The maximum length of this file is **10 pages** (Must use letter size, Verdana size 10 or similar)**.** For an adequate evaluation of your proposal merits,this file must include the following aspects: Proposal description, Hypothesis,Goals, Methodology, Work Plan, Work in progress and Available Resources. Be sure to highlight the relevance of your project concerning the scientific merits achieved in the field of the proposed topic. Keep in mind the Bases del Concurso de Proyectos FONDECYT Iniciación 2018 and Application Instructions.

Facilitadores y distractores en la selección de pensiones

If one types 'Me quiero pensionar Chile' into Google —a common search phrase for people who want to start their retirement process in Chile— one finds that second from the top is a website called '¿Cuál es el proceso para jubilarse?' and the information on the link suggests it is the official government website —That would seem like a good place to start. It is note worthy that the website with the most hits is a pensions advice office. However, if one clicks on the official website, the link leads to an orange and white page, full of other links with names and acronyms of things one does not understand, written in small font. It is the online equivalent of a call center with too many alternatives. It is simple to imagine the level of anxiety that a person, who wants to start their retirement process, must face when they encounter the website. The stakes are high, bad decisions can lead to worse economic conditions for the rest of their lives, or so it might seem.

It is, therefore, not surprising that between the years 2004–17, of the total of annuities sold, 47.7% were done through pension sales agents, 35% of people used a neutral pensions advisor and the rest selected their option independently (FNE, 2018, p.52). That is 82.7% of people paid someone for advice on what pension mode and provider to select. The cost for this advice is determined by law to have an upper limit of 2% of the funds the person has accumulated over time, with up to a maximum of 60 U.F. (aprox 2,700 USD).

The number of people paying for advice is not intuitively surprising, however, it is high if one considers that the retirement process in Chile is highly regulated through the *Sistema de Consultas y Ofertas de Montos de Pensión* (SCOMP). SCOMP is a system through which every retiree has to inform insurance companies (CSV by its initials in Spanish) and Pension Fund Administrators (AFP) of his/her decision to retire and indicate the pension mode they are interested in receiving offers for. All CSV and AFPs must then present a pension offer through the system, which is reported back to the retiree in a standard format where the offers are ranked by amount paid to the pensioner and the company's level of risk, in a multiple comparisons structure. People have the possibility of selecting one of the pension offers from the list or accepting an external offer. An important restriction of the external offers is that the CSV or AFP must increase the amount offered, regarding the same company's offer in the SCOMP, but it can still be lower than the competition.

The FNE (2018) report, based on analysis of Chilean administrative data on pension offer decisions, indicates that people on average sacrifice 2% of the monetary value of their pension. That is, on average, people selected pension offers that were 2% lower than the one they could have obtained had they selected a different provider — what is referred to here as 'selection error'. In the National Economic Prosecution Service's (FNE) assessment, this translates into substantive economic loss for 80% of people included in their study (FNE, 2018, p.13). The results correspond with Illanes and Padi (2017) findings, which indicate that 17% of the people in his sample (restricted to singles with no beneficiaries) accepted an offer that was strictly economically inferior to others that were available to them through SCOMP. In short, people are asking for advice and still not selecting their best options.

Different mechanisms could explain this state of affairs, pension sales agents appear to have some influence, which is reasonable given the agent's incentives. According to information from the Chilean Commission for Financial Markets (CMF), 94.8% of the people who started their SCOMP process through a neutral pensions advisor selected an optimal offer, while an 88.8% of people starting SCOMP through a sales agent did so. However, this project argues that part of this behavior can be explained because of low levels of 'financial literacy' (cf. Lusardi and Mitchelli, 2007; Gathergood and Weber, 2017; McGrath, 2015) in the population and the 'cognitive overload' (cf. Sweller, 1988; Kahneman, 2011) many people face when they have to make relevant decisions and there is too much information to process. If this is the case, changes to they way information is portrayed can positively and substantively improve retiree's welfare. This project uses two online experiments to address the question regarding what information and formats facilitate or distract people from making good pension decisions.

Experiment 1, SCOMP Metrics and Formats, uses an online experiment to test whether variations in the types of metrics and formats in which the SCOMP information is provided can help reduce selection error (facilitates decisions) and what information simply distracts people. The argument is, that selection errors can be reduced by simplifying the information provided to people and making it more visually attractive. The different treatments, Figs 1–5, have been elaborated in conjunction with the Research Division of the Pensions Superintendency (SP), who also sponsors this project. The treatments include suggestions to SCOMP modifications proposed by the FNE, the CMF, SP and the author of this grant application (PI). Treatments comply with all legal requirements to the SCOMP format and could be implemented through administrative measures if there positive effects in selection behavior.

Experiment 2, Education Through Online Resources, experimentally compares two different ways of presenting information (written v. video) and two different website structures (product v. profile oriented) in a classic 2x2 design. The argument

is that changes to the way information is organized on a website —from product to profile centered— and the way the information is provided —from text to video— can increase the number of people that want to get informed and, ultimately, helps improve pension mode and offer selection. Both the FNE and the CMF have expressed the need to improve the levels of information people have about pension options as a mechanism to improve the pensions market. We know from (Chan and Stevens, 2008; Martinez et al., 2009; Comisión Asesora, 2015) that information levels about pensions are low.

