Investigating the introduction of a fintech advancement designed to reduce limited attention regarding inactive saving accounts - data, survey, and field experiment

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Abstract

Lost and forgotten retirement savings accounts are increasingly becoming a problem. This paper uses proprietary data, survey data, and a field experiment to study the effect of two campaigns to raise awareness and direct attention to this issue among account holders. The first campaign is based on a fintech innovation – a centralized database, accessible via a website, created by the Israeli financial regulator to help individuals find and manage inactive retirement savings accounts. The website substantially lowered observation and information search costs for finding inactive accounts and was widely publicized. The second campaign utilized the information from the website to encourage individuals (via a tax exemption and an awareness campaign) to close small inactive accounts and avoid new minimum management fees that would gradually exhaust the savings over time. We show evidence that after the campaigns, inactive retirement accounts still only received limited attention. This is more pronounced for individuals with low socioeconomic status and low financial literacy. The results of a controlled field experiment indicate that interventions that provide similar information using a more personal interaction (face-to-face or video) can increase attention.

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1. Introduction

This paper analyses an intervention to increase attention to inactive and forgotten retirement savings accounts. In recent decades, policy makers have shifted responsibility for retirement savings from governments and employers to individuals. This transfer has raised concerns, as individuals do not always make optimal choices (e.g. avoiding fees, putting away enough in retirement savings, making sound investment choices, and avoiding excessive debt).[2] Furthermore, as people change jobs more often or do not accumulate long periods in formal work, they may lose track of their retirement savings accounts, especially those that they are no longer contributing to.

Often accounts that are inactive (no longer receiving new deposits) or have been forgotten by the account holder are small, but across the population they add up to significant amounts of money. For instance, in the US between 2003 and 2014, 25 million retirement accounts became inactive because of job separation. Of these 25 million accounts, 16 million of them, with an aggregate sum of 8.5 billion USD, had funds under 5,000 USD. [3] In 2019 in Israel, around half of the accounts in pension funds are inactive and at risk of being forgotten.[4]

Countries have different approaches to these inactive accounts. For example, the US regulator or retirement fund provider can transfer small balance accounts to low yield funds where fees erode the savings, and the US government can confiscate inactive accounts if they stay inactive for a long period of time.[5] Given that, it is not surprising that policy makers and providers have begun to respond. For example, in the United States and United Kingdom, companies are creating databases of inactive accounts. Specifically, PenChecks[6] introduced the "National Registry of Unclaimed Retirement Benefits" in the US, and a similar directory is being developed by companies in the UK. However, for-profit solutions may be costly for many, and these companies may not be able to access information from all providers. Australia is an example where there is a government-run program to find and manage inactive

[2] For further discussion, see Hurwitz et al (2020b), Statman (2019) Lusardi and Mitchell (2017), Chetty (2015), Madrian (2014), Lusardi and Mitchell (2011a), Lusardi and Mitchell (2007), Benartzi (2001), Statman (1995).
[3] Conversion for NIS to USD in all the paper was done using an exchange rate of 3.5. One potential explanation is the increasing turnover of employees in the job market.
[4] The 2019 CMISD annual report.
[5] United States Government Accountability Office report to congressional requesters from November 2014: "401(K) PLANS: Greater Protections Needed for Forced Transfers and Inactive Accounts."
[6] A private financial services company.

accounts online through the Australian Tax Office.[7] Our work focuses on investigating a similar governmental online solution.

It is reasonable to assume that inactive retirement saving accounts will have an even greater impact in the future, due to an increase worldwide in reliance on personal retirement saving accounts in defined compensation (DC) pension systems. In 1995, Israel became one of the first countries in the world to stop enrolling new savers in DB (Defined Benefits) pension funds. Hence, Israel's experiences can be valuable for anticipating what is to come in other countries.[8]

This paper investigates two campaigns conducted in Israel that aimed to bring attention to inactive retirement savings accounts. The first act was the "Money Mountain" campaign. In 2013, the Israeli retirement savings regulator, the Capital Markets, Insurance, and Savings Department (hereinafter "CMISD"), launched a fintech product that collects information from all retirement savings institutions, and enables individuals to access the information from all providers through one website. The website dramatically lowered search costs for finding information about inactive savings accounts.

A year after the Money Mountain campaign was launched the CMISD launched a second campaign utilizing the information from the website and focused on closing small inactive accounts in provident funds (a type of retirement savings vehicle) by introducing a tax exemption for withdrawals from small inactive accounts. The intention was to save the individuals from paying new minimum management fees that would gradually exhaust their savings over time. The new fees allow provident funds to collect at least 2 USD per month. Under such fees, an inactive account of 300 USD[9] with a 6% annual return rate will hit a zero balance in approximately twelve years. Similar incentives to close inactive retirement accounts applies in other countries. For example, in the UK there are also minimum fees,[10] and in the US, transfers to funds with low returns causes similar erosion.

Both of these campaigns were relevant for low and high socioeconomic status populations. In Israel, employers have been legally obligated to deposit money into retirement savings accounts for their workers since 2008. Some unions' salary agreements obligated employers to enroll employees in retirement saving plans even before this was made law. Employers

[7] https://www.ato.gov.au/individuals/super/growing-your-super/keeping-track-of-your-super/
[8] For more detailed discussion about the Israeli pension system see Hurwitz and Sade (2019) and Mugerman et al. (2014) among others.
[9] Median account size found in our data.
[10] https://www.ftadviser.com/pensions/2019/03/07/pensionbee-flags-risks-of-now-pension-fee-structure

often decide on many aspects of these plans, including the retirement plan provider.[11] However, without automatic continuity of savings after a change of workplace, a new account can be opened in a different savings vehicle or with a different provider, when an employee has more than one job at a time or starts a new job. Therefore, a large percentage of workers who change jobs may have several inactive accounts. Since people with low socioeconomic status are more likely to change jobs frequently, these campaigns may deliver large benefits to them.

It is important to note that both campaigns were national and widely publicized and the second included personal letters from provident fund providers to savers. The tax exemption campaign included a monetary incentive to close accounts and avoid higher fees as well as a tax exemption on withdrawing funds, to increase the likelihood that the utility from closing an account would be higher than the costs. The second campaign directed people to the Money Mountain website as the main place to search for inactive funds. For the tax exemption campaign, letters were sent to all inactive account holders that the provident fund providers had information on, although for accounts that had been inactive for a long time, some account holders could not be reached. The campaigns were expected to have a high impact on observation costs and on the salience of the issue and should not have created additional costs or barriers.

Hence, if we assume that no frictions exist, the optimal and rational action for each individual with a work history in Israel is clear; individuals should have visited the website and searched for inactive accounts. For many individuals it may have been optimal to close the accounts and either withdraw the funds or transfer the savings to a different account. Following the second campaign, all individuals should have visited the Money Mountain website and searched for inactive provident funds accounts, if they did not already receive direct communication about an inactive account. Then, if they found or had a small inactive account in a provident fund, they should have closed the account by withdrawing the savings or transferring them to another active account. Failing to do so effectively resulted in a loss because of the minimum fees.

The campaigns utilized emerging technological and digital tools that improve financial regulation. These innovations have the potential to promote direct interaction and deal with

[11] The three types of retirement vehicles in Israel are pension funds, life insurance funds, and provident funds.

the limited attention problem, but they may entail costs for some people, particularly for those with low financial and digital literacy.[12]

To investigate the outcomes of the Money Mountain and tax exemption campaigns, we use two data sets. The first data set is proprietary data obtained from a provident fund provider that illustrates the effect of the tax exemption campaign. The data consists of individuals' actual actions and includes information on the number of tax-exempt accounts closed, out of over 12,000 eligible accounts. The second data set we use to investigate both campaigns is designed to be a nationally geographically and demographically representative Internet survey of 504 individuals. This was a professional survey[13] conducted in 2015 after the campaigns ended. This data provides information about individuals' declared actions and their awareness of the campaigns. As administrative data from provident funds and survey data each have their own shortcomings, we use both sources to achieve a richer evaluation of the attention to inactive retirement savings accounts following the campaigns. Using the two data sets allows us to investigate observation costs, the salience of the information (awareness) following the campaigns, differences between different populations' costs and actual action taken.

We begin our research with an estimate of the percentage of inactive accounts that were closed because of the campaigns. Our proprietary data and survey data indicate a lower-than-expected closing rate of 16 percent of accounts, which is consistent with the information the regulator provided. This suggests that our samples are representative of the total population.[14] Proprietary data shows that individuals who closed inactive retirement savings accounts following the tax exemption campaign were older and came from localities with a higher socioeconomic index.

Our conjecture based on the data is that while the campaigns reduced information search costs, other indirect costs remained. We used the survey data to investigate whether there were populations that faced higher costs and hence gave less attention to inactive retirement accounts following the campaigns. Using the survey data we can differentiate between observation costs that may affect salience and awareness of the campaigns, and other frictions that may affect whether an individual will close an inactive account.

[12] Deuflhard et al. (2019) show that financial literacy is connected to use of fintech and online banking.
[13] Geocartography Knowledge Group.
[14] Provident fund account holders come from localities with a slightly higher socioeconomic index than the country average, but the general closing rate is in line with the country average reported by the regulator. The survey is an Internet survey and like all Internet surveys, it represents only the technologically skilled population and underrepresents certain parts of the population.

The survey data shows that people who lacked objective financial literacy or subjective financial literacy (confidence in one's knowledge of retirement savings), who are more likely to be young, female and of low socio-economic status, had lower attention to the campaigns and to inactive retirement savings accounts. These individuals were less likely to be aware of both campaigns, less likely to have visited the Money Mountain website, and had less intention to close inactive retirement savings accounts following the campaigns. Additionally, we present evidence that individuals' subjective confidence in having the relevant knowledge, specifically in the case of retirement savings, is more important than their objective knowledge of general financial concepts for lowering costs in this context. This may indicate that the measure of subjective confidence captures both actual expected direct and indirect costs, as well as expected subjective costs. To summarize the main survey results, our simulation indicates that among individuals with high financial literacy (both objective and subjective) and high socioeconomic attributes, over 81% were aware of the campaigns, 93% visited the Money Mountain website and 33% went on to contact the fund provider with the intention of closing an inactive account. These rates drop to less than 33%, 42%, and 17% respectively for individuals with low financial literacy and low socioeconomic status. With respect to reverse causality, it is unlikely that the campaigns significantly increased users' objective financial literacy because they did not provide financial information relevant to financial literacy and how it is measured. With respect to subjective financial literacy, we also argue that it is less plausible that we observe reverse causality. Being aware of one specific financial regulation or taking one action following the campaigns is not likely to change the individuals' overall self-perceived financial literacy about long-term savings. We provide several robustness tests to support each of our findings, including several estimation methods and a matching exercise.

The findings from both sources of data, that both campaigns had limited success, prompts the question whether there might be other approaches, besides a media campaign, that could be more effective in overcoming limited attention, especially for populations with higher actual or perceived direct and indirect observation and transaction costs. To test this hypothesis, we conducted a field experiment. The experiment investigated the effectiveness of different communication methods on the awareness and actions of an underprivileged population in our sample: Ultra-Orthodox Jewish women with low objective and subjective financial literacy. The women were recruited from a class at a college for Ultra-Orthodox Jewish women. Ultra-Orthodox women tend to marry young, and undertake paid work to support their husbands who commit to full time religious study.

For our experiment, we used the launch of the "Money Mountain 2" campaign in 2017. Like the original Money Mountain campaign, Money Mountain 2 was launched to help the population find inactive accounts and had the same website as the original Money Mountain, but it extended this service from the retirement savings accounts to the bank accounts.

In the field experiment, the interventions we tested included personal and non-personal digital and non-digital interventions.[15] The interventions were: (1) no intervention (for the control group), (2) an e-mail explanation of the financial campaign, (3) an e-mail explanation together with a video explanation featuring a professional actor, (4) a face-to-face explanation of the financial regulation given by an employee of the Bank of Israel (the organization in charge of banking regulation), and, finally, (5) an e-mail explanation given to part of the control group after they had filled out a baseline survey. This last intervention enabled us to isolate the effect of detailed information provided in an e-mail on a group that had had an earlier encounter with a Bank of Israel employee (who handed out a baseline survey). These interventions could easily be repeated in future interventions. We ran a survey on each group following the interventions to investigate their effectiveness.

We find that the interventions that include a more personal interaction (including an e-mail with an accompanying video presentation), increased the awareness of the campaign by more than 100% relative to the control group. These interventions were also more successful in raising the percentage of subjects visiting the website (from 14% in the control group, to between 16% and 28% in the treatment groups). Our conjecture is that a more personal interaction helps lower observation costs or perceived transaction costs.

The remainder of the paper is organized as follows. The literature review is in Section 2. Section 3 provides institutional details on the two retirement savings campaigns in Israel, as well as an overview of the Israeli retirement savings market and related demographics. The data is described in Section 4. Section 5 is a discussion of the results for the provident fund data. Section 6 contains a description of the main independent variables—the objective financial literacy index and the subjective financial literacy variables—and the results of the survey data. Section 7 is a description of the conclusions from both data sets. In Section 8 we describe the field experiment, and in Section 9 we describe the paper's implications and contributions and provide recommendations for practice and future research.

[15] Research shows that the presentation of relevant and detailed information to consumers can affect consumers' objective financial literacy (Lusardi et al. (2017b) and Drexler et al. (2014)) and actions (e.g., Clark et al. (2017a) and Goda et al. (2014)); this suggests such exposure may reduce the relevant costs and, accordingly, inattention in the subsample.

2. Literature Review and Hypotheses

Our work is related to the following literature: retirement savings, limited attention, financial literacy, take-up, and field experiments.

2.1 Limited Attention

Limited attention theory is based on the idea that individuals may not consider all available information.[16] This can be rational (rational limited attention), based on information search costs or transaction costs, or irrational, based on behavioral biases that affect the salience of information and can even cause avoidance of it (e.g. the "Ostrich effect").[17] The literature aims to model the probability that individuals will be attentive to the information available,[18] and usually puts an emphasis on observational frictions[19] or transaction costs.[20] In some limited attention models, information avoidance or strategic ignorance stems from states of the world where there is negative utility from receiving information,[21] or where the information might affect motivation or self-control.[22] Our investigation focuses on a case where there is no negative utility from the information itself nor an incentive to act in a harmful way – you either have inactive accounts ("good") or you don't (you are no worse off).

The empirical literature provides evidence of how attention shocks that make an attribute or issue more salient can affect financial decision making and actions.[23] It also informs us about the connection between limited attention and digital platforms. Fintech advancements can be overwhelming for users, but they can also lower information costs by allowing easy access to once-costly information, thus reducing inattention.[24]

[16] Corgnet et al. (2020), Handel and Schwartzstein (2018), Gabaix (2017), Golman et al. (2017), Caplin (2016), Frydman and Camerer (2016), Ackert and Deaves (2010), and DellaVigna (2009). Another branch of the literature claims that limited attention stems from the computational complexity of the tasks: Reutskaja et al. (2018), Franco et al. (2018), Bossaerts et al. (2018), Bossaerts, and Murawski (2017). This literature is connected to the psychological literature on how individuals make choices, for example: Schilbach et al. (2016), Kahneman (2011).

[17] Olafsson and Pagel (2017), Sicherman et al. (2016), Karlsson et al. (2009), and Galai and Sade (2006).

[18] Andersen et al. (2020).

[19] Andries and Haddad (2020), Pagel (2018), Caplin et al. (2019), Hortaçsu et al. (2017), and Golman et al. (2017).

[20] Jacobs and Weber (2016), Abel et al.(2013), Alvarez et al. (2012), Biais and Weber (2009), Hirshleifer et al. (2009), Veldkamp (2011) for a survey.

[21] Gabaix (2017), Golman et al. (2017), Huber et al. (2008), and Galai and Sade (2006),

[22]), Huck et al. (2018), Brunnermeier and Parker (2005), Bénabou and Tirole (2002), and Carrillo and Mariotti (2000).

[23] These shocks include: financial news (Lowenstein et al. (2016)), paydays (Olafsson and Pagel (2017)), big bills (Hortaçsu at al. (2017)), and reminders (Ben-David and Sade (2019), Karlan et al. (2016b), Zwane et al. (2011), Stango and Zinman (2014)).

