

Improving Pension Information: Experimental Evidence on Learning using Online Resources

Denise Laroze¹, Gabriela Fajardo², Charles N. Noussair³, Ximena Quintanilla⁴, Paulina Granados Zambrano⁵, Pedro Vallette⁶, Mauricio Lopez-Tapia⁷

¹ Centro de investigación en Complejidad Social, Facultad de Gobierno, Universidad del Desarrollo, Chile

² Departamento de Administración, Facultad de Administración y Economía, Universidad de Santiago de Chile, Chile

³ Department of Economics, University of Arizona, USA

⁴ Superintendencia de Pensiones, Chile

⁵ Superintendencia de Pensiones, Chile

⁶ Instituto de Previsión Social, Chile

⁷ Facultad de Administración y Economía, Universidad de Santiago de Chile, Chile

Improving Pension Information: Experimental Evidence on Learning using Online Resources

Abstract

Deciding what to do with one’s pension funds is a high-stakes, one-shot decision. Retirement schemes are often described in technical jargon that few people understand. We consider whether the learning process can be eased by providing information in video format (vs. the standard textual format) and by changes to the user interface of the websites on which individuals learn about their pension options. The results of both a field experiment with 50 to 70-year-old participants and a laboratory experiment with university students both suggest that videos are significantly and substantively more effective in increasing the number of correct responses to a retirement comprehension test. The significance of this effect is robust to changes in the content of the videos, with equivalent impact in private and public pension schemes. The study is conducted in association with the Chilean pension authority (*Superintendencia de Pensiones*) and experts from the National Social Security Organization of Chile (*Instituto de Previsión Social*).

Keywords

Choice Architecture, Financial Literacy, Retirement Decisions, User Interface

1 Introduction

Choosing a retirement scheme is a one-shot, high-stakes decision. In many countries, individuals must decide what to do with their private pension funds and ensure they receive the public benefits they are eligible for. The Chilean pension system is no exception.¹ The information available is often presented in technical language that few people understand and in a format that many find daunting. It is, therefore, not surprising that many people navigating the private pension scheme pay for advice ([Granados et al. 2019](#)) or leave money on the table by not applying for public benefits ([Centro UC et al. 2017](#)).

Governments are responsible for providing effective communication ([OECD 2017](#), [UNDP 2018](#)). In the context of pensions, this means presenting information in a way that increases comprehension of the decisions needed to retire. One action public organizations can take is to improve how information is presented on their websites. Many pension-related websites display information entirely in textual format and are structured in terms of products with technical names such as Annuities, Programmed Withdrawals, Beneficiaries, and Online Applications.

It is not clear which changes to the choice architecture (user interface) of a website, if any, are effective at helping people understand the differences between alternative retirement schemes and the public benefits available –See [Figure 1](#) for an example of the status quo. Education literature suggests that innovative ways of presenting information, including videos, can be powerful tools for teaching school-age children (see [Karppinen 2005](#), [Berk 2009](#), among others), as well as the general population ([Mayer & Moreno 2003](#)). The choice architecture literature suggests that reducing the number of elements in a choice task (home screen) makes engaging with the information on the website more

¹For more details about the Chilean Pension System, see [Appendix A.1](#).



Figure 1: Screen-shot of the official Chilean Pensions Superintendancy Retirement Advice website in 2019

likely, improves the user experience, and fosters learning (Johnson et al. 2012, Hoffmann et al. 2019, Stone & University 2005, Um et al. 2012, Heidig et al. 2015). However, little of this has been evaluated on a population of decision-makers over 50 years of age who may not be as comfortable with audiovisual interactions online as younger generations (Prescott 2021, Anderson & Perrin 2017).

In this study, we conduct an experimental evaluation of two innovations to the status quo using a 2*2 design: (1) changing the medium of description by presenting the most relevant information in video instead of text, while keeping the wording constant; and (2) changing the structure of the homepage (the choice task) from long to short by restructuring the information in terms of pensioner profile types instead of the current long list of pension products (see Johnson et al. 2012). To ensure robustness to the content of the websites, we implemented two variations: (1) one providing information on how to retire using funds in private savings accounts, and (2) one with information on how to access available public benefits. The study thus consists of a total of eight experimental variations, encompassing two format changes, two structural changes, and two content differences.

We conducted both an online field experiment with a sample of 458 participants aged 50 or above who have not yet retired and a fully randomized laboratory version of the experiment with a convenience sample of 209 students. Using two samples helps establish robustness and addresses potential replication or measurement errors (see Levitt & List 2007, Camerer et al. 2016, Duch et al. 2020). The online sample allows us to reach the population of interest that a change in the information structure would impact more directly. Older decision-makers are generally more difficult to reach, and only a few studies attempt to do so (Duch et al. 2021, Nam & Loibl 2021, Xue et al. 2020, de Grip et al. 2020, Pereira & Afonso 2020).

The experiment was conducted in Chile, and all the content was constructed in collaboration with experts from the Chilean Pension Authority *Superintendencia de Pensiones* and the National Social Security Organization *Instituto de Previsión Social*. Replication material is available on GitHub². Our results show that the change from text to video produced a significant increase in comprehension of the relevant aspects of the retirement decision-making process. The change in format from long-product-oriented to short-profile-structured did not improve understanding. The significance and magnitude of the effect are consistent across public or private pension tasks, as well as across the gender

²<https://github.com/deniselaroze/Pensions-Website-Design>

and level of financial literacy of participants. The results are very similar between the laboratory and online implementations. One potential reason why the profile structure did not produce the intended effect is that, when combined with a video, it is associated with a decrease in participants' levels of emotional arousal, which may reflect reduced attention to the information.

These results contribute to the education literature (see [Karppinen 2005](#), [Berk 2009](#), [Mayer & Moreno 2003](#), among many others), providing evidence that short informative videos are effective in conveying complex information to all age groups. They reinforce the notion that choice architecture is important and that not all choices have the intended consequences, making it fundamental to conduct experimental evaluations before implementing major changes ([Johnson et al. 2012](#), [Hoffmann et al. 2019](#)). Additionally, it is crucial to consider how these changes affect one's emotional reaction to the website ([Stone & University 2005](#), [Um et al. 2012](#), [Heidig et al. 2015](#)). This study further contributes to previous experimental studies on retirement, such as [Duch et al. \(2021\)](#), which conducted experiments on the choice architecture of one element in the retirement process in Chile—the structure of the pension scheme offers comparison table—and [Pereira & Afonso \(2020\)](#), which conducted online experiments on retirement savings plans.

The sections that follow provide a review of the literature on the main components of the study, such as financial literacy, decision architecture, and emotions when interacting with web platforms. Subsequently, we present the design and procedure of the study, followed by its main results, and conclude with the discussion and final remarks.

2 Related Literature

2.1 Financial Literacy

In general, financial illiteracy is widespread among demographically representative populations ([Lusardi & Mitchell 2014](#)).³ About pension-related topics, people typically understand little, with women, the elderly, and the less educated scoring lower than other groups ([Hasler & Lusardi 2017](#)). Also, the financially illiterate are less likely to plan for retirement ([Lusardi & Mitchell 2011](#)).

Chile is no exception to this pattern. [Landerretche & Martínez \(2013\)](#) find that Chileans have limited knowledge regarding the pension system, its rules, and the consequences of their (in)decisions. Their results also suggest that the subgroups with higher levels of financial literacy behave more financially responsibly concerning pension savings. They are more likely to have additional, voluntary savings, display active financial behavior, and voluntarily contribute to their pension funds when self-employed.

Learning about the retirement process has a cost in terms of effort. One has to understand what the retirement options are and how to access them. Middle- and High-income earners can side-step this information hurdle by paying a third-party specialist for advice and reducing the effort to a monetary cost. On the other hand, low-income earners who would like to access public benefits have to do so on their own. Even though there are national information offices that can give guidance regarding what benefits a person is eligible for, an individual has to choose whether or not to make the effort to

³In 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 American respondents, and a similar proportion in France, answered all three questions correctly. In Germany (53.2%), Switzerland (50.1%), and the Netherlands (44.8%) the proportions were somewhat higher.

apply. Failing to apply for public benefits, when one is eligible, is a clear welfare loss to the individual. The difficulty is in getting past the first hurdle of understanding what benefits are available and if one is a potential beneficiary.

2.2 Choice Architecture

When it comes to decisions as crucial as selecting a retirement scheme, official Institutional websites are a key source of information in the retirement decision-making process. They are typically considered a reputable source of information that people can rely on for objective information that is up to date with the most recent policy changes. However, the usual website is so loaded with information that it has all the characteristics of a “Paradox of Choice” (see [Iyengar & Lepper 2001](#), [Schwartz 2004](#), [Scheibehenne et al. 2010](#), [Kinjo & Ebina 2015](#)), with the large number of options hindering the making of good choices – Figure 1 presents a screenshot of the status quo at the time of this study and highlights the density of information currently on display.

