non-minority population 22,850 (12,361 treated+ 10,489 control). The minority groups' matched data sets have a relatively low socio-economic status as indicated by income and education (although mother's education in the Ultra-Orthodox population is, as expected, high).[36] All three data sets provide evidence of common support (Appendix 3). The balances of the data sets are presented in Appendix 4[37] and Appendix 5 provides the averages of the main variables from the matched data sets.

We conducted several robustness tests on our matching procedure. First, in the matching procedure, we included information on the locality where parents live, based on indices published by the Israeli Central Bureau of Statistics (CBS), in the matching process: socio-econ index,[38] centrality index,[39] and rural status of the locality.[40] Second, we also used an alternative matching methods including (a) nearest neighbour without replacement, (b) caliper matching that does not allow matching if the propensity score distance between observations is more than 0.1 standard deviations, (c) pairing 1:3 observations, and (d) Mahalanobis matching,[41] which all provided similar outcomes, as expected when using a big data base (Pan and Bai (2015)). Robust matching outcomes are not presented unless stated otherwise and are available upon request.

Next, we conducted a matching exercise using the NII telephone survey population. From observations for which we have survey data, we matched observations where parents received a text message to those that did not receive one during the investigated period. We used this data to investigate the interaction effect of financial literacies and trust, and the text message intervention. We investigated children for whom no choice was made by February 6th. As this data set has many fewer observations, and we use a matching

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[36] Ultra-Orthodox women are the main bread earners and do not have religious barriers to education.

[37] All standardized mean variations are less than 0.1 that is a strict rule of thumb for good balance (Austin 2009) except for one. The father's wage variable in the Arab population matched data set which has an absolute standardized mean difference of 0.13 between the groups.

[38] Calculated using data from the 2015 national survey on demographic and standard-of-living features of the population in each locality, such as data on income, level of education, level of employment, and national insurance allowances given to the population in each locality. Each locality is given a ranking between 1 and 10. This variable can be used to characterize localities and their population on average but is a noisy proxy for individual data.

[39] Calculated using data from 2015 and grades localities' proximity to economic activity or potential for activity. Each locality is given a ranking between 1 and 10.

[40] Calculated using data from 2015 and indicates if a locality is rural or not.

[41] Mahalanobis' matching is a type of propensity score matching using calipers. The caliper required that the matching of parents that received and did not receive a text message is done only if the log-odds of their propensity score are within 0.25 standard deviations. Within this caliper, parents are matched to minimize the sum of the Mahalonobis' distance between matched partners.

exercise that controls for child and household characteristics, for the main specification we did not partition on the child's age or number in the family.[42] We built four data sets in a similar way to those from the main administrative data sample: general population, only Arab population, only Ultra-Orthodox Jewish population, and only non-minority population. The general population matched survey dataset has 1,076 observations (593 treated+ 483 control). The Arab population survey dataset has 377 observations (253 treated+ 124 matched). The Ultra-Orthodox population survey dataset has 355 observations (196 treated+ 159 matched). The non-minority population sample has 284 observations (144 treated + 140 matched). We provide evidence of common support for the survey samples matching exercises in Appendix 3. The balances of the data sets are presented in Appendix 4[43] and Appendix 6 provides main statistics of the main matched data set and the averages of the main variables for the minority population data sets.

5.2. Empirical model

We aim to quantify the effect of receiving a text message on active enrollment in the SECP program while controlling for other relevant factors. We estimate the following model: for each set of parents i we estimate each outcome (y_j), dummy value of 1 or 0 for the different outcomes, on parents' characteristics:

$$Y_i = \beta_0 + \beta_1 * I_i + \beta_2 * X_i * I_i + \beta_3 * X_i + \epsilon_i$$

where Y_i is the outcome variable for parents i for four outcomes: (1) Any active enrollment choice regarding the SECP program (choosing a provider, choosing an investment track, choosing to deposit an additional NIS 50 to the child's account, or actively choosing not to deposit additional funds)[44], (2) Depositing an additional NIS 50 to the child's account, 3) Choosing a high yield/risk investment track, or 4) Actively enrolling to the program while using a mobile phone. We initially focus on any active enrollment outcome, as any specific choice might be affected by choice architecture (Sethi-Iyengar et al. (2004), Thaler and Sunstein (2009)) or money constraints (such as choosing an investment provider and level of investment risk). Then, we investigate choices that should increase the amount of funds in the savings program. As shown by

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[42] When partitioning data on children under the age of 15 and first born, we find outcomes very similar in size and sign as presented in the paper but they are not as statistically significant because of smaller sample sizes.

[43] All standardized mean differences are less than 0.5 standard deviations (Rubin (2001)).

[44] For robustness checks we investigate any active enrollment choice without including those that actively choose the default and the outcomes are very similar.

Grinstein-Weiss et al. (2019a) making additional deposits doubles the child's funds at age 21 for a low yield/risk investment track from NIS 12,650, which is about one year of university tuition. Funds can reach NIS 61,700 when additional deposits and a high yield/risk track is chosen, which is six years of tuition. Finally, as the text message had an embedded link to the website that should have lowered transaction costs for those with high digital literacy; we investigate choices made via smartphone. This last investigation is aimed at investigating the effect of potential differences in digital literacy and higher digital frictions between the different populations.

We estimate the regressions for making the active enrollment choices from 6-19 February, the two weeks of the field experiment before additional text messages were sent. I_i is a dummy for parents receiving a mobile text message. Although we used a matching exercise and the treated and untreated groups are supposed to have similar attributes, for additional caution and to find differences in the effect of the text message by parent's attributes, we added interactions and controls for parents' characteristics. We denote by X household i characteristics that were also used in the matching process. These include family income and parent's academic attainment as well as parents' minority affiliation. In the survey data we also include in X parent's level of trust in government, objective financial literacy, and subjective financial literacy, which allows us to investigate the interaction between the text message and these characteristic above and beyond household characteristics. Variable descriptions are presented in Appendix 1 for the administrative data and Appendix 2 for the additional survey sample.

For the main regression, we used a linear model regression on the matched data ((Imbens and Wooldridge (2009)) using cluster-robust standard errors that account for dependence between observations within matched pairs (Abadie and Spiess (2021).

6. Results - The effect of text messages on choices made in the SECP

6.1. Any active enrolment

We start by investigating any active enrolment choice during the period following the text message intervention. Investigating this choice allows us to show the general effect of the text message as an intervention that lowers observation and transaction costs with no money constraints. We also investigate whether the effect was different for minority population.

Outcomes from the linear regression (OLS) on the general population on making any enrolment choice show that the coefficient of the text message is positive and significant and stands at 0.12 (p<0.01) (Table 1). Overall, the text message significantly increased any active enrolment, while controlling for other related variables as previously described. Yet, this effect is not similar to all sub segments of the population. The effect of the text message is halved for the Arab and the Ultra-Orthodox minority populations both when looking at the interaction in the main survey sample and when comparing the size of the effect of the text message between the general population data sample and the minority groups' data samples. Regarding socio-economic status, for the Arab population there is also a significant effect for the text message if the mother has academic attainment. Control variables without the interaction with the text message dummy do not have a significant effect (omitted from regressions).[45]

Table 1

6.2. Choosing to deposit additional funds to SECP

Given the obtained results regarding any choice, next, we study a specific action, the decision to deposit an additional NIS 50. This choice has a substantial effect on the final savings outcome, resulting in greater wealth inequality in the future. Yet, this choice might be affected by liquidity constraints and may not be optimal for all households. Additionally, we investigate whether we observe differences in the effect of the text message for minority populations.

The outcome indicates a positive effect of 0.07 (p<0.01) of the text message on choosing to deposit an additional NIS 50 for the general population (Table 2), lower than for the "any active choice". Similar to "any active choice" the effect of the text messages on minority populations choosing to add additional funds is smaller than for the general population. The interaction coefficients are 0.02 in the minority samples (p<0.01 for the Arab sample, p<0.1 for the Ultra-Orthodox sample). For choosing to add NIS 50, the

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[45] During the investigated period, no active campaign took place; hence, those actively participating during this period (without receiving a text message) are those that did not make a choice up until this point. This means socio-economic attributes may have contradicting effects during the investigated period if early enrollers have high or low socio-economic attributes. Indeed, we do not find that household attributes by themselves had a large effect on choices during the investigated period. Significant effects for making any enrolment choice are found for the dummy variables for married parents and Arab parents in the general population sample (regression outcomes presented in column (1)). The first coefficient is -0.0004 (p<0.05) and the second is 0.003 (p<0.01). These effects are even smaller in the regressions investigating choosing to deposit additional funds or a riskier investment track.

interaction between income and the text message dummy is statistically significant and positive for all data sets. This indicates that income, which is most likely correlated with liquidity constraints, influences the ability to deposit more and hence, to save more. The interaction between the text message dummy and father's academic attainment dummy is positive and statistically significant in the general population data set but the interaction with mother's academic attainment dummy is statistically significant for the Arab population data set. This indicates that socio-economic attributes have a larger interaction effect with the text message for depositing additional funds to SECP. This may be correlated with liquidity constraints, or due to low financial literacy or cultural frictions.

Table 2

6.3. Choosing to a higher yield/risk investment track

The next specific active action that we study is the decision to choose a higher yield/risk investment track that yields higher expected savings, with higher volatility and again might be affected by higher costs and frictions. Again, we investigate whether there are differences in the effect of the text message for minority populations for this choice.

The outcome indicates a positive effect of 0.03 (p<0.01) for the text message on choosing a higher yield/risk investment track for the general population (Table 3). The effect on minority populations is a tenth in size for the Arab population and not statistically significant for the Ultra-Orthodox population. For this choice in the general population data set the interaction between the text message dummy and income, mother's academic attainment dummy and father's academic attainment dummy is statistically significant and positive, indicating a larger effect for socio-economic attributes and frictions for this choice.

It is also interesting to note that the effect of the text messages on choosing a religious investment track (either "Kosher" or "Sharia") is much smaller not only for the general population but also for minorities. The coefficient of the text message is 0.01 in the general sample (p<0.01) and not statistically significant for minority populations (not presented). On the other hand, the effect of the text message was stronger for choosing to invest in a bank. The coefficients are 0.06 for the general sample and 0.04 for the minority populations sample (all p<0.01). Refraining from choosing an investment track that should yield expected higher savings did not happen because minority populations choose a religious investment track. It seems that they were more inclined to save in an investment

track with even lower expected return in a bank. We conjecture that this stems from low financial literacy and cultural non-religious frictions that will be tested next.

Table 3

Section 6.1-6.3 provides evidence that although the text message had a positive effect on any active enrolment and on choices that lead to higher overall savings in the program, the effect was mitigated for minorities. In the following sections we investigate different channels that could affect this differential effect: digital literacy, trust, objective financial literacy, subjective financial literacy, as well as other remaining cultural frictions.

6.4. Digital literacy: investigating the effect of text messages on making a Choice using a smartphone

Parents who received the text message on a mobile phone could click the embedded link to enrol in the program directly. For those with sufficient digital literacy and access, the text messages may have reduced transaction costs and increased the salience of the issue. The administrative data tells us which device was used to enrol in the program, so we can observe the extent to which the embedded link facilitated enrolment. Minority groups in Israel have low digital literacy that might have affected their engagement with the text message. We investigate differences between the general population and minority populations to test the potential effect of the friction stemming from low digital literacy among minority populations who received the text message.