[24] Ben-David and Sade (2019), Carlin et al. (2017), Goldfarb and Tucker (2017), Karlan et.al (2016a), Benartzi & Lehrer (2015).

Following the limited attention literature, in this project we investigate the effect of the two campaigns – the Money Mountain fintech-based campaign, and the small inactive provident fund accounts and tax exemption campaign – on limited attention. We interpret the first efforts as an attention shock aimed at lowering observation and transaction costs of being aware of inactive retirement savings accounts. We interpret the second campaign as an additional attention shock after the imposition of minimum fees meant that paying attention to these accounts would have higher utility for individuals. In our case study, we measure attention by the salience of the campaigns as well as action taken: visiting the website or closing an inactive account. Although we hypothesized that these efforts reduced inattention, we also hypothesized that the government's efforts did not eliminate inattention and that observation and transaction costs remain.

We measure whether there is still limited attention after the campaigns, using proprietary data and actual accounts closed. We then investigate whether observation costs remained after the campaigns and whether there are differences in transaction costs for different populations using survey data. Observation costs persisted if individuals were not aware of campaigns, either because they were exposed to the campaigns but did not register the information or they had less access to media and were not exposed to the information at all.

Differences in transaction costs can be investigated via differences in individuals' actions following the campaigns: visiting the website to find inactive accounts or contacting the retirement fund provider with an intention of closing an inactive account. The next section is a summary of the literature that describes the mechanisms of the differences between populations in persistence of costs and limited attention.

2.2 Financial Literacy

Recently, there is growing interest in the literature about financial literacy, how it is defined and its effect on financial decision making. We use the relatively broad definition from the Organization for Economic Cooperation and Development (OECD). A 2012 OECD working paper describes financial literacy as "the combination of customers'/investors' understanding of financial products and concepts, and their ability and confidence to appreciate financial risks and opportunities, to make informed choices, to know where to go for help and to take other effective actions to improve their financial well-being."[25] This definition captures

[25] Atkinson and Messy (2012). Another way to think about financial literacy comes from Lusardi et al. (2017a), who present financial literacy in a model as an investment and individuals' levels of financial literacy are determined endogenously.

knowledge, perceived knowledge, and actions; this paper uses the first two in order to learn about specific actions. We use the term *objective financial literacy* to describe *objective* knowledge regarding general financial issues, and we based our measure on the most comparable and widespread measure in the academic literature (an index of the number of correct answers to three financial questions, first presented by Lusardi and Mitchell (2007)). Earlier literature documents that objective financial literacy is correlated with financial behavior, including planning and saving for retirement,[26] personal debt management,[27] participation in the stock market,[28] choosing mutual funds with lower fees,[29] and accumulation and management of wealth.[30] Objective financial literacy is also associated with socioeconomic characteristics such as gender, education, wealth, race, and ethnicity.[31] It also has a generational effect in that parents' objective financial literacy affects a child's literacy and financial behavior.[32] We use the term *subjective* financial literacy to refer to confidence in one's own knowledge of financial issues, and specifically, for this paper, confidence in one's knowledge of retirement savings. Like objective knowledge, subjective confidence can affect a person's financial behavior. Having confidence in one's own knowledge of the issues mitigates the perceived difficulty of the task (even more than actual knowledge does), and hence overcomes the tendency to procrastinate and delay action.[33] Research has found that there is a positive connection between general efficacy and financial outcomes.[34] Specifically, earlier research investigated individuals' general confidence in their financial literacy. Allgood and Walstad (2012) showed that both objective financial literacy and financial confidence significantly influence financial behavior: individuals with high self-reported financial knowledge are more likely to plan their finances, to have substantially more retirement savings, and pay lower management fees.[35] Financial confidence is also associated

[26] Uppal (2016), Clark et al. (2017b), and Hilgert et al. (2003); for a review, see Lusardi and Mitchell (2014).
[27] Lusardi and Tufano (2009).
[28] Van Rooij et al. (2011).
[29] Hastings and Mitchell (2018), Hastings et al. (2012), Hastings and Mitchell (2010), and Hastings and Tejeda-Ashton (2008).
[30] Lusardi (2008), and Hilgert et al. (2003).
[31] Bucher-Koenen et al. (2017), Lusardi and Mitchell (2014), Brown and Graf (2013), Atkinson and Messy (2012), Lusardi and Mitchell (2008), and OECD (2005). Financial literacy is also related to personal attributes such as cognitive ability and motivation; see, e.g., Fernandes et al. (2014), Van Rooij et al. (2011), and Lusardi et al. (2010).
[32] Razen et al. (2020), Lusardi et al. (2010) and Mandell (2008).
[33] For further discussion see Tversky and Shafir (1992) and Heath and Tversky (1991).
[34] Das et al. (2020), Kuhnen and Melzer (2018). Momentary emotions can also affect financial outcomes (Ehrig et al (2020)).
[35]Financial confidence was found to be important in Lusardi and Mitchell (2007, 2017), Van Rooij et al. (2012), Parker et al. (2012), and Lusardi and Beeler (2006). Different ways of measuring financial confidence were also found to affect economic outcomes Anderson et al. (2017), Anderson and Robinson (2019), Glaser et al. (2013), and Hadar et al. (2013).

with socio-economic characteristics. Older and more educated male respondents are more likely to possess subjective financial literacy.[36] Anderson et al. (2017) and Anderson and Robinson (2019) provide evidence that people's own perception about how well they answer financial literacy questions affects how financially active they are, rather than actual financial literacy.

In this paper we rely on the evidence that objective and subjective financial literacy have both been linked to individuals' abilities to make many financial decisions. Although the literature on the issue is limited and contradictory at times,[37] we interpret the lack of objective and subjective financial literacy as a proxy for costs that affect attention to financial issues, and specifically to the issue of inactive retirement savings accounts. Limited attention could persist because of observation costs (salience of the issue as measured by awareness of the campaigns) and transaction costs (measured by actions taken: visiting the Money Mountain website and closing inactive accounts). Hence, we hypothesized that individuals who have lower objective and/or subjective financial literacy had higher observation costs and transaction costs causing them to be less aware of the campaigns or less likely to take action.

2.3 Take-up and field experiment literature

This paper also relates to the take-up literature that 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.[38] This literature indicates that the information/salience channel (observation costs) is an important factor in explaining take-up.[39] The absence of stigma for people who act upon the regulation and the relatively low transaction costs in the case we study, as well as survey

[36]Drolet (2016); for a review, see Lusardi and Mitchell (2014).
[37]Stango and Zinman (2014) find that an attention shock to overdrafts had a higher effect on individuals with lower education and lower subjective financial literacy. They emphasize the need for further investigation of this effect, which could be mechanical as overdraft fees are higher for this subsample.
[38] Finkelstein and Notowidigdo (2019), Bhargava and Manoli (2015), and Currie et al. (2006).
[39] For example, Finkelstein and Notowidigdo (2019), Bhargava and Manoli (2015), Strawczynski, and Myronichev (2015), Russell et al. (2014), Herd et al. (2013), Riphahn (2001), Leventhal et al. (1965), Coe (1983), and Daponte et al. (1998). Coe (1983) emphasizes lack of information as the most significant explanation for the unsatisfactory take-up rate of the food stamps program, even though the program was heavily publicized. Bhargava and Manoli (2015) claim that take-up is sensitive to the frequency, salience, and simplicity with which information is provided. Ebenstein and Stage (2010) suggest that reducing application barriers alone may not be an effective tool for increasing program participation and that information barriers may still exist.

data on intentions and not only on actions, allows us to distinguish between the information channel (observation costs) and transaction costs of take-up.[40]

Following the literature, we hypothesized that underprivileged populations should have more limited attention to the issue. As shown in the financial literacy literature, financial literacy is also a proxy for socioeconomic conditions, and consequently, this hypothesis should lead to the same outcomes as the hypotheses stated above.

Additionally, this paper relates to literature on field experiments that investigate the effectiveness of different policies.[41] Eberhardt et al. (2018), Choi et al (2017) and Beshears et al. (2015) are examples of field investigations that aim to encourage retirement savings, while the latter also investigated behavioral interventions using emails. It has been found that interventions that only provide financial information are less effective for individuals with low socioeconomic status.[42] Additionally, it was found that it is necessary to present the steps required for taking action in detail and that this is more important for underprivileged populations.[43] Heinberg et al. (2014) provide us with insights on the effectiveness of videos for providing financial information, as well as the general need to consider behavioral aspects of financial programs.[44] Laudenbach et al. (2018) describe a positive effect for information provided through a phone conversation, as well as a positive effect if the voice of the person providing the information is more likeable.[45]

We hypothesized that different methods to disseminate information about a campaign will have different impacts on attention to inactive accounts and take-up. The field experiment we planned allows us to investigate the effect of a digital intervention versus face-to-face interventions, as well as the dimensional effect of adding a video presentation to an e-mail or of having the group meet and interact with a person before receiving more detailed information. We hypothesized that interventions with a more personal interaction should have

[40] Currie et al. (2006) cite three channels that were found to affect less privileged populations: lack of information, stigma, and transaction costs. Moffitt (1983) provides an economic model of stigma and Baumberg (2016) shows a quantitative measure of the effect of stigma on benefit take-up in the UK.
[41] Duflo (2017) reviews field experiments evaluating policies, Levitt and List (2009) offer a review of field experiments, and Keiser and Menkhoff (2017) present a meta-analysis on financial education interventions (including nudges).
[42] Finkelstein and Notowidigdo (2019) and Keiser and Menkhoff (2017)
[43] Clark et al. (2017a), Lusardi et al. (2017b), Drexler et al. (2014) and Goda et al. (2014),
[44] Laudenbach et al. (2018), Hurwitz et al. (2020b) and Hutchinson et al. (2017) also provide evidence on the importance of the communication format and not just the content for financial information.
[45] Karlan et al (2015). Roth et al. (2016) is another example of a paper that emphasizes the role of personal interactions on financial outcomes. This might also be connected to literature on the effect of personal social interactions on behaviour and output in the workplace: Corgnet et al. (2019) and Ashraf and Bandiera, (2018). Psychological papers on motivation also indicate that people are more likely to complete an action if they relate to the person presenting it: Ryan and Deci (2000).

a positive effect on attention and take-up. Specifically, we hypothesized that for populations with low financial literacy, more elaborate face-to-face interventions will have a stronger positive effect compared to a video, and video will have a stronger positive effect compared to e-mail/text alone.

3. Setting

In this section we describe the two financial regulations that are the background to our interest in this topic and some background to the situation in Israel. We also describe the two socioeconomic geographical indices used in this paper and provide a summary of past findings on objective financial literacy in Israel.

3.1 "Money Mountain" campaign

The "Money Mountain" website went live at the beginning of 2013 (Figure 1), and the supporting campaign began in May 2013. The name hinted at the possibility of finding vast sums of misplaced retirement savings. Advertisements aimed at promoting the simple action of accessing the website appeared in various formats, reaching the majority of the population through television, radio, and the Internet.[46] With a yearly expenditure of a million dollars, or about 2% of the government's national advertising budget, it was one of the biggest campaigns the government had funded to date.[47] However, the campaign used retirement savings jargon and did not provide explicit instructions on how to use the website and withdraw savings, despite prior research that showed that explicit instructions are important in promoting action.[48] Before the Money Mountain campaign the CMICD assessed that inactive retirement savings accounts amounted to more than USD 2.9 billion, and that 40% of accounts in all retirement savings vehicles were inactive.

[Figure 1]

[46] To put the campaign in context, in May 2013 the average weekly viewing rate of the main television news broadcasts (the 8 pm news) was around 25% of all households in Israel, and the number is still the same today. This means that many people in Israel would have seen the commercials that ran during the news. In the US, none of the main news broadcasts have such high viewing rates and none of them reach the top ten viewed weekly shows. Data on Israeli TV ratings is taken from the Israeli Audience Research Board. Data on US TV ratings taken from Nielsen's website.

[47] It was more expensive than all other advertising campaigns that year except one, and the first campaign of this magnitude for a financial issue. https://www.themarker.com/advertising/1.2423218

[48] Leventhal et al. (1965) show that a communication about tetanus shots was effective in changing beliefs and attitudes, but only 3% took the step of being inoculated, compared with 28% of those who received a more precise explanation of how to get to the inoculation center and schedule an appointment. See also Clark et al. (2017a) and Goda et al. (2014).

The Money Mountain website uses information collected from all retirement savings providers in Israel, which are legally obligated to provide this information to the regulator. It allows individuals to use information listed on their national identity card to view all their inactive accounts, and it identifies the retirement fund providers where these accounts are held as well as contact information. The CMISD reports that there were over 1.2 million visits to the Money Mountain website in May 2013. The "Money Mountain" campaign had the sole purpose of raising awareness about the issue of inactive accounts and helping people find lost inactive accounts.

3.2 **Tax exemption and minimum fees campaign**

Following the Money Mountain campaign, there was an additional campaign to raise attention to inactive small accounts in provident funds. The campaign promoted a tax exemption on savings withdrawn from inactive provident funds with a balance of less than USD 2,000. It initially went into effect in April 2014 for a year, but was later extended for another three months to the end of July 2015. The exemption applied to a tax on withdrawing funds before retirement age that is not indexed to the socio-economic status of the account holder. The tax exemption was necessary because of legislation coming into effect at the beginning of 2015 that would impose new minimum management fees on provident funds. There is a cap on the fees that provident funds can collect, expressed as a percentage of deposits and accruals; the new fees would permit provident funds to collect a fixed amount of USD 2 per month, even if this exceeded the maximum percentage cap previously allowed by law. These new fees would gradually exhaust small inactive accounts. The regulator hoped that the tax exemption would create a buzz and encourage individuals to close small inactive accounts or transfer them to other active accounts in provident funds to preserve their savings. The funds eligible for tax exemption were those with balances that were likely to be exhausted after several years once minimum fees were imposed. News of the tax exemption was carried in current events and lifestyle programs on television, radio, the Internet, and in print media for the duration of the exemption.[49] The media campaign stated that the Money Mountain website was the main tool for finding inactive accounts in provident funds and in other retirement savings vehicles. Provident fund providers were also obligated to notify owners of small inactive accounts by letter that they were eligible to withdraw their savings, tax free, for a limited period of time, and explained how they could withdraw their savings via the fund or a bank. As some of these

[49]Data from the Israeli Audience Research Board demonstrates that during April 2014, TV shows about consumer protection were popular, and the average weekly viewing rate was around 10%-15% of Israeli households. More than 30% of households watched news or lifestyle shows in the evening (the data does not include additional households that watched such shows in other time slots).

accounts were inactive for many years, the last known address might be wrong, and not all account owners received the letter. Both the media campaign and the letters were focused on the new tax exemption and not on the minimum fees.

The CMISD estimated that there were 1.8 million small inactive accounts in provident funds, valued at about USD 680 million. In the first quarter of the tax exemption, April to June 2014, 11.5% of eligible accounts were closed, constituting 17% of savings in eligible accounts. By April 2015, the end of the initial tax-exemption period, that number had climbed only to 15% of accounts closed, approximately 19% of total savings in the eligible tax-exempt accounts.[50] During the period of the tax exemption, withdrawing savings from provident funds became easier, and inquiries and statements from provident fund providers and the regulator indicated that during the campaign accounts were closed at a higher rate than usual.

Because of the small response, in July 2015 the CMISD restored the tax exemption effective in the beginning of 2016 and made it permanent – but beneficiaries of the exemption could not have anticipated this.

3.3 National Demographics

Compared to other OECD countries, Israel has high-income inequality. Nineteen percent of families in Israel live in poverty. Ultra-Orthodox Jewish families and Arab families had a poverty rate of over 50% in 2014 (National Insurance Institute of Israel (2014)).

These two sub-groups have lower digital literacy. Israel's Central Bureau of Statistics (CBS) Expenditure Survey of 2014, which used a representative sample of the Israeli population, indicates that only 26% of Ultra-Orthodox Jews and 41% of Arabs have a personal Internet subscription, compared with a 71% national average. The Program for the International Assessment of Adult Competencies (PIAAC) 2014–2015 survey of workers' competence in a digital environment also shows that Israeli adults had a slightly lower grade (274) than the OECD average (279), but that the Israeli Arab population's grade was much lower (238). Overall Israel is comparable to many developed countries, but the Arab population and the Ultra-orthodox population are distinct and need to be addressed separately in any empirical study of the Israeli population.