Choice architecture can offer some options to address this issue by changing the format in which information is provided – a.k.a. the UX of the websites ([Stone et al. 2005](#)). One possible alternative is to reduce the effort of acquiring information by providing key concepts in video that complements audio and images. The education literature suggests that innovative ways of presenting information, including videos, can be a powerful tool for teaching school-age children (see [Karppinen 2005](#), [Berk 2009](#), among others) and general populations ([Mayer & Moreno 2003](#)). Governments, NGOs, and other institutions have already started to use short informative videos as part of their educational material. [Luisardi et al. \(2017\)](#) study the impact of different online financial literacy training tools and find that an informational brochure, a visual interactive tool, a written narrative, and a video narrative are all effective tools in increasing self-efficacy. However, videos, in particular, improved financial literacy more effectively than written narratives or any of the other tools. For example, the tutorials of the UK’s National Health Service ([NHS](#)), the [World Bank](#) and [Unicef](#) are strongly image/videos based. However, not all videos or e-learning facilities are useful ([Lim Fat et al. 2011](#)). An evaluation of a multi-method e-learning innovation designed to teach clinical skills to student nurses finds that students do appreciate the videos, but that they do not improve performance outcomes on their own ([Kelly et al. 2009](#)).

Thus, despite some positive findings, it is not evident that a visual format is always an efficient way of transmitting information to an older population, especially when there are relevant consequences at stake ([Taylor & Thompson 1982](#)). This age group is not as used to technology as younger generations, and reading text may be a more natural mode of self-study for them. Furthermore, retirees are more likely to have hearing problems or difficulties retaining information at the speed of a short 3-6 minute video. It may be, that despite the availability of visual aids, the increased ease of acquiring information is not sufficient to substantively reduce the use of pension advisors or sales agents. If that is the case, it would not be cost-effective to produce images and video content. It is, therefore, relevant to study the impact of this innovation on an older age group.

A second alternative for easing the cognitive effort required to navigate retirement information is to change the description of the choice task by reducing the number of icons available on the homepage (see [Johnson et al. 2012](#)). This can be achieved by structuring the retirement information in terms of user profiles, allowing individuals to select the profile appropriate for them. The profiles aggregate relevant products for

certain types of people and exclude those unlikely to apply. This simplifies the homepage choice set, limiting the likelihood of a choice paradox, reducing the effort needed to engage, and facilitating learning. However, modifying a website’s homepage is costly and requires the collaboration of a multidisciplinary group of experts to select profiles, organize information, and implement changes.

It is essential to recognize that individuals are not passive recipients of a predetermined architecture; they actively engage with and respond to it based on their unique attributes and circumstances (Krijnen et al. 2017). Therefore, choice architects must understand this intricate process and test their interventions before large-scale implementation, as any reduction in the choice set not accepted by users could have unintended consequences.

2.3 Emotions

The literature on user interfaces (UI) and user experience (UX) suggests that emotions play a strong role in how people interact with different websites. Forlizzi & Battarbee (2004) state that emotions can explain our disposition to act, the valence of that disposition, and the face and body changes associated with arousal. Emotions are also related to the evaluation of the outcomes and perceptions around a process of interaction with a product. Thus, the authors claim that, when the outcome is satisfactory, there is a feeling of accomplishment, and effort is reduced, supporting a more fluent experience. However, if the outcome is negative, there is a usability problem (UP), which provokes the feeling of frustration and irritation (Bruun et al. 2016). These emotions are described as high arousal (activated) and negative valence (unpleasant) (Bruun et al. 2016), which in the case of our study, may lead to avoiding future experiences with the product and, thus, making less informed decisions.

There has been development of “emotional designs” that select characteristics (design shapes, colors, letters, web structure) to evoke positive or negative emotions, which can either facilitate or hinder learning in each of these platforms (Stone & University 2005, Um et al. 2012, Heidig et al. 2015). Um et al. (2012), for example, find that positivity-inducing web designs facilitate multiple aspects of the learning process. They increase comprehension and knowledge transfer and reduce the perceived difficulty of a learning task for school students. However, as Knörzer et al. (2016) point out, there is still no conclusive evidence on how emotions influence learning in a more general population. While we advance no hypothesis in this regard, our study does include measurement of the emotional state that participants are in when they navigate through the experimental website prototypes.

We measure emotions using Noldus FaceReaderTM software (den Uyl & van Kuilenburg (2005)). Individuals are videotaped during their experimental sessions with the webcam of their computers. The videotapes are later analyzed with the Facereader software. The software analyzes snapshots of the video 30 times a second and considers how closely the expressions in the face in the video correspond to profiles showing happiness, sadness, anger, fear, disgust, surprise, neutrality, and arousal, using the Facial Action Coding System (FACS). Facereader has been shown to be accurate in identifying individuals’ emotions, both intended and spontaneous (Lewinski et al. (2014), Terzis et al. (2010)). It has been successfully employed in a number of experimental economic studies (Fiala & Noussair (2017), van Leeuwen et al. (2018), Breaban & Noussair (2018)).

3 Experimental Design

The experiments consist of three sections, the first is a questionnaire that sets the context of pension information and include sociodemographic questions used for block randomization. After that, participants are randomly assigned to one of the treatment websites structured as described in Table 1. In the online version of the experiment with subjects aged 50+, participants are asked which information they would like to access, retirement using (a) Private Savings or (b) Public Benefits.⁴ After they finished navigating the website they were invited to answer a comprehension questionnaire. Figure A.1 in the Appendix presents a diagram of the experimental design.

Information Structure	Information Format		
		Text	Video
	Long-Product	Baseline	Video Treatment
	Short-Profile	Profile Treatment	Video and Profile Treatment

Table 1: Experimental treatment groups. The prototypes with information about private pension savings and the ones with information on public benefits have the same four treatment conditions but differ in the content that is displayed under each condition.

The Baseline treatment (Figure 2 top left) uses a text format with the product structure that was on the Pension Superintendency website at the time the experiment was designed. The Video Treatment (Figure 2 top right) keeps the same homepage structure but changes the most relevant elements of the content from text to video. The Profile Treatment (Figure 2 bottom left) changes the structure of the homepage from long to short and aggregates the concepts of the Baseline into four retirement profiles, but keeps all the information in text format. Finally, the Video-and-Profile Treatment (Figure 2 bottom right), incorporates both innovations with a homepage designed in terms of profiles and information provided in video format. The colors, graphical references, and number of products are the same across all treatments. In all treatments, participants were told that they could earn extra money for responding to questions about a pension alternative of their interest.

In terms of the structure, the **Product Treatments** display all the pension products of the website on the home screen, ordered in terms of relevance and equivalent across columns. A person could navigate freely across all products. They were also informed that all the information they needed to answer the questions correctly was located in the top two icons of the Product Treatments (see Section A.4 in the Appendix for the exact instructions). The instructions were available to participants at all times on the top left tab.

In the **Profile Treatments**, participants were presented with a set of four different types of people who would like to retire and were asked to choose one of the profiles. They were told that all the information they needed to answer the incentivized questions correctly was available in the profile of their choice. Participants could choose any profile, with the possibility of changing their minds and navigating across all types freely. This display strategy reduces the number of products on the home screen, without reducing

⁴In the laboratory version of the experiment, students were randomly allocated a gender-consistent person for whom they were asked to find an adequate retirement option. This was fully randomized between private and public pension websites.

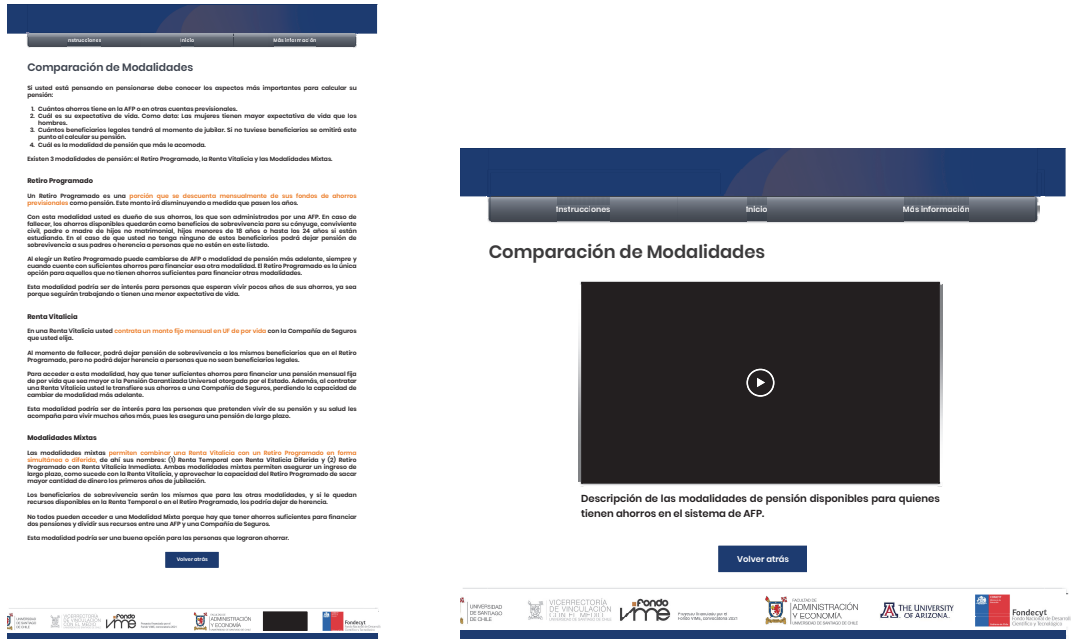


Figure 3: Text versus Video Treatments for the Private Pension Scheme. The references of the Public Benefits websites are in Appendix A.2.

pension strands that were presented on the home screen, and the rest of the information in the Product Treatments was incorporated as links people could access within each profile - keeping the total set of tabs and links constant across treatments. The full content list was always available in the top right *Más información* “more information” tab.