Outcomes indicate a positive effect of 0.04 (significant at the 1% level) for the text message on making any active enrolment choice using a smartphone for the general population (Table 4). The effect of the text message for the general population on making an active choice using a computer or non-digitally (not presented) is smaller and half as large as the effect from using a smartphone. This suggests that for those receiving the text message, costs were lowered for using smartphones to enrol in the SECP.[46]

The effect of the text message on making an active enrolment choice using a smartphone goes down to 0.01 (p< 0.01) for the Arab population and is not statistically significant for the Ultra-Orthodox population). For the Arab population the effect of the

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[46] Throughout the initial phase in the general population the percent of parents making an active choice using a digital device (smartphone or computer) stays similar. During the text message campaign the ratio of those making a choice via smartphone is higher and those making a choice via computer is smaller than those percentages throughout the initial SECP installation period.

text message on making choices using the other non-smartphone options (computer, non-digitally) is similar in size and statistical significance. This suggests that for this population transaction costs for using a smartphone were not lowered more than they were lowered for other platforms. The Ultra-Orthodox population had a similar in size but non-significant effect for using a smartphone or computer to enrol following the text message but had a positive and significant effect for enrolling using a non-digital platform (0.02, p <0.1) (not presented). As this population has low digital literacy and part of this population probably received the message by voice mail (because of cultural frictions), transaction costs for using a smartphone were not lowered and if they did choose to enrol, they did not do so by digital means.

Table 4

6.5. Trust and financial literacies investigation – Telephone survey matching exercise

Using our main rich set of administrative data has advantages because it has information on actual choices that were made and households' socio-economic attributes. However, administrative data does not contain information about perceptions, emotions and knowledge. As the NII conducted an extensive survey and was able to link it to the administrative database, we have access to additional "soft" information. We use this information to enhance our understanding of the channels that interact with the text messages' effect on the overall population and minority populations.

In this section, we investigate the interaction effect between the text message and trust, objective financial literacy, and subjective financial literacy to see if the effect of the text message depends on these channels. Additionally, we investigate this interaction effect for the general population and minority populations separately to discover whether these channels affect the differences between groups in their response to the text reminder. We know from the academic literature that these characteristics impact financial behavior and minority populations should have lower levels of these characteristics

We present the regressions on any active enrolment in the SECP, on choosing to deposit additional funds, and discuss additional outcomes (Table 5).[47]

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[47] We do not present outcomes for using a smartphone to enroll in SECP but we discuss outcomes in text. Because of the small sample size, the regression on making any active choice by using a mobile smartphone for the Ultra-Orthodox population cannot be investigated. We do not present or discuss outcomes for choosing a higher yield/risk investment track, as outcomes are statistically not significant

The interaction between the text message dummy and having a high level of trust in the government is significant and relatively (to other variables coefficients) large, 0.16 and 0.10 (p<0.01) for making any active choice and for choosing to add additional funds respectively. The interaction effect is stronger for minority populations. The coefficients of these interactions for making any active choice and for choosing to add additional funds are 0.29 and 0.17 (p<0.01) for the Arab population and 0.38 and 0.38 (p<0.01) for the Ultra-Orthodox population. It is not surprising that for making an active choice using a smartphone (not presented) trust seems to have a smaller effect and is only statistically significant in the general population sample. In all regressions, trust has a non-significant effect for the non-minority population indicating that the interaction effect of trust and the text message dummy found in the general population stems mostly from the trust effect on minority populations. It is also interesting to note that the effect is higher for any active choice, smaller for depositing additional funds and smallest for using a smartphone to make an active choice. This can mean that trust has a larger effect on basic interactions, and for other choices has a smaller effect.

Having low subjective financial literacy has a negative, large and statistically significant effect for making any active choice and for choosing to add additional funds when receiving a text message. For the general population the coefficient is -0.10 and -0.10 respectively (p<0.01). This interaction effect is also stronger for minority populations. The coefficients of the interaction are -0.20 and -0.15 (p<0.01) for the Arab population and -0.22 and -0.20 respectively (p<0.01) for the Ultra-Orthodox population. For making an active choice by using a smartphone for the general and minority populations (not presented), subjective financial literacy seems to have a smaller effect and is less statistically significant, although the sign remains negative for all data sets. For the non-minority population sample the subjective financial literacy interaction effect is not statistically significant. This also indicates that a large part of the interaction effect of subjective financial literacy and the text message in the general population (especially for making any active enrolment choice) stems from minority populations.

The interaction between the text message dummy and having low objective financial literacy is negative and statistically significant for all choices in the general population sample. It is -0.07 (p<0.01) for making any active choice and for depositing additional

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because of the small proportion of population choosing these investment tracks. Nonetheless, the signs of the investigated coefficients for choosing a higher yield/risk investment track are the same as those on any enrolment choice and on depositing additional funds.

funds, and -0.05 (p<0.01) for using a smartphone to make any active choice (not presented). The similar and even smaller size of the interaction between objective financial literacy and the text message on making a choice using a smartphone indicates that objective financial literacy is not a major channel for use of digital platforms in the general population. For the Arab population sample, although the interaction between low objective financial literacy and the text message is negative in all regressions investigated, it is only statistically significant for using a smartphone to make any active choice, -0.10 (p<0.01) (not presented). This means that objective financial literacy might be a channel for the use of digital platforms for this minority.[48]

From these regressions, we learn that trust and financial literacies affect how recipients respond to the text message. It also seems that these effects are stronger and stem mostly from their effect on minority populations. This is on top of the effect that stems from the fact that minority populations have lower levels of financial literacy and should generally be less affected by the text message.

These regressions also present evidence that even after controlling for trust, subjective and objective financial literacy, and socio-economic attributes, the text message effect is still weaker for minority populations (Table 5). In the minority population samples, the coefficient of the text message dummy by itself is smaller and even negative for making any choice and choosing to save additional funds. In the general population sample regression, the interaction effect between the text message dummy and minority affiliation is negative as well (although not statistically significant, not presented in table). We found one outlier, for making an active choice using a smartphone. In this investigation the text message effect on the Arab minority is actually stronger (coefficient in the Arab population sample larger and statistically significant) and the interaction effect between the text message dummy and the Arab population dummy in the general sample is also positive and significant (0.03 p<0.1, not presented). We know from Table 4 that the effect of the text message on the Arab population for making any active choice using a smartphone is actually smaller than for the general population. It seems that for this choice

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[48] There is a slightly larger coefficient for the interaction between the text message and objective financial literacy for depositing additional funds than for making any enrolment choice. There is also a slightly smaller coefficient for the interaction between the text message and subjective financial literacy on any active enrolment choice than for depositing additional funds. Meaning, the directions of effects are that objective financial literacy has a larger effect on specific choices and subjective financial literacy has a larger effect on any active choice. The coefficient is not statistically significant for choosing a high yield/risk investment track.

a large portion of the difference between the minority and the general population stems from low financial literacy and trust.

Table 5

6.6. Robustness- liquidity and ability to cover expenses

Liquidity constraints might be correlated with minority affiliation, and we controlled for that in the regressions above using the socio-economic income and education variables. For more insights into the effect of liquidity constraints on our results, the survey answers tell us about the parents' ability to cover expenses. The survey asked: "Do you have difficulty covering day-to-day expenses?" The answers were on a scale from 1-5, from no difficulty at all to having a very large difficulty. We use a dummy variable to indicate if a parent answered that the household has a large or very large difficulty covering day-to-day expenses. The outcomes of the regressions, which includes an additional interaction term between the text message dummy and the difficulty to cover expenses dummy, on making any active choice are presented in Table 6. The regressions in table 6 are the same as the ones in table 5 with the additional interaction term. Table 6 provides evidence that liquidity constraints have a negative effect on the response to the text message. The coefficient of the interaction is -0.06 ($p<0.1$) and -0.21 ($p<0.01$) for the general and Arab populations respectively. Table 6 provides evidence that even after adding additional controls for liquidity constraints, outcomes remain similar; the size and significance of the effects of the text message on enrolment – as well as the coefficients of the interactions of the text message with parent's attributes including trust, objective financial literacy and subjective financial literacy – do not change.

Table 6

7. Additional robustness tests

7.1. Does SECP participate change overall savings?

In terms of the welfare effect, we want to know whether additional contributions to the SECP increased the saving rate, or simply displaced other saving. A question in the survey for those who knew about the program was: "Did you change your deposits to your child's/children's previous savings due to the Savings Account program?" The possible answers were: No, Increased, Decreased, Don't know, Refuse to answer. We coded a

dummy for parents answering that they decreased savings following the program.[49] When we ran the regressions for making any active choice or choosing to deposit additional funds[50] on the indicator that parents decreased savings following the program, we find a small coefficient of 0.01 ($p<0.01$) in the general population sample. For the non-minority population the coefficient rises to 0.02 ($p<0.01$); for minority populations it is not significant. When adding controls to the regressions, outcomes remain similar.[51] Hence, parents saving in the program and depositing additional funds are likely to increase the child's overall saving and we do not find indications of transfers between other savings.

7.2. Robustness – culture and locality variables

The text messages had a smaller effect on minority populations above and beyond all the measurable variables (socio-economic status, trust, financial literacies). This can be thought of as the remainder cultural affect (including language frictions). Our assumption, based on the geography of Israel, is that cultural effects may be stronger at more rural locations. People living in remote localities should be more affected by the local culture and less aligned with the general population. Hence, they should be less affected by the text message as they have higher cultural frictions. Accordingly, for an additional robustness check we use the matched data sets and additional variables for household location to investigate the effect of rural and peripheral localities. Table 7 provides evidence of such an effect for making any active choice and shows that cultural frictions are higher for the Arab population. The interaction between the text message dummy and the centrality index of the locality is positive and statistically positive for the general population (0.003, $p<0.01$) and stronger for the Arab population (0.01, $p<0.01$). Additionally, the interaction between the text message dummy and the dummy variable if a locality is rural is negative and statistically significant for the general population (-0.01, $p<0.01$) and this interaction effect is stronger for the Arab population as well (-0.02, $p<0.01$). Results are similar but less statistically significant for choosing to add additional

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[49] For this investigation, we used the unmatched survey data. We included children over the age of 15 as defaults are not of an interest for this investigation and used all available observations. When partitioning only on first born child our conclusions (and coefficient size) remain similar but outcomes are less statistically significant.

[50] Outcomes remain the same when investigating choices made during the full installation period of the SECP installation (January-June 2017) or on our investigated period (February 6th-19th).

[51] For the general population the Arab dummy coefficient is -0.01 ($p<0.05$) and the child age coefficient is -.001 ($p<0.01$).

funds, choosing a higher yield/risk investment track, and making a choice by smartphone (not presented).

Table 7

8. Conclusion and Discussion

In this paper, we estimate the effect of a mobile text message with an embedded link on enrolment in the SECP, a government-based child saving program that gives small monthly deposits to all children in Israel under the age of 18, and offers parents a choice to opt in with additional contributions of their own. We used matching based exercises between those that received a text message and those that did not, to investigate the effect of the text message during a two-week period when the initial campaign subsided, and no other measure was taken to raise enrollment. This gave us a two-week period of a natural experiment.

This is a unique setting to investigate the effect of the text message on a large population. We have rich administrative data on all eligible children and households in Israel and a large survey attached to the administrative data to investigate differences in the effect on minority groups. Israel has two distinct minority groups, the Arab population and the Ultra-Orthodox Jewish population. Both have high poverty rates, low digital literacy, low financial literacy and unique cultural differences.