This project will contribute directly to the generation of information that is relevant for pressing public policy reforms as well as provide relevant contributions to the literature on the impact of financial illiteracy in retirement decisions (Lusardi and Mitchelli, 2007; Lusardi and Mitchell, 2011a, 2007), financial market regulations and 'choice architecture' (Campbell et al., 2011; Thaler and Sunstein, 2009, among many others); education on complex financial matters (OECD, 2005; President's Advisory Council on Financial Literacy, 2008; Drexler et al., 2014; Kast et al., 2012, among others), as well as on the use of short modern education videos to provide relevant pension information. As (Lusardi and Mitchell, 2014, p.30) indicates, very little has been done so far in terms of a cost-benefit evaluation of which sorts of financial education programs are most appropriate, and least expensive, or for whom, and this is a high priority area. This project contributes to that literature by conducting cost-benefit evaluation informed by causal experimental results of education and regulation measures on retirement decisions.

Furthermore, Chile is currently in the process of a pension system overhaul and one of the many aspects that will be modified is the SCOMP. As part of the John Fell Fund (JFF) "A Global Perspective on Financial Literacy" 2017, of which I am co-investigator, there is funding for a pilot version of Experiment 1 that will provide relevant information for policy makers. However, a large sample size of 1.500-2.000, is necessary to achieve statistical power at 80% of confidence of avoiding type II errors. The money budgeted in this project will provide the resources for obtaining the full set of necessary observations. As part of the work that has gone into the pilot, the Faculty of Administration and Economics (FAE), Universidad de Santiago de Chile, sponsor of this project, has a research collaboration agreement with the SP of which I am lead researcher, attesting to the importance of this topic to the SP and the viability of the research.[1]

Experiment 1: SCOMP Metrics and Formats

Lusardi, Mitchell, co-authors, and others, have conducted over a decade of research on the level of financial illiteracy in the population and the problems this has on relevant personal financial decisions, such as retirement savings (Lusardi and Mitchell, 2007, 2011b, 2014, 2011a; Hastings and Mitchell, 2011; Chen and Volpe, 1998; J, 200). Their results show that financial illiteracy is widespread among the population —in a measure of financial literacy composed of three questions, one on interest rate compounding, another on inflation and a last one on stock risk— only 30.2% of USA respondents answered all three correctly, with similar proportions in the France, while Germany (53.2%), Switzerland (50.1%) and the Netherlands (44.8%) are somewhat higher, but still only about half the survey population could answer simple financial literary questions correctly (Lusardi and Mitchell, 2014).

Not only are levels of financial literacy low, but women, the elderly and the less educated tend to fare significantly worse than the rest, concentrating the problem on population that is already vulnerable in other mayor aspects of pension decisions (Lusardi and Mitchell, 2011a). Women tend to accumulate smaller pension savings in Chile, in part due to lower proportions of women in the workforce, taking time off for childcare and gender pay gap, etc. The less educated also tend to be the poorer sections of the population (Contreras, 1999) and, as Chile has a mandatory contribution scheme in which 10% of the person's wages are accumulated in an AFP, the less educated also accumulate lower pension savings.[2] Most importantly, the financially illiterate are less likely to plan for retirement (Lusardi and Mitchell, 2011b) and, one assumes, will have a harder time understanding complex retirement decisions.

There are two different approaches to dealing with this reality, one is through regulation the other is education (Lusardi and Mitchell, 2014). This research project will attempt to evaluate the impact of both approaches through each of the two experiments. In terms of regulation, Campbell et al. (2011) argue that for consumer financial regulations to be effective, they need to be tailored to the specific market and that their impact should be rigorously evaluated, as excessive regulation can have negative effects on markets and innovation. Thaler and Sunstein (2009) have highlighted the importance of paying special attention to the design of decision making environments, the so called 'choice architecture', as small nudges can have substantive impact of human behavior.

The FNE (2018) report suggests that the SCOMP regulation is not being effective and therefore addressing possible solutions to the problem should be evaluated. This project proposes to test marginal changes that help simplify the options that people face, without reducing the quality of information they can access. If these changes are substantial, it may reduce political pressures of removing choice options (e.g. external offers) from the consumers' options all together.

[1] The full project with the SP is available on my Github repository https://github.com/deniselaroze/Experimento-Metricas-y-Formatos-SCOMP

[2] There is a minimum State guaranteed pension of 168 USD a month, and other State subsidies for the less well off, but these are low relative to purchasing power.

Goals

The objective of Experiment 1 is to identify what SCOMP metrics and formates reduce offer selection errors. That is, the selection of pension offers that are economically less beneficial to the consumer, assuming benefits measured as the Net Present Value (NPV). Specific goals are :

1. To identify whether different ways (metrics and formats) of presenting the financial information in SCOMP (treatments) have an impact on pension offer selection. If so, to identify which metric or format is the most effective in reducing selection errors relative to the current SCOMP report (Control).

2. To Determine what individual level characteristics correlate with errors in offer selection, for example, risk aversion, financial (il)literacy, gender, age, socio-economic status, etc.