Figure 3 presents the **Text** and **Video treatments**. The information on both was the same and simplified from that on the official Chilean Pension Authority website. They both present information in a straightforward and informative manner, explaining the main concepts (i.e. annuities) and their characteristics. The information was organized into paragraphs with a clear focus on conveying facts and details to the reader, providing explanations and examples, and concluding with an invitation for the reader to consider whether a certain concept (annuity) is suitable for their preferences. The videos were written from the perspective of a couple who wanted to retire and asked questions to an informed counselor in the form of a voice-over. For symmetry, the content in the text treatments is equivalent to the script used in the videos. Graphical elements of the videos, such as the male and female figures, are included as images in the text treatments, to keep the socio-identity and graphics references constant across treatments. The graphics used in the websites were designed to be inclusive, representing different geographical locations and segments of the Chilean population. Videos included sign language and subtitles for ease of access.⁵

The content on the current institutional website is written in complex legal terms that are considered impractical for a tutorial aimed at easing the effort to learn about pensions. For this reason, the research team worked with experts from the Pension Superintendency and the Chilean Social Pensions Institute (IPS) to ensure that all content in the experiment was in line with legislation and used a framing that presented the pros and cons of different alternatives, without directly imposing choices on participants.

⁵All these elements were evaluated by retirement-aged volunteers who helped the team produce reliable content. Screenshots of the different treatments are available on the Github repository.

3.1 Behavioral Outcomes of Interest

A first behavior of interest is the likelihood that an individual completes the comprehension questions. Failure to do so would be considered as attrition to the main dependent variable of interest which is level of comprehension. The treatments might alter the participants' willingness to navigate through the website at all, altering their behavior in terms of their willingness to continue with the original survey (they could just close the browser and forfeit all payment) or opt out of the comprehension questions, and get paid for finishing the survey without making any effort to learn. If the treatments have an effect on the likelihood of attempting the comprehension questions, this would need to be accounted for in the estimation strategy for dependent variables that came down the line.

The second, and main, outcome of interest is the number of correct responses to a comprehension test participants are asked to complete after navigating through the website. The comprehension tests consist of a series of seven multiple-choice questions, each of which has one correct response. The content of the questions varies depending on the retirement system: Private Pension or Public Benefits, but is consistent in structure across treatments. Questions in the Private scheme included topics such as: 1) whether it is compulsory to retire at 65 for men and 60 for women, 2) what is the first step needed in order to start the retirement process, 3) whether everyone can choose between different retirement schemes, 4) what is the purpose of the Pension Amounts Inquiry and Offers System (SCOMP), 5) whether one can make more than one enquiry to the SCOMP, 6) if hiring a consultant is compulsory and 7) who gets ownership of the funds once the decision is made (the person or an insurance company).

Questions regarding public benefits included: 1) at what age can a person apply to the funds, 2) what is the first thing a person needs in order to apply, 3) who has access to the benefits (if foreigners are included or not), 4) how the public benefits are financed (with taxes or individual's private savings), 5) what are the financial reasons why a person could be denied a benefit, 6) whether it is necessary to be retired to access pension age benefits, and 7) what is the maximum amount one can receive as a pension age benefit. The wording and correct responses to the questions are available in Section A.7 in the Appendix. Responses to individual questions are coded as dummies, with 1 for a correct response and 0 otherwise, and the sum of correct responses is used as the dependent variable of interest. For more context, section A.1 in the Appendix presents a description of the Chilean pension system.

Answering the comprehension questions is incentivized, with each correct question adding 500 CLP (approx 0.60 USD) to a participant's earnings. For Private Pensions, a person could opt to (a) make the effort of answering the questions on their own and earning a maximum of 3,500 CLP, if they answer every question correctly (7 questions * 500 CLP); or (b) ask for help (paying for advice) and earning 2,700 pesos with certainty. The latter is an option that could be reasonable for people who expect to answer five or fewer questions correctly. For Public Pensions, a person who opted not to answer the comprehension questions earned 0 for the responses, mimicking the costs of not applying for a benefit. Participants could access the websites with the correct information at the time of responding to the comprehension questions if they wanted to. In all treatments, participants who completed the survey left with a baseline of 6,500 CLP (approx 8 USD), on top of which they earned extra money for the comprehension questions.

A third set of dependent variables of interest concerns the user's evaluation of the experience of participating in the experiment and navigating the prototypes. Participants

indicated (a) if they found the information useful, (b) if they would recommend the website and (c) the emotions they experienced during the process. These elements are relevant to understanding the overall reaction to the experience participants have during the experiment.

3.2 Robustness tests included in the design

To stress test the experimental design and ensure that results are consistent across different populations (as well as the Private and Public content variations) the experimental design includes both an online sample that represents the target population of people aged 50-70 that have not yet retired, as well as a controlled lab version with a student sample aged between 18-33 with an average age of 21.3. The design aimed for the laboratory version to closely mirror the online study. Consequently, the two studies differ in only four substantive elements. (a) The lab version involved university students, facilitating replication for researchers with access to similar participants who lack strong priors about pensions. (b) Participants in the lab were randomly assigned to treatments and to a gender-consistent description of a person that is interested in retiring, whose interests they are asked to consider when navigating the website and gathering information (see Section A.5). (c) The laboratory setting afforded precise control over the experimental environment and participants' task engagement, ensuring alignment between intention to treat and treatment assignment. (d) In the lab sessions, consenting students were filmed and their emotions were tracked using facereading software.

To enable balance tests and to acquire demographic information, we collected data on personal characteristics such as gender, age, financial literacy, level of education, and income level (proxied by access to public or private healthcare). Previous evidence suggests that men have higher baseline levels of financial literacy on average and that there are gender differences in retirement investment decisions (Sundén & Surette 1998, Lusardi & Mitchell 2008, 2014). However, it is not obvious why men or women would react more to changes in a website's user interface or the inclusion of a video. Nevertheless, given the potential policy implications of this research, it is important to rule out negative effects to any subgroup of the population and test for moderating factors in any treatment effects.

3.3 Hypotheses

Given the intention with which the innovations are designed, the expectation is that they would contribute to increasing the effectiveness of the online tutorial. They would do so both by increasing the number of people that finish the tutorial, as well as the level of understanding of relevant retirement-related topics. The innovations would also improve users' experiences.⁶

Specifically, we hypothesize that:

- 1) More people will complete the tutorial when (a) information is provided with videos than with text and (b) information is organized into profiles.

⁶At the time of pre-registration, we were worried that people would abandon the experiment halfway through. For this reason, we registered several hypotheses about attrition. Since attrition was so low, three hypotheses were aggregated into the first one, to make it easier for the reader.

- 2) The rate of correct responses on a comprehension questionnaire will be higher when (a) information is provided with videos than with text and (b) information is organized into profiles.
- 3) People’s self-reported evaluations of the website will be higher when (a) information is provided with videos than with text and (b) information is organized into profiles.

4 Data Collection

Online Sample The 55-70 year old participants included in the online version of the experiment were recruited from the CESS Universidad de Santiago de Chile online subject pool between July 27 and August 3, 2022. Of the 904 people who consented to participate in the experiment, following pre-registered protocols, 292 were excluded because they indicated that they were already retired, and 38 participants were excluded because they were under age 50. Drop outs in the first stage of the data collection (before treatment assignment) was low, with one person leaving after the first question and another at the end of the instructions, before reaching the experimental website.

The 458 people for which there is response data are split into reasonable gender split with 47% that self-identify as male and 53% as female. The sample has a high proportion of educated participants, with 30% with high school or basic education, 52% with a college or university degree, and 18% that have a postgraduate degree. As a proxy for income, 33% have a private healthcare plan.⁷ The financial literacy of the sample is low, with 29% unable to answer any of the three financial literacy questions correctly (classified as Low Fin. Lit.). 58% are considered mid-level in that they answered 1 out of 3 financial literacy questions correctly (classified as Mid. Fin. Lit.), and the remaining 13% who answered 2 or 3 out of 3 questions are classified as High Fin. Lit. In this online version of the experiment, participants self-selected into the Private or Public pensions websites, with 200 (44%) self-selecting into the Public benefits, and 258 (56%) into the Private benefits.

On average participants earned 9,036 CLP (9-10 USD) from their efforts in the experiment, with participants that completed the Private Pensions task earning 9,149 on average and those in the Public Benefits task 8,889 CLP on average.⁸

Laboratory Sample This sample was composed of Students aged between 18-33 with an average age of 21.3. 60% self-identify as female and 40% as male. Despite being university students, financial literacy is low, with 50% unable to answer any of the three literacy questions correctly, 41% able to answer one, and 9% answering 2 or 3 correctly. Of the 222 people that started the experiment, 202 people answered the comprehension questions, 101 in the Private and 101 in the Public conditions. On average participants earned 9,220 CLP from their efforts in the experiment, with participants that completed the Private Pensions task earning 9,231 and those in the Public Benefits task 9,208 CLP on average.⁹

⁷People in the top 20% of income have private health insurance, while the rest of the population mainly has access to public healthcare. A small group of military and police personnel fall into a different health insurance system.

⁸The average response time was 31 minutes, for participants that completed the survey in one continuous 120 minute interval. See the descriptive statistics in the replication material.

⁹The average response time was 53 minutes. See the descriptive statistics in the replication material.