We find that for the general population the text messages raised the proportion of parents enrolling to the program. We investigate specific choices that should raise the overall amount of funds saved in the program following the text message. In the general population, the text message dummy coefficient for depositing additional funds is lower than that for making any active enrollment choice, and is even lower or for choosing a higher yield/risk investment track. Nonetheless, they are all statistically significant and positive.

When investigating the effect of the text messages on minority populations we find an overall mitigated effect; the coefficient sizes drop significantly for making any enrollment choice or depositing additional funds for both minority populations. For choosing a higher yield/risk investment track the coefficients drop for both minority groups but also becomes non-significant for the Ultra-Orthodox population. This means that beyond socio-economic status (including income) minority population' predicted savings and welfare from the program is lower than for the non-minority population.

We investigated the existence of different channels leading to the mitigated effect of the text message on minority groups. We provide evidence that minority groups' low digital literacy is a channel that mitigates the effect of the text message, by showing that minority populations are much less likely to make an active choice by using a smartphone (and the embedded hyperlink in the text message). We also show that trust, subjective financial literacy (confidence in one's knowledge), and to some extent objective financial literacy affect the engagement with the text message and that this effect is stronger for minority populations. In these regressions, we show that even after controlling for these and other socio-economic variables (including an indication of liquidity constraints) the text message effect on minority groups' enrolment in the SECP is still smaller than for the general population. This leads to the conclusion that additional cultural barriers exist (including language barriers). We provide additional evidence that the text messages' effect on those living in more peripheral and rural localities is smaller. As those living in more peripheral and rural localities are more affected by local culture, we believe this is an indicator of higher cultural frictions and is further evidence of cultural barriers to engagement with the mobile text message. We also use the survey data to show that saving in the SECP program does not decrease saving elsewhere. Hence, SECP savings are mostly additional savings that can boost children's welfare.

As we find a remaining negative effect for minority populations, we might attribute this to language frictions. However, Strawczynski and Myronichev (2015) provide evidence that even when the text message is sent in the native language of minority groups, the effect is still mitigated. The mitigated effect we find for the Ultra-Orthodox population, which does not have a language barrier, also indicates that the remaining cultural frictions include more than just language frictions.

Interventions and nudges can be effective tools to strengthen policy outcomes but they need to be calibrated (Benartzi et al. 2017, Madrian (2014), Datta and Mullainathan (2014)). The low costs of text messages and their potential benefits make them an attractive tool for many financial innovations. We show that text messages can significantly raise participation rates in government programs, but there are shortcomings and not all populations respond in the same manner.

We present evidence that well-intentioned interventions may exacerbate rather than mitigate disparities. If the government relies heavily on interventions and text messages, especially in financial consumer regulation, and minority groups are much less responsive

to these interventions, the long-term effect will be regressive. This is especially true in a program such as the SECP, where the defaults will result in less wealth in the long term (lower deposits from parents and less risky, lower return investment tracks). Active enrollment can also affect the way these populations address and trust financial institutions and regulations in wider contexts.[52] As we find that text messages have a larger effect on those with high digital literacy, trust and subjective financial literacy, more infrastructure and education, emphasizing confidence in financial management, is needed to make consumer financial regulations and nudges more effective. Another policy implication is that regulatory campaigns need to be accompanied by explanations that will enhance self-efficacy and allow individuals to opt into programs that will improve their long-term outcomes.

We believe that our results highlight the need to tailor solutions to different minority groups, based on their specific characteristics. Indeed, we were informed that certain Fintech initiatives are considering introducing personalized messages for different individuals. We leave the investigation of personalized options to future research.

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[52] Actively participating in saving programs can promote financial inclusion as it increases self- efficacy and makes future interactions with financial institutions and regulators more likely (Sherraden (1991).

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Figures

Figure 1: <u>Savings for Every Child Program text message intervention timeline</u>
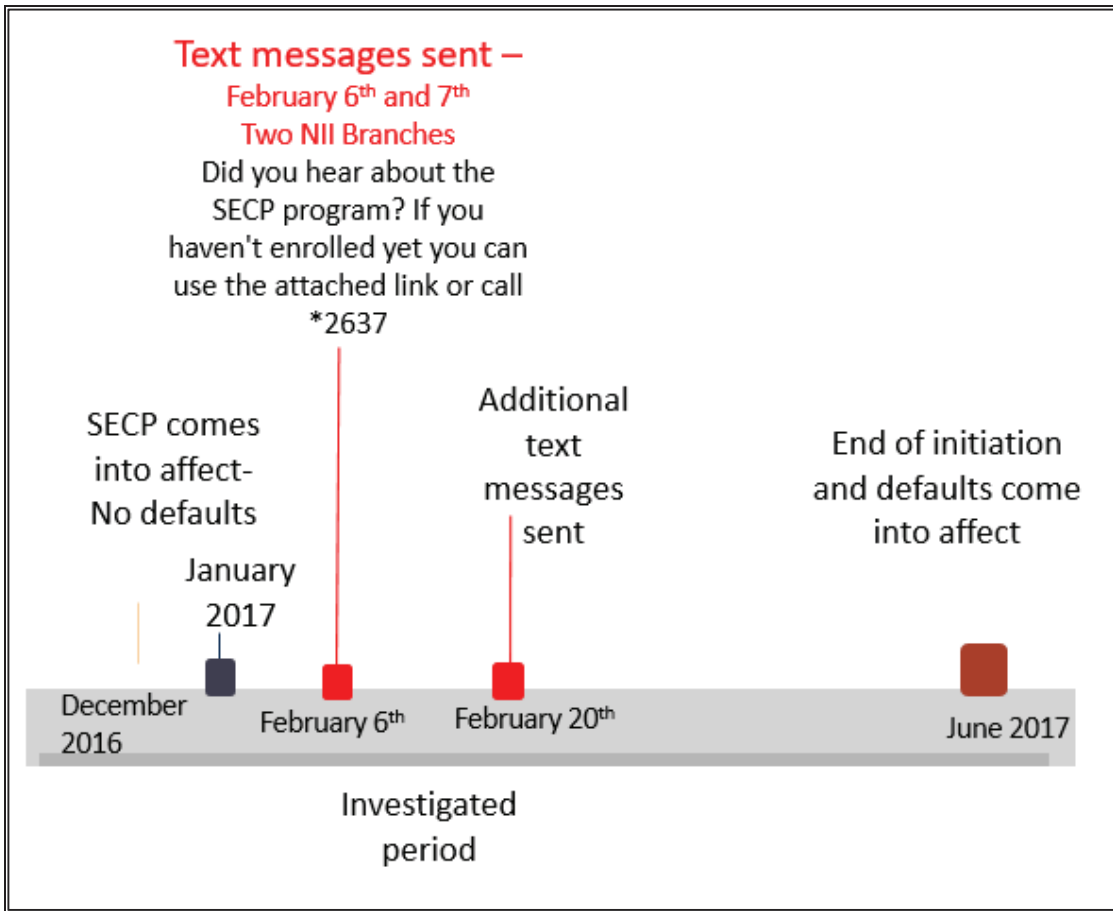
Tables

Table 1 - <u>Made any choice by February 19th</u>

	Full sample (1)	Arab (2)	Ultra-Orthodox (3)	Non-Minority (4)
Message	0.12***	0.06***	0.06***	0.15***
	(0.01)	(0.01)	(0.02)	(0.01)
Message*Arab	-0.05***			
	(0.004)			
Message*Ultra-Orthodox Jew	-0.05***			
	(0.004)			
Message*Income	0.00	-0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Message*Mother academic	-0.004	0.01*	-0.002	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Message*Father academic	0.01	0.002	0.002	0.01
	(0.01)	(0.01)	(0.02)	(0.01)
Message*Number of children	-0.001	-0.001	-0.003	-0.002
	(0.002)	(0.002)	(0.003)	(0.002)
Message*Child age	-0.002***	-0.001*	0.001	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
Message*Parents married	-0.02***	0.002	-0.03	-0.03***
	(0.01)	(0.01)	(0.02)	(0.01)
Non-interaction Controls	Y	Y	Y	Y
Constant	0.004***	0.004	-0.001	0.003
	(0.001)	(0.01)	(0.02)	(0.01)
Observations	60,363	23,560	13,329	22,850
R^2	0.03	0.02	0.01	0.05

*$p<0.1$**$p<0.05$***$p<0.01$

Notes: Each column represents a different linear regression of the effect of receiving a text message on February 6th and 7th and it's interactions with additional individual characteristics on making any active enrollment to the SECP program by February 19th. Column (1) reports a regression on the general population matched data set. Column (2) reports a regression on the Arab minority matched data set. Column (3) reports a regression on the Ultra-Orthodox minority matched data set. Column (4) reports a regression on the non-minority matched data set. Data obtained from the NII administrative data sample.

Table 2 - <u>Choose to deposit additional funds by February 19th</u>

	Full sample (1)	Arab (2)	Ultra-Orthodox (3)	Non-Minority (4)
Message	0.07***	0.02***	0.02*	0.08***
	(0.01)	(0.004)	(0.01)	(0.01)
Message*Arab	-0.04***			
	(0.003)			
Message*Ultra-Orthodox Jew	-0.03***			
	(0.003)			
Message*Income	0.00***	0.00*	0.0000**	0.00***
	(0.00)	(0.00)	(0.0000)	(0.00)
Message*Mother academic	0.003	0.01***	0.0000	0.004
	(0.01)	(0.005)	(0.01)	(0.01)
Message*Father academic	0.01**	0.01	0.01	0.01
	(0.01)	(0.01)	(0.02)	(0.01)
Message*Number of children	-0.001**	-0.001	-0.004*	-0.003*
	(0.002)	(0.001)	(0.002)	(0.002)
Message*Child age	-0.001***	-0.001**	0.001	-0.002***
	(0.001)	(0.0004)	(0.001)	(0.001)
Message*Parents married	-0.01***	-0.0000	-0.001	-0.02***
	(0.01)	(0.003)	(0.01)	(0.01)
Non-interaction Controls	Y	Y	Y	Y
Constant	0.001	0.003	-0.0003	0.0001
	(0.0003)	(0.003)	(0.01)	(0.005)
Observations	60,363	23,560	13,329	22,850
R^2	0.03	0.01	0.01	0.03

*p<0.1**p<0.05***p<0.01

Notes: Each column represents a different linear regression of the effect of receiving a text message on February 6th and 7th and its interactions with additional individual characteristics on choosing to deposit additional NIS 50 savings to the SECP program by February 19th. Column (1) reports a regression on the general population matched data set. Column (2) reports a regression on the Arab minority matched data set. Column (3) reports a regression on the Ultra-Orthodox minority matched data set. Column (4) reports a regression on the non-minority matched data set. Data obtained from the NII administrative data sample.