3. To Establish if there are correlations between the level of knowledge about a CSV or AFP and offer selection, as a potential explanation for why some people are choosing offers that do not maximize NPV.

4. To Determine what percentage of the participants opt to receive information for the pension mode most suited for their profile.

5. To Use the results of Experiment 1 to generate policy proposals to reform SCOMP.

Methodology - Experimental Design

To comply with these objectives this Online experiment combines a survey —including socio-demographic, lifestyle, health, and potential beneficiary questions— with a task in which participants take incentivized decisions on pension offers, as if they were making a choice from SCOMP. To make the task as real as possible, without actually initiating a SCOMP application, each participant will make decisions for a hypothetical profile of a person that is similar to them. The offers that participants observe are produced with real administrative data for a person of the participant's same gender and income category.

To mimic the structure of real incentives, the decisions people have direct impact on the amount of money participants earn in that experimental task. The objective of this is to make the offer selection salient for the participants, have them put effort into selecting the most economically rewarding alternative, and reduce the number of people that simply select at random to finish the survey quickly. The structure of the experiment is based on previous research conducted by OXERA and CESS Nuffield (2016) for the UK Financial Conduct Authority.

The experiment takes roughly 30 min and is coded in Qualtrics, with a friendly user interface. For external validity, male and female subjects aged 55-70, that have not yet retired, will be recruited using the Santiago Centre for Experimental Social Science CESSonline panel, which I have access to as a CESS postdoc. Following Gerber and Green (2012), treatments will be block random assigned by gender, income category and age, with the objective of having an equivalent number of people per block in each of the Treatment and Control variants of the experiment.

Treatments

The design of the different treatments are based on the modifications to the SCOMP format suggested by the FNE (2018), the CMF, and work conducted by the PI together with experts in the Research Division of the SP. The idea is to test the impact of marginal differences in the SCOMP format, first by adding information on the expected monthly payments in pesos, and then by incorporating the risk classification into a monthly conversion of the NPV figure. The approach is similar to (Hastings and Tejeda-Ashton, 2008) testing of fees presented in Chilean pesos vs. annual percentage rates. The current SCOMP format (Fig. 1) is used as a **Control** group on which to conduct statistical comparisons.[3]

Treatment 1: adds a column with a conversion of the monthly pension allowance from *Unidad de Fomento* - UF (monetary unit adjusted by inflation) to Chilean pesos —Fig. 2. The argument here is that average people are not financially literate enough to understand decimal differences in offers, when it is in a currency that is not commonly used outside banking activities (loans, investments, mortgages, etc.). Therefore, incorporating the conversion of the UF to pesos (at a fixed publicly informed date) and presented as a value that is comparable to a monthly salary, could improve people's understanding of the differences in offers, and through that, improve offer selection.

Treatment 2: reduces the information provided in the current SCOMP by eliminating the risk classification of the company and incorporating that information into a new metric: the Net Present Value (NPV) of the pension over the person's life expectancy, adjusted by risk classification of the company and discount rates for guaranteed periods.[4] The NPV is presented in pesos equivalent to a monthly income, to keep the comparison to people's active working lives. The UF is kept, as it is a legal requirement for the SCOMP format.

[3] For the Treatment and Control images the ',' is used to separate decimals and '.' to separate thousands, as this is the formate used in Chilean Spanish. The rest of the document uses the USA and UK structure of '.' for decimals.

[4] These periods guarantee benefits to beneficiaries in case the retiree dies prematurely (within the accorded number of months).

Compañía de Seguros	Pension mensual en UF, sin retiro de excedentes	Clasificación de Riesgo de la Compañía de Seguros*
Compañía 1	9,48	AA
Compañía 2	9,44	AA
Compañía 3	9,41	AA
Compañía 4	9,41	AA-
Compañía 5	9,40	AA
Compañía 6	9,38	AA+
Compañía 7	9,37	AA
Compañía 8	9,25	AA+
Compañía 9	9,22	AA
Compañía 10	9,15	AA
Compañía 11	9,09	BBB+
Compañía 12	9,06	AA

*Las categorías de Clasificación de Riesgo que permiten a las Compañías ofrecer Rentas Vitalicias, ordenadas de mejor a inferior clasificación, son las siguientes AAA (mejor clasificación), AA, A, BBB (inferior). Cada una de estas categorías puede tener subíndices "+" o "-", siendo el subíndice "+" mejor que el "-".

Figure 1: Control treatment - current SCOMP format.

Compañía de Seguros	Pension mensual en UF, sin retiro de excedentes	Pension mensual en pesos al día XXX, sin retiro de excedentes	Clasificación de Riesgo de la Compañía de Seguros*
Compañía 1	9,48	242.963	AA
Compañía 2	9,44	241.938	AA
Compañía 3	9,41	241.169	AA
Compañía 4	9,41	241.169	AA-
Compañía 5	9,40	240.913	AA
Compañía 6	9,38	240.400	AA+
Compañía 7	9,37	240.144	AA
Compañía 8	9,25	237.068	AA+
Compañía 9	9,22	236.299	AA
Compañía 10	9,15	234.505	AA
Compañía 11	9,09	232.968	BBB+
Compañía 12	9,06	232.199	AA

*Las categorías de Clasificación de Riesgo que permiten a las Compañías ofrecer Rentas Vitalicias, ordenadas de mejor a inferior clasificación, son las siguientes AAA (mejor clasificación), AA, A, BBB (inferior). Cada una de estas categorías puede tener subíndices "+" o "-", siendo el subíndice "+" mejor que el "-".