Variable	Baseline	Profile	Video	Profile and Video	Total
Female	63 (25.51%)	60 (24.29%)	67 (27.13%)	57 (23.08%)	247
Male	57 (26.27%)	52 (23.96%)	55 (25.35%)	53 (24.42%)	217
Low Fin. Lit.	36 (27.48%)	32 (24.43%)	29 (22.14%)	34 (25.95%)	131
Mid Fin. Lit.	71 (27.10%)	58 (22.14%)	71 (27.10%)	62 (23.66%)	262
High Fin. Lit.	11 (18.03%)	19 (31.15%)	19 (31.15%)	12 (19.67%)	61
Post-graduate	20 (23.53%)	18 (21.18%)	24 (28.24%)	23 (27.06%)	85
Primary or high-school	36 (24.83%)	32 (22.07%)	41 (28.28%)	36 (24.83%)	145
University	65 (27.31%)	63 (26.47%)	57 (23.95%)	53 (22.27%)	238
Public Health or other	76 (24.68%)	76 (24.68%)	80 (25.97%)	76 (24.68%)	308
Private healthcare	44 (28.21%)	36 (23.08%)	41 (26.28%)	35 (22.44%)	156
Age (mean)	57.89	58.47	58.06	58.62	
Age (sd)	4.58	5.49	4.77	4.50	

Table 2: Balance test: characteristics of participants assigned to each of the treatments in the online sample.

Variable	Baseline	Profile	Video	Profile and Video	Total
Female	32 (25.00%)	32 (25.00%)	33 (25.78%)	31 (24.22%)	128
Male	22 (25.58%)	22 (25.58%)	22 (25.58%)	20 (23.26%)	86
Low Fin. Lit.	26 (25.49%)	23 (22.55%)	32 (31.37%)	21 (20.59%)	102
Mid Fin. Lit.	20 (23.81%)	24 (28.57%)	19 (22.62%)	21.00 (25.00%)	84.00
High Fin. Lit.	7 (38.89%)	4 (22.22%)	2 (11.11%)	5 (27.78%)	18
Post-graduate	1	2			
Primary or high-school	46 (26.14%)	44 (25.00%)	43 (24.43%)	43 (24.43%)	176
University	7 (19.44%)	9 (25.00%)	12 (33.33%)	8 (22.22%)	36
Public Health or other	40 (24.54%)	41 (25.15%)	46 (28.22%)	36 (22.09%)	163
Private healthcare	14 (28.00%)	12 (24.00%)	9 (18.00%)	15 (30.00%)	50
Age (mean)	21.15	22.25	21.68	22.41	
Age (sd)	1.86	7.08	3.13	6.84	

Table 3: Balance test: characteristics of participants assigned to each of the treatments in the lab sample.

Tables 2 and 3 present balance tables with frequencies of observable individual level characteristics. As can be observed in both the online and the lab samples, assignment to treatments is balanced by gender, financial literacy, level of education and access to private healthcare (a proxy for income). This is in line with expectations as treatment assignment was automated through the Qualtrics functions. This result is supported by Multinomial Logistic Regression using treatment allocation as the dependent variable and characteristics of the online participants as independent variables – results are given in Tables A.4 to A.6. Balance was also achieved within the Private Pension vs Public Benefits information subgroups, allowing for comparisons across website contents – see

Tables A.4 and A.5 in the Appendix.

5 Results

5.1 The online study with 50 - 70 year olds

We first consider Hypothesis 1), which asserts that the user interface would affect the likelihood of completing the tutorial. Of the 572 participants assigned to treatments, we are able to trace 458 to the third stage of the experiment where the dependent variables of interest were collected.¹⁰ The other 114 were not possible to match with the post-treatment response data. The proportion of people that left while observing the treatment (attrition) was similar across treatments, with 20% in the Baseline, 15% in the Profile Treatment, 19% in the Video Treatment, and 25% in the Video*Profile Treatment. The effect of treatment on the probability of finishing the tutorial is insignificant (see Appendix Table A.2 columns 1 and 2). Furthermore, only 11 participants opted out of the comprehension questions, 1 person in the relatively low-cost-of-opting-out Private Pension branch of the experiment, and 10 people in the high-cost-of-opting-out Public Benefits branch. Table A.2 (columns 3 and 4) also presents logit estimations of the likelihood of avoiding the comprehension questions. None of the variables included in the estimations are significant predictors of opting out of the tutorial. Thus, for the remainder of our analysis, attrition is assumed to be random. Hypothesis 1) is not supported.

The most substantive effect of the innovations is on the level of comprehension of retirement-related topics, where the addition of key information in a video format can substantively increase the number of correct responses. Figure 4 presents the mean number of correct responses by treatment in the online sample. Average scores are high with 67% (4.7/7) correct responses in the Baseline, 65% (4.6/7) in the Profile, 80% (5.6/7) in the Video and 75% (5.3/7) in the Profile and Video combination treatment. Scores are higher in both treatments that include videos relative to the text only treatments, independently of the profile structure of the homepage. These results suggest that all treatments provide information that is comprehensible for people, but that understanding it is more effective when there is a video.

Table 4 presents OLS estimates of the number of correct responses as a function of treatment. As can be observed, the Video treatment is the main driver of increases in comprehension and its impact is significant at the $p < 0.05$ for different subgroups of the sample. The columns in Table 4 contain estimates for different subsets of the sample and address Hypothesis 2). The hypothesis stated that the rate of correct responses would be higher under the treatments with videos than in the other treatments. Column 1 includes all participants who completed the comprehension and financial literacy questions of the survey. In line with Hypothesis 2), it is possible to observe a significant effect for the Video treatment. However, the Profile treatment has no effect, which is not supportive of the hypothesis.¹¹

¹⁰Participants could answer the comprehension questions as many times as they liked and got paid for their best attempt. 8 people answered the questionnaire more than once. To keep their observations comparable with the rest, we kept the first response of the observation in which they progressed the longest. This excludes mistakes like people who clicked on the wrong option and then went back and completed the version they had intended.

¹¹Three participants completed the comprehension questions but not the financial literacy questions. The inclusion of those three observations does not change the estimations in any substantive or significant way. Table A.11 in the Appendix presents the estimations without controlling for Financial Literacy.

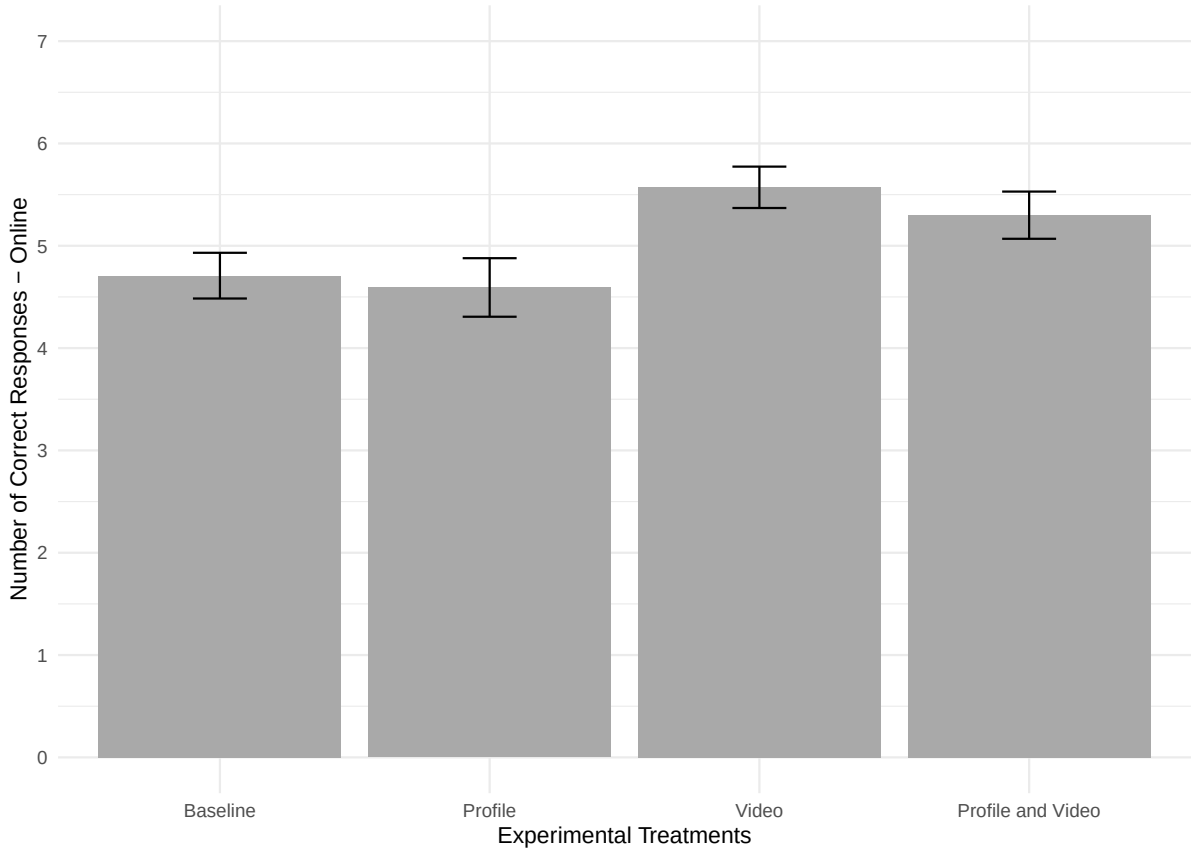


Figure 4: Number of correct responses by treatment assignment online, with 95% confidence intervals

Table 4: The number of correct responses, as a function of treatment and literacy level (OLS estimates with heteroscedasticity robust standard errors).