Table 3 - <u>Choose high yield/risk track by February 19th</u>

	Full sample (1)	Arab (2)	Ultra-Orthodox (3)	Non-Minority (4)
Message	0.03***	0.003***	0.01	0.03***
	(0.004)	(0.001)	(0.01)	(0.005)
Message*Arab	-0.03***			
	(0.002)			
Message*Ultra-Orthodox Jew	-0.02***			
	(0.002)			
Message*Income	0.00***	0.00	0.0000**	0.00***
	(0.00)	(0.00)	(0.0000)	(0.00)
Message*Mother academic	0.003**	-0.0001	-0.003	0.01***
	(0.004)	(0.002)	(0.002)	(0.004)
Message*Father academic	0.01***	-0.0001	0.01	0.02***
	(0.005)	(0.002)	(0.01)	(0.005)
Message*Number of children	0.001*	-0.0001	-0.002*	-0.0003
	(0.001)	(0.0003)	(0.001)	(0.001)
Message*Child age	-0.001***	-0.0002*	0.0004	-0.002***
	(0.0004)	(0.0001)	(0.0004)	(0.0004)
Message*Parents married	-0.003*	-0.0004	-0.0003	-0.004
	(0.004)	(0.001)	(0.01)	(0.005)
Non-interaction Controls	Y	Y	Y	Y
Constant	0.0002	0.00	0.00	0.001
	(0.0004)	(0.001)	(0.01)	(0.004)
Observations	60,363	23,560	13,329	22,850
R^2	0.03	0.001	0.01	0.03

*p<0.1**p<0.05***p<0.01

Notes: Each column represents a different linear regression of the effect of receiving a text message on February 6th and 7th and its interactions with additional individual characteristics on choosing a higher yield/risk investment track in the SECP program by February 19th. Column (1) reports a regression on the general population matched data set. Column (2) reports a regression on the Arab minority matched data set. Column (3) reports a regression on the Ultra-Orthodox minority matched data set. Column (4) reports a regression on the non-minority matched sample. Data obtained from the NII administrative data sample.

Table 4 – <u>Choose by Smartphone by February 19th</u>

	Full sample (1)	Arab (2)	Ultra-Orthodox (3)	Non-Minority (4)
Text message	0.04***	0.01**	0.01	0.06***
	(0.01)	(0.004)	(0.01)	(0.005)
Message*Arab	-0.02***			
	(0.002)			
Message*Ultra- Orthodox Jew	-0.02***			
	(0.002)			
Message*Income	0.00***	0.00	0.0000**	0.00
	(0.00)	(0.00)	(0.0000)	(0.00)
Message*Mother academic	-0.003	0.02***	-0.005*	-0.01**
	(0.004)	(0.004)	(0.003)	(0.004)
Message*Father academic	0.002	0.01**	0.001	-0.0003
	(0.004)	(0.005)	(0.01)	(0.005)
Message*Number of children	-0.001**	-0.0001	-0.002*	-0.003**
	(0.001)	(0.001)	(0.001)	(0.001)
Message*Child age	-0.001***	-0.001	0.0003	-0.002***
	(0.0004)	(0.0003)	(0.0005)	(0.0004)
Message*Parents married	-0.001	0.004	-0.001	-0.003
	(0.004)	(0.003)	(0.01)	(0.004)
Non-interaction Controls	Y	Y	Y	Y
Constant	0.001***	0.003	0.00	0.001
	(0.001)	(0.003)	(0.01)	(0.004)
Observations	60,363	23,560	13,329	22,850
R^2	0.02	0.01	0.01	0.02

*p<0.1**p<0.05***p<0.01

Notes: Each column represents a different linear regression of the effect of receiving a text message on February 6th and 7th and it's interactions with additional individual characteristics on making an active choice in the SECP program while using a smartphone by February 19th. Column (1) reports a regression on the general population matched data set. Column (2) reports a regression on the Arab minority matched data set. Column (3) reports a regression on the Ultra-Orthodox minority matched data set. Column (4) reports a regression on the non-minority matched data set. Data obtained from the NII administrative data sample.

Table 5 - <u>Made Choice by February 19th – Additional Survey Sample</u>

	Panel A- Any active enrollment choice			
	Full sample (1)	Arab (2)	Ultra-Orthodox (3)	Non-Minority (4)
Text message	0.07*	-0.16***	0.05	0.03
	(0.06)	(0.06)	(0.03)	(0.05)
Text message*Trust	0.16***	0.29***	0.38***	-0.02
	(0.08)	(0.05)	(0.06)	(0.10)
Text message*Low Subjective financial literacy	-0.10***	-0.20***	-0.22***	0.01
	(0.08)	(0.06)	(0.05)	(0.10)
Text message*Low Objective financial literacy	-0.07**	0.04	-0.04	0.01
	(0.07)	(0.06)	(0.04)	(0.07)
R^2	0.06	0.14	0.20	0.05
	Panel B- Choose to add additional 50 NIS			
	Full sample (1)	Arab (2)	Ultra-Orthodox (3)	Non-Minority (4)
Text message	0.06*	-0.13***	0.04	0.04
	(0.06)	(0.04)	(0.02)	(0.05)
Text message*Trust	0.10***	0.17***	0.38***	0.03
	(0.07)	(0.04)	(0.06)	(0.09)
Text message*Low Subjective financial literacy	-0.10***	-0.15***	-0.20***	-0.05
	(0.04)	(0.04)	(0.04)	(0.09)
Text message*Low Objective financial literacy	-0.07***	0.03	-0.05	-0.06
	(0.06)	(0.04)	(0.04)	(0.06)
R^2	0.07	0.14	0.25	0.06
Constant	Y	Y	Y	Y
Additional controls	Y	Y	Y	Y
Observations	1,076	377	355	283

*p<0.1**p<0.05***p<0.01

Notes: Each column represents a different linear regression of the effect of receiving a text message on February 6th and 7th and its interactions with additional individual characteristics on making an active choice in the SECP program by February 19th. Panel A presents regressions on making any active enrolment choice. Panel B presents regressions on depositing additional funds. Column (1) reports a regression on the general population matched data set. Column (2) reports a regression on the Arab minority matched data set. Column (3) reports a regression on the Ultra-Orthodox minority matched data set. Column (4) reports a regression on the non-minority matched data set. Data obtained from the NII administrative data sample.

Table 6 - <u>*Made any choice by February 19th – NII Survey sample*</u>

	Full sample (1)	Arab (2)	Ultra-Orthodox (3)	Non-Minority (4)
Text message	0.09**	-0.10*	0.05	0.06
	(0.07)	(0.06)	(0.03)	(0.06)
Text message*Difficulty to Cover expenses	-0.06*	-0.21***	0.01	-0.06
	(0.09)	(0.06)	(0.04)	(0.07)
Text message*Trust	0.15***	0.31***	0.40***	-0.0004
	(0.09)	(0.05)	(0.07)	(0.10)
Text message*Low Subjective financial literacy	-0.10***	-0.24***	-0.22***	0.004
	(0.08)	(0.06)	(0.05)	(0.10)
Text message*Low Objective financial literacy	-0.07**	0.01	-0.04	-0.01
	(0.08)	(0.06)	(0.04)	(0.07)
Constant	0.10**	0.21***	0.02	0.19**
	(0.10)	(0.07)	(0.07)	(0.09)
Observations	1,076	377	355	283
R^2	0.07	0.16	0.21	0.08

*p**p***p<0.01

Notes: Each column represents a different linear regression of the effect of receiving a text message on February 6th and 7th and it's interactions with having a higher level of trust dummy variable (having an average of 4 or higher to two questions regarding level of trust in government), having a low level of objective financial literacy dummy variable (knowing the answer to one or less objective financial literacy questions) and having a low level of subjective financial literacy dummy variable (having self proclaimed low or very low understating of financial issues) on making any active enrollment choice in the SECP program by February 19th. Column (1) reports a regression on the general population matched data set. Column (2) reports a regression on the Arab minority matched data set. Column (3) reports a regression on the Ultra-Orthodox minority matched data set. Column (4) reports a regression on the non-minority matched data set. Data obtained from the NII survey data sample.

Table 7 - <u>Made any choice- including locality indices</u>

	Full sample (1)	Arab (2)	Ultra-Orthodox (3)	Non-Minority (4)
Message	0.10***	0.04***	0.06***	0.14***
	(0.02)	(0.01)	(0.02)	(0.02)
Message*Arab	0.003**			
	(0.001)			
Message*Ultra- Orthodox Jew	-0.001			
	(0.001)			
Message*Centrality index	0.003***	0.01***	-0.0005	0.002
	(0.002)	(0.002)	(0.002)	(0.002)
Message *Socio-econ index	0.0003	-0.005**	0.002	-0.002
	(0.002)	(0.002)	(0.003)	(0.002)
Message *Rural	-0.01***	-0.02***	-0.004	0.01
	(0.01)	(0.005)	(0.01)	(0.01)
Additional Controls	Y	Y	Y	Y
Constant	0.01***	0.01	-0.002	0.001
	(0.001)	(0.01)	(0.02)	(0.01)
Observations	60,363	23,560	13,329	22,850
R^2	0.03	0.02	0.01	0.05

*p<0.1**p<0.05***p<0.01

Notes: Each column represents a different linear regression of the effect of receiving a text message on February 6th and 7th and it's interactions with minority affiliation variables as well as locality variables on making any active choice in the SECP program by February 19th. Locality variables include socio-economic index, centrality index and rural indicator calculated using data from the 2015 national survey on demographic and standard-of-living. For the socio-economic index each locality is given a ranking between 1 and 10. Centrality index grades localities' proximity to economic activity or potential for activity. Each locality is given a ranking between 1 and 10. Column (1) reports a regression on the general population matched data set. Column (2) reports a regression on the Arab minority matched data set. Column (3) reports a regression on the Ultra-Orthodox minority matched data set. Column (4) reports a regression on the non-minority matched data set. Data obtained from the NII administrative data sample.

Appendix 1 - Statistics and variable descriptions administrative data

Statistics and variable descriptions – administrative data before matching process

Variable	Description	Mean	St. Dev.	Min	Max	Arab Mean	Ultra-Orthodox Mean
		Independent variables					
Message	Received mobile text message between 6-7th of February	0.044	0.206	0	1	0.080	0.130
Parents Arab	Arab household	0.215	0.411	0	1		
Parents Ultra-Orthodox	Ultra-Orthodox Jewish household	0.091	0.288	0	1		
Income	Sum of Father's and Mother's wage in thousands of NIS	17.03	17.63	0	1.82	9.235	7
Mother Academic	Indicator if mother has academic attainment in any higher education institution in Israel	0.414	0.493	0	1	0.206	0.536
Father academic	Indicator if father has academic attainment in any higher education institution in Israel	0.281	0.449	0	1	0.206	0.042
Number of children	Number of children by same parent	2.309	1.341	1	18	2.477	3.306
Child age	Age of child when program went into effect	7.456	4.796	0	15	7.7	6.453
Parents married	Indicator if parents are married	0.801	0.399	0	1	0.830	0.914
Centrality index	CBS indicator grading localities' proximity to economic activity or potential for activity. Calculated using data from 2015 national survey on demographic and standard-of-living. The higher the index the more central the locality.	6.809	2.227	0	10	5.534	7.667

Rural	CBS indicator if a locality is rural or not. Calculated using data from 2015 national survey on demographic and standard-of-living.	0.087	0.467	1	0	0.449	0.280
Socio-economic index	CBS indicator on localities socio-economic status. Calculated using data from the 2015 national survey on demographic and standard-of-living. The higher the index the higher socio-economic status of the locality.	3.188	2.965	10	0	2.202	5.194
Mother's wage	Mother's wage in thousands of NIS	4.5	2.36	0.67	0	7.73	5.97
Fathers wage	Father's wage in thousands of NIS	3.0	6.87	1.82	0	14.03	11.06
Child male	Indicator if child is male (used in matching).	0.516	0.509	1	0	0.500	0.512
Parents average age	Average age of parents	30.962	35.75	98	1	7.737	37.469
Dependent Variables							
Made any active enrolment choice	Made any active choice regarding the SECP by February 19th (choosing a provider, choosing an investment track, choosing to deposit an additional NIS 50 to the child's account, or actively choosing not to deposit additional funds)	0.021	0.039	1	0	0.161	0.027
Choose to deposit additional funds	Choose to add additional NIS 50 to the SECP by February 19th	0.012	0.018	1	0	0.129	0.017
Choose a higher yield/risk investment track	Choose a higher yield/risk investment track in the SECP by February 19th	0.003	0.002	1	0	0.097	0.009
Choose using a smartphone	Made an active enrolment choice in the SECP using a smartphone by February 19th	0.002	0.007	1	0	0.068	0.005

	Description						
Choose using a computer	Made an active enrolment choice in the SECP using a computer by February 19th	0.014	0.117	0	1	0.012	0.009
Choose using non-digital platform	Made an active enrolment choice in the SECP using a phone conversation with the NII or making the choice physically in an NII branch by February 19th	0.003	0.057	0	1	0.005	0.005
Choose religious track	Choose a religious investment track by February 19th. Either "Kosher" or "Sharia" investment track, in line with Jewish and Muslim religious law respectively.	0.002	0.046	0	1	0.001	0.013
Choose to invest in bank	Choose to invest SECP savings in a bank by February 19th	0.010	0.102	0	1	0.027	0.003
Observations		886,920	886,920	886,920	886,920	190,742	80,830

Notes: Table provides statistics of main variables and their descriptions from the main administrative data sample after partitioning for first children under the age of 15 who did not make an active choice by February 6th. The two right hand columns provide variable averages when the data is partitioned for minority populations alone.