3.4 Israel: Geographical indices

In the provident fund data we have information on the localities of the account owner, which we use to indicate sociodemographic status using indices. The CBS publishes two

[50] Data received by CMISD representatives.

sociodemographic indices that characterize Israeli local authorities' population on average: the socioeconomic index and the periphery index. The indices are noisy proxies for account owner individual characteristics.

The socioeconomic index is calculated using data from the 2008 national survey on demographic and standard-of-living features of the population in each locality. The index has data on income, level of education, level of employment, and national insurance allowances given to the population in each locality. Each locality ranked from 1 to 10, where 1 is given to localities with extremely low socioeconomic markers and 10 to localities with high socioeconomic markers. Ninety percent of the localities with grades below 4 are Arab localities.

The periphery index is based on data from 2004 and grades localities' proximity to economic activity or potential for such activity. The index is calculated using data on each locality's proximity to the two main districts in Israel (Tel Aviv and Jerusalem), the locality's size, and the locality's proximity to other local authorities. Each locality is given a ranking between 1 and 5, where 1 refers to the most peripheral localities and 5 to the most central.

3.5 Israel: Objective financial literacy

A 2012 CBS survey (CBS (2012)) found that the Israeli population has relatively low objective financial literacy: 59% of the Israeli population knew how to calculate interest paid on a loan (versus an international average of 82%), 65% could define inflation (versus an international average of 80%), and 48% understood the concept of diversification (versus an international average of 71%). The survey also found that Israelis have a very positive attitude toward retirement saving relative to residents of other countries.[51]

4. Data description

The data for the empirical investigation of the two campaigns came from two sources: 1) a large provident fund, and 2) Internet surveys (a main survey and an additional complementary survey from the same survey company).

4.1 Provident fund proprietary data

Our first data source is proprietary data from a large provident fund in Israel. This data contains information on 12,735 inactive accounts that were eligible for tax-exempt withdrawal as of April 2014, with an indication of whether these accounts were closed before

[51] Only 18% stated that they would rather spend money today and not save for retirement (versus an international average of 45%). Similar findings were found in Mugerman et al. (2014).

the end of the tax exemption period that ended in July 2015.[52] The provident fund data includes information on the account owner's gender (this does not have to be the person who actually closed the account), age, deposit value, and locality. Using the locality data, we are able to identify if the locality is Arab, as well as the locality's ranking on the CBS's socioeconomic index and periphery index.

54% of account owners are female and 4% are from Arab localities. The accounts localities' average socioeconomic index is 5.7, which is above the country's average of 4.8, and their localities' periphery index is 3.6, which is also above the country's average of 2.8. The mean eligible account size is around 490 USD (median 300 USD). Account holders who live in high socioeconomic localities (index of 8 and above) have 2,575 inactive accounts (20% of accounts) with an average of 520 USD per account, and account holders who live in low socioeconomic localities (index of 4 and under) have 3,109 inactive accounts (24% of accounts) with an average of 470 USD. Thus the issue of inactive accounts is relevant for all populations[53] and account sizes do not differ much by locality index.

4.2 **Internet survey**

We used an Internet survey to investigate two types of costs after the campaigns: outstanding observation costs affecting inactive retirement accounts and prohibitive transaction costs. The survey consisted of questions about retirement savings, awareness of the two financial campaigns (salience of the campaign), and actions taken as a result of the campaigns. Specifically, we asked about visiting the website to look for inactive accounts or contacting a retirement fund provider with the intention of closing an inactive account following the campaigns. Asking questions about intentions following exposure to at least one of the campaigns allows us to investigate intended actions, and to distinguish intended action from the final effect, which might be tainted by additional technical difficulties and the transaction costs of the account closing process.

The survey also included objective questions about financial literacy, subjective questions about the respondent's confidence on the issue of retirement savings, and several demographic and socioeconomic questions. These allowed us to differentiate the magnitudes of costs by individual's characteristics.

[52] We were not able to retrieve earlier data.
[53] The higher number of accounts of individuals coming from low socioeconomic localities provides additional evidence of the prevalence of inactive accounts in the whole Israeli population, and especially for those of lower socioeconomic status who change jobs frequently.

The main Internet survey, based on a survey of 504 people that was relatively representative of the nation in geographic and demographic terms, was conducted in August 2015 using a professional survey company. The sample was intended to represent the general Israeli population, however, like all Internet surveys, it represents only the technologically skilled population and underrepresents those who are less so.

Our sample is similar in most significant categories to the CBS Expenditure Survey of 2014, which is a representative sample of the Israeli population (the percentages in parentheses are those of the CBS survey): 48% males (48%), 57% married (64%), 29% with traditional beliefs (29%), 15% with religious beliefs (13%), 6% retired (5%), and 22% not formally working[54] (25%). Our sample underrepresented: immigrants 16% (30%); Ultra-Orthodox Jews 3% (8%); and Arabs 1% (16%).

5. Provident fund accounts closed

[Table 1]

As described above, because of the minimum fees coming into effect and the tax exemption, all small inactive provident funds accounts should have been closed. Proprietary data from the provident fund reports the number of actual accounts closed. Table 1 shows differences between the population that closed inactive accounts and the population that did not. The closing rate of inactive accounts in our data was 16%, similar to the 15% stated by the CMISD.

In Table 1, using a proportion test, we can see that when dividing the population according to socioeconomic conditions, people from localities with a higher socioeconomic index, higher periphery index, and older account owners are more likely to close accounts (the optimal action). We divide our sample based on localities above and below the country's median score of the indices (the socioeconomic index and periphery index).[55]

The closing rate for account owners from localities with a socioeconomic index or a peripheral index above the median is 18% and 18%, respectively, versus 13% and 15% for account owners from localities with those indices below the median, with both differences being statistically significant. Additionally, the closing rate for Arab localities is only 11%,

[54] Most are not in the workforce and not seeking work; a smaller percentage are unemployed and seeking employment.
[55] Our choice of cut-off involved a trade-off: if we considered only localities at the tails of the distribution, we would be better able to distinguish the populations, but, at the same time, we would have fewer observations and hence our model would have less explanatory power.

significantly different from the 16.5% average for all other localities. As noted above, in Israel higher poverty rates are found in the periphery and in the Arab community. Older account owners have a statistically significantly higher closing rate (account owners over the age of 60 have a closing rate of 23% and account owners under the age of 35 have a closing rate of 15%). Based on the provident fund data, we do not find a difference in closing rates between men and women. These outcomes are in line with our hypotheses that individuals with low socioeconomic status have more limited attention following the campaigns.

The size of the account can have different effects on the utility of closing an account. On the one hand, the larger the savings the larger the cash benefit from the tax exemption, but on the other hand, the smaller the account the quicker the savings will be exhausted by minimum fees. When comparing the percent of inactive accounts closed by amount of savings and by socioeconomic breakdown (see Figure 2), we obtain the following outcomes. First, for all groups, the larger the savings in the inactive account, the higher the percent of accounts closed. For owners of accounts with small balances (in the lowest quartile when dividing accounts by size)[56] and from localities with a socioeconomic index below the median, the percent of inactive accounts closed is 6%, less than half of the 13% overall average. For account owners from localities with a socioeconomic index above the median, the 24% percent of large (in the highest quartile by size)[57] inactive accounts closed is higher than this population's overall average closing rate of 18%. It is also higher than the 19% closing rate for large inactive accounts by account owners from below-median socioeconomic index localities. The lower closing rate of all sizes of inactive accounts in below-median socioeconomic localities runs counter to an expected income effect that should make small savings account relatively more worth closing for poorer populations. Possible explanations can stem from all aspects of limited attention, such as observation costs (i.e. poorer populations have higher frictions for receiving and understanding financial information), and transaction costs (i.e. if it is more costly for the low socioeconomic population to fill out forms, talk to official representatives and to access the internet. The costs can be physical, mental, or emotional). We further provide evidence of the existence of both observation costs and transaction costs in sections 6 and 7.

[Figure 2]

[56]The average account size in this lowest quartile was around 50 USD (52 USD for accounts from localities below the socioeconomic index median and 51 USD from localities above).
[57] The accounts in the largest quartiles had an average account size of 1,260 USD (1,257 USD for accounts from localities below the socioeconomic index median and 1,266 USD from localities above).

Account holders coming from localities with low socioeconomic indices might have other characteristics driving this effect. For a robustness check we used propensity score matching for accounts that were closed to those that were not closed using all available information[58] except the socioeconomic locality index. The matching process provided one group of 1,941 account holders that closed an account and 1,941 matched account holders that did not close an account. The difference in the average locality index of the two groups is statistically significant, (p-value of 0.03) indicating that there were indeed statistical differences in withdrawal rates that were correlated with socioeconomic attributes, even after controlling for all other available attributes.

For an additional robustness check we ran a propensity score matching for account holders from localities with low socioeconomic indices (with an index of 4 or less) to account holders from localities with higher socioeconomic indices using variables as in the former matching procedure. The matching process provided one group of 3,107 account holders from localities with low socioeconomic indices and 3,107 matched account holders from localities with higher socioeconomic indices. Based on the matched observations we estimate a logit regression and a linear model. In these regressions, the negative effect of having the account holder coming from a locality with low socioeconomic status on closing an account persists and is statistically significant at the 1% level. When estimating the logit regression with an interaction with account size (dummy variables for small, medium, and large accounts) we also find evidence that for small accounts the closing rate is significantly lower for people from low socioeconomic localities, above and beyond the negative effects of the low socioeconomic locality and account size by themselves.[59]

The major advantage of the provident fund data is that it shows us individuals' completed actions. Using this data, we document that inattention to inactive provident accounts persists, even after the campaigns lowered observation costs, lowered transaction costs of finding inactive accounts, and also included a tax exemption and minimum fees that raised the opportunity cost of inaction. We found that inattention is higher for smaller accounts. We also found a geographical connection between actual accounts closed, on the one hand, and Arab localities, a locality's socioeconomic index, and a locality's periphery index, on the other. The

[58] Account holder gender, age, number of small inactive accounts in the provident fund the account holder has in his or her name, total savings in account, the percent of the funds that are attributed to severance pay (in Israel, the employer can deposit part, or all of the severance pay to the employee through the retirement savings. This component might affect transaction costs), the year the first deposit was made, the periphery score index of the locality, and the religious composition of the locality

[59] However, this outcome is not as robust: it is not significant at the 10% level in an OLS linear model.

disadvantage of the provident fund data is that we have limited information on the channels that affected action. For example, we are unable to investigate the effect of personal attributes such as individuals' financial literacy (objective and subjective). Another disadvantage is that technical difficulties can affect the closure of inactive accounts (e.g. if there was a problem reaching the retirement fund provider on the phone or if the website crashed).

6. Survey Data and analysis

Survey data allows us to focus on the different channels of attention to inactive accounts following the campaigns. We look at awareness and salience of the campaigns (did observation costs remain?) and actions or intention to act following the campaigns (did transaction costs remain?). We check whether these channels differ according to individual's personal attributes, and specifically financial literacy, that have been found in the literature to affect costs.

While the financial literacy definition provided by the OECD is relatively broad, we focus on "objective (general) financial literacy" that measures basic knowledge of financial concepts and "subjective financial literacy" that is based on confidence in one's knowledge of the specific subject matter, namely retirement savings. Both literacies can be interpreted as proxies for actual or perceived information search and transaction costs. The following section describes how we measure and define these personal attributes.

6.1 Survey: Personal characteristics variables

6.1.1 Objective Financial literacy

As in the literature, here the objective financial literacy index score, which serves as our proxy for objective financial literacy, [60] is calculated so that the index value is the total number of correct answers.[61] The basic questions in the index, questions regarding interest rates, inflation, and risk diversification, have been shown to differentiate naïve from sophisticated respondents well. The responses can characterize people's levels of financial knowledge and are strongly correlated with financial behaviors. Lusardi and Mitchell (2017) found that when more questions are added to the three stated above, the additional questions

[60] An example of the status of these questions can be found in Hasting et al.'s (2012) literature review, where they are called the "Big Three." Hung et al. (2009) show that the three original financial literacy questions are stable over time and have a high correlation with other financial literacy measures.

[61] Unlike in Lusardi and Mitchell (2007) and the Dutch DNB Household Survey (Van Rooij et al. 2011), in this paper we present only one formulation of the diversification question, the one that had the highest response rate in those other studies. The fact that wording matters is evidence that respondents often do not understand the question or the concepts, and that some answers are simply guesses. Hence, empirical work should consider the fact that these measures are often noisy proxies for the true level of financial literacy.

do not change any of the conclusions or the correlation of higher or lower objective financial literacy with major socioeconomic characteristics. The main statistics and wording of these three questions from the survey data appear in Table 2, where we can see that 76% answered the interest rate question correctly, 59% answered the inflation question correctly, and 45% answered the diversification question correctly. The findings of our main survey are similar to those of the CBS Financial Literacy Survey of 2012.[62]

[Table 2]

Objective financial literacy captures knowledge you are unlikely to learn about from the campaigns we investigate (interest, inflation, and diversification have nothing to do with inactive retirement accounts). Hence, the reasonable interpretation of an observed correlation of the objective financial literacy index and financial behavior following the campaigns is that objective financial literacy affects the observed actions and not the reverse.

6.1.2 Subjective financial literacy

As stated in the literature, financial awareness and actions can depend on subjective feelings of confidence that people have about their financial knowledge.[63] In this paper we want to isolate this subjective component of financial literacy, and specifically financial confidence in one's knowledge of retirement savings (as distinct from other financial knowledge), so we ask specifically about confidence in one's knowledge of retirement savings. The wording of the question and the main statistics are presented with other subjective questions in Table 3. In the table we show that the percentage of people who answer that they had a fair to excellent understanding of retirement savings (on a scale from 1 to 5, all those answering 3 and above) is 29%, far lower than Lusardi and Mitchell's (2011a) finding of 70% having confidence about general financial knowledge. This indicates that there might be differences between subjective confidence in retirement literacy and subjective confidence in general financial knowledge. It is also interesting to note that the Spearman non-parametric correlation between

[62]Financial Literacy Survey: Knowledge, Opinions, and Behavior in Financial Issues, November 2012, CBS. The wording of the questions in the CBS survey was different from the wording of the questions in our survey but covered similar fields. The overall score we find in Israel of 31% is also a bit lower than the 33% average score in Hastings et al. 2012, which provides data on former papers that used the same three financial literacy questions using a simple average on data from Germany 2009, Netherland 2010, USA 2009, Japan 2010, Chile 2012, and Mexico 2010.

[63] Previous studies, e.g., Van Rooij et al. (2011, 2012), Lusardi and Mitchell (2011a), and Lusardi and Tufano (2009) used a general question about confidence in financial knowledge: "On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your overall financial knowledge?" In Lusardi and Mitchell (2017) the wording of the question was slightly different: "On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your understanding of economics?"

the subjective and objective financial literacy measures that we used[64] is only 0.16 and significant at the 1% level.

[Table 3]

Subjective financial literacy (having high confidence in one's knowledge of retirement knowledge) is a personality trait that is correlated with many economic actions and outcomes. In the survey data, we find a positive correlation of around 0.3 for the subjective financial literacy variable and the survey answers regarding: frequency of checking information on your retirement account, bargaining with fund providers on management fees, and being aware of complicated concepts related to retirement savings.[65] It also has a highly positive correlation of 0.24, statistically significant at the 1% level, with having additional personal investments in stocks, bonds, or investment funds. The subjective financial literacy measure is a personality trait that affects many economical outcomes and activities. Hence, when we investigated the effect of this variable on financial outcomes following the campaign, it is more likely that we are seeing the influence of subjective financial literacy – as a proxy for individuals' actual or perceived observation and transaction costs – on awareness of the financial campaigns and related actions, rather than testing the reverse causality.[66]

Our subjective measure of financial literacy is not as widely used or validated in the academic literature as our objective financial literacy index. That is why for robustness we also include another subjective question in the survey about respondents' level of interest in retirement issues.[67] The correlation between the stated confidence in retirement knowledge and stated interest in retirement issues is 0.35 and significant at the 1% level and the correlation between stated interest in retirement issues and the measure of objective financial literacy is not statistically different from zero at the 10% level.