	Number of correct responses					
	Full Online	Private	Public	Female	Male	Doesn't know
	(1)	(2)	(3)	(4)	(5)	(6)
Profile _i	−0.180 (0.205)	−0.016 (0.306)	−0.313 (0.272)	−0.159 (0.293)	−0.224 (0.288)	−0.331 (0.364)
Video _j	0.864*** (0.165)	0.911*** (0.246)	0.854*** (0.219)	1.023*** (0.232)	0.684** (0.233)	1.108*** (0.243)
Profile _i *Video _j	−0.050 (0.262)	−0.312 (0.398)	0.153 (0.346)	−0.237 (0.363)	0.157 (0.383)	−0.022 (0.459)
Mid Fin. Lit.	0.093 (0.151)	−0.195 (0.229)	0.295 (0.199)	−0.066 (0.203)	0.271 (0.222)	−0.187 (0.255)
High Fin. Lit.	0.661** (0.203)	0.667* (0.320)	0.620* (0.258)	0.502 (0.334)	0.822** (0.264)	0.232 (0.374)
Constant	4.594*** (0.161)	4.698*** (0.251)	4.513*** (0.210)	4.605*** (0.239)	4.580*** (0.210)	4.603*** (0.264)
Observations	444	189	255	238	206	178
R ²	0.111	0.107	0.131	0.115	0.114	0.139
Adjusted R ²	0.1	0.083	0.113	0.096	0.092	0.114

Note: p<0.05; **p<0.01; ***p<0.001

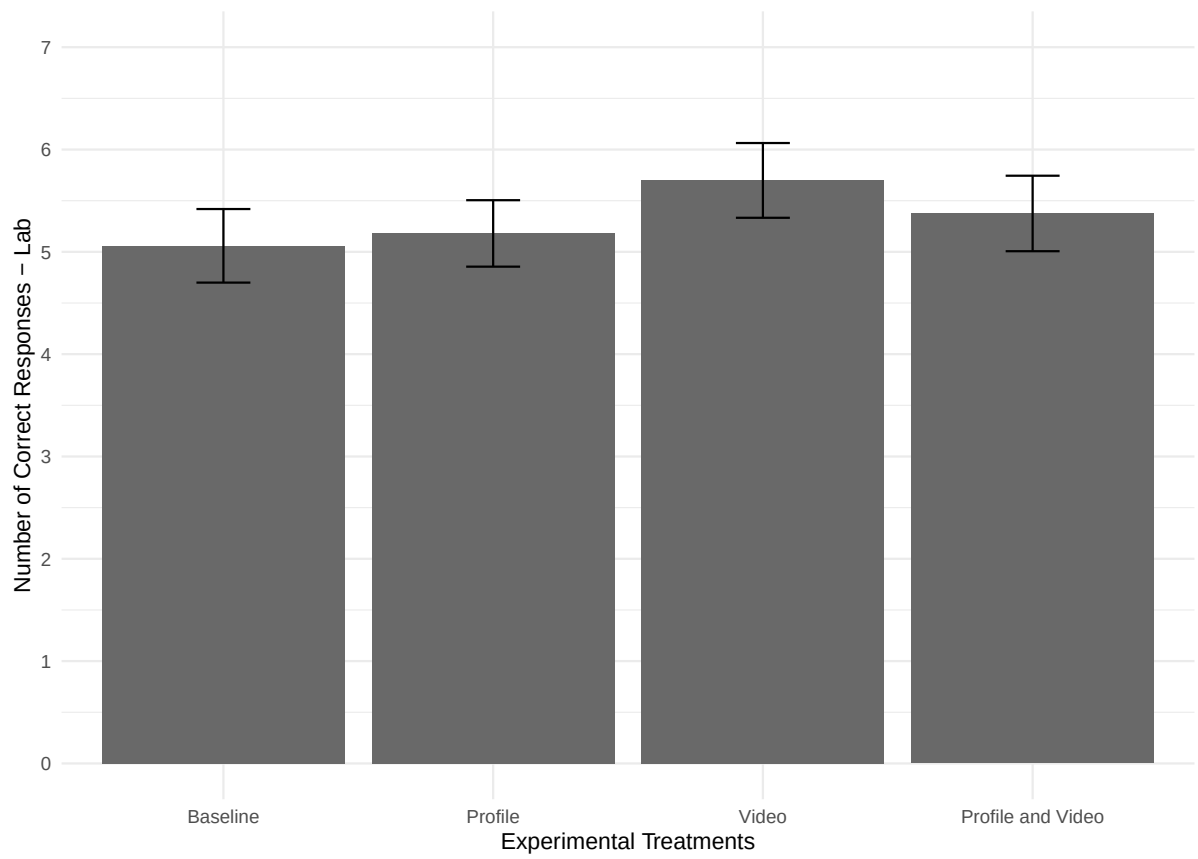


Figure 5: Number of correct responses by treatment assignment in the lab, with 95% confidence intervals

The experimental design included block randomization, providing balanced estimations for the subsets of Private and Public information websites and for comparisons across genders. Columns 2 – 3 divide the sample into participants who observed the Private Pension website (2) and those who observed the Public Benefit websites (3). As can be observed, the Video treatment is significant in both sub-groups and the magnitude of the effect is similar. Columns 4 – 5 present the comparisons for men and women separately. The estimates show that for both genders, the Video treatment increases the average number of correct responses, but has a larger effect for women. Finally, column (6) presents the estimations for a subset of the sample that, when asked what type of pension they were interested in, declared that they did not know. This group is a proxy for a subset of the population that has little previous knowledge about pension-related products. As one can see, this is the group that presents the highest treatment effect, with people who observed a video answering on average 1.1 more questions correctly than those that only had the text format.

Financial literacy was included as a control in these estimations because of the relationship between understanding pension-related topics and standard financial literacy questions (Lusardi & Mitchell 2011). This variable behaves as one would expect, with higher response rates associated with higher levels of financial literacy. However, this relationship is not as stable across sub-samples as the impact of the video treatment.

We used Bayesian Additive Regression Tree (BART) estimations (Dorie et al. 2022) to test for treatment heterogeneity between Private Pension vs Public Benefits information (Figure A.6) across gender (Figure A.7) and financial literacy (Figure A.8). This machine learning approach for estimating conditional average treatment effects (CATEs) is non-parametric, thus avoiding the imposition of any functional form on the estimated treatment and covariate effects. The estimates indicate that the Video treatment significantly enhances the levels of correct responses across all subgroups, with no significant interactions observed.

5.2 The Lab Study with students

In the lab version of the study, attrition is not a concern. Only 7 participants avoided the comprehension questions (5 in the Private and 2 in the Public condition) and thirteen observations were lost because of technical errors in the lab. As before, none of this attrition is correlated with the treatments (see Appendix Table A.3).

Figure 5 shows the number of correct answers to the comprehension questions by treatment. It shows a similar pattern to the online study, with the Video treatment exhibiting the highest level of comprehension, with Profile+Video second.

Table 5: Number of correct responses for different sub-groups of the Lab sample (OLS estimates with heteroscedasticity robust standard errors)

	Number of correct responses				
	Full Lab	Private	Public	Female	Male
	(1)	(2)	(3)	(4)	(5)
Profile _i	0.187 (0.244)	0.456 (0.314)	−0.058 (0.370)	0.434 (0.307)	−0.337 (0.417)
Video _j	0.858*** (0.237)	0.838** (0.315)	0.894* (0.357)	1.105*** (0.272)	0.491 (0.435)
Profile _i *Video _j	−0.595 (0.337)	−0.900* (0.435)	−0.294 (0.509)	−0.958* (0.423)	0.018 (0.549)
Mid Fin. Lit.	0.161 (0.175)	0.087 (0.231)	0.292 (0.261)	0.058 (0.214)	0.355 (0.305)
High Fin. Lit.	1.121*** (0.241)	0.888** (0.331)	1.407*** (0.309)	1.490*** (0.329)	0.847* (0.342)
Constant	4.848*** (0.207)	4.979*** (0.279)	4.682*** (0.315)	4.704*** (0.234)	5.139*** (0.397)
Observations	200	99	101	122	78
R ²	0.112	0.111	0.135	0.146	0.097
Adjusted R ²	0.089	0.063	0.089	0.109	0.035

Note: *p<0.05; **p<0.01; ***p<0.001

Table 5 reports the estimates of OLS models of the determinants on the number of correct responses. They display the same pattern as in the online sample (Table 5), providing robust evidence that the Video treatment has a significant effect on learning about the retirement process. The effect is observable in the full sample, as well as the Private and Public data subsets and for women.¹² The magnitude of the effect is very similar in the lab and online samples, on the order of an increase in 0.8 correct responses. As with the online sample, the male subset presents the lowest impact and is not significant in the lab subgroup. The magnitude of the coefficient (0.491) is positive and similar to the 0.684 of the online sample. Overall, these results provide robust evidence in favor of Hypothesis 2) for the video but not the profiles.

Once again, Bayesian Additive Regression Trees (BART) estimations are conducted to test for heterogeneity of the treatment effect in the student sample. The results suggest that there are no substantive interactions of the treatments with gender or financial literacy, but it appears that the students that were randomly assigned to the Private Pension website gained more from the Video treatments than those that observed the simpler Public Benefit information – see Figures A.6, A.7 and A.8.