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Figure 2: Treatment 1 adds the pension offer converted to Chilean pesos.

Compañía de Seguros	Valor Presente Esperado Mensual*	Pension mensual en UF, sin retiro de excedentes
Compañía 1	249.216	9,48
Compañía 2	248.169	9,44
Compañía 3	247.384	9,41
Compañía 4	247.384	9,41
Compañía 5	247.122	9,40
Compañía 6	246.599	9,38
Compañía 7	246.337	9,37
Compañía 8	243.197	9,25
Compañía 9	242.412	9,22
Compañía 10	240.580	9,15
Compañía 11	239.010	9,09
Compañía 12	238.224	9,06

* Este cálculo es un ejemplo del monto acumulado que recibiría usted si vive hasta la expectativa de vida que señala la tabla de mortalidad elaborada por las autoridades, ponderando por el riesgo de quiebra de la compañía de seguros y los costos de los Períodos Garantizados que usted haya elegido.

Figure 3: Treatment 3 incorporates a monthly NPV and eliminating risk classification

Treatment 3: Adds a Total NPV column with a loss framing based on the amount of money a person would forfeit, over their life expectancy, if they choose a company with lower monthly NPV. The argument is that the loss framing will induce loss aversion in participants and lead to more people selecting the first offer (the one with highest NPV) (Tversky and Kahneman, 1981).

Treatment 4: Changes the format of the information incorporated in Treatment 3, adds color in green, yellow and red, using a street light reference to guide people in the offer selection. It has the value in monthly NPV (right) and total NPV (left), as well as the UF.

Participants will view two of these treatments, one for the pension mode they ranked highest and another for the one

Compañía de Seguros	Valor Presente Esperado Mensual*	Valor Presente Esperado Total de la pensión*	Pension mensual en UF, sin retiro de excedentes
Compañía 1	249.216	59.811.837	9,48
		Perdidas**	
Compañía 2	248.169	-251.241	9,44
Compañía 3	247.384	-439.667	9,41
Compañía 4	247.384	-439.667	9,41
Compañía 5	247.122	-502.483	9,40
Compañía 6	246.599	-628.092	9,38
Compañía 7	246.337	-690.909	9,37
Compañía 8	243.197	-1.444.609	9,25
Compañía 9	242.412	-1.633.034	9,22
Compañía 10	240.580	-2.072.701	9,15
Compañía 11	239.010	-2.449.551	9,09
Compañía 12	238.224	-2.637.976	9,06

* Este cálculo es un ejemplo del monto acumulado que recibiría usted si vive hasta la expectativa de vida que señala la tabla de mortalidad elaborada por las autoridades, ponderando por el riesgo de quiebra de la compañía de seguros y los costos de los Períodos Garantizados que usted haya elegido.

** Perdidas en relación a la oferta con valor presente esperado total más alto.

Figure 4: Treatment 3 incorporates a loss framing

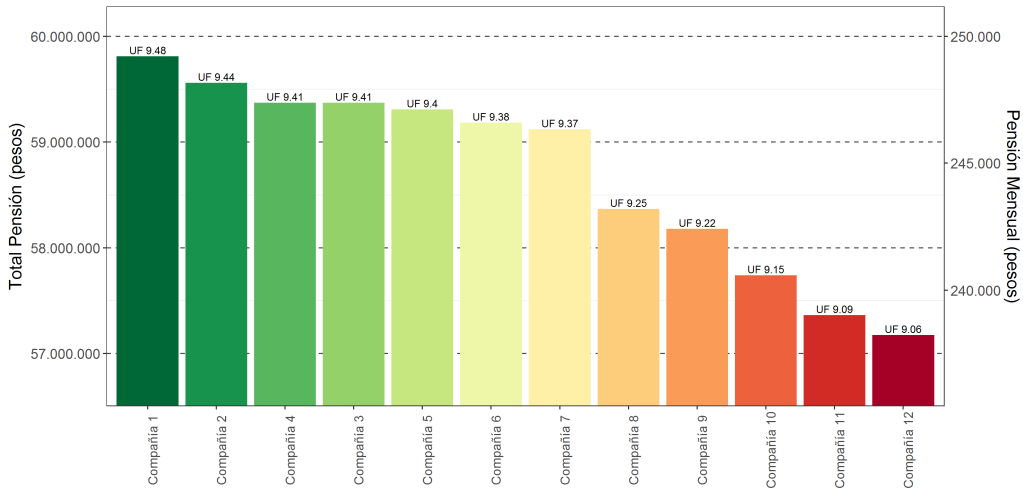

Figure 5: Treatment 4 changes the format of the information provided in Treatment 3

they ranked second most appropriate for their profile. Treatment/Control allocation will be block randomized. The two observations per individual will improve power and allow for within subject variation, without been too onerous on the person's attention. The information provided in the treatments will be transformations of real offers made to people in the past. No deception will be used. If legally possible, the treatments will incorporate the real company names of the offers, which will enable one to analyze if there are correlations between offer selection and how much the person knows about that company (included as Likert scale question in the experiment).