6.1.3 Descriptive statistics of personal characteristics variables

[64] Lusardi and Mitchell (2007, 2017), Parker et al. (2014), Van Rooij et al. (2012), and Lusardi and Beeler (2006) all found a positive correlation between financial literacy and financial confidence, despite the fact that about one-third of the highest and lowest financially educated respondents didn't have the same matching self-reported financial knowledge.

[65] Actuarial deficit and indirect expenses.

[66] Additionally, the correlation between being aware of the Money Mountain regulations, accessing the Money Mountain website, or contacting the fund provider with the intention of closing an inactive account, and the other economic outcomes described above is much lower than the correlation of these economic outcomes with subjective financial literacy. In our survey, the subjective financial literacy question followed the objective literacy question, which might have affected the answers. In a later research using survey data we changed the order of the subjective and objective questions and the correlation between objective and subjective financial literacy remained similar to the one presented above. We conclude that subjective financial literacy is a personality trait that has a stronger connection than the Money Mountain campaigns with other economic outcomes and activities.

[67] The wording of the question and main statistics are presented in Table 3.

Our survey results indicate (Table 4) that individuals with high objective financial literacy are likely to be older, male, have a higher income, have a higher education, and come from localities with a higher socioeconomic index. We also learn from Table 4 that individuals with high subjective financial literacy are likely to be older, male, and born in Israel.

[Table 4]

6.2 Survey: Results

6.2.1 Descriptive statistics

The awareness of the Money Mountain campaign and the awareness of the tax exemption for withdrawing savings from small inactive provident fund accounts are the same (42% and 40%, respectively). When comparing this outcome to an earlier CMISD evaluation of the program using survey data from June 2013, we see that after two years the awareness of the campaign was much lower (42% versus 67% in the CMISD survey). Even though the issue of inactive funds and Money Mountain remains in the public eye to this day, the decline in awareness could stem from the fact that the effects of interventions diminish over time (Fernandes et al. 2014).

The survey data indicates that 58% of the people who heard about the Money Mountain campaign were also aware of the tax exemption and 58% were aware of at least one campaign. The data also shows that more people visited the Money Mountain website than those that indicated that they are aware of the campaign, 53% versus 42%. An additional 14% were only aware of the tax exemption campaign. This indicates that some people visited the website because of consultation with a financial advisor, word-of-mouth, or other sources of information that were not related to the campaign itself and hence did not connect the actions. When comparing this outcome to the CMISD evaluation of June 2013, we see that the percentage of people who visited the Money Mountain website was remarkably similar: 53% in our survey versus 54% in the CMISD evaluation.

The percentage of people who contacted their retirement fund provider with the intention of closing an inactive account as a result of the Money Mountain or the tax incentive campaign is much lower than the number who visited the website, 14% of the main survey sample. Survey data indicate that that only 75% of the individuals who intended to close an inactive account state that they did so, confirming our concern about the existence of additional transaction costs for closing accounts. It is noteworthy that a high percentage of the people who intended to close an account were aware of at least one of the campaigns: 68% were aware of the Money Mountain campaign and 76% were aware of the tax exemption campaign.

Fifty-one percent of the people who intended to close an inactive account were aware of both campaigns.

In Figure 3A we can already see that people with high versus low objective financial literacy were more aware of the financial campaigns: around 54% versus around 25%. Those with high financial literacy were also more likely to access the Money Mountain website (62%) versus those with low financial literacy (41%, differences are statistically significant at the 1% level). Yet at the same time, when we examine intention to close an inactive account, objective financial literacy does not seem to matter (difference not statistically different from 0), and this may imply that other factors should be taken into account, such as confidence in retirement knowledge, our subjective measure of financial literacy.

Subjective financial literacy plays a role in awareness and in actions taken, as can be seen in Figure 3B where all differences between individuals with high and low subjective financial literacy are statistically significant at the 1% level. Individuals with high subjective financial literacy, in comparison to those with low subjective literacy, were more aware of the Money Mountain campaign (73% versus 40%)), were more aware of the tax exemption campaign (78% versus 37%), were more likely to have visited the website (85% versus 35%), and were more likely to contact their retirement fund provider with the intention of closing an inactive account following the campaigns (50% versus 13%).

[Figure 3]

6.2.2 Empirical model

We investigate the relationship between the financial outcomes and the proxies of individuals' actual or perceived observation and transaction costs: their objective measure of general financial knowledge (objective financial literacy index),[68] and their subjective financial literacy (confidence in their knowledge about retirement savings). We report correlations and would like to infer causality from the various financial literacy measures to the financial outcomes, rather than vice versa.

We examine four possible outcome variables using logit regressions: (1) awareness of the Money Mountain campaign, (2) awareness of the tax exemption campaign, (3) access to the Money Mountain website, or (4) contacting the retirement fund provider with the intention of

[68] When examining each of the questions in the objective financial literacy index separately, the outcomes are consistent with former research by, e.g., Lusardi and Mitchell (2011b) and Van Rooij et al. (2011): it is the understanding of risk diversification (understanding of advanced financial knowledge) that matters most for retirement planning. Nevertheless, for the specifications presented above we believe that the objective financial literacy index has better explanatory power because of former research that shows the stability of the index over time and the correlation with other financial literacy measures (Hung et al. 2009).

closing (withdraw or transfer savings) an inactive account as a result of the campaigns. These variables each receive a value of 1 or 0.

The specification of the main regressions is as follows[69]: for each subject i we regress each outcome (y_j) on subject i's personal characteristics:

$$\log\left(\frac{p_{j_i}}{1-p_{j_i}}\right) = \alpha + \beta_1 * Objective\ financial\ literacy_i + \beta_2 * Subjective\ financial\ literacy_i + \beta_3 * X_i + \epsilon_i$$

Where $P_{j_i} = p\left(Y_{j_i} = 1 \middle| X_i, Objective\ and\ subjective\ financail\ literacy_i\right)$ is the relevant outcome variable (j=1-4) for individual i. X_i denotes a vector of individual i's demographic and socioeconomic characteristics, including age, gender, marital status, income, education, religious identity, work status, and whether the individual is an immigrant.[70] The variable descriptions are presented in Appendix 1.[71]

We estimate the model using three samples: the first is the main survey sample. The second and third survey samples were used only for robust estimates for the main regression specification: the second is the main sample with an additional complementary survey sample of 124 individuals who indicated they are aware of the Money Mountain campaign, and the third is the main sample with weights on the complementary survey. [72] Our aim in conducting this complementary survey was to obtain better statistics on this cognizant population. Outcomes from all three survey samples are presented in table 6. As the main outcomes from all three data descriptions are similar, when outcomes are different, we discuss it in the footnotes.

[69] When running the regressions for awareness of the campaigns and actions taken without the confidence in retirement knowledge variable, we find that the financial literacy index variable had a stronger and more significant effect and the R^2 was lower.

[70] None of the socioeconomic variables have a correlation higher than 0.3 with either the financial literacy variable or the confidence in retirement knowledge variable.

[71] The results are similar when we use different specifications of the socioeconomic variables. In addition, as expected of the structure of the variable, when we use a dummy variable that indicates whether an individual had a score that was above or below the median score of the financial literacy index, the outcomes of the models are similar except for the fact that the effect of the financial literacy variable is stronger. Similarly, when we add a dummy variable that indicates whether individuals answer that they had little or no understanding of retirement issues, we find similar outcomes for the regressions except that the two dummy variables for confidence in retirement knowledge are not always both statistically significant. In another robustness check, we add income information for 82 observations where income was missing, using a forecast regression from the CBS expenditure survey of 2014. The outcomes are again similar in size and significant for the main specifications in the paper.

[72] In the third sample, observations from the complementary sample received a weight of 0.42, and observation from the main sample received a weight of 1. The reason for the weights is to bring the average awareness of the Money Mountain campaign in the complementary sample down from 100% to the 42%, which is the level of awareness in the main sample, in order not to overweigh it. A specification where a dummy variable is used in the regression to indicate observations from the complementary survey sample instead of weights produces similar outcomes.

We begin by examining the regressions for outcomes 1 and 2 – awareness of the financial campaigns – and describe the results. This tests the salience channel of the campaigns and whether observation costs remained. We then look at the regressions for outcomes 3 and 4 – action taken following the financial campaigns, which tell us whether costs remain following the campaigns. We present and describe the size effects of individuals' characteristics (socio-economic status and financial literacy) on awareness of the campaigns and on actions following the campaigns. We then examine and describe robust specifications.

6.2.3 Campaign awareness regressions

[Table 5]

In Table 5 we analyze the effects of individuals' characteristics on their awareness of the financial campaigns using the main sample.[73] We present the logit method of estimation but the results are qualitatively similar when using either a linear probability model (estimated by OLS) or the probit method of estimation (results not presented). In particular, the coefficients on our main variables of interest (namely, objective financial literacy and subjective financial literacy/confidence in retirement knowledge) have the same positive sign and are statistically significant across all three estimation techniques and for awareness of both campaigns. Our regressions on the main specification have 424 observations out of the 504 in our survey, because 80 observations did not include income data.

Column (1) of Table 5 shows that, given the financial literacy variables, the only personal characteristics that significantly affect the awareness of the Money Mountain campaign are being an immigrant or a non-worker. Both of these characteristics have significant negative effects on awareness of the campaign, though the effect of being an immigrant is only significant at 10%. A possible explanation of the negative effect of being an immigrant (over 50% of the immigrants in the survey came from the former USSR) is that language or cultural barriers may have stopped the campaign from reaching this population (Osili and Paulson (2008)). When regressions are estimated with only immigrants who arrived after the fall of the USSR in 1989 instead of all immigrants, the outcomes are very similar.

Despite the associated descriptive results, age does not seem to have a significant effect. Age and age squared also do not have a significant effect in the regression as shown in column (1)

[73] When analyzing the awareness of the campaigns, we use only the main survey sample because the complementary sample consists of respondents who stated up front that they were aware of the Money Mountain campaign.

of Table 8, even when the work status dummies are not added (as work status dummies include being "retired" which is strongly correlated with age).[74]

Column (2) of Table 5 shows the effect of the dependent variables on awareness of the tax exemption campaign. The effect of not working remains negative and statistically significant, though that is reduced to the 10% level. In this regression, however, we see that higher education has a positive and significant effect. The coefficient of immigrants with awareness of the tax exemption campaign is negative but not statistically significant. Age has a positive effect on awareness of the tax exemption campaign and when we add age squared and drop the variable for work status, in column (2) of Table 8, the effect of age on financial outcomes has an inverted U shape, which is consistent with the literature.

6.2.4 Post-campaign action regressions

[Table 6]

Table 6 presents the effect of the dependent variables on visiting the website and/or contacting the retirement fund provider with the intention of closing an inactive account using all three data descriptions.[75] CMISD's objective was to not only raise awareness of the issue, but also to reduce transaction costs, and provide a digital tool to help people check whether and where they had inactive accounts. In column (1) of Table 6, we investigate the outcome of visiting the Money Mountain website. We do not know the exact dates when individuals visited the Money Mountain website, or the exact dates when they contacted the fund providers with the intention of closing an inactive account. Objective and subjective financial literacy, age, and academic education are all positive and statistically significant at 5%.[76] Being female and being traditionally religious are negative and significant at 10%. We also find that the effect of age has an inverted U shape even when controlling for work status variables (not presented; the regression without the work status variables is presented in

[74] Age has a correlation of 0.41 with the work status variable.

[75] When regressions on actions taken following the campaigns are run only on the population of people who indicate they have savings in retirement funds, provident funds, or insurance policies (355 respondents out of the full sample of 424 respondents used in main regression), we find that education is no longer statistically significant for accessing the Internet site. Additionally, the non-working variable is no longer statistically significant for contacting fund providers with the intention of closing an account but all other outcomes are hardly changed (not shown). We believe that a large segment of the population does not know whether it has retirement savings and that looking at the more general sample gives a better indication of actual outcomes. In a 2016 CBC long-term financial survey only 53% stated that they or their partner has a long term retirement savings although administrative data and laws indicate the actual number is much higher. Additionally, as inactive accounts are so prevalent in Israel it is a reasonable assumption that most of individuals or at least one of their immediate family members had an inactive account.

[76] In column (2) of Table 6 the education variables are not statistically significant, but we believe that this sample suffers from uncorrected sample selection.

column (3) of Table 8). The action taken in this regression requires that individuals be comfortable with using the Internet and with the topic. As expected, this kind of action has a strong inverted U shape for age. The gender effect we find in the regression is consistent with the literature on financial behavior and on attention shocks,[77] although we do not find such an unequivocal outcome for awareness of the financial campaigns.[78]

The survey questions allowed us to know whether people who contacted fund providers with the intention of closing an inactive account did so because of the Money Mountain campaign or because of the tax exemption campaign, but as discussed earlier, the campaigns were related and affected each other. As we do not have data on the dates of these contacts, we are unable to distinguish between each campaign's effect.[79] Therefore, in column (4) of Table 6, we analyze the data on contacting fund providers with the intention of closing an inactive account while acknowledging that it may be jointly driven by both campaigns.[80] Subjective financial literacy, being female[81] and not formally employed[82] are the only statistically significant variables. Our results suggest that in this case, taking action following the campaigns, which amounts to contacting one's retirement fund provider, is more significantly affected by our subjective financial literacy measure, which is based upon the indicated confidence in one's knowledge of retirement savings, rather than objective financial literacy.[83] The fact that non-workers intended to close fewer inactive accounts might be because current work status is positively correlated with past work status, but there may also be an effect originating from the inattentiveness of this population to financial, and specifically retirement, issues. It is interesting to note that age has no effect on contacting the fund provider with the intention of closing an inactive account, as seen in column (4) of Table 6 and in column (4) of Table 8. This may be because of either difference in the costs for taking action or because the younger population opened more savings accounts after 2008 and hence are more likely to

[77] Carlin et al. (2017).
[78] Columns (2) and (3) give quite similar results, with the main difference being that objective financial literacy is now positive and significant. Given the weakening of this result between columns (2) and (3), the latter effect is very likely generated by the additional complementary sample, whose level of both financial literacy variables is higher than that in the main sample.
[79] Nonetheless, when running the regression only on those that intended to close an account following the tax exemption campaign the outcomes are similar.
[80] When running the main sample regression on people who state that they closed an account for any reason, none of the financial literacy variables are significant. This might be because of noise stemming from the closing of accounts due to changing jobs or other activities unrelated to the campaigns.
[81] In column (5) of Table 6 the female variable is not statistically significant, but we believe that this sample suffers from uncorrected sample selection.
[82] Only in the main survey sample.
[83] This is in line with an outcome in Meir et al. (2016), which shows that objective financial literacy and retirement action are not correlated when controlling for background variables.

benefit from the tax exemption. As stated above, all retirement monies saved before 2008 were already eligible for a tax exemption on lump-sum withdrawals.

6.2.5 Illustration of the size of effects of individuals' characteristics

[Table 7]

To illustrate the size of the effects from the regressions in Tables 5 and 6 on different populations, Table 7 displays the probability of being aware of the financial campaigns or of taking action following the campaigns in several pre-specified values of the explanatory variables. We can see that both the socio-economic attributes and the objective and subjective financial literacy effects were substantial. The model states that over 65% of individuals (depending on gender and campaign) with high objective and subjective financial literacy were aware of the campaigns, but awareness was less than 51% for individuals with low objective and subjective financial literacy. For individuals with low objective and subjective financial literacy, with low socioeconomic attributes (55 years old, academically educated, with an above-average income consistent with having high financial literacy), awareness was less than 33%. Awareness of the tax exemption campaign was the lowest and stood at 13% for women with low socioeconomic attributes (35 years old, with a high school degree or lower, and below-average income).