¹²The inclusion of the Financial Literacy controls reduces the sample by 2 observations for the Private Pension estimations. Table A.12 presents the estimations without controls.

5.3 Self-reported evaluations of the tutorial and emotional response

Hypothesis 3) proposed that the Profile and Video treatments would improve people’s self-reported evaluations of the tutorial. However, Table 6 suggests there is no difference in how much people would recommend a website across treatments. This was measured with responses to the question ‘Considering your experience on this website, how likely are you to recommend it to a family member or friend?’ answered on a scale from 0 - 10. As shown in Table A.9 in the Appendix, the mean levels of recommendation are high, at approximately 8.5 out of 10 in the lab and 8.3 in the online subject pool, but there is no significant differences across treatments.

Table 6: Comparison of OLS models on a 0-10 recommendation score, with 10 as the highest value, estimated with heteroscedasticity robust standard errors.

	NPS Lab	NPS Online
Profile_i	−0.148 (0.362)	−0.047 (0.274)
Video_j	0.212 (0.291)	0.431 (0.252)
Profile_i x Video_j	0.493 (0.468)	−0.264 (0.368)
Mid Fin. Lit.	−0.276 (0.253)	−0.451* (0.194)
High Fin. Lit.	0.306 (0.326)	−0.080 (0.262)
Constant	8.215*** (0.244)	8.347*** (0.214)
Observations	204	455
$\sqrt{R}$	0.035	0.02
Adjusted $\sqrt{R}$	0.01	0.009
<i>Note:</i> *p<0.05; **p<0.01; ***p<0.001		

One possible reason why there are no treatment effects is that the content was consistent for all treatments (within information groups) and was written in a citizen-friendly language that is substantively easier to understand than the status quo. The positive evaluations of the website are also present in the responses to the questions “How easy was it to find the information you were looking for?” (1-5 scale), where the average response is 4.4 out of 5, as well as on “Is the information available on the website sufficient to make a decision?” (0-10 scale), where responses averaged 7.9 out of 10.¹³

The literature on user experience (UX) and user interfaces (UI) suggests that a positive experience can enhance understanding (Stone & University 2005, Um et al. 2012, Heidig et al. 2015). Therefore, it is relevant to understand how changes in a website structure alter the emotional dimension of user experience. To do so, in the lab sessions, we recorded

¹³Tables A.7 and A.8 present the OLS estimations.

videos of the students who consented and processed them using the *Noldus FaceReader* emotional analysis software.

Table 7: Valence and arousal experienced by participants during the website navigation as a function of treatment (OLS)

	Valence	Arousal
	(1)	(2)
Profile	0.011 (0.027)	0.032* (0.018)
Video	0.013 (0.027)	0.029 (0.018)
Profile _i *Video _j	−0.008 (0.037)	−0.076*** (0.025)
Constant	−0.146**** (0.020)	0.255**** (0.014)
Observations	117	117
R ²	0.003	0.083
F Statistic (df = 3; 113)	0.129	3.388**

Note: *p<0.1; **p<0.05; ***p<0.01

Table 7 presents Ordinary Least Squares (OLS) estimates of the levels of valence and arousal participants experienced while they navigated. In Column 1 it can be observed that the level of positive versus negative emotions (valence) is not altered by the treatments. On average negative emotions prevail in the sample (negative constant) and neither the change in the user interface nor the inclusion of videos can explain any difference across participants. However, arousal (column 2) is negatively associated with the Video+Profile treatment combination. A possible interpretation for this reduction in arousal is that participants reduced their level of concentration under Profile+Video.

6 Discussion

This study examines the potential for enhancing pension literacy through two innovations implemented on an institutional website. The first innovation involves modifying the informational format, transitioning from text-only to a combination of text and key information presented in video form. The second innovation focuses on altering the homepage structure from a lengthy product-oriented approach to a more concise profile-based layout. These innovations were evaluated using two distinct content variations. One set of experimental treatments provided guidance on retirement using private savings, while the other set offered information about accessing public benefits. Additionally, for robustness and replicability of results (cf. [Camerer et al. 2019](#), [Duch et al. 2020](#), among others) the study engaged two different subject pools: an online subject pool representing the policy-relevant population, and a separate subject pool comprising university students that permits easy replication. Remarkably, the results remain highly consistent with both samples.

As predicted, the videos substantively and significantly improved the comprehension of both the private and public retirement processes, increasing the average number of correct responses by 0.8 out of 7. This effect is consistent across the different topics on retirement that we queried. In the Private Pensions retirement context, the amount of information is substantively greater than that of the Public Benefits, with videos that lasted 6:42 (Private Retirement options) and 5:00 minutes (how to retire with private funds) versus 4:14 (Public Benefits available) and 3:54 (how to apply to a benefit). This highlights the value of the [Johnson et al. \(2012\)](#) recommendations about structuring and describing options in a simple, organized way, but also addresses the issue of focusing on the experience of the users by making a post-evaluation decision about the optimal architecture. The results are also consistent across subject pools, with people aged 50+ doing an experiment online presenting the same effects as students in their late teens and early 20s with very little interest in pensions in the controlled environment of the laboratory.

Contrary to our expectations, changing the structure of the homepage did not contribute to any of the behaviors of interest. It did not get more people to complete the tutorial, nor did it help comprehension, despite organizing information in a hierarchical structure and reducing the amount of unnecessary information – understood as information that is not necessary for completing the comprehension test. Furthermore, the profile structure, in combination with videos, reduced the level of arousal experienced by students in the lab. While it is tempting to interpret the decrease in arousal as reflecting lower concentration that leads to worse performance, the evidence on the relationship between arousal and performance is mixed. The Yerkes-Dodson Law ([Yerkes & Dodson \(1908\)](#)) asserts that performance and arousal are positively correlated until the arousal level reaches a certain point, beyond which the correlation turns negative. Empirical evidence has tended to support this inverted U-shaped relationship ([Robazza et al. \(1998\)](#) [Anderson \(1994\)](#), [Watters et al. \(1997\)](#)).

Our efforts to simplify the presentation with profiles was not successful in improving comprehension. We view this as an illustration of a principle that simplicity of presentation does not necessarily translate to better understanding. While simplification surely improves understanding in many cases, it may not be a general rule.

One reason that the profiles may not have been effective might be that people did not relate to the profiles that were constructed. As [Johnson et al. \(2012\)](#) and [Krijnen et al. \(2017\)](#) suggest, the reduction of the choice set into profiles has to make sense to the people that use them, and might produce misunderstandings if they do not. The research team approached the profile construction with a lot of care and knowledge about the different alternatives. However, it is indeed a difficult task to specify the appropriate profiles, especially in the Private retirement setting. Nevertheless, in the Public Benefits websites, the categories are clear-cut and non-overlapping as the profiles were organized in terms of non-compatible benefits, and the profile-structure treatments still did not affect any of the behaviors of interest.

This study shows that it is possible to help people understand complex retirement-related topics by incorporating videos that explain key elements of the process, namely the alternatives available and how to access them. This is a simple and relatively cheap alternative to increase comprehension and facilitate good decisions. Indeed, the videos produced for this experiment were made public on the Chilean Pensions Superintendency website in 2023.

A Appendix

A.1 The Chilean Pensions System

The Chilean population has access to two complementary retirement schemes, (1) a Private scheme in which people retire using the funds that they have accumulated in personal pension accounts; and (2) a Public Benefits scheme that consists of a baseline pension guaranteed by the State to Chileans and foreigners that comply with a set of requirements. The public system excludes people in the top 10% of the income distribution.¹⁴ A person in the lower 90% of income that has private savings would need to go through both the procedures of the Private and Public schemes in order to access all the pension resources available to them. Those in the top 10% can only access their private savings, and someone without private pension savings (for example if they never worked legally) and categorized in the lower 90% of income can only access public benefits.

Individuals with private savings have access to three main retirement distribution modes: Annuities, Programmed Withdrawals, and a mix of the two. Access to each of these is determined by the amount of money accumulated and the possibility of paying the administrative costs. Each of the different modes has pros and cons. The default is a Programmed Withdrawal for people who have not accumulated enough money to finance an Annuity or a mixed strand. Programmed Withdrawals are more risky, as people keep ownership of their money and assume both financial and longevity risks.¹⁵ Annuities are less risky, as the personal savings are sold to an insurance company for a fixed, inflation-corrected monthly allowance for the rest of a person's life. Annuities do not lead to inheritance in the event of early death. The combination of Annuities and Programmed Withdrawals pool the pros and cons of each. Each of the three modes has a set of nuanced alternatives that can be added. One of the challenges workers face when they initiate the private retirement process is the large number of alternatives available. While they give the person the opportunity to tailor their pension to their individual needs, the decisions made in the process impose high cognitive demand, are written in technical language, and have substantive life consequences ([Superintendencia de Pensiones 2019](#)).

People who are classified in the lower 90% of income according to the pensions targeting score can access one of the Public Pension Benefits that are available: There is a Guaranteed Universal Pension (*Pensión Garantizada Universal*) that is equivalent to 250 USD a month (as of April 1, 2023), for people that do not have private pension savings. The same Guaranteed Universal Pension is also available to people who do have private savings, but the amount topped-up varies depending on the magnitude of their self-financed base pension. For people with a base pension less than or equal to 870 USD, the amount is 250 USD; for people in the range of 870 USD to 1390 USD, the amount decreases monotonically. Those earning above 1390 USD are excluded from the public benefits. The decision-making challenges for potential beneficiaries of Public Pensions are similar to those for Private Pensions. There is much information that is difficult to understand and the individual needs to make the effort of applying. People need to learn about the benefits available to them and then fill out forms to apply to the correct scheme.