To keep things as simple and relatable as possible, participants will be told they are going to make decisions for a hypothetical person that has a profile similar to theirs. To do that the experiment incorporates 40 variants of the experimental treatments, one for each gender-income category, as indicated in Table 1. Female and male retirees face substantively different offers, women live longer and generally have lower amounts of accumulated savings. And people from different income levels face different offers, simply because of how the pension system is designed. For this experiment income groups are separated into four levels. Level 1 is the lowest 10% of income (up to $217,000 a month). Level 2 the group located between the 10 and 50 percentile of income ($217,001 $613,000). Level, 3 between the 50th and 90th percentile ($613,001 $1,651,000) and Level 4 the 90th percentile and above ($1,651,001 or more).[5] These variants are incorporated so as to provide people with pension values that are similar to ones they could be offered if they were going to retire. Having enough observations for each variant will also enable the PI to estimate heterogenous treatment effects across income groups and gender. An ideal sample size ranges in the 1300-1700 participants.

Other elements of the experiment To give participants context, before they are presented with two of the Treatments, they will be provided with information on the different pension modes, with a short comprehension test. This will give participants information on the choices they will have to make.[6] For the same context argument, people will be presented with profiles of retirees and information on why they are choosing one pension mode other others, such as health considerations,

[5] Percentiles 10 and 90 are used by the Chilean *Instituto Nacional de Estadísticas* to measure inequality (INE, 2017).
[6] The information provided has been collected from official websites.

Table 1: Treatment variants

Gender	Income level	Control	Treatment 1	Treatment 2	Treatment 3	Treatment 4
Female	Level 1	variant 1	variant 5	variant 9	variant 13	variant 33
	Level 2	variant 2	variant 6	variant 10	variant 14	variant 34
	Level 3	variant 3	variant 7	variant 11	variant 15	variant 35
	Level 4	variant 4	variant 8	variant 12	variant 16	variant 36
Male	Level 1	variant 17	variant 21	variant 25	variant 29	variant 36
	Level 2	variant 22	variant 10	variant 26	variant 30	variant 38
	Level 3	variant 19	variant 23	variant 27	variant 31	variant 39
	Level 4	variant 20	variant 24	variant 28	variant 32	variant 40

the desire to leave inheritance, risk aversion, other sources of income, etc. The profiles have the same gender as the one the participant declares in previous questions of the survey —complete profiles can be observed in the annexed documents.

The experiment also incorporates a series of questions about the individual, which will be used in the data analysis to compare the profile and options the participant selected to his/her declared characteristics: *a*) if s/he has a stable partner, *b*) if s/he has underage children, *c*) at what age their parents died (f they've passed), *d*) if the person smokes or drink regularly, *e*) if they exercise, *f*) If they have received advise from a pensions advisor or sales agent, or would like to receive advice from one of the two, *g*) financial literacy, *h*) self-perception of the complexity of pension decisions, *i*) time preferences, and *j*) incentivized risk preferences.

Subject payments Participants will be paid $6,000 for completing the experiment, plus up to $3,000 for offer selection, and between $0-2,160 for their decisions in a standard risk aversion test (Holt and Laury, 2002), leaving total payments to range between $6,000 and $11,160.

In the offer selection, people will get paid $1,500 pesos, if they choose the offer with the highest NPV, decreasing in intervals of $250 o $125 pesos until payments reach zero for the worst five offers (explanatory figure in annexed document and replication material). Participants will make two of these incentivized decisions, his/her top two ranked modes, with the possibility of earning up to $3,000 in this task. Pension mode and profile selection will not be incentivized.

Following Holt and Laury (2002), risk preferences will ve incentivized through a lottery where people have to choose between five payment options, that start at the least risky is option 1 that always pays $720 pesos), and get to the riskiest option 5, with the highest expected payoff, but a 50% chance of winning $2.160 and another 50% chance of getting zero.

Informed consent All participants have to provide informed consent to participate in this study, for this they will be shown a video with the CESS ethical guidelines and have time to read a formal consent form in which they are informed that: there is no deception at any time in the experiment, that participation is voluntary, and that they give consent to the SP to provide the experimenters with information on their administrative pensions data for the next five to ten years. The consent form is included in the annexed document. The experimental design has already gone through an external CESS ethics approval and a broad version of the design has been approved by the Oxford ethics committee, the appropriate USACH ethical approval will be processed if this project is approved.

Hypothesis

1. The expectation is that simplifying the metrics in which the pension offer information is provided will reduce the number of offer selection errors. If so, one would observe less errors in participants that were presented with Treatments 1 and 2, over Control.

2. Furthermore, one would expect that the loss framing in Treatment 3 would produce a stronger effect, and reduce errors more significantly than Treatments 1 and 2, while

3. the visual elements of Treatment 4 are expected to generate a strongest impact on error reduction of all the treatments.

4. In the cases where people do not maximize the offer selection, one would expect to find that company selection is positively correlated with the amount of knowledge the person has of that CSV or AFP.