Among individuals with high subjective and objective literacy, 93% of women with high socioeconomic attributes and 95% of men with high socioeconomic attributes visited the Money Mountain website compared with roughly 66% and 74% respectively, for those with both types of low financial literacy. Among individuals with high subjective and objective literacy, 77% of women with low demographic attributes and 83% of men with low socioeconomic attributes visited the Money Mountain website. These rates drop to 34% for women and 42% for men with both low subjective and objective literacy and low socioeconomic attributes. 33% and 47% of individuals with high financial literacy and high socioeconomic status, for women and men respectively, contacted the fund provider with the intention of closing an inactive account. These rates drop to less than 17% for individuals with low financial literacy and low socioeconomic status.

6.2.6 Robustness checks

6.2.6.1 Inquiries about inactive accounts

We examine cases where individuals contacted their retirement fund provider to inquire about inactive accounts in column (5) of Table 8. By "inquiry", we mean *any* inquiries about

inactive funds and not specifically inquiries resulting from the financial campaigns. Our findings were that only subjective financial literacy is statistically significant. This lends support to the role of subjective financial literacy in taking actions in financial domains.

[Table 8]

6.2.6.2 Interest in retirement issues

As mentioned above, the question that we use in this study to estimate subjective financial literacy is not as widely used in the literature as the objective financial literacy index. For a robustness check we investigate the effect of interest in retirement issues instead of the subjective question about confidence in retirement knowledge. We present evidence in columns (6)–(9) of Table 8 that interest in retirement works in the same direction as confidence in retirement knowledge and has a positive effect (although not always significant) on financial awareness and action, as expected, and that all the other variables' outcomes remain similar to those presented above.

6.2.6.3 Expectations of fund size

As optimism has been found to affect financial outcomes (Kuhnen and Miu (2017), Puri and Robinson (2007)), one might speculate that the correlation between financial literacy and actions following the campaigns reflect an actual connection between the expectation of finding funds in inactive accounts and financial literacy. We do not find a statistically significant correlation between the expectation of finding funds in inactive accounts and objective or subjective financial literacy. Nonetheless, we do a robustness check for the main specification where the regressions include dummy variables for expected costs, columns (1)-(4) in Table 9. The wording and statistics of the expectation variables are presented in Appendix 2. The results provide evidence that the positive effects of financial literacy on attention do not stem from expected cash benefit; objective and subjective financial literacy have the same economic effect on outcomes (and the effects stay mostly significant) regardless of expectations.[84]

[84] When running the regressions with interactions between the expectations and the financial literacies overall, except for awareness of the tax exemption campaign, the effect of the financial literacies is not affected by expectations. In most regressions there is no apparent trend between the coefficient of the interactions and size of expectation and the coefficients for the interactions are similar in size (although most are not statistically significant). However, for being aware of the tax exemption campaign, overall, the larger the expectations the larger (and more statistically significant) the effect of objective financial literacy (between 0.8 for expecting to find no inactive account and 1.9 for expecting to find over $28,500). For visiting the website, only the interactions between expecting to find funds between $285-$1,500 or expecting to find funds between $5,700-$28,500 and objective financial literacy are statically significantly larger than when expectations are below $285.

The expectations dummy variables are based on two different wordings of questions: the first question was aimed at individuals who contacted the retirement fund provider with the intention of closing an account as a result of the campaigns, and the second question was aimed at those who did not contact their retirement fund provider. Because of differences between the wordings of the questions, the answer "Expecting to find no inactive accounts" was only available for those who contacted their retirement fund provider. This means that this dummy variable is highly correlated with those who did not contact the retirement fund provider and hence, any correlation might stem from reverse causality.

To deal with the reverse causality we made two corrections. We ran the regressions dropping the "Expecting to find no inactive accounts" variable. The outcomes remain very much the same (regressions not presented). Next, as shown in column (5) of Table 9, we ran the regression for contacting the fund provider with the intention of closing an inactive account after dropping the aforementioned dummy and when using only the sample of people who visited the Money Mountain website and found inactive accounts. Although this specification raises questions of sample selection, it allows us to deal with reverse causality. In this specification, subjective financial literacy (confidence in retirement knowledge) is statistically significant and similar in size to the coefficients presented in earlier tables.

[**Table 9**]

6.2.6.4 Ordered Logit

We also estimate the depth of attention by ranking outcomes in an ordered logit estimation (that enables ranking of the dependent variable) in Table 10. For the specification in column (1) of Table 10, there are three levels of attention: (1) awareness of the campaigns, (2) awareness and visiting the website, and (3) awareness, visiting the website, and contacting the retirement fund provider with the intention of closing an inactive account. For the specification in column (2) of Table 10, we used seven ranks and the outcomes are similar. The ranking process is described in the table notes. These exercises give us an estimation of the importance of the financial literacy (as well as other individual characteristics) for attention to the issue of inactive retirement accounts and the campaigns when including both awareness and action taken as a whole. In these exercises both financial literacy variables are statistically significant at the 1% level and have a large economic effect.

[**Table 10**]

7. Reconciling the results from the provident fund data and the survey data

The results from the analysis of the provident fund account data are largely compatible with the results from the analysis of the survey data.[85] From the survey data the effect of socioeconomic characteristics on actions can be observed in the positive effect of education and the negative effect of unemployment on actions but also in the positive effect of objective and subjective financial literacy on actions. As the financial literacy variables are positively correlated with the socioeconomic and periphery indices, one should expect a positive correlation between socioeconomic characteristics and actions taken following the campaigns, and there is such a correlation in the provident fund data. We also find from both databases that taking action following the campaigns is negatively affected by age.

These outcomes are all in line with our hypotheses: inattention to inactive retirement saving accounts remains even after the government's efforts to raise awareness. Additionally, inattention remains higher and take-up is lower for individuals with low socioeconomic status and low financial literacy.

We do not find differences in the number of inactive accounts closed between men and women in the provident fund data, as we did in the survey data and literature. It is quite probable that in some households the husband (or other male family member) took the initiative of closing the wife's (or other female family member's) inactive account on her behalf and as we do not know the gender of the person who closed the account, but only the gender of the account owner, this information is missing from the provident fund data. The absence of individual characteristics in the provident fund data highlights the advantage of using survey data when trying to separate out the effects of interventions on the population. The survey data allow us to investigate factors on an individual level, and specifically, they show us the importance of gender as well as other factors for limited attention in the retirement context, as expected by the literature.

The literature states that those with higher observation costs are always less attentive and hence have a lower probability of taking actions in all states of the world.[86] On the other hand, transaction costs and preferences (such as myopia and risk aversion), have been found to

[85] The main survey sample is younger than the provident fund population (41.77 versus 44.34) and has fewer women than in the provident fund population (50% versus 54%). The provident fund account data have a higher representation of people living in Arab localities, who are underrepresented in the Internet survey.
[86] Andersen et al. (2020), Abel et al. (2013), and Alvarez et al. (2012).

cause actions to be state dependent on economic conditions: action is only taken when the tradeoff between the utility and the cost of the action is positive.

We use both data sets to provide evidence of the existence of the two frictions in our setting as well as to provide evidence of differences in the size of frictions by population characteristics. We assume that an individual must have awareness of the issue "m", which should affect her intermediate attention and, in this context, should provide a constant probability that action is taken regardless of preferences and account size. She then trades off her expected utility from taking an action (here – withdrawing funds) "EU(π)" and an expected transaction cost "E(C)" (trade off that includes preferences as well as all available transaction costs) which should affect her action dependent on account size (utility) and the costs, here proxied by financial literacy and socio-economic status.

The survey data indicates that the percentage of people who are aware of any of the financial campaigns (m) is 58%. This awareness is widely dispersed in the population; individuals with low financial literacy had an awareness of 37% versus 96% for those who had high financial literacy. From provident data (Figure 2) we know that individuals coming from low socioeconomic status localities had a lower closing rate of accounts than those coming from higher socioeconomic status localities for all account sizes. The lower awareness and lower closing rate of accounts of at least 21% for all account sizes provide an estimation of the higher observation costs for the populations coming from low socioeconomic localities and with lower financial literacy.

For the trade-off between "EU(π)" and "E(C)", survey data shows that among those who were aware of the campaigns, 22.5% (13% of the population) contacted their retirement fund provider with the intention of closing an inactive account, similar to the national withdrawal rate of 15% and slightly lower than our estimation from the provident fund data of a closing rate of 16%. For simplicity, we assume that the expected utility of all individuals is equal to the average account size in the provident fund data.[87] According to the provident fund data, the expected utility of a closed account (average size of account) is $620. The expected utility of an average unclosed account is $465. This reveals that a large percent of the population, despite being aware of the campaign, did not close their accounts (those who were aware of

[87] We assume, for simplicity's sake, that the utility of money is identical across socioeconomic groups. We disregard in this calculation differences in expected utility or preferences in the population that can affect estimations of such differences in expectations of account size and availability of inactive accounts, as well as the timing of receiving funds and discounting.

the campaigns but did not contact the retirement fund provider, 77.5%*58%=45%). This implies a high average expected transaction cost of over $465 to close an inactive account.

We also find evidence that individuals coming from low socioeconomic status localities seem to have higher transaction costs than those coming from higher socioeconomic status localities. This is represented in different closing rates by account size. Compared to those coming from high socioeconomic status localities, individuals from low socioeconomic status localities had a 21% and 22% lower closing rate for small and medium accounts respectively, versus a 57% lower closing rate for large accounts. Additionally, closed accounts of individuals from low socioeconomic status localities were 2% larger than those coming from high socioeconomic status localities. From survey data we found that the level of subjective financial literacy is positively associated with the likelihood of having contacted the provider, which is connected to having lower transaction costs. All these provide evidence of state-dependent frictions and transaction costs that are higher for those coming from low socioeconomic localities and with low financial literacy.

8. Informational Intervention Field Experiment

To follow up on the outcomes described above, we conducted a field experiment to examine how different information interventions affect an underprivileged population's awareness of a financial campaign and the actions it takes following the campaigns. We showed that populations with low objective and subjective financial literacy (proxy for cost and expected costs) are less aware of the information on financial regulation and this affects their ability to take action. The next natural question is whether financial campaigns with different designs would lead to lower observation costs (assuming other costs remain the same) and more attention. To address this question, we document the effect of different modes of communication. Our experiment on the effects of different interventions builds on existing financial behavior research that shows that short training programs, particularly those that provide detailed and personalized information, can affect financial behavior. We also contribute by testing whether an explanation involving a more personal interaction has the potential to be more effective.

8.1 Experimental setting

7.1.1 Population

The experiment aims to investigate potential interventions for a population that might incur high perceived or actual costs of financial actions. Since in our data we find that the ultra-Orthodox population had low objective and subjective financial literacy (also found in

previous research), as well as low awareness of the financial campaigns and website (Table 11), the experiment targets a population of ultra-Orthodox women. As stated above, the ultra-Orthodox community suffers from high poverty rates. Additionally, it is usually the women, who from an early age are the main providers for their households. As these women take part in the job market, they are equally likely to have an inactive account in the retirement savings system or in the banking sector. Hence, it is particularly important to communicate relevant financial information to this population.

It is difficult to survey this population, and our survey sample only included 3% ultra-Orthodox individuals (10% of the general population). Even the CBS, which uses national infrastructure, sometimes has difficulty reaching this population. To reach this population we use other methods.

For our interventions, we targeted a population of female ultra-Orthodox college students studying education and health professions in specialized classes for the ultra-Orthodox community.

In the survey that we conducted on the experiment population, we found that this population indeed has exceptionally low objective financial literacy and is therefore a good sample to target. Only 6% of the subjects knew the right answers to all three objective financial literacy questions (versus 31% in the initial full sample).[88] Comparing the women aged 24-35 in our sample, which is the main age group in our sample, to ultra-Orthodox woman aged 25-34 in the CBS 2014 Expenditure Survey, reveals they have similar attributes (the numbers in parentheses are those of the CBS survey): the socioeconomic index is 4.5 (4.1)[89]; the periphery index is 4.2 (4.3); and the marriage rate is 85% (94%).

[Table 11]

7.1.2 Financial Regulation

Our field experiment was based on a new extension to the government's Money Mountain campaign and website. While the first part of the campaign was about raising awareness of inactive accounts in the retirement savings system, the second part, dubbed "Money Mountain 2," was about raising awareness of inactive accounts in the banking system. The two campaigns rely on the same website, where individuals can look for their own and other close

[88] Moreover, 25% of the subjects did not know the answer to any of the three questions (versus 0% in the overall main survey sample).
[89] In the CBS survey the socioeconomic locality index is between 1 to 5 and not 10; the average reported above is the average multiplied by two to stay consistent with earlier measures.

family members' inactive accounts. The launch of the Money Mountain 2 website in September 2016 was advertised in a minor media campaign. Another media campaign was launched on radio and Internet sites in September 2017, after our field experiment was over.

7.1.3 Interventions

All participants filled out at least one survey that was used to collect data on individuals' characteristics and attention to the issue.

The interventions we examined in the experiment are as follows:

1. **No intervention:** Control group only filled out a baseline survey handed out by an employee of the Bank of Israel during class.
2. **E-mail intervention**: Received detailed information on the financial regulation in an e-mail and later filled out a survey in person during class.
3. **E-mail–video intervention**: Received detailed information on the financial regulation in an e-mail, along with a video presentation by a professional actor,[90] and later filled out a survey in person during class.
4. **Face-to-face intervention:** Received a face-to-face explanation of the financial regulation from an employee of the Bank of Israel (the organization in charge of banking regulations) and later filled out a survey in person during class.
5. **Double survey–e-mail intervention:** Filled out a survey in person handed out by an employee of the bank of Israel during class, received detailed information on the financial regulation in an e-mail, and then filled out the same survey in person for the second time during class.

The e-mail provided (1) detailed instructions on how to access and use the website, (2) an explanation of the steps to take to close accounts if they find inactive funds (e.g., contacting the relevant bank), and (3) a direct link to the website. The video had an actor explain all this information using screenshots from the website. The face-to face explanation provided the same information.

The various interventions described above enable us to test the effectiveness of the mode of communication, in particular digital versus face-to-face. In addition, we examine the dimensional effect of adding a video presentation to an e-mail text, or of having the class meet and interact with a person before receiving more detailed information.

[90] The video presentation was 70 seconds (1:10 minutes) long.

8.2 **Randomization and Data Collection**

The fact that we could enter and re-enter classes to make the interventions and collect the survey data enabled us to relay information in a supervised framework with the possibility of following up on the impact of the intervention on the individuals. Classes were randomly selected to be the control and intervention groups. Each class was part of a different academic program or curriculum such that students in one class were not taking courses with students in the other classes. To further minimize the risk of spillovers between treatment areas, the face-to-face intervention took place on a different campus in another city where there is another branch of the college. This branch is located in an area as central as the other campus but with lower socioeconomic attributes. Each intervention group was made up of two classes: one in education and one in a health profession, except for the face-to-face intervention group, which was made up of a single education class.

For the analysis we draw on survey data and examine the subjects' objective and subjective financial literacy in two fields: general financial issues, and specific knowledge related to banking and checking accounts. The survey includes questions on digital access to personal banking data and several personal characteristics: marital status, income, work status, and age. Survey data allows us to see how these personal characteristics affect awareness of the Money Mountain 2 financial campaign and access to the website.

The baseline surveys and interventions took place in the beginning of August 2017, and the follow-up surveys took place ten days to two weeks after the interventions.

For the final intervention group, the survey–e-mail group, 75% of a class that was used initially as a control group were then sent an email intervention and filled out a survey for the second time. Seven additional subjects who were not in the control group answered the survey only once after the e-mail intervention (we added these subjects' data to the general e-mail intervention group).

In the control and treatment groups' data we find similar personal characteristics, with no significant differences in the average income or the average periphery index. There are differences between the groups in the percentage of married women, but this characteristic does not have a significant effect or correlation with financial outcomes in the survey sample in the earlier section of the paper. While there is a significant difference between the average socioeconomic locality index in the face-to-face intervention group and the average in the control group (probably due to the different location of the campus), there is no significant difference between the groups in the individuals' income. Hence, we believe that they have

similar socioeconomic individual characteristics. All the other groups have a similar average socioeconomic locality index in addition to the individual socioeconomic characteristics. The average age for most of the groups is early- to mid-20s: 23 for the control group, 26 for the e-mail intervention group, 24 for the e-mail–video intervention group, and 22 for the survey–e-mail intervention group. The only outlier is the average age of the face-to-face intervention group, which is 34.