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Appendix 2 - Statistics and variable descriptions survey data

Statistics and variable descriptions – Survey data before matching process					
Variable	**Description**	**Mean**	**St. Dev.**	**Min**	**Max**
Independent variables					
Message	See Appendix 1	0.059	0.236	0	1
Parents Arab		0.175	0.380	0	1
Parents Ultra-Orthodox		0.148	0.355	0	1
Income		19.207	17.556	0	236
Mother Academic		0.438	0.496	0	1
Father academic		0.298	0.457	0	1
Number of children		3.309	1.884	1	1
Child age		8.019	5.582	0	19
Parents married		0.904	0.295	0	1
Centrality index		6.603	2.162	0	10
Rural		0.325	0.468	0	1
Socio-economic index		5.086	2.270	0	10
High trust in government	Dummy variable indicating if parent answered on average that he had a high or very high level of trust in the Israeli government out of two possible questions	0.132	0.339	0	1
Objective financial literacy index	Index of amount of objective financial literacy questions answered correctly	1.372	0.975	0	3
Low objective financial literacy index	Dummy variable for those answering correctly one objective financial literacy question or less	0.534	0.499	0	1
Low subjective financial literacy index	Dummy variable for those answering that they have a low or very low understanding of financial issues	0.144	0.351	0	1
Difficulty covering expenses	Dummy variable for those answering that they have high or very high difficulty of covering expenses or paying bills in a typical month	0.374	0.484	0	1
Program will exist on 25 years	Dummy variable for those answering that the probability that the SECP program will exist in 25 years is high or very high	0.368	0.482	0	1

Mother's wage	See Appendix 1	6.64	7.98	0	184.67
Fathers wage		12.57	13.67	0	179.93
Child male		0.512	0.500	0	1
Parents average age		39.791	7.375	20	71
Number of children in family		2.16	1.42	1	12
Dependent Variables					
Made any active enrolment choice	See Appendix 1	0.026	0.161	0	1
Choose to deposit additional funds		0.018	0.132	0	1
Choose a higher yield/risk investment track		0.011	0.104	0	1
Choose using a smartphone		0.004	0.060	0	1
Choose using a computer		0.014	0.119	0	1
Choose using non-digital platform		0.003	0.053	0	1
Choose religious track		0.001	0.038	0	1
Choose to invest in bank		0.011	0.103	0	1
Decrease other savings	Dummy variable for those answering that following the SECP program they decreased other savings	0.012	0.108	0	1
Observations	11,215	11,215	11,215	11,215	11,215

Notes: Table provides statistics and their descriptions of main variables from the full survey data sample.

Appendix 3 – Matching common support

Figure 3.1 – Propensity Score distribution between matched and control observations, administrative data sample general population

Figure 3.2 – Propensity Score distribution between matched and control observations, administrative data sample Arab population

Figure 3.3 – <u>Propensity Score distribution between matched and control</u>
<u>observations, administrative data sample Ultra-Orthodox Jewish population</u>

Figure 3.4 – <u>Propensity Score distribution between matched and control</u>
<u>observations, administrative data sample non-minority population</u>