Experiment 2: Education Through Online Resources

A second way of dealing with the problem of financial illiteracy and the pensions market is through education and improving people's understanding of the choices they have to make. One knows from Chan and Stevens (2008); Martinez et al. (2009); Comisión Asesora (2015) that information levels on pension related topics are low, and that illiteracy is high (Lusardi and

Mitchell, 2014, and co). What one doesn't know is what is the best way of educating a population on a topic that can be perceived as risky, and that can have large consequences for their lives. People may just prefer to pay an expert.

There are only a few studies that compare the effects of different education strategies. (Drexler et al., 2014) study on micro-entrepreneurs finds that rule-of-thumb training significantly improved a firms financial practice over standard accounting training, suggesting that simpler training programs could be beneficial. Cole et al. (2011) study the use of subsidies vs education programs on the uptake of financial services in Indonesia, they find that education had only a modest impact on people with limited education or financial literacy, in contrast minor subsidies greatly increase the demand for bank accounts.

There is still a lot to be learned on how to transmit relevant financial knowledge more effectively. The 82.7% of people that pay for a neutral pensions advisor or sales agents to conduct the retirement process through SCOMP, highlights the need to do so. The FNE (2018) and CMF, in a yet to be published report of the pensions market, also suggest improving people's levels of education.

One of the available sources of information is the official website. According to Ipsos Chile (2015) survey data, Chile had an internet penetration of 71.3% of households in 2015, 74.2% in urban areas, 55% in rural, and a 62,1% in the lowest quantile of households. Therefore, a large proportion of the population could benefit from using the official website as a source of information. However, the current format of the official website (Fig. 6 left) has a structure that is focused on providing information about the products —annuities, draw down alternatives, and combinations, risk, legislation, etc.— that is very demanding in terms of the amount of effort an individual has to put in order to understand what s/he is supposed to do. What would be happening, using Kahneman (2011) two system argument, is that the retiree gets overwhelmed with information and their system II gives up, deciding to pay for an advisor or sales agent, without trying to figure things out. The argument in this project is that a profile based structure could reduce the amount of information overload and make it more likely for people to search for information themselves.

In the current product based structure, people have to learn about each of the products and then decide which is better for their unique conditions. The information structure assumes the person will look up all the different alternatives and understand the nuanced decisions regarding guaranteed months and what the risk classification of the potential companies indicate, before making a decision. In Chile there are currently four different pension modes and a lot of decisions —*Retiros Programados - RP* (draw-down), *Rentas Vitalicias- RV* (annuities), *Renta Temporal con Renta Vitalicia Diferida - RTRVD* and *Renta Vitalicia Inmediata con Retiro Programado - RVIRP* (the latter two are combinations or drawn-down products and annuities). Each of the different modes has pros and cons, RP are more risky, as people can run out of money, but are more flexible in terms of inheritance, RV are less risky, but are more constrained in terms of who and how much is left for the beneficiaries, the other two modes are combinations of both and tend to hedge the risk and benefits. Within each mode there are a multitude of nuanced decisions that modify the condition of the pension marginally, but can provide security for beneficiaries.

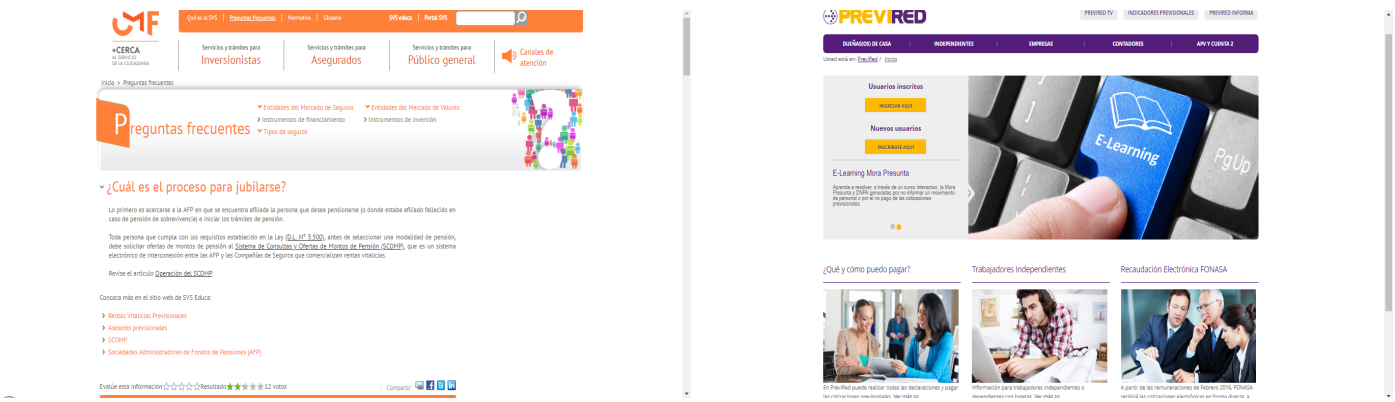

Figure 6: Screen-shot of the official Chilean pensions advice website (left) and Previred.com website (right)

On the other hand, this project argues, that the profile based structure simplifies the information research process, streamlining the amount of data the person feels they need to acquire without limiting the total information the person can access. This simplification is expected to improve the likelihood an individual will make the effort to research their options. Take for example the Previred.org website (Fig. 6 right), the information is categorized by the type of user (or for this experiment's purposes retiree profiles). At the point of entering the website, a person only has to make a simple decision, what type of person am I? Once a profile is selected, the person gets all the relevant information for that specific profile, reducing the total amount information and, consequently, the time and energy spent on researching their options. Obviously, anyone can change profiles and redo the search from another position if the person decides the original profile selection was not adequate.