8.3 **Methodology**

The empirical analysis compares the outcomes in the intervention groups to those in the control group.

We examine two possible outcome variables using logit regressions: (1) awareness of the Money Mountain 2 campaign or (2) access to the Money Mountain website. These variables each receive a value of 1 or 0.

For each subject *i* we regress each outcome (y_j) on an indicator variable identifying the intervention that subject received (dummy value of 1 or 0) while controlling for the personal characteristics of the subject (X):

$$\log\left(\frac{p_j}{1-p_j}\right) = \alpha_i + \beta_t * Intervention_{i,t} + \beta_x * X_i + \epsilon_i$$

Where $P_{j_i} = p\left(Y_{j_i} = 1 \middle| X_i\right)$ is the outcome variable (j=1,2) for individual i. The coefficient of interest β_t indicates a dummy variable for the method of intervention t, namely, either (1) e-mail intervention, (2) e-mail–video intervention, (3) face-to-face intervention, or (4) survey–e-mail intervention, where no intervention is our baseline case. Additionally, we run another regression where the coefficient of interest β_t indicates a dummy variable for the method of intervention t=5, which is the dummy for all of the personal interaction interventions (video, face-to-face, and survey-e-mail) where all other interventions are our baseline case. For both regressions we denote by X_i individual *i*'s personal characteristics: age; income; objective financial literacy; knowledge of general financial issues; knowledge of specific banking and checking account issues; subjective financial literacy; confidence in knowledge of general financial issues; confidence in knowledge of specific banking and checking account issues, and digital access to banking account. The variable descriptions are presented in Appendix 3.[91]

[91] The results are similar for different specifications of the socioeconomic variables.

8.4 **Results**

Statistics about the groups' awareness and actions following the Money Mountain 2 campaign appear in Table 12. It shows that interventions increased awareness of the campaign for the intervention groups by more than 100% relative to the control group (from 18% to between 42%-62%) and that the personal interaction interventions had a positive effect on visiting the website (from 14% to between 16% and 28%).

[Table 12]

Our results indicate that the interventions have a significant effect (at the 5% level) on awareness of the Money Mountain 2 campaign (columns (1) and (2) of Table 13). The effect of a personal interaction intervention (i.e., e-mail–video, face-to-face, or survey–e-mail) have a positive and statistically significant effect (at the 10% level) on visiting the website (column (4) of Table 13).[92] When controlling for subjects' characteristics, the effect of the e-mail intervention is no longer significant for awareness of the campaign (column (1) of Table 13) and the personal interaction interventions become non-significant for visiting the website (column (3) of Table 13).[93]

[Table 13]

To study if there are differences in the effects of the interactions on those with high or low financial literacies, we ran the regression presented in table 13 when including an interaction term between the human interaction variable and the different subjective and objective financial literacy variables.[94] The interaction coefficient is positive in all specifications for subjective banking financial literacy. For objective financial literacy, the interaction term is positive for the banking financial literacy variable but negative for the general financial literacy variable. From this it seems that more personal interaction seems to have a larger effect on those with low subjective financial literacy but not necessarily for those with low financial literacy.

These outcomes indicate that more personal interactions with detailed and specific information can indeed have a strong effect on the success of financial initiatives. This is

[92] It is likely that the insignificant effects of variables when there are controls for personal characteristics, stems from the small sample size.
[93] When comparing our results to the results of the Bauer et al. (2018) field experiment, which investigated the effect of letters with different wording on accessing a website that provides personal details on individuals' retirement savings, the effect we find seems substantial. In Bauer et al. (2018), the most effective letter, which included a financial incentive (small lottery) to access the website, raised visits from 3% in the control group to 5%.
[94] In the regression with an interaction with general subjective financial literacy, singularities occur and the interaction term is dropped.

accomplished through lowering costs for populations that have indications of high perceived or actual observation and transaction costs. The outcomes can be used to design more effective and inclusive campaigns. Future research should continue to investigate how regulators and savers may engage with this issue around the world.

9. Conclusion, discussion, and further research

In this paper we research the effect of financial campaigns and a fintech advancement on inattention to inactive retirement savings accounts. These campaigns alerted the population to a new website that was intended to lower information search and observation costs, and help people to find and close inactive retirement savings accounts. There was a tax exemption for this activity. The campaigns were connected to each other and put an emphasis on the website. These solutions to inattention to inactive accounts were novel and based on fintech advancements, and are a response to a problem that occurs in many countries.

While the paper focuses on a policy action in Israel, the issue of inactive retirement savings accounts and fintech advancements are of global interest. As time has passed since personal retirement accounts were introduced, DC pension systems have become more prevalent, and people change jobs more often, small, inactive retirement accounts are likely to increase in number and to amount to larger sums of unclaimed money.

Our proprietary data and survey data indicate a lower-than-expected closing rate of 16 percent of accounts, which is consistent with the information the regulator provided and in turn suggests that our samples are representative of the total population in this matter. Proprietary data shows that individuals who closed inactive retirement savings accounts in the provident fund following the tax exemption campaign were older and came from localities with a higher socioeconomic index. Survey data presents evidence that people who lacked objective or subjective financial literacy, which includes younger people and women, had lower attention to the campaigns and to inactive retirement savings accounts, stemming from both higher observation costs (effecting salience) and higher transaction costs (effecting actions).

We contribute to the literature by providing evidence that there is limited attention to inactive retirement accounts and that financial literacy affects the take-up of government financial campaigns. We provide evidence of higher observation costs as well as higher transaction costs for those with low socioeconomic status and low financial literacy.

Following the campaigns, we find an average awareness of inactive accounts and financial campaigns of 58%, but it is highly dependent on objective and subjective financial literacy; those with low subjective and objective financial literacy had an awareness rate of only 37%, whilst those with high measures of both types of financial literacy had an awareness rate of 96%. Individuals coming from low socioeconomic status localities had a lower closing rate for all account sizes, providing a measurable indication that this population had higher observation costs. Additionally, we provide evidence that the size of the transaction costs also fluctuates by financial literacies and socioeconomic status and after both campaigns, it remains on average above 465 USD. We also contribute to the academic literature of limited attention by providing direct empirical evidence of inattention even when the financial information and choices available are relatively simple (enter a website and decide to close an account) and there is no need for any mathematical calculations.

As financial literacy is correlated with socioeconomic status, this means that the current way consumer financial regulation is being relayed to the public can affect inequality in the long run. Those from more deprived backgrounds are less attentive, and hence less able to act in a way that can improve their financial status. It seems that the use of digital media and fintech advancements exacerbates differences between populations, as there are no intermediators and individuals must make their own decisions directly and on their own initiative.

As retirement savings is perhaps the largest financial issue individuals face during their lifetime, future campaigns and interventions will need to address heterogeneity in the public's financial and digital literacies and costs, especially as the use of fintech advancements by regulators becomes more prevalent.

While we do not attempt to provide all possible solutions, we investigate several possible interventions via a field experiment. The field experiment provides evidence that there can be accessible and superior ways to provide information that are better targeted to populations with low financial literacy. Our field experiment indicates that more personal (and detailed) digital interventions do seem to lower observation costs, and contribute to the attention of individuals with low socioeconomic status, and specifically those with low subjective financial literacy. For example, face-to-face explanations, and even e-mails that include a video presentation, can promote wider dissemination of financial information to the public, and they can easily be widely replicated in future interventions. Following the COVID-19 pandemic, online education and lectures have been made much more accessible. Policy makers may try to use these innovations to reach the less attentive population and provide

individuals with timely and personal financial information more easily. We leave for further research the possibility of using digital tools to promote financial awareness among different populations.

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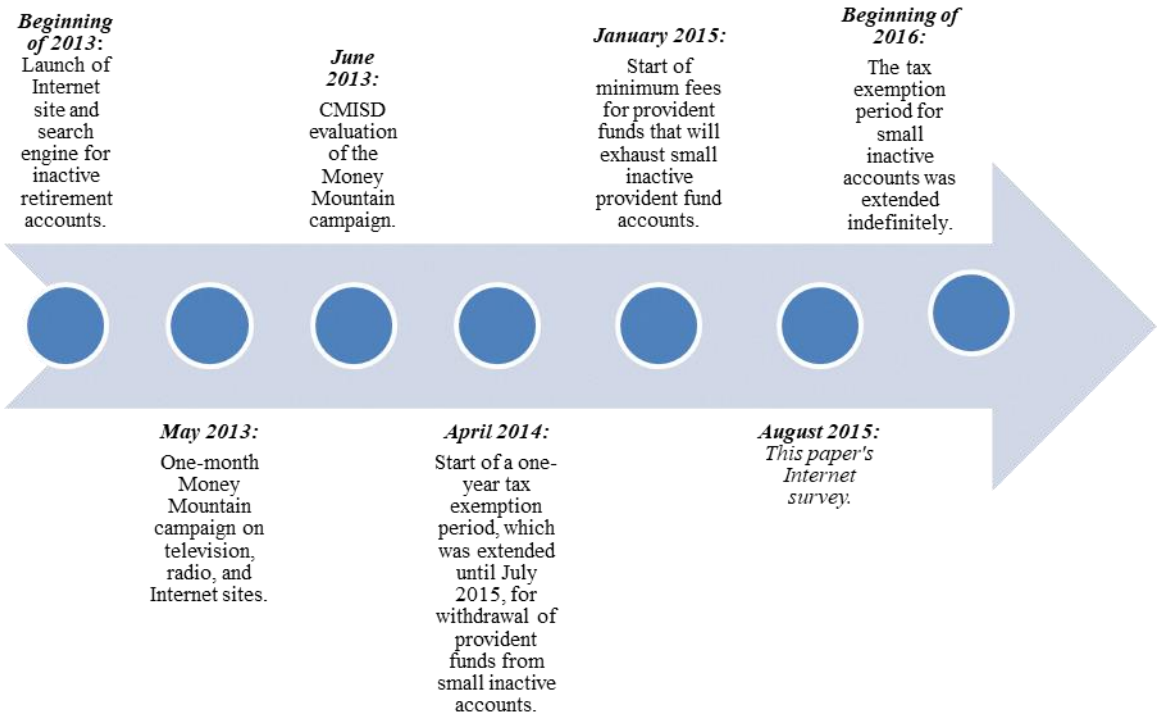
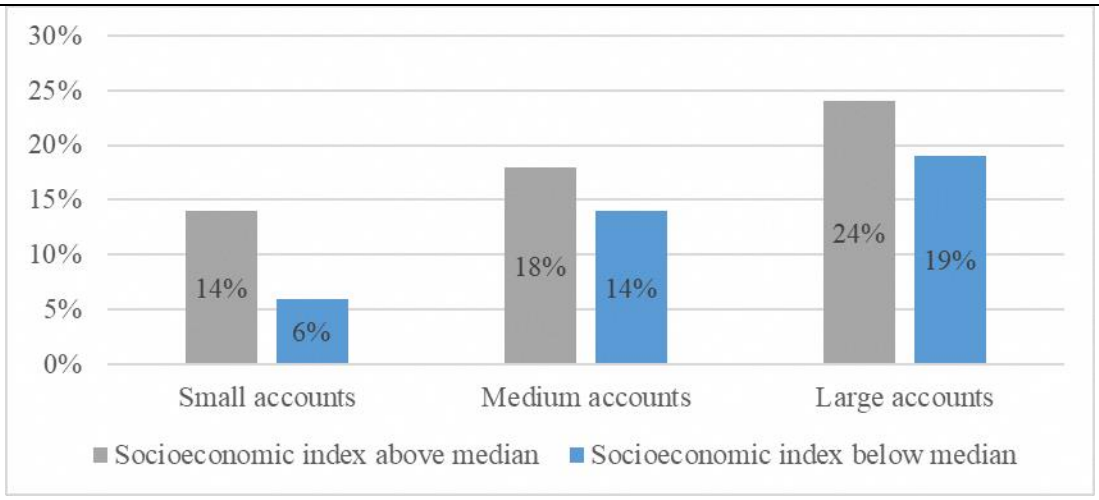
Figure 1 – CMISD campaigns and research timeline



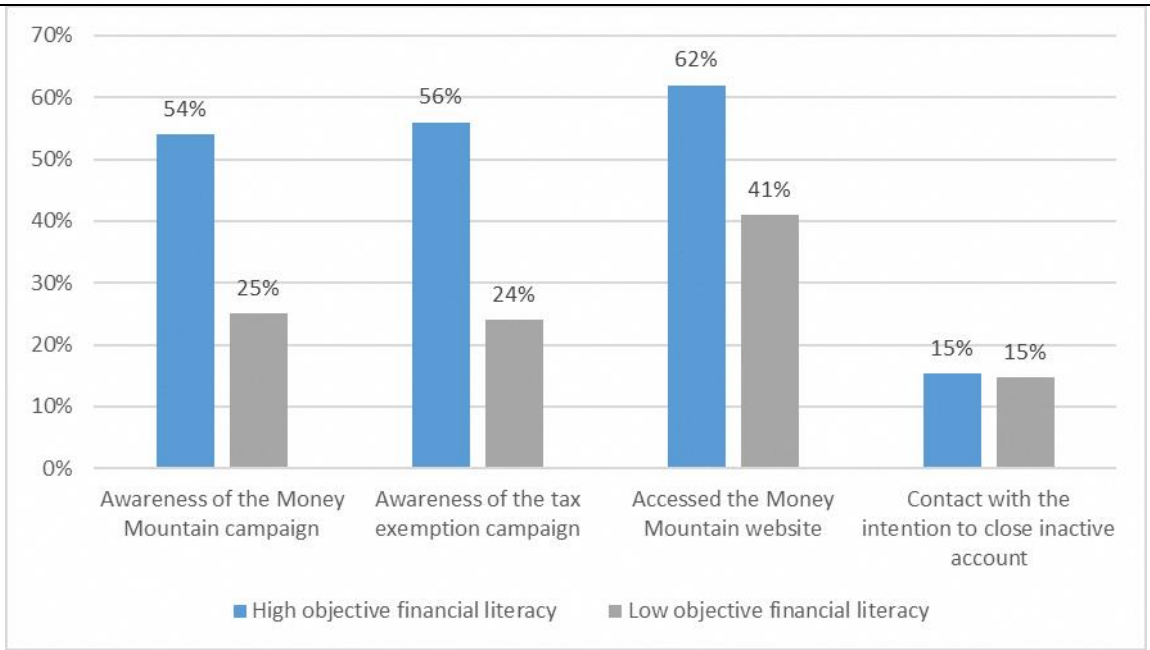
This figure shows the CMISD Money Mountain and tax exemption campaigns from the beginning of 2013 to the beginning of 2016.