Figure 3.5 – <u>Propensity Score distribution between matched and control observations, survey data sample general population</u>
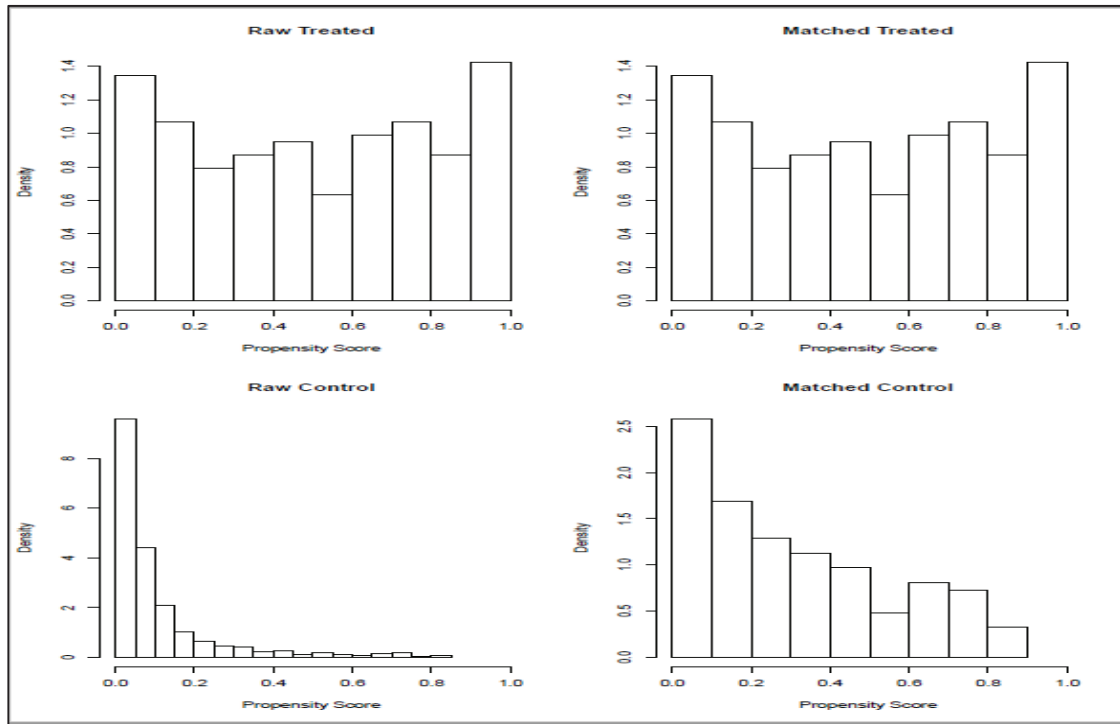
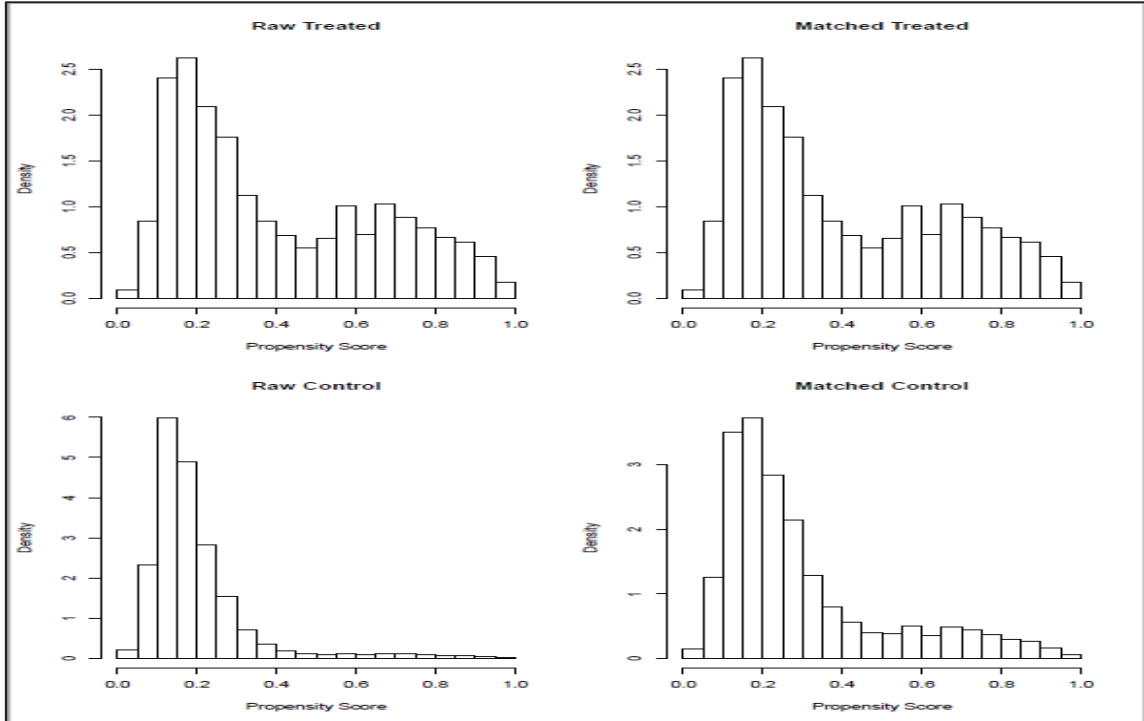**Figure 3.6 – <u>Propensity Score distribution between matched and control observations, survey data sample Arab population</u>**
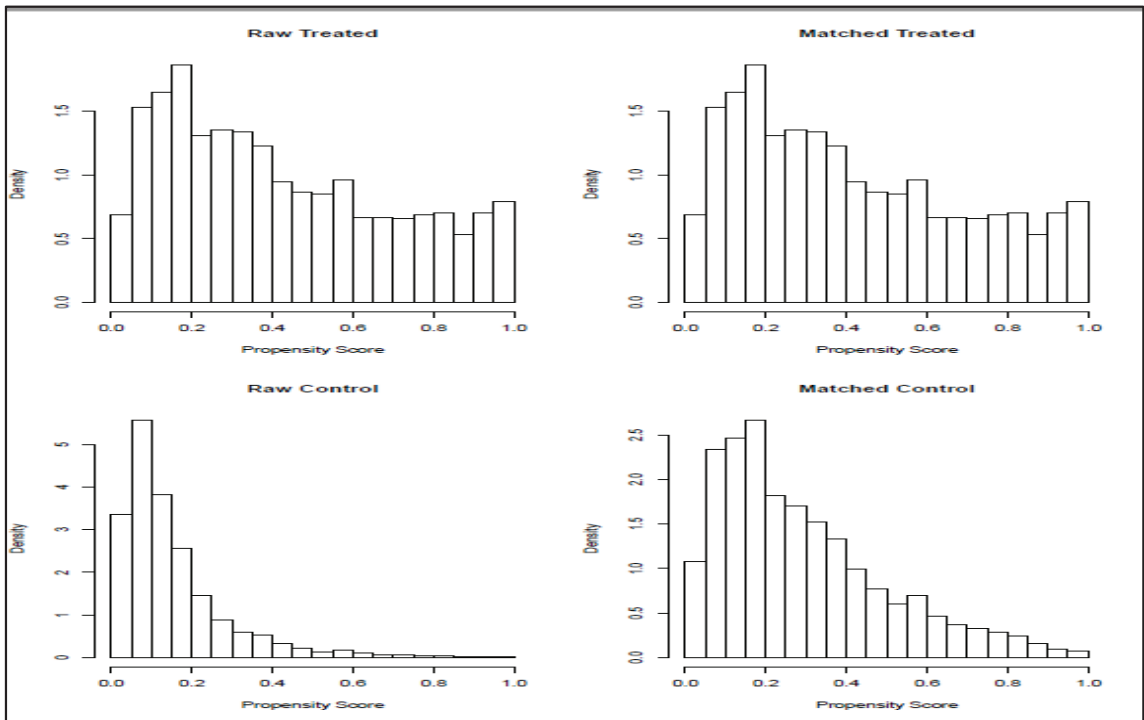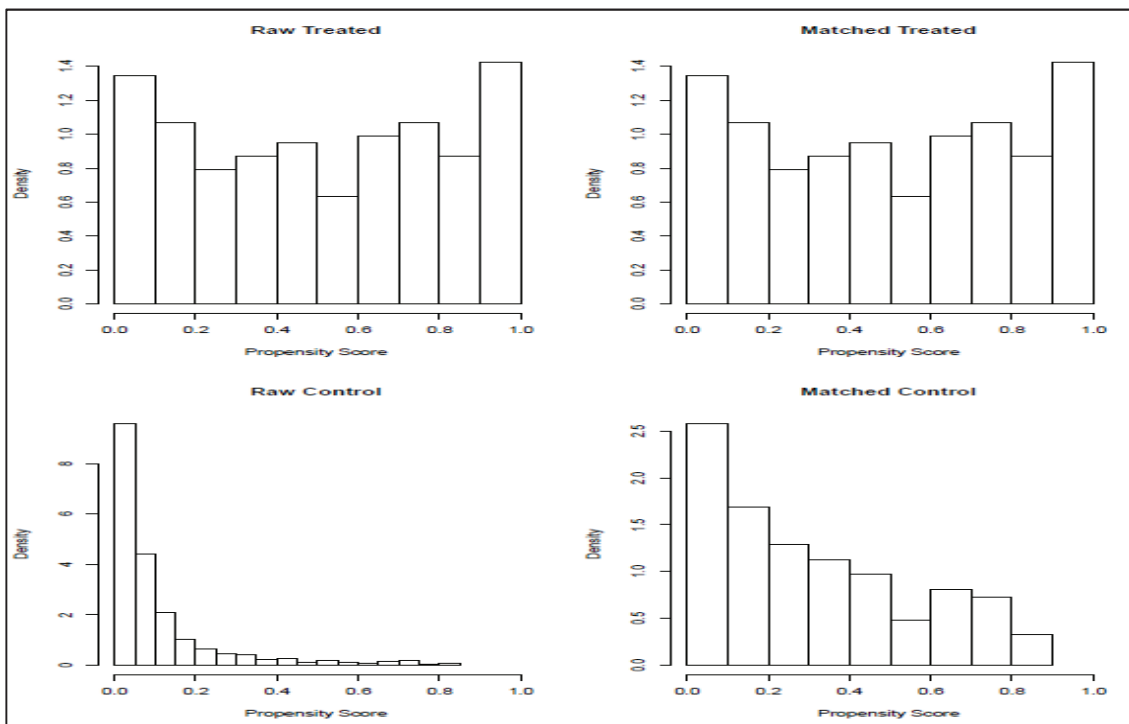
Figure 3.7 – <u>Propensity Score distribution between matched and control observations, survey data sample Ultra-Orthodox Jewish population</u>
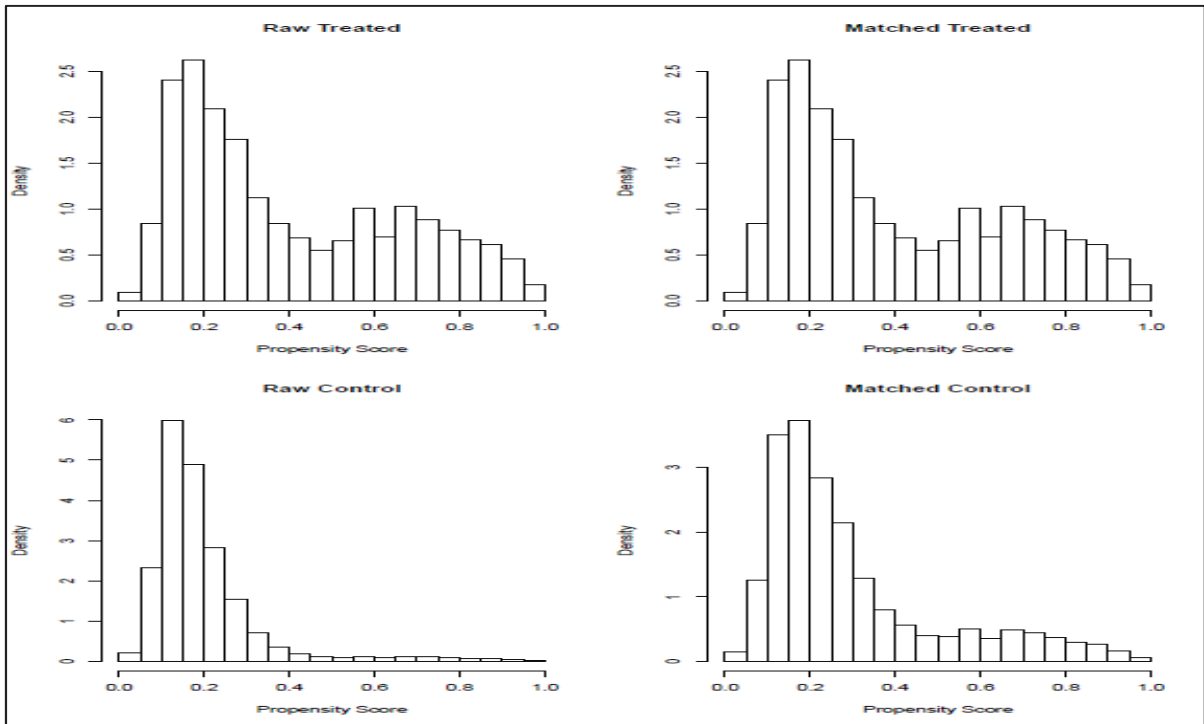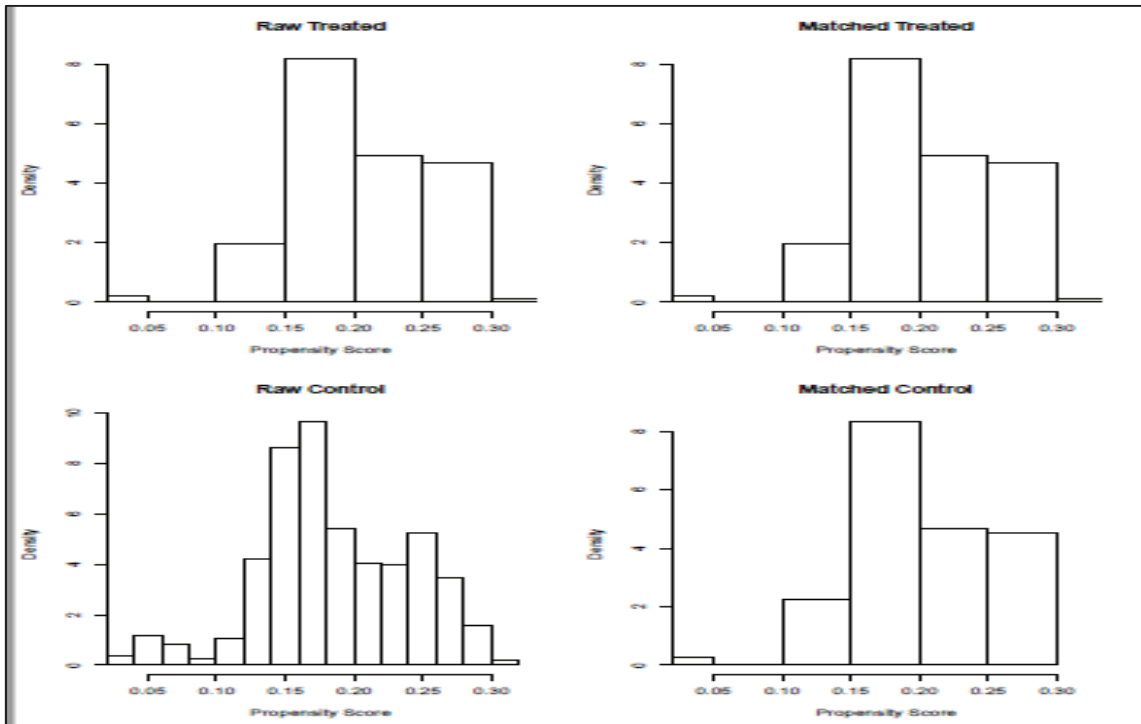