¹⁴In the last decade there have been several unsuccessful attempts at pension reform and there currently are proposals being discussed in the legislature. The information provided here is valid as of January 2023.

¹⁵If the person dies before exhausting the fund, it yields an inheritance.

A.2 Examples of website types

Web-based Pension Information is a cheap and accessible source of pension information. One can access it in the comfort of the home, work computer, or smartphone of choice.¹⁶ However, this comfort comes at the cost of not being able to ask questions verbally and implies making an effort to understand the content of the website and to select valid sources of information. Among those sources are official government websites. In a review of nine pension websites conducted in April 2020 (references in Appendix table A.1), the majority are structured in terms of Products, that is, focused on defining concepts used in the pension jargon. They are good sources of legal references that can be used by pensions advisors or sales agents, but not citizen-user friendly.

There are a few examples of websites from other countries that have invested in a friendlier user interface, most notably the German *Deutsche Rentenversicherung* https://www.deutsche-rentenversicherung.de/DRV/EN/Home/home_node.html?https=1 and the Australian Services Australia <https://www.servicesaustralia.gov.au/individuals/older-australians>, but a Profile structured User Interface, that is organized by types of pension clients and the information that is most relevant to them is rare.¹⁷ Wesbroom (2004) conducted a survey on the use of websites to promote company pension schemes in the UK and found that, while sixty-two percent of companies had a dedicated website, the majority had a ‘reference library’ format (a.k.a product-based information) with a series of pdf files to download, and a only a few cases presented a web-friendly structure.

Country	Website	Reference	Link
UK	Product	Structure	Link
Ireland	Product		Link
Canada	Product		Link
Spain	Product		Link
New Zealand	Product		Link
Italy	Mixed		Link
USA	Mixed	Audiovisual	Link
Germany	Profile	Structure	Link
Australia	Profile		link

Table A.1: Table of website references reviewed in April 2020. UK, USA and Germany serve as references for material for this study.

¹⁶According to Ipsos Chile (2015) survey data, in 2015 Chile had an internet penetration of 71.3% of households, 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 access these resources.

¹⁷See the Chilean [Previred.cl](#) for an example of website designed for active workers.

A.3 Diagram of experimental design

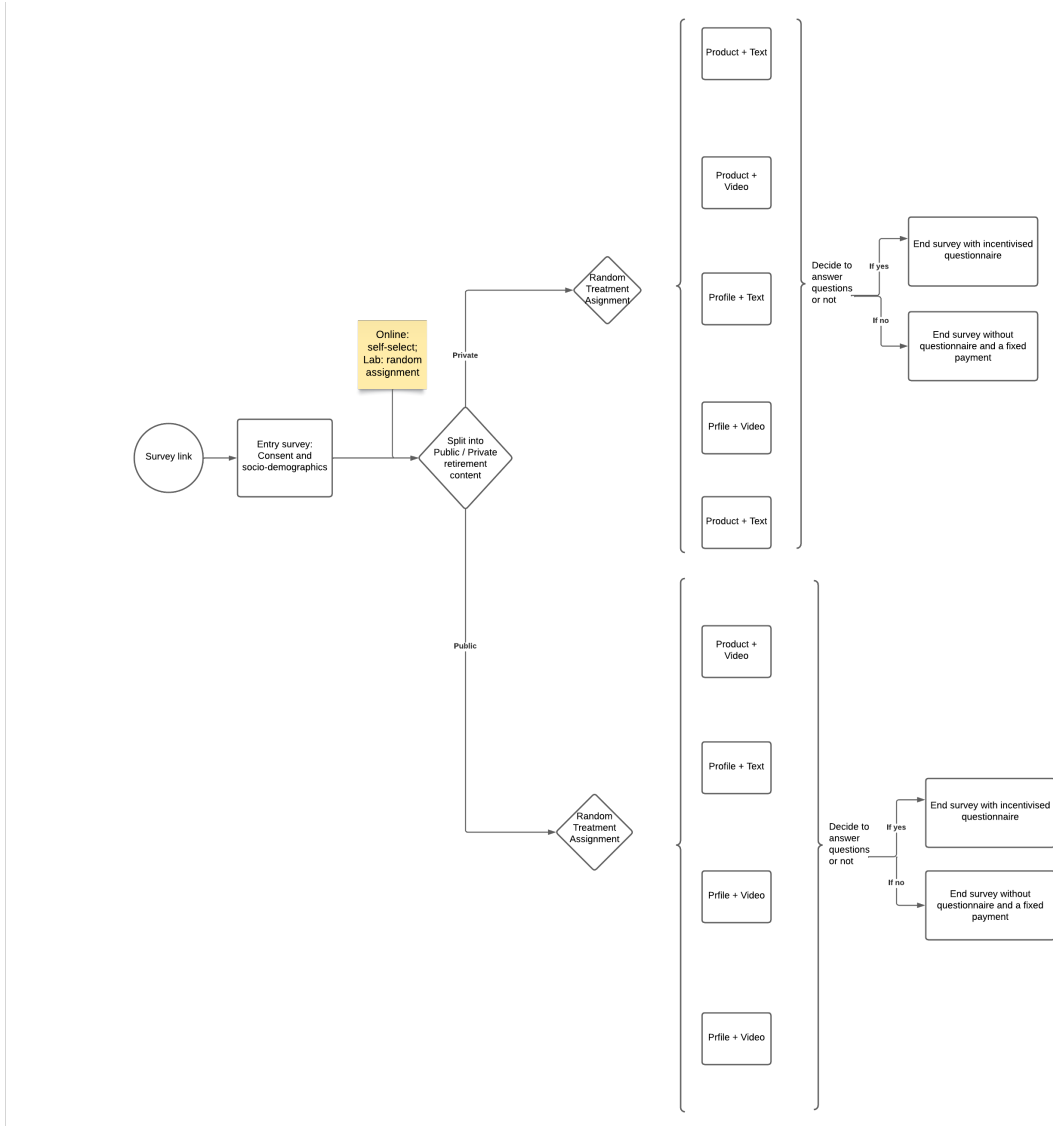


Figure A.1: The process that participants follow throughout the experiment.

A.4 Online Instructions

In this section, we present the original instructions in Spanish and its translation in English, for both public and private retirement systems. The text in **red** corresponds what people observed in the video treatment, while the text in **blue** is the baseline content in text. These instructions are the same for profile and product structure treatments.

In Spanish - Private System

En esta sección del estudio los invitamos a navegar por este sitio web para conocer más sobre la modalidad de interés para su perfil de pensionado. El sitio web contiene información del sistema para jubilarse con los fondos en la AFP.

Al terminar continuará con la encuesta, en la cual se encuentra una sección de 7 preguntas de comprensión que puede elegir contestar o no.

Solo es necesario navegar por UNA de las modalidades para responder las preguntas de comprensión.

Toda la información que necesita para contestar las preguntas se encuentra en [\[los videos\]](#)/ [\[las secciones\]](#) del sitio web denominados/as “Comparación de modalidades” y “Pasos a seguir”.

En esta actividad opcional puede ganar \$ 500 por respuesta correcta, sumando un máximo de \$ 3.500 al pago que va a recibir por terminar la encuesta. Si no desea contestar las preguntas, las puede omitir y seguir adelante con la encuesta principal, pero solo ganará \$ 2.700, pues se le cobrarán \$ 800 por pedir ayuda a un experto para que responda las preguntas.

Usted puede navegar por el sitio web el tiempo que desee. Cuando termine haga click en “Continuar Encuesta” y podrá elegir entre contestar o no las preguntas de comprensión.

Contestar preguntas (Privado)

Al hacer click en “Sí, deseo responder”, usted continuará con la encuesta, en la cual se encuentra una sección de 7 preguntas de comprensión. Toda la información que necesita para contestar las preguntas se encuentra en [\[los videos\]](#)/ [\[las secciones\]](#) del sitio web denominados/as “Comparación de modalidades” y “Pasos a seguir”. En esta actividad opcional puede ganar \$ 500 por respuesta correcta, sumando un máximo de \$ 3.500 al pago que va a recibir por terminar la encuesta. Si usted no desea contestar las preguntas, puede regresar a la encuesta principal haciendo click en el botón “Prefiero pagar por ayuda”. Al hacer eso, usted confirma que desea omitir la actividad adicional de pensiones y seguir adelante con la encuesta principal, ganando solo \$ 2.700, pues se le cobrarán \$ 800 por pedir ayuda a un experto para que responda las preguntas.

Sí, deseo responder / Prefiero pagar por ayuda

In English - Private System

In this study section, we invite you to navigate through this website to learn more about the interest option for your pensioner profile. The website contains information about the system for retiring with funds in the AFP (Administradora de Fondos de Pensiones).

Upon finishing, you will continue with the survey, in which there is a section of 7 comprehension questions you can choose to answer.

It is only necessary to navigate through ONE of the options to answer the comprehension questions.

All the information you need to answer the questions can be found in the [\[videos\]](#)/[\[sections\]](#) of the website labeled “Modalities Comparison” and “Steps to Follow.”