Figure 2 - Percentage of closed accounts by socioeconomic index and account size



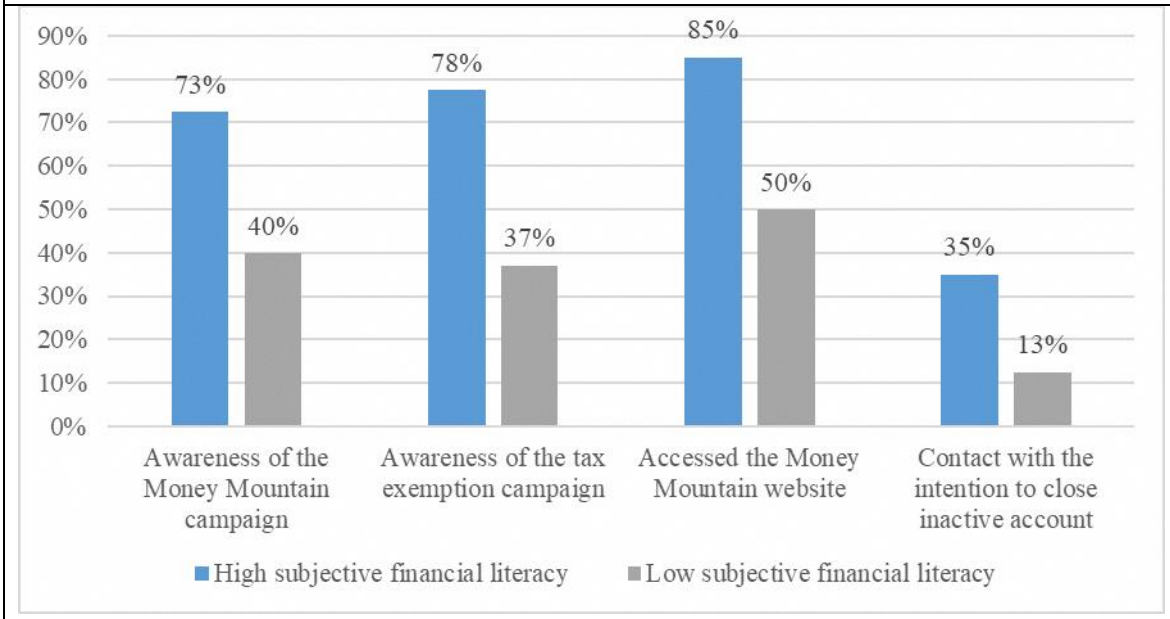
Notes: The table shows the number and percentage of closed accounts out of all eligible accounts during the tax exemption campaign, from the beginning of March 2014 to the end of July 2015, by socioeconomic index and size of account (amount of money): small, medium, or large. Socioeconomic index of local authorities in Israel from the Israeli Central Bureau of Statistics (1 is for authorities with a low socioeconomic index and 10 is for authorities with a high socioeconomic index). The country median is 5 and the mean is 4.8. Size of account is calculated by dividing the accounts savings size into quarters and then categorizing them: small accounts are accounts that are in the lowest quartile, with a mean account size of around 50 USD (52 USD for accounts from localities below the socioeconomic index median and 51 USD from localities above), medium accounts are in the 2nd and 3rd quartiles, with a mean fund size of 345 USD (345 USD for accounts from localities below the socioeconomic index median and 347 USD from localities above), and large accounts are in the highest quartile, with an average account size of 1,260 USD (1,257 USD for accounts from localities below the socioeconomic index median and 1,266 USD from localities above). The NIS to USD conversion rate is 3.5. Data obtained from a large provident fund provider. The differences in withdrawal rates between large and small account size and the average for all the samples are all significant at the 1% level. The differences in withdrawal rates for the medium-sized accounts and the sample average are not statistically significant for accounts from localities below the socioeconomic index median and are significant at the 10% level for accounts from localities above the median

Figure 3A – Financial regulation outcomes by objective financial literacy



The Y-axis shows the percentage of individuals who indicated that they are aware of the financial campaigns, visited the Money Mountain website, or contacred the retirement fund provider with the intention of closing an inactive account. The X-axis shows the level of the individuals' objective financial literacy. Individuals who have high objective financial literacy answer all three objective financial literacy questions correctly and are indicated in blue. Individuals who have low objective financial literacy did not answer any objective financial literacy questions correctly and are indicated in grey. Data obtained from the main survey sample.

Figure 3B – Financial regulation outcomes by subjective financial literacy



The Y-axis shows the percentage of individuals who indicated that they were fully aware of the financial camapaigns, visited the Money Mountain website, or contacted the retirement fund provider with the intention of closing an inactive account. The X-axis shows the level of the subjective financial literacy. Individuals who have high subjective literacy state that they have an excellent or good understanding of retirement savings and are indicated in blue. Individuals who have low subjective literacy state that they had fair, poor, or no understanding of retirement savings and are indicated in grey. Data obtained from the main survey sample.

Table 1 – Mean differences of closed accounts during tax exemption campaign by different population subsets						
(Number, means, percent)						
Population subsets:	**Age>60**	**Age<35**	**Periphery index above country median[1]**	**Socioeconomic index above country median[2]**	**From Arab locality**	**Female**
N	1,787	3,074	6,582	6,144	499	6,852
% Closed accounts	23%	15%	18%	18%	11%	16%
Population subsets	**Age<61**	**Age>34**	**Periphery index below country median[1]**	**Socioeconomic index below country median[2]**	**Not from Arab locality**	**Male**
N	10,937	9,650	1,311	3,109	12,236	5,883
% Closed accounts	15%	17%	15%	13%	16%	16%
X square of difference of proportions between groups % closed accounts	**67.41*** **	**4.35** **	**6.4** **	**46.7*** **	**11.5*** **	**0.52**
1. Periphery index of local authorities in Israel from the Israeli CBS (1 is for authorities in the outskirts of the country and 5 is for authorities in the heart of the country). The country median is 3 and the mean is 2.8. Data is presented for subsets above or below the country median.						
2. Socioeconomic index of local authorities in Israel from the Israeli Central Bureau of Statistics (1 is for low economic authorities and 10 is for high socioeconomic authorities). The country median is 5 and the mean is 4.8. Data is presented for subsets above or below the country median.						
*** p<0.01, ** p<0.05, * p<0.1.						
Notes: The table shows the number and percentage of closed accounts out of all eligible accounts during the tax exemption campaign, from the beginning of March 2014 to the end of July 2015, for different population subsets. Data obtained from a large provident fund provider.						

Table 2 – Objective financial literacy questions and the distribution of answers

Name of question	**Interest question**				**Inflation question**				**Diversification question**		
Question	Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?				Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?				Do you think that the following statement is true or false? "Buying a single company stock usually provides a safer return than a mutual fund stock."		
Answer	More than $102	Exactly $102	Less than $102	DK[1]	Less than today	More than today	Exactly the same	DK[1]	FALSE	TRUE	DK[1]
	correct answer	wrong answer		DK*	correct answer	wrong answer		DK*	correct answer	wrong answer	DK*
	76%	11%		14%	59%	14%		27%	45%	7%	47%

1. *Did not know the answer.*

Notes: The table shows the wording of the three objective financial literacy questions and answers, with the percentage of individuals who answer correctly, incorrectly, or state that they did not know the answer. Data obtained from the main survey sample.

Table 3 – Subjective financial literacy questions and distribution of answers

Question category		**Excellent**	**Good**	**Fair**	**Poor**	**Not at all**	**DK[1]**
Confidence in retirement funds knowledge	How much do you feel you understand retirement savings?	1%	7%	21%	37%	29%	6%
Interest in retirement funds	How much are you interested in retirement savings?	9%	17%	33%	23%	14%	4%

1. Did not know the answer.

Notes: The table shows the wording of the two subjective questions and answers, with the distributions of individuals' answers. Data obtained from the main survey sample.

Table 4– Socioeconomic characteristics and mean differences of people who have high and low objective and subjective financial literacy index scores

	Objective financial literacy[5]			Subjective financial literacy[6]		
Socioeconomic characteristics	**Low**	**High**	**T-score of mean difference between Low and High**	**Low**	**High**	**T-score of mean difference between Low and High**
Age	37.19	41.97	**-2.45****	39.21	43.43	**-1.81***
Female	72%	35%	**5.78*****	59%	23%	**5.11*****
Immigrant	12%	17%	**-0.97**	18%	8%	**2.2****
Income level[1]	1.97	2.52	**-3.87*****	2.23	2.36	**-0.84**
Education level[2]	1.61	2.13	**-6.03*****	1.88	1.97	**-0.82**
			X(chi) square of difference in proportions			
Percentage of people who have a socioeconomic index *above the median*[3]	42%	62%	**2.76***	60%	54%	**0.3**
Percentage of people who have a socioeconomic index *below the median*[3]	21%	12%	**2.22**	12%	13%	**0**
Percentage of people who have a periphery index *above the median*[4]	63%	71%	**1.13**	62%	67%	**0.15**
Percentage of people who have a periphery index *below the median*[4]	13%	6%	**2.23**	8%	3%	**0.76**

1. Income ranges between 1 and 3, where 1 is below-average income, 2 is average income, and 3 is above-average income.

2. Education ranges between 1 and 3, where 1 is high school education or below, 2 is above high school education but non-academic, and 3 is academic education.

3. Socioeconomic index of local authorities in Israel from the Israeli Central Bureau of Statistics (1 is for authorities with a low socioeconomic index and 10 is for authorities with a high socioeconomic index). The country median is 5 and the mean is 4.8.

4. Periphery index of local authorities in Israel from the Israeli Central Bureau of Statistics (1 is for authorities in the outskirts of the country and 5 is for authorities in the heart of the country). The country median is 3 and the mean is 2.8.

5. Objective financial literacy index (0 is for people with low objective financial literacy and 3 is for people with high objective financial literacy).

6. People with low subjective financial literacy state that they have fair, poor, or no understanding of retirement savings. Individuals with high subjective literacy state that they have an excellent or good understanding of retirement savings.

*** p<0.01, ** p<0.05, * p<0.1.

Notes: The table shows means and mean differences for individuals with high or low objective and subjective financial Data obtained from the main survey sample.

Table 5 – Awareness of campaigns			
		(1)	(2)
Variables:		**Awareness of the Money Mountain campaign**	**Awareness of the tax exemption campaign**
Objective Financial literacy		0.281**	0.337***
		(0.116)	(0.125)
Subjective Financial literacy		0.937**	1.497***
		(0.414)	(0.454)
Age		0.015	0.024**
		(0.01)	(0.01)
Female		-0.347	-0.317
		(0.219)	(0.231)
Married		0.054	0.348
		(0.254)	(0.265)
Income Level	**Average income**	0.469	-0.086
		(0.439)	(0.476)
	Above-average income	0.148	0.019
		(0.255)	(0.273)
Education Level	**Non-academic above high school education**	-0.046	0.993***
		(0.272)	(0.315)
	Academic education	0.272	0.959**
		(0.357)	(0.392)
Religious Identity	**Traditional**	0.026	-0.14
		(0.242)	(0.259)
	Religious	-0.235	-0.254
		(0.329)	(0.344)
	Ultra-Orthodox	-0.214	-0.348
		(0.736)	(0.753)
Work Status	**Non-workers**	-0.6**	-0.594*
		(0.293)	(0.32)
	Retired	-0.472	-0.278
		(0.516)	(0.53)
Immigrant		-0.498*	-0.135
		(0.297)	(0.298)
Constant		-1.268***	-2.744***
		(0.486)	(0.555)
Observations		424	424
McFadden Pseudo R^2		0.23	0.29
AIC		562	517
Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.			
Notes: Each column represents a different regression of the effect of individual characteristics on awareness of financial campaigns. Column (1) reports a logit estimation of awareness of the Money Mountain campaign. Column (2) reports a logit estimation of awareness of the tax exemption campaign. Data obtained from the main survey sample.			

Table 6 –Actions taken following the campaigns							
		(1)[1]	(2)[2]	(3)[3]	(4)[1]	(5)[2]	(6)[3]
Variables:		**Visited the Money Mountain website**			**Contact with the intention of closing inactive account**		
Objective Financial literacy		0.1430	0.234**	0.188*	-0.050	0.0010	-0.028
		(0.115)	(0.102)	(0.109)	(0.171)	(0.147)	(0.159)
Subjective Financial literacy		1.447***	1.049***	1.234***	0.874**	1.398***	1.158***
		(0.494)	(0.383)	(0.436)	(0.432)	(0.324)	(0.37)
Age		0.027***	0.031***	0.029***	0.010	0.0080	0.009
		(0.01)	(0.009)	(0.009)	(0.014)	(0.011)	(0.012)
Female		-0.372*	-0.405**	-0.39*	-0.604*	-0.4520	-0.521*
		(0.22)	(0.198)	(0.209)	(0.326)	(0.278)	(0.302)
Married		0.1920	0.1980	0.190	0.2750	0.4660	0.373
		(0.25)	(0.226)	(0.238)	(0.376)	(0.319)	(0.348)
Income Level	**Average income**	0.0680	-0.0640	0.0040	0.1330	-0.1010	0.002
		(0.447)	(0.429)	(0.438)	(0.655)	(0.593)	(0.625)
	Above-average income	0.0730	-0.0190	0.0350	0.1440	-0.1980	-0.028
		(0.25)	(0.229)	(0.239)	(0.395)	(0.337)	(0.365)
Education Level	**Non-academic above high school education**	0.49*	0.2090	0.3430	-0.0320	0.2180	0.097
		(0.268)	(0.237)	(0.252)	(0.416)	(0.359)	(0.387)
	Academic education	0.734**	0.4970	0.608*	0.440	0.4880	0.47
		(0.364)	(0.33)	(0.347)	(0.501)	(0.442)	(0.472)
Religious Identity	**Traditional**	-0.432*	-0.3070	-0.3670	0.280	0.0260	0.157
		(0.244)	(0.219)	(0.232)	(0.345)	(0.298)	(0.321)
	Religious	-0.0170	0.0320	0.0040	0.1320	-0.0690	0.03
		(0.327)	(0.306)	(0.317)	(0.46)	(0.406)	(0.434)
	Ultra-Orthodox	-0.0980	0.3130	0.1120	0.0210	0.2410	0.149
		(0.69)	(0.62)	(0.652)	(1.112)	(0.818)	(0.949)
Work Status	**Non-workers**	-0.2140	-0.2580	-0.2380	-1.11*	-0.5330	-0.803
		(0.278)	(0.254)	(0.266)	(0.572)	(0.431)	(0.495)
	Retired	-0.1510	-0.6580	-0.4240	-0.2270	-0.9530	-0.558
		(0.536)	(0.439)	(0.487)	(0.719)	(0.614)	(0.662)
Immigrant		0.0090	-0.1950	-0.0940	-0.4620	-0.0950	-0.26
		(0.288)	(0.269)	(0.279)	(0.474)	(0.371)	(0.417)
Constant		-1.45***	-1.242***	-1.351***	-2.245***	-2.339***	-2.287***
		(0.487)	(0.444)	(0.465)	(0.711)	(0.617)	(0.663)
Observations		424	539	539	424	539	539
McFadden Pseudo R2		0.24	0.23	0.24	0.27	0.24	0.27
AIC		559	682	561	333	447	335

1. Main survey sample.
2. Main survey sample and complementary sample.
3. Main survey sample and weighted complementary sample.

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

Notes: Each column represents a different regression of the effect of individual characteristics on action taken following the campaigns. Column (1)–(3) reports logit estimations of visiting the Money Mountain website for three different samples. Columns (4)–(6) reports logit estimations of contacting the retirement savings provider with the intention of closing inactive accounts as a result of the Money Mountain campaign or the tax exemption campaign for three different samples. Data obtained from survey.

Table 7 – Probability of being affected by the financial regulation for specific populations						
			Awareness of the Money Mountain campaign	**Awareness of the tax exemption campaign**	**Visited the Money Mountain website**	**Contact with the intention of closing inactive account**
High objective and subjective financial literacy	**Male**	**High socioeconomic attributes**	86%	92%	95%	47%
		Low socioeconomic attributes	75%	72%	83%	29%
	Female	**High socioeconomic attributes**	81%	89%	93%	33%
		Low socioeconomic attributes	68%	65%	77%	18%
Low objective and subjective financial literacy	**Male**	**High socioeconomic attributes**	51%	48%	74%	30%
		Low socioeconomic attributes	33%	17%	42%	17%
	Female	**High socio-economic attributes**	42%	40%	66%	19%
		Low socioeconomic attributes	26%	13%	34%	10%

Notes: The table shows the outcomes (being aware of financial regulation or taking actions following the campaigns) deriving from the logit model in Tables 5 and 6 for individuals who are married, non-immigrant, secular, and employed. The table displays data for women and men who have either a high (3) or low (0) objective financial literacy index and have high subjective financial literacy, meaning they are confident in their retirement knowledge (state that they have good or excellent understanding of retirement issues), or have low subjective financial literacy, meaning they are not confident in their knowledge (state that they had poor or no understanding of retirement issues). The data also presents results for individuals with high and low socioeconomic attributes. Individuals with high socio-economic attributes are married, aged 55, with an academic education, and with above-average income. People with low socio-economic attributes are married, aged 35, with a high school degree or lower, and with below-average income. Data obtained from the main survey sample.