Figure 3.8 – <u>Propensity Score distribution between matched and control observations, survey data sample non-minority population</u>
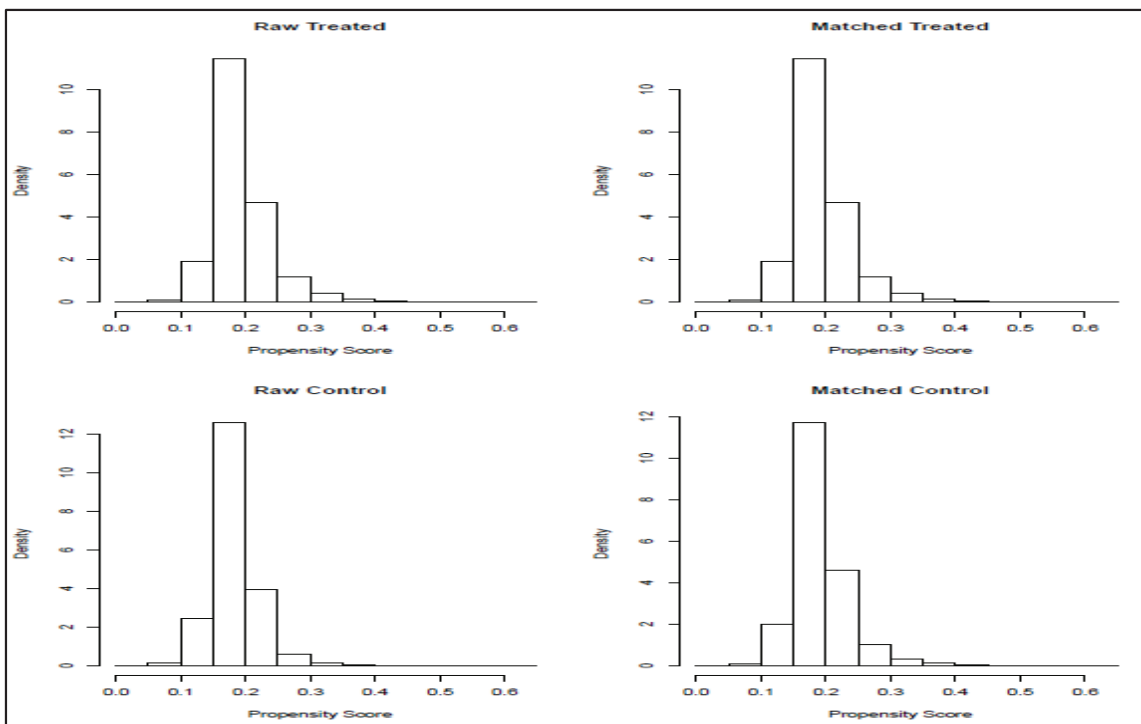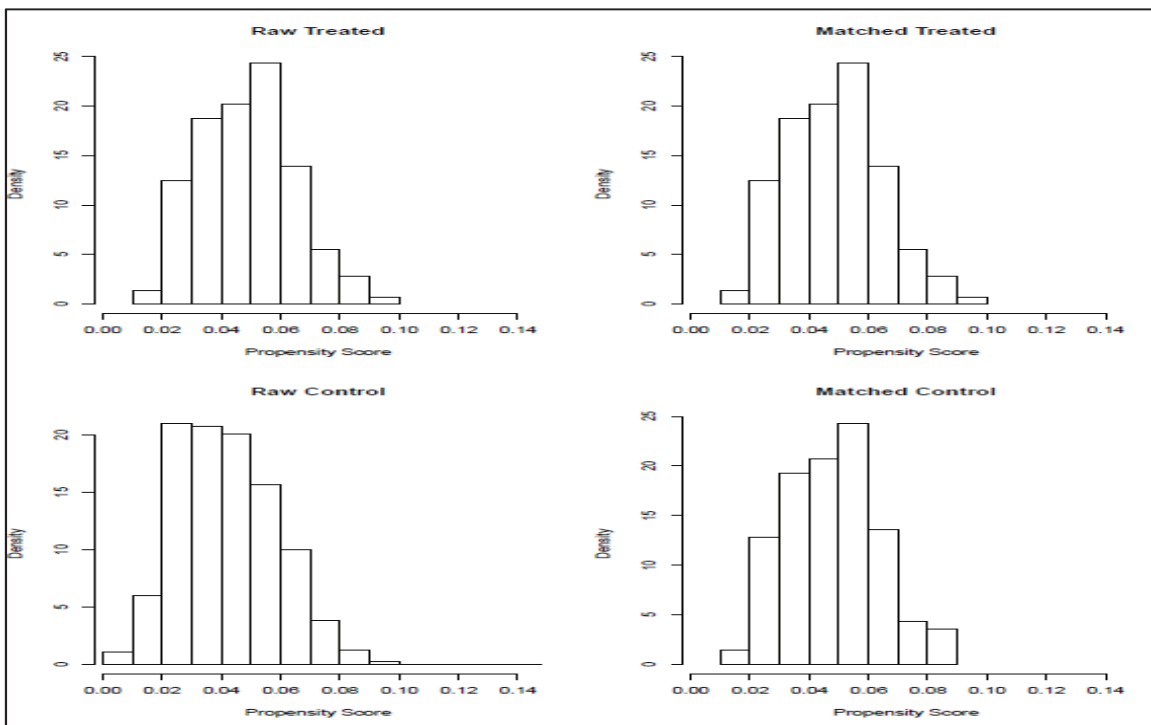
Table 4.1: Balance test for matched variables before and after matching- Main administrative data matched sample Pre matched data

	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	3,439	3,939	4,923.3	5,692	-0.09	0.00
Father wage	5,833	8,825	8,232.5	10,469	-0.32	0.00
Mother academic	0.35	0.31	0.48	0.46	0.07	0.00
Father academic	0.14	0.21	0.34	0.40	-0.18	0.00
Number of children	3.20	2.26	1.91	1.21	0.59	0.00
Child age	7.28	7.42	4.58	4.82	-0.03	0.00
Parents married	0.82	0.84	0.39	0.37	-0.05	0.00
Child male	0.51	0.51	0.50	0.50	0.00	0.95
Arab	0.39	0.49	0.49	0.50	-0.19	0.00
Ultra-Orthodox	0.28	0.03	0.45	0.18	0.71	0.00
Number of Observations	37,293	113,668				
Post-matched sample						
	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	3,438.8	3,180.5	4,923.3	4,734.7	0.05	0.00
Father wage	5,833.1	5,645.2	8,232.5	8,134.4	0.02	0.01
Mother academic	0.35	0.35	0.48	0.48	0.00	0.60
Father academic	0.14	0.13	0.34	0.34	0.02	0.01
Number of children	3.20	3.14	1.91	1.83	0.03	0.00
Child age	7.28	7.26	4.58	4.65	0.00	0.60
Parents married	0.82	0.81	0.39	0.39	-0.02	0.00
Child male	0.51	0.51	0.50	0.50	-0.00	0.71
Arab	0.39	0.38	0.49	0.48	0.04	0.00
Ultra-Orthodox	0.28	0.28	0.45	0.45	-0.02	0.02
Number of Observations	37,293	23,070				

Note: This table reports average values and standard deviations of household characteristics variables from the main matched administrative data sample. We report the standardized mean difference between treated and control variables as described in Austin (2011). Smaller differences represent better balance between samples. The table also reports the p.values of the t-statistic tests of the differences in means for numeric variables. For binary variables the p.values of a proportion test statistics are reported.

Table 4.2: Balance test for matched variables before and after matching- Arab population administrative data matched sample Pre matched data

	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	1,312.8	2,490.8	3,105.0	4,134.7	-0.32	0.00
Father wage	5,312.5	7,327.5	6,347.4	8,132.9	-0.28	0.00
Mother academic	0.12	0.24	0.32	0.43	-0.33	0.00
Father academic	0.09	0.15	0.28	0.35	-0.18	0.00
Number of children	3.77	2.37	1.90	1.15	0.89	0.00
Child age	7.88	7.35	4.33	4.83	0.11	0.00
Parents married	0.78	0.93	0.41	0.26	-0.42	0.00
Child male	0.51	0.51	0.50	0.50	0.00	0.64
Number of Observations	14,659	55,362				
Post-matched sample						
	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	1,312.8	1,185.1	3,105.0	2,708.5	0.04	0.00
Father wage	5,312.5	4,528.2	6,347.4	5,602.8	0.13	0.00
Mother academic	0.12	0.10	0.32	0.29	0.07	0.00
Father academic	0.09	0.07	0.28	0.26	0.07	0.00
Number of children	3.77	3.70	1.90	1.84	0.04	0.01
Child age	4.33	4.47	4.33	4.47	-0.03	0.02
Parents married	0.78	0.74	0.41	0.44	0.09	0.00
Child male	0.51	0.51	0.50	0.50	0.00	0.93
Number of Observations	14,659	8,901				

Note: This table reports average values and standard deviations of household characteristics variables from the Arab population matched administrative data sample. We report the standardized mean difference between treated and control variables as described in Austin (2011). Smaller differences represent better balance between samples. The table also reports the p.values of the t-statistic tests of the differences in means for numeric variables. For binary variables the p.values of a proportion test statistics are reported.

Table 4.3: Balance test for matched variables before and after matching- Ultra-Orthodox Jewish population administrative data matched sample Pre matched data

	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	4,371.4	3,314.9	4,072.4	3,693.5	0.27	0.00
Father wage	2,198.1	3,164.7	4,411.8	5,443.4	-0.20	0.00
Mother academic	0.619	0.528	0.486	0.499	0.19	0.00
Father academic	0.029	0.031	0.168	0.174	-0.01	0.51
Number of children	3.463	3.130	2.028	1.850	0.17	0.00
Child age	6.158	5.901	4.592	4.528	0.06	0.00
Parents married	0.958	0.928	0.200	0.258	0.13	0.00
Child male	0.514	0.528	0.500	0.499	-0.03	0.16
Number of Observations	10,275	3,915				
Post-matched sample						
	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	4,371.4	4,392.9	4,072.4	4,577.1	-0.00	0.82
Father wage	2,198.1	2,328.0	4,411.8	4,270.0	-0.03	0.14
Mother academic	0.62	0.64	0.49	0.48	-0.03	0.10
Father academic	0.03	0.03	0.17	0.17	-0.00	0.82
Number of children	3.46	3.47	2.03	1.98	-0.00	0.93
Child age	6.16	6.16	4.59	4.51	-0.00	1.00
Parents married	0.96	0.96	0.20	0.20	-0.01	0.76
Child male	0.51	0.52	0.50	0.50	-0.01	0.67
Number of Observations	10,275	3,054				

Note: This table reports average values and standard deviations of household characteristics variables from the Ultra-Orthodox population matched administrative data sample. We report the standardized mean difference between treated and control variables as described in Austin (2011). Smaller differences represent better balance between samples. The table also reports the p.values of the t-statistic tests of the differences in means for numeric variables. For binary variables the p.values of a proportion test statistics are reported.

Table 4.4: Balance test for matched variables before and after matching- Non-minority administrative data matched sample Pre matched data

	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	5,184.6	5,458.9	6,227.4	6,697.0	-0.04	0.00
Father wage	9,471.1	10,757.6	10,769.9	12,299.7	-0.11	0.00
Mother academic	0.40	0.37	0.49	0.48	0.05	0.00
Father academic	0.28	0.28	0.45	0.45	0.01	0.29
Number of children	2.32	2.08	1.44	1.17	0.18	0.00
Child age	7.51	7.59	4.71	4.82	-0.02	0.09
Parents married	0.74	0.74	0.44	0.44	0.01	0.36
Child male	0.51	0.51	0.50	0.50	-0.00	0.66
Number of Observations	12,361	54,392				
Post-matched sample						
	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	5,184.6	5,083.8	6,227.4	6,260.5	0.02	0.22
Father wage	9,471.1	9,716.4	10,769.9	11,414.2	-0.02	0.10
Mother academic	0.40	0.39	0.49	0.49	0.02	0.15
Father academic	0.28	0.28	0.45	0.45	0.02	0.22
Number of children	2.32	2.35	1.44	1.44	-0.02	0.11
Child age	7.51	7.66	4.71	4.73	-0.03	0.02
Parents married	0.74	0.74	0.44	0.44	0.01	0.32
Child male	0.51	0.51	0.50	0.50	0.00	0.79
Number of Observations	12,361	10,489				

Note: This table reports average values and standard deviations of household characteristics variables from the non-minority matched administrative data sample. We report the standardized mean difference between treated and control variables as described in Austin (2011). Smaller differences represent better balance between samples. The table also reports the p.values of the t-statistic tests of the differences in means for numeric variables. For binary variables the p.values of a proportion test statistics are reported.