The SCOMP does not force an individual to select a pension mode, each person can ask for an offer on as many modes and special conditions as they wish, however, the amount if information included in the SCOMP report is directly related to the number of options selected. A person who does not know what they want and asks for a price comparison of everything will get so much information it is unlikely anyone will have the cognitive capacity of processing all of it, if they are not experts.

		Structure Treatment	
Format Treatment		**Product**	**Profile**
	Text	Control	Treatment 1
	Video	Treatment 2	Treatment 3

Table 2: Experimental treatment groups

Aside from the structure, there is another visual difference between the websites in Fig. 6, the Previred.org site has images, not just text. We know from the literature on education that innovative ways of presenting information, including videos, are a powerful tool for teaching students, especially in combination with other educational resources (Karppinen, 2005; Berk, 2009, among others). There are similar results from a multi-method evaluation of an e-learning innovation designed to teach clinical skills to student nurses, which finds that students appreciate the videos, but that it did not improve performance outcomes on their own (Kelly et al., 2009). However, in situations such as retirement, where classroom style educational resources are limited and not easily found, the information *status quo* is low and videos could help improve the situation. Governments, NGOs and other institutions have already started to use short informative videos as educational elements. The UK's beloved National Health Service (NHS) has a long list of videos and apps to educationally support a women through pregnancy and motherhood. The World Bank and Unicef websites are mainly images and videos and they rely on these visual elements to disseminate their reports. Of course not all videos are useful (Lim Fat et al., 2011), but short relatable videos tend to be 'Liked' by viewers Meseguer-Martinez et al. (2017) and these can be very simple and effective to use when other alternatives are not available, such as teaching children in the Amazon (Michael Trucano, 2014).

Within Experiment 2, the project proposes to test the impact of including pension information in video format along side the structure of how the information is presented, in a classic 2x2 design. The video format reduces the effort the person has to put in to get informed, and it includes audio and visual elements that can make it more appealing than reading. This attractiveness is expected to lead more people to choose to look for information themselves, and consequently to less people opting for a pensions provider. However, the level of impact of the videos is unknown, given the complexity of the topic, people may simply not be interested in informing themselves on their pension mode alternatives and would rather pay for the security of getting an acceptable option without making much effort. For policy purposes, it is important to have an unbiased estimate of the potential impact of the videos and website structures, to evaluate if this is a reasonable investment. Experiments are ideal methods for estimating this impact.

Goals

The main goal of Experiment 2 is to identify what structures and formats of online information for retirees helps reduce the amount of people that opt for paying a pensions advisor or sales agent.

1. To identify whether a profile based structure can increase the amount of people who search for information, and
2. if that increases the amount of people that select the best pension mode for their profile.
3. To identify if video information substantively increases the number of people that select the best pension mode for their profile.

Methodology - Experimental Design

Experiment 2 uses a similar structure and components of Experiment 1, but randomly varies the way the modes information is provided. Along the same lines as Experiment 1, Experiment 2 will be done online with a Qualtrics (or equivalent) user interface, paid a min amount for taking part in the experiment plus the possibility of earning more in incentivized tasks. As before, the person will also have to go through a series of different sections, including: access to information on pension modes select a profile, rank the pension modes according to how go they are for that profile, and select a pension offer among the different AFP and CSV providers (with an incentive). The main differences are in the structure with which the person accesses the modes information and the format in which the information is presented, as well has having the option to 'pay' (forfeit profits) for an 'advisor' (the experimenter default) to select the pension mode for them.

Then a participant enters the experiment, they will have to answer a short set of questions that will be used for block random assignment of treatments. After that, the participant will be assigned to one of the two Structure Treatments (structured by product - Control and structured by profile - Treatment 1 in table 2) and one of the two Format Treatments (Text - Control and Video Treatment 2). Treatment 3 is the combination of both a profile structure and video information - the furthest from the current *status quo*.

The Control group will face a web page similar to the official website (Fig 6 left), with a set of products that the person can click on to view information, or an option to directly continue with the study. The number of clicks per link will be recorded as a measure of browsing and willingness to look for information. Then the participant will read a list of retiree profiles and select one they identify with. Based on that selection the participant will be asked to order the different pension

modes in terms of how appropriate they are for that profile. The selection is incentivized, so the participant will earn more money for a correct modes selection. Participants will also have the option to 'pay' for an advisor to rank the modes, and earn the extra money.

Participants in Treatment 1 will first read the different profiles, select the one they relate to most, and then look at pension mode information. This time the web page they see will be ordered in terms of those profiles, similar to the Previred.org webpage (Fig 6 right), but without the images. The information people access will be displayed in text, just as it is in the Control.

Participants allocated to Treatment 2 will follow the same product structure as the Control, but will vary the may people are shown the information about the different pension modes. In this treatment, instead of text, there will be short informative videos that provide equivalent information as the text used in Control and Treatment 1.