In this optional activity, you can earn \$ 500 per correct answer, adding up to a maximum of \$ 3,500 to the payment you will receive for completing the survey. If you choose not to answer the questions, you can skip them and proceed with the main survey. However, you will only earn \$ 2,700, as \$ 800 will be deducted for requesting help from an expert to answer the questions.

You can navigate the website for as long as you like. When you finish, click on “Continue Survey,” and you will have the choice to answer or not answer the comprehension questions.

Answer Questions (Private)

By clicking “Yes, I want to respond,” you will continue with the survey, in which

there is a section of 7 comprehension questions. All the information you need to answer the questions can be found in the [\[videos\]](#)/[\[sections\]](#) of the website labeled “Modalities Comparison” and “Steps to Follow.”

In this optional activity, you can earn \$ 500 per correct answer, adding up to a maximum of \$ 3,500 to the payment you will receive for completing the survey. If you choose not to answer the questions, you can return to the main survey by clicking the "Prefer to pay for help" button. By doing so, you confirm that you want to skip the additional pension activity and proceed with the main survey, earning only \$ 2,700, as \$ 800 will be deducted for requesting help from an expert to answer the questions.

Yes, I want to respond / Prefer to pay for help

In Spanish - Public System

En esta sección del estudio los invitamos a navegar por este sitio web para conocer más sobre el beneficio de interés para su perfil de pensionado. El sitio web contiene información del sistema de beneficios públicos de pensiones.

Al terminar continuará con la encuesta, en la cual se encuentra una sección de 7 preguntas de comprensión que puede elegir contestar o no.

Solo es necesario navegar por UNO de los beneficios para responder las preguntas de comprensión.

Toda la información que necesita para contestar las preguntas se encuentra en [\[los videos\]](#)/[\[las secciones\]](#) del sitio web denominados/as “Comparación de beneficios” y “Pasos a seguir”.

En esta actividad opcional puede ganar \$ 500 por respuesta correcta, sumando un máximo de \$ 3.500 al pago que va a recibir por terminar la encuesta. Si no desea contestar las preguntas, las puede omitir y seguir adelante con la encuesta principal sin recibir el monto adicional.

Usted puede navegar por el sitio web el tiempo que desee. Cuando termine haga click en “Continuar Encuesta” y podrá elegir entre contestar o no las preguntas de comprensión.

Contestar preguntas (Público)

Al hacer click en “Continuar preguntas adicionales”, usted continuará con la encuesta, en la cual se encuentra una sección de 7 preguntas de comprensión. Toda la información que necesita para contestar las preguntas se encuentra en [\[los videos\]](#)/[\[las secciones\]](#) del sitio web denominados/as “Comparación de beneficios” y “Pasos a seguir”. En esta actividad opcional puede ganar \$ 500 por respuesta correcta, sumando un máximo de \$ 3.500 al pago que va a recibir por terminar la encuesta. Si usted no desea contestar las preguntas, puede regresar a la encuesta principal haciendo click en el botón “Omitir preguntas adicionales”. Al hacer eso, usted confirma que desea omitir la actividad adicional de pensiones y seguir adelante con la encuesta principal sin recibir el monto adicional.

Continuar preguntas adicionales / Omitir preguntas adicionales

In English - Public system

In this study section, we invite you to navigate through this website to learn more about the benefit of interest for your pensioner profile. The website contains information about the public pension benefits system.

Upon finishing, you will proceed with the survey, in which there is a section of 7 comprehension questions you can choose to answer.

It is only necessary to navigate through ONE of the benefits to answer the comprehension questions.

All the information you need to answer the questions can be found in the [\[videos\]](#)/[\[sections\]](#) of the website called "Benefit Comparison" and "Steps to Follow."

In this optional activity, you can earn \$ 500 per correct answer, adding up to a maximum of \$ 3,500 to the payment you will receive for completing the survey. If you choose not to answer the questions, you can skip them and proceed with the main survey without receiving the additional amount.

You can navigate the website for as long as you like. When you finish, click on "Continue Survey", and you will have the choice to answer or not answer the comprehension questions.

Answer Questions (Public)

By clicking "Continue with Additional Questions", you will proceed with the survey, which includes a section of 7 comprehension questions. All the information you need to answer the questions can be found in the [\[videos\]](#)/[\[sections\]](#) of the website labeled "Benefit Comparison" and "Steps to Follow." In this optional activity, you can earn \$ 500 per correct answer, adding up to a maximum of \$ 3,500 to the payment you will receive for completing the survey. If you choose not to answer the questions, you can return to the main survey by clicking the "Skip Additional Questions" button. By doing so, you confirm that you want to skip the additional pension activity and proceed with the main survey without receiving the additional amount.

Continue with Additional Questions / Skip Additional Questions

A.5 Laboratory Instructions

A.5.1 In Spanish

A.5.1.1 Instrucciones

En el Sistema de Pensiones de Chile existen dos mecanismos a través de los cuales uno puede acceder a una pensión: el sistema privado con los ahorros acumulados en las AFP y los beneficios públicos de pensión como la Pensión Garantizada Universal. A continuación le presentaremos el perfil de una persona que se quiere jubilar. Por favor, lea el perfil con atención y piense en esa persona cuando navegue por el sitio web que vendrá más adelante.

A.5.1.2 Perfiles

Perfil 1 - Sistema Privado

Considere este perfil para responder las siguientes preguntas: [NOMBRE] (65 años) está ansioso/a con la idea de jubilarse. Él/ella y su esposo/a tienen buena salud, terminaron de pagar los dividendos de la casa y sus hijos ya son independientes. Además, él/ella logró ahorrar algo de dinero por separado, que piensa usar para cubrir posibles gastos futuros, por ejemplo, una enfermedad. [NOMBRE] no tiene contemplado dejarle herencia a nadie, salvo a su esposo/a que ya es beneficiario/a de su pensión. Considerando su situación, él/ella quiere saber cuál es la opción de pensión que más le conviene.

Perfil 2 - Sistema Privado

Considere este perfil para responder las siguientes preguntas: [NOMBRE] (65 años) está pensando en jubilarse, ya que está un poco afectado/a de salud y no quiere trabajar

más. Si bien él/ella ha ahorrado, todavía tiene que terminar de pagar el dividendo de su casa y tiene una hija estudiando en la universidad. Como los padres de [NOMBRE] murieron después de los 90 años, él/ella no quiere arriesgarse a quedar sin dinero en caso de tener una vida longeva, pero necesita tener ingresos más altos algunos años más para poder pagar sus gastos. Considerando su situación, él/ella quiere saber cuál es la opción de pensión que más le conviene.

Perfil 3 - Sistema Privado

Considere este perfil para responder las siguientes preguntas: [NOMBRE] (65 años) tiene prácticamente decidido jubilarse. Él/ella no tiene buena salud y tiene un nieto con problemas del desarrollo. Actualmente, [NOMBRE], utiliza parte de sus ahorros para cubrir los gastos de su nieto y quiere asegurarse que no le vaya a faltar ese apoyo, si es que él/ella fallece. Por este motivo, quiere dejar a su nieto una herencia con el dinero que tiene acumulado en su fondo de pensión, ya que él no puede ser beneficiario de una Renta Vitalicia. Considerando su situación, él/ella quiere saber cuál es la opción de pensión que más le conviene.

Perfil 4 - Sistema Privado

Considere este perfil para responder las siguientes preguntas: A [NOMBRE] (65 años) todavía le quedan algunas dudas, pero tiene prácticamente decidido jubilarse. Él/ella tiene buena salud, pero paga todos sus gastos de vida (incluidos los médicos) con los ingresos que recibe por concepto de arriendo. [NOMBRE] sabe que más adelante podrá tener gastos inesperados, por lo que prefiere tener control sobre sus fondos. Además, él/ella sabe que podría dejar esos fondos como herencia, si le llegase a pasar algo antes que se consuman. Considerando su situación, él/ella quiere saber cuál es la opción de pensión que más le conviene.

Perfil 5 - Sistema Público

Considere este perfil para responder las siguientes preguntas: [NOMBRE] (65 años) dedicó la mayor parte de su vida a la enseñanza. Como no podía encontrar un trabajo puertas afuera acorde a sus necesidades, él/ella decidió instalar una guardería en su propia casa. [NOMBRE] todavía no tiene intenciones de iniciar su jubilación en su AFP, pues quiere seguir trabajando en su guardería, pero sabe que puede solicitar una pensión del Estado que le sería útil para gastos imprevistos. Considerando su situación, él/ella quiere saber cuál es la opción de pensión que más le conviene.

Perfil 6 - Sistema Público

Considere este perfil para responder las siguientes preguntas: [NOMBRE] (65 años) es albañil. Nunca fue de su agrado trabajar en constructoras debido a los conflictos laborales que surgían con sus colegas. Debido a ello, [NOMBRE] decidió trabajar de forma independiente en casas particulares, lo que ocasionó que él/ella no cotizara en una AFP. Actualmente, [NOMBRE] necesita seguir trabajando, pero quiere solicitar una pensión para obtener más ingresos. Considerando su situación, él/ella quiere saber cuál es la opción de pensión que más le conviene.

Perfil 7

Considere este perfil para responder las siguientes preguntas: [NOMBRE] (45 años) trabajaba en una empresa de reparto a domicilio. Un día, mientras él/ella recorría un cerro en su bicicleta cayó por un barranco, lo que dejó a [NOMBRE] con tetraplejía. Debido al accidente, él/ella perdió su capacidad de trabajo de por