Table 4.5: Balance test for matched variables before and after matching- Main survey data matched sample Pre matched data

	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	4085.3	6064.5	5136.9	8334.0	-0.29	0.00
Father wage	5999.1	11763.7	8164.3	13266.7	-0.52	0.00
Mother academic	0.35	0.39	0.48	0.49	-0.09	0.04
Father academic	0.12	0.24	0.32	0.43	-0.33	0.00
Number of children	4.74	3.36	2.33	1.99	0.64	0.00
Child age	7.11	8.61	5.37	5.90	-0.27	0.00
Parents married	0.90	0.90	0.30	0.30	-0.01	0.76
Child male	0.50	0.51	0.50	0.50	-0.02	0.71
Arab	0.43	0.22	0.50	0.42	0.44	0.00
Ultra-Orthodox	0.33	0.16	0.47	0.37	0.41	0.00
Number of Observations	593	5285				
Post-matched sample						
	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	4085.3	3945.7	5136.9	4646.4	0.03	0.64
Father wage	5999.1	6286.2	8164.3	8081.2	-0.04	0.56
Mother academic	0.35	0.36	0.48	0.48	-0.02	0.69
Father academic	0.12	0.09	0.32	0.29	0.08	0.21
Number of children	4.74	5.13	2.33	2.89	-0.15	0.01
Child age	7.11	6.70	5.37	5.56	0.07	0.22
Parents married	0.90	0.93	0.30	0.26	-0.10	0.10
Child male	0.50	0.49	0.50	0.50	0.02	0.70
Arab	0.43	0.34	0.50	0.47	0.18	0.00
Ultra-Orthodox	0.33	0.38	0.47	0.49	-0.10	0.09
Number of Observations	593	483				

Note: This table reports average values and standard deviations of household characteristics variables from the main matched survey data sample. We report the standardized mean difference between treated and control variables as described in Austin (2011). Smaller differences represent better balance between samples. The table also reports the p.values of the t-statistic tests of the differences in means for numeric variables. For binary variables the p.values of a proportion test statistics are reported.

Table 4.6: Balance test for matched variables before and after matching- Arab population survey data matched sample Pre matched data

	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	1830.6	3258.0	3900.8	4705.9	-0.33	0.00
Father wage	4636.5	8117.2	5519.7	7457.1	-0.53	0.00
Mother academic	0.15	0.24	0.35	0.43	-0.25	0.00
Father academic	0.09	0.14	0.28	0.35	-0.18	0.02
Number of children	5.20	3.05	1.95	1.21	1.33	0.00
Child age	7.69	9.27	5.48	5.82	-0.28	0.00
Parents married	0.84	0.97	0.37	0.17	-0.46	0.00
Child male	0.47	0.50	0.50	0.50	-0.07	0.34
Number of Observations	253	1182				
Post-matched sample						
	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	1830.6	922.3	3900.8	2312.6	0.28	0.00
Father wage	4636.5	2689.7	5519.7	3997.6	0.40	0.00
Mother academic	0.15	0.11	0.35	0.31	0.12	0.29
Father academic	0.09	0.02	0.28	0.13	0.33	0.01
Number of children	5.20	4.87	1.95	1.36	0.20	0.06
Child age	7.69	5.94	5.48	5.60	0.31	0.00
Parents married	0.84	0.94	0.37	0.24	-0.32	0.01
Child male	0.47	0.40	0.50	0.49	0.15	0.17
Number of Observations	253	124				

Note: This table reports average values and standard deviations of household characteristics variables from the Arab population matched survey data sample. We report the standardized mean difference between treated and control variables as described in Austin (2011). Smaller differences represent better balance between samples. The table also reports the p.values of the t-statistic tests of the differences in means for numeric variables. For binary variables the p.values of a proportion test statistics are reported.

Table 4.7: Balance test for matched variables before and after matching- Ultra-Orthodox Jewish population survey data matched sample Pre matched data

	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	4432.0	3931.5	3507.3	3916.1	0.13	0.11
Father wage	3620.4	4818.0	4608.7	7472.9	-0.19	0.01
Mother academic	0.52	0.41	0.50	0.49	0.23	0.01
Father academic	0.01	0.04	0.10	0.20	-0.20	0.07
Number of children	5.35	5.47	2.73	2.62	-0.04	0.62
Child age	6.58	7.35	5.37	5.60	-0.14	0.11
Parents married	0.97	0.98	0.16	0.16	0.00	0.97
Child male	0.56	0.52	0.50	0.50	0.07	0.41
Number of Observations	131	3262				
Post-matched sample						
	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	4432.0	4414.2	3507.3	3738.8	0.00	0.97
Father wage	3620.4	3180.8	4608.7	4649.8	0.09	0.43
Mother academic	0.52	0.51	0.50	0.50	0.03	0.80
Father academic	0.01	0.01	0.10	0.10	0.00	1.00
Number of children	5.35	5.22	2.73	2.52	0.05	0.69
Child age	6.58	6.06	5.37	5.19	0.10	0.42
Parents married	0.97	0.99	0.16	0.10	-0.12	0.33
Child male	0.56	0.52	0.50	0.50	0.07	0.55
Number of Observations	131	144				

Note: This table reports average values and standard deviations of household characteristics variables from the Ultra-Orthodox population matched survey data sample. We report the standardized mean difference between treated and control variables as described in Austin (2011). Smaller differences represent better balance between samples. The table also reports the p.values of the t-statistic tests of the differences in means for numeric variables. For binary variables the p.values of a proportion test statistics are reported.

Table 4.8: <u>Balance test for matched variables before and after matching- non-minority population survey data matched sample</u>

Pre matched data

	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	7574.8	7631.3	6650.8	9700.0	-0.01	0.92
Father wage	11631.0	14875.8	12260.2	14957.2	-0.24	0.00
Mother academic	0.46	0.44	0.50	0.50	0.04	0.60
Father academic	0.32	0.33	0.47	0.47	-0.02	0.77
Number of children	3.08	2.92	1.42	1.67	0.10	0.19
Child age	6.82	8.70	5.09	5.95	-0.34	0.00
Parents married	0.90	0.86	0.31	0.35	0.12	0.19
Child male	0.49	0.51	0.50	0.50	-0.04	0.63
Number of Observations	144	3262				

Post-matched sample

	Means Treated	Means Control	Standard Deviation Treated	Standard Deviation Control	Standardized Mean Difference	P.value of test statistic of mean differences
Mother wage	7574.8	7287.4	6650.8	8612.1	0.04	0.75
Father wage	11631.0	11260.8	12260.1	9120.5	0.03	0.77
Mother academic	0.46	0.44	0.50	0.50	0.03	0.81
Father academic	0.32	0.32	0.47	0.47	0.00	1.00
Number of children	3.08	2.94	1.42	1.82	0.09	0.45
Child age	6.82	6.70	5.09	6.07	0.02	0.86
Parents married	0.90	0.89	0.31	0.32	0.02	0.85
Child male	0.49	0.55	0.50	0.50	-0.11	0.35
Number of Observations	144	140				

Note: This table reports average values and standard deviations of household characteristics variables from the non-minority matched survey data sample. We report the standardized mean difference between treated and control variables as described in Austin (2011). Smaller differences represent better balance between samples. The table also reports the p.values of the t-statistic tests of the differences in means for numeric variables. For binary variables the p.values of a proportion test statistics are reported.

Appendix 5 - Statistics and variable descriptions matched administrative data

Statistic	Mean	St. Dev.	Min	Max	Arab Mean	Ultra-Orthodox Mean
Statistics and variables description - matched administrative data general population and minority populations' database means						
Message	0.618	0.486	0	1	0.622	0.771
Income	9.66	10.94	0	306.25	6.66	6.52
Parents Arab	0.412	0.492	0	1		
Parents Ultra-Orthodox	0.221	0.415	0	1		
Mother academic	0.332	0.471	0	1	0.124	0.605
Father academic	0.148	0.355	0	1	0.090	0.029
Number of children	3.028	1.798	1	18	3.491	3.406
Child age	7.301	4.620	0	15	7.751	6.111
Parents married	0.808	0.393	0	1	0.793	0.953
Centrality index	5.448	2.526	0	10	3.967	8.149
Rural	0.365	0.481	0	1	0.601	0.068
Socio-econ index	3.419	2.179	0	10	1.985	2.846
Mother wage	3,412.799	4,993.873	0	124,050	1.36	4.18
Father wage	6,243.829	8,554.950	0	283,546	5.3	2.34
Child male	0.511	0.500	0	1	0.510	0.517
Parent's average age	34.825	7.611	18	86	34.522	30.106
Dependent Variables						
Made any enrolment choice	0.039	0.192	0	1	0.031	0.029
Choose to deposit additional funds	0.024	0.152	0	1	0.010	0.016
Choose a higher yield/risk investment track	0.008	0.090	0	1	0.001	0.003
Choose using a smartphone	0.011	0.105	0	1	0.008	0.004
Choose using a computer	0.012	0.109	0	1	0.006	0.010
Choose using non-digital platform	0.006	0.077	0	1	0.004	0.007
Choose religious track	0.006	0.075	0	1	0.001	0.019
Choose to invest in bank	0.017	0.130	0	1	0.023	0.004
Observations	60,363				23,560	13,329

Notes: Table provides statistics of main variables from the main administrative data sample after partitioning for first born children under the age of 15 who did not make a choice by February 6th, and after preforming nearest neighbor propensity score matching between parents that received a text message on February 6th or 7th and parents that received a text reminder later on. The two right hand columns provide variable averages for the minority matched data sets.

Appendix 6 - Statistics and variable descriptions matched survey data

Statistics and variable descriptions – Survey data after matching process						
Variable	Mean	St. Dev.	Min	Max	Arab sample	Ultra-Orthodox sample
Independent variables						
Message	0.551	0.498	0	1	0.671	0.552
Parents Arab	0.393	0.489	0	1		
Parents Ultra-Orthodox	0.327	0.469	0	1		
Income	10.52	10.90	0	72.12	6.198	
Mother Academic	0.349	0.477	0	1	0.151	0.496
Father academic	0.114	0.318	0	1	0.069	0.011
Number of children	4.711	2.502	1	12	4.875	5.335
Child age	7.117	5.467	0	19	7.743	6.499
Parents married	0.908	0.289	0	1	0.867	0.980
Centrality index	5.981	2.543	0	10	4.146	8.082
Rural	0.375	0.484	0	1	0.621	0.093
Socio-economic index	3.220	2.177	0	9	1.809	2.893
Trust in government	2.545	1.439	0	5	3.365	2.025
High trust in government	0.204	0.403	0	1	0.401	0.068
Objective financial literacy index	1.141	0.974	0	3	0.920	1.270
Low objective financial literacy index	0.638	0.481	0	1	0.759	
Subjective financial literacy	2.599	1.111	1	5	2.578	2.479
Low subjective financial literacy index	0.205	0.404	0	1	0.204	0.130
Difficulty covering expenses	0.261	0.439	0	1	0.154	0.318
Program will exist on 25 years	0.402	0.491	0	1	0.448	0.290
Mother's wage	4.04	4.98	0	35.88	1.72	4.38
Fathers wage	6.48	8.3	0	62.79	4.49	3.46
Child male	0.505	0.500	0	1	0.462	0.555
Parents average age	37.763	7.198	20	64	38.005	35.239
Number of children in family	3.013	2.077	1	12	2.981	3.254
Dependent Variables						
Made any active enrolment choice	0.052	0.222	0	1	0.064	0.031
Choose to deposit additional funds	0.033	0.177	0	1	0.170	
Decrease other savings	0.009	0.096	0	1		2.025
Observations	1,076	1,076	1,076	1,076	377	355

Notes: Table provides statistics of main variables from the survey data sample after preforming nearest neighbor propensity score matching between parents that did not make a choice by February 6th and received a text message on February 6th or 7th and parents that received a text reminder later. The two right hand columns provide variable averages for the minority matched data sets. Because of privacy procedures of the NII, averages numbers providing outcomes smaller than 10 observations can not be presented and hence presented as lower than the average leading to 10 observations and colored in light grey.