Finally, participants in Treatment 3, will follow the profile structure, as Treatment 1, and receive video, information as in Treatment 2. This treatment cell will allow one to estimate the interactive effect of radically changing both the structure and format in which the pension information is provided, and identify f there are substantial gains with regards to the other treatments.

Of course, this experiment will not be able to replicate the level of anxiety a person truly faces when they face their own retirement process and, for ethical reasons, the scenarios will have to be hypothetical. However, the structure of the experiment contemplates generating a baseline measure of behavior in the Control group, that faces the same structure and information currently available online. People's willingness to look around for information and ranking of modes for their selected profile (the independent variables of interest) in the other three treatment groups will be compared to the behavior in the Control.

After finalizing modes selection section of the experiment, participants will be asked the same series of questions as experiment 1, to collect measures on financial literacy, risk aversion, time discounting, health conditions, potential beneficiaries, etc.

Experiment 2 will also use male and female participants between the ages of 55-70 that will be especially recruited by CESS for this purpose. There is an item in the budget to finance the recruitment costs. As with Experiment 1, all participants will have to give informed consent for taking part in the study and they will be paid for their participation. Payment will have the same $6.000 minimum for taking part in the study, plus another 5.000-6.000 in incentivized tasks.

Hypothesis

1. The expectation is that a profile oriented website structure will lead to less people paying for an advisor than a product oriented one, and that

2. information in a video formate will lead to more people directly selecting the appropriate mode for a profile, than the text information format.

3. One can further expect that the combination of both profile and video treatments will lead to the highest amount of people directly selecting the appropriate mode profile.

Work Plan

This work plan detailed in Table 3 is divided into the activities that are required for each of the two experiments, as well as producing the intended output – a peer reviewed article published in the a WOS (ex ISI) ranked journal and a policy report of the experimental results oriented towards the SP, FNE and CMF. The plan also incorporates activities to disseminate results in Chile (Santiago, Concepción and Valdivia), as well as international conferences, in all three years.

	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct
Year 1	1	2	3	4	5	6	7	8	9	10	11	12
Experiment One												
Recruitment	x	x	x									
Implement Online experiment		x	x	x								
Data Analysis					x	x	x					
Write paper						x	x	x	x			
Dissemination event Santiago					x	x						
Present at EPSA								x				
Present at Universidad de Concepción (Chile)												x
Experiment Two												
Experiment design									x	x	x	x
Coding												x

	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct
Year 2												
Expriment One (cont.)												
Present results at Santiago based universities (e.g. FAE at USACH, and the ICP at PUC)	x	x					x					
Present results at BEEC			x									
Edit and submit manuscript	x	x	x	x	x	x						
Revise and resubmit						x	x	x	x	x	x	x
Write policy report									x	x	x	x
Experiment Two (cont.)												
Design	x											
Coding (cont.)		x										
Video production		x	x									
Pre-tests			x	x	x							
Recruitment						x	x	x	x	x		
Running experiments							x	x	x	x		
Data Analysis										x	x	x
Year 3												
Experiment Two (cont.)												
Data Analysis	x	x										
Write paper		x	x		x	x	x	x				
Present results at IMBESS							x					
Edit and submit manuscript									x	x	x	x
Dissemination events Santiago (2)							x		x			
Present at Universidad Austral								x				

Table 3: Work plan for the three year project.

Work in progress

The design and code for Experiment 1 is ready and, by the time the *Iniciación* funding comes in, we will have implemented a pilot of the experiment with the funding through a University of Oxford John Fell Fund grant, of which I am a co-investigator (ending in Sept 2018). The experimental design for the pilot has been developed in collaboration with the SP, with whom I have been working with for the past six months on identifying the research areas of interest, treatments, incentives and population. We are now in the process of signing a formal research collaboration agreement between the *Facultad de Administración y Economía, Universidad de Santiago de Chile* (my academic sponsors), and the *Superintendencia de Pensiones* for this project.

Available Resources

As a post-doc at the Centre for Experimental Social Sciences (CESS), Universidad de Santiago de Chile, I have access to all the necessary infrastructure to conduct the online experiments. CESS has the Qualtrics license needed to run the survey, as well as a subject pool of 2000 online participants in Chile already. We will need to recruit more subjects in order to obtain the necessary numbers of participants for this project, therefore, money has been allocated towards a Recruitment item in the budget. That recruitment will mainly be conducted through social media adds on Facebook, Twitter, Instagram and Linkedin. If that strategy does not produce enough participants other media and snowball strategies will be implemented.

CESS also has programmers with the skills to generate the experimental code for the randomization elements in the Qualtrics survey. I, as well as the CESS Santiago Lab manager, have conducted these types of experiments before and have the necessary expertise to carry them out successfully. The FAE will also provide the PI with office space, a well equipped library, and an active research community with which to discuss ideas.

As part of the University of Oxford John Fell Fund grant, of which I am a co-investigator, there are funds to conduct the recruitment and subject costs to run a pilot of Experiment 1. Furthermore, the SP has signed a commitment letter to contribute $4.6 million worth of pesos in expert time and advise (attached).