Table 8 – Robustness tests: Age squared, Inquiry, and interest in retirement issues

Variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Age square				Inquiry	Subjective financial literacy: Interest in retirement issues			
	Awareness of the Money Mountain campaign	Awareness of the tax exemption campaign	Visited the Money Mountain website	Contact with the intention of closing inactive account	Inquiry about inactive accounts	Awareness of the Money Mountain campaign	Awareness of the tax exemption campaign	Visited the Money Mountain website	Contact with the intention of closing inactive account
Objective financial literacy	0.26**	0.33***	0.15	-0.07	0.1	0.30***	0.36***	0.16	-0.02
	(0.12)	(0.12)	(0.11)	(0.17)	(0.16)	(0.12)	(0.13)	(0.12)	(0.17)
Subjective financial literacy (Confidence or Interest)	1.05**	1.59***	1.47***	0.99**	0.86*	0.32	0.99***	0.77***	0.49
	(0.41)	(0.45)	(0.49)	(0.43)	(0.45)	(0.24)	(0.26)	(0.26)	(0.32)
Age	0.08	0.16**	0.13**	0.07	(0.02)	0.02*	0.02**	0.03***	0.01
	(0.06)	(0.07)	(0.06)	(0.09)	(0.09)	(0.01)	(0.01)	(0.01)	(0.01)
Age Squared	0	-0.00**	-0.00*	0					
	(0.00)	(0.00)	(0.00)	(0.00)					
Female	-0.37*	-0.34	-0.37*	-0.62*	-0.09	-0.40*	-0.38	-0.43**	-0.67**
	(0.22)	(0.23)	(0.22)	(0.33)	(0.31)	(0.22)	(0.23)	(0.22)	(0.32)
Income Level: Average income	0.5	-0.07	0.08	0.16	-0.37	0.43	-0.22	-0.03	0.1
	(0.44)	(0.48)	(0.45)	(0.65)	(0.68)	(0.44)	(0.48)	(0.44)	(0.65)
Income Level: Above-average income	0.22	0.03	0.07	0.25	-0.06	0.12	-0.03	0.04	0.11
	(0.25)	(0.27)	(0.25)	(0.39)	(0.35)	(0.25)	(0.27)	(0.25)	(0.39)
Education Level: Non- academic above high school education	-0.04	0.92***	0.388	-0.009	0.141	-0.07	0.95***	0.46*	-0.08
	(0.28)	(0.32)	(0.27)	(0.41)	(0.40)	(0.27)	(0.31)	(0.25)	(0.41)
Education Level: Academic education	0.28	0.85**	0.59	0.48	0.17	0.267	0.98**	0.76**	0.4
	(0.37)	(0.40)	(0.38)	(0.51)	(0.52)	(0.36)	(0.39)	(0.37)	(0.50)
Immigrant	-0.48	-0.08	0.07	-0.44	0.22	-0.55*	-0.22	-0.05	-0.55
	(0.30)	(0.30)	(0.29)	(0.47)	(0.40)	(0.30)	(0.30)	(0.29)	(0.47)
Constant	-2.72**	-5.45***	-3.38***	-3.84**	-1.83	-1.23**	-2.73***	-1.45***	-2.25***
	(1.13)	(1.32)	(1.14)	(1.75)	(1.74)	(0.49)	(0.56)	(0.49)	(0.71)
Other Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	424	424	424	424	424	424	424	424	424
McFadden Pseudo R^2	0.23	0.29	0.25	0.27	0.16	0.22	0.29	0.24	0.27
AIC	564.3	515.1	554.4	335.1	353.1	566.2	514.8	559.8	334.4

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Notes: Each column represents a different regression of the effect of individual characteristics on awareness of financial campaigns. Columns (1)–(4) report logit estimations of awareness of the financial campaigns and action taken following the campaigns, controlling for age and age squared and without controlling for work status variables. Column (5) reports logit estimations of inquiring about inactive accounts (any inquiries about inactive funds and not specifically inquiries resulting from the financial campaigns). Columns (6)–(9) report logit estimations of awareness of the financial campaigns and action taken when controlling for an additional subjective question about interest in retirement issues. Other controls as presented in main regressions. Data obtained from the main survey sample.

Table 9 - Robustness checks funds expectations					
Variables:	**Awareness of the Money Mountain campaign**	**Awareness of the tax exemption campaign**	**Visited the Money Mountain website**	**Contact with the intention of closing inactive account**	**Contact with the intention of closing inactive account**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Financial literacy index	0.302**	0.403***	0.158	-0.028	-0.287
	(0.12)	(0.131)	(0.124)	(0.182)	(0.22)
Confidence in retirement knowledge	0.970**	1.472***	1.578***	0.691	1.543***
	(0.446)	(0.49)	(0.559)	(0.495)	(0.533)
Expecting to find no inactive accounts	-1.152***	-0.533	-1.418***	-1.917***	
	(0.403)	(0.418)	(0.416)	(0.609)	
Expecting to find funds between $285-$1,500	-0.369	0.565	0.023	0.235	0.539
	(0.452)	(0.471)	(0.475)	(0.543)	(0.689)
Expecting to find funds between $1,500-$5,700	-0.263	0.136	0.034	-0.391	0.619
	(0.447)	(0.461)	(0.474)	(0.558)	(0.61)
Expecting to find funds between $5,700-$28,500	-0.612	0.141	0.246	-1.178*	-0.143
	(0.48)	(0.503)	(0.517)	(0.693)	(0.587)
Expecting to find funds over $28,500	-0.602	1.217	-0.235	-0.479	-0.605
	(0.814)	(0.967)	(0.962)	(0.923)	(0.704)
Did not know what expectations were	-0.685	0.269	-0.577	-1.121*	0.62
	(0.439)	(0.454)	(0.45)	(0.615)	(0.92)
Constant	-0.679	-2.912***	-1.033	-1.679*	-0.033
	(0.61)	(0.685)	(0.631)	(0.876)	(1.072)
Controls for other personal attributes	Y	Y	Y	Y	Y
Observations	412	412	412	412	175
McFadden Pseudo R^2	0.27	0.32	0.32	0.35	0.35
AIC	548	503	519	312	229

Notes: Each column represents a different regression of the effect of individuals' expectations to find funds on being aware of financial campaigns or taking actions following the campaigns. The dummy variable dropped in all regressions is expecting to find less than 285$. Column (1) reports a logit estimation for dummy variables for the size of expectations on awareness of the Money Mountain campaign. Column (2) reports a logit estimation for dummy variables for the size of expectations on awareness of the tax exemption campaign. Column (3) reports a logit estimation for dummy variables for the size of expectations on visiting the Money Mountain website. Column (4) reports a logit estimation for dummy variables for the size of expectations on contacting the retirement fund provider with the intent of closing an inactive account. Column (5) reports a logit estimation for dummy variables for the size of expectations on contacting the retirement fund provider with the intent of closing an inactive account while only using observations of individuals who visited the Money Mountain website and found inactive accounts and when the observations of individuals who did not expect to find any inactive accounts are dropped. Data obtained from the main survey sample.

Table 10 - Ordered logit regression			
		Three Leveled	**Seven Leveled**
Variables:		**(1)**	**(2)**
Financial literacy index		0.24***	0.19***
		(0.109)	(0.099)
Confidence in retirement knowledge		1.15***	1.22***
		(0.354)	(0.348)
Age		0.03***	0.03***
		(0.009)	(0.008)
Female		-0.46***	-0.37***
		(0.206)	(0.191)
Married		0.360	0.270
		(0.23)	(0.217)
Income Level	Average income	0.160	0.10
		(0.412)	(0.378)
	Above average income	0.070	00
		(0.236)	(0.22)
Education Level	Above high school education	0.49***	0.47***
		(0.255)	(0.239)
	Academic education	0.73***	0.7***
		(0.342)	(0.318)
Religious Identity	Traditional	-0.090	-0.130
		(0.226)	(0.214)
	Religious	-0.130	-0.060
		(0.307)	(0.282)
	Ultra-religious	-0.150	-0.380
		(0.715)	(0.659)
Working Level	Non-Working	-0.48***	-0.48***
		(0.272)	(0.25)
	Retiree	-0.430	-0.430
		(0.493)	(0.458)
Immigrant		-0.150	-0.130
		(0.27)	(0.254)
Constants		Y	Y
Observations		386	424
McFadden Pseudo R^2		0.31	0.48
AIC		932	1234

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: Each column represents a different regression of the effect of individual characteristics on awareness of financial campaigns. Column (1) reports the estimation from a three-level ordered logit model. The levels are: 1- have awareness of both Money Mountain and tax exemption campaigns, but did not access the Money Mountain website or contact the retirement fund provider with the intention of closing inactive account, 2- have awareness of both campaigns and visited the Money Mountain website, but did not contact retirement fund provider, and 3 - have awareness, visited the website, and contacted the retirement fund provider. Column (2) reports the estimation from a seven-leveled ordered logit regression. The levels are 1- have awareness of at least one campaign, either the Money Mountain campaign and/or the tax exemption, but did not access the Money Mountain website or contact the retirement fund provider with the intention of closing inactive account, 2- have no awareness of the campaigns but visited the Money Mountain website and did not contact the retirement fund provider, 3- have awareness of at least one of the mentioned campaigns and also visited the website but did not contact the retirement fund provider, 4- have no awareness of both of the campaigns, did not access the website, but contacted the retirement fund provider with the intention of closing inactive account, 5- have awareness of both of the campaigns, did not access the website, and contacted the retirement fund provider with the intention of closing inactive account, 6 - have no awareness of the campaigns, visited the website, and contacted the retirement fund provider with the intention of closing inactive account, and 7 - have awareness of both of the campaigns, visited the website, and contacted the retirement fund provider with the intention of closing inactive account. Data obtained from the main survey sample.

Table 11 – Differences between Ultra-Orthodox population and rest of the population		
	Ultra-Orthodox population	**Rest of the Population**
Subjective financial literacy[1]	0%	8%
High objective financial literacy[2]	14%	31%
Awareness of the Money Mountain campaign[3]	21%	43%
Awareness of the tax exemption campaign[3]	36%	40%
Access to the Money Mountain website[4]	36%	53%
Contact with the intention of closing inactive account[4]	14%	14%

1. Individuals who state in the representative survey that they have high subjective financial literacy (state that they had good or excellent understanding of retirement savings).
2. Individuals who have high objective financial literacy and correctly answer all three objective financial literacy questions about interest rate, inflation, and risk diversification.
3. Individuals who state that they are aware of the Money Mountain campaign that was advertised on television, radio, and Internet sites or who are aware of the tax exemption campaign advertised in professional media and news outlets and in a letter to provident fund owners.
4. Individuals who state that they had visited the Money Mountain website or who contacted their retirement fund providers with the intention of closing an inactive account.

Notes: The table reports subjective and objective financial literacy, awareness of financial campaigns, and actions taken following the campaigns by ultra-Orthodox Jews relative to the rest of the population. Data obtained from the main survey sample.

Table 12– Awareness of financial campaign and access to Money Mountain website by different intervention groups						
		Control group	**E-mail intervention**	**E-mail–video intervention**	**Face-to-face intervention**	**Survey–e-mail intervention**
Awareness of the Money Mountain 2 campaign	**% out of group**	18%	45%	50%	62%	42%
Access to Money Mountain website	**% out of group**	14%	9%	19%	28%	16%
Total number of observations in intervention group		78	33	42	29	43

Notes: The table shows the number and percentage of people from each intervention group who are aware of the Money Mountain campaign or visited the Money Mountain website. Data obtained from field experiment and survey data.

Table 13: Regressions of interventions on awareness of the financial campaign and on visiting the website				
	Awareness of the Money Mountain 2 campaign	**Awareness of the Money Mountain 2 campaign**	**Visited the Money Mountain website**	**Visited the Money Mountain website**
	(1)	**(2)**	**(3)**	**(4)**
E-mail intervention	0.98	1.29**		
	(0.61)	(0.56)		
E-mail–video intervention	1.65***	1.45***		
	(0.56)	(0.5)		
Face-to-face intervention	1.5**	1.94***		
	(0.56)	(0.55)		
Survey–e-mail intervention	1.40**	1.12**		
	(0.56)	(0.5)		
Personal interaction intervention			0.98	0.79*
			(0.51)	(0.46)
Constant	-3.06***	-1.45***	-3.06***	-2.17***
	(1)	(0.393)	(0.94)	(0.4)
Control for individuals' characteristics	Y	N	Y	N
McFadden Pseudo R^2	0.18	0.06	0.13	0.02
AIC	230.16	241.98	161.57	163.73
N	174	182	174	182
Standard errors in parentheses.				
*** p<0.01, ** p<0.05, * p<0.1.				
Notes: Each column represents a different *regression of the effect of interventions on success of the financial campaigns. Columns (1) and (2) report logit estimations of awareness of the financial campaign. Columns (3) and (4) report logit estimations for access to the Money Mountain website. Data obtained from field experiment and survey data.*				

Appendix 1– Variable description	
Y Variables	**Description**
Awareness of the Money Mountain campaign	Dummy variable for people who state that they have awareness of the campaign
Awareness of the tax exemption campaign	Dummy variable for people who state that they have awareness of the campaign
Visited the Money Mountain website	Dummy variable for people who state that they visited the Money Mountain website
Contact with the intention of closing inactive account	Dummy variable for people who state that they contacted their retirement fund provider about closing inactive accounts (withdraw or transfer savings)
X Variables	**Description**
Objective financial literacy index	Financial literacy index, which is the sum of correct answers to three questions about interest rate, inflation, and diversification risk
Age	Value in years
Subjective financial literacy	Dummy variable for all those who answer that their understanding of retirement issues is good or excellent
Interest in retirement	Dummy variable for all those who answer that their interest in retirement issues is good or excellent
Interest rate question	Dummy variable for all those who answer correctly
Inflation question	Dummy variable for all those who answer correctly
Diversification question	Dummy variable for all those who answer correctly
Married	Dummy variable for married
Income level	Dummy variables for below-average income, average income, and above-average income
Education level	Dummy variables for high school education, Non- academic above high school education, and academic education
Religious identity	Dummy variables for secular, traditional, religious, and ultra-Orthodox
Work status	Dummy variables for employed (including voluntary army service and part-time employment), non-workers (including mandatory service and student status), and retired
Immigrant	Dummy variable for immigrant

Appendix 2 – Expectations of funds' amount in inactive accounts by wording and distribution of answers								
Questions:	**Answers/ Dummy variable:**	Expecting to find no inactive accounts	Expecting to find less than NIS1 ,000 ($285)	Expecting to find funds between NIS 1,000-5,000 ($285-$1,500)	Expecting to find funds between NIS 5,000-20,000 ($1,500-$5,700)	Expecting to find funds between NIS 20,000-100,000 ($5,700-$28,500)	Expecting to find funds over NIS 100,000 ($28,500)	Did not have particular expectations
Contacted the retirement fund provider with the intention of closing an inactive account	**Before you contacted the retirement fund provider, what did you estimate was the amount of funds that you have in the inactive account that you were interested in?**		21%	23%	13%	3%	29%	12%
Did not contact the retirement fund provider with the intention of closing an inactive account	**If you must estimate, what do you think are the amounts of funds that you have today in an inactive account (where no new funds are being deposited into)?**	44%	8%	12%	11%	8%	2%	15%
Expectations dummy variables		33%	9%	14%	14%	9%	2%	19%

Notes: The table shows the wording of two questions regarding expectations of finding funds in inactive funds for those who did and did not contact the retirement fund provider with the intention of closing an inactive account as a result of the campaigns. The table also describes the distribution of answers and the distribution between the final dummy expectation variables, which are the sum of both questions and are presented in the regressions and statistics. Data obtained from the main survey sample.

Appendix 3 – Variable description	
Y Variables	**Description**
Awareness of the Money Mountain 2 campaign	Dummy variable for people who state that they are aware or think they are aware of the campaign
Visited the Money Mountain website	Dummy variable for people who state that they visited the Money Mountain website
X Variables	**Description**
Financial literacy index	Financial literacy index, which is the sum of correct answers to three questions about interest rate, inflation, and diversification risk
Banking and checking account knowledge	An index that is the sum of correct answers to two questions about the price of transactions while using an automatic machine versus using a clerk and about the option to invest in stocks from your bank account
Confidence in financial knowledge	Dummy variable for all those who answer that their understanding of financial issues is good or excellent
Confidence in banking and checking account knowledge	Dummy variable for all those who answer that their understanding of banking and checking account issues is good or excellent
No digital access	Dummy variable for all those who answer that they did not access data about their checking account online
Age	Value in years
Income level	Dummy variables for below-average income and above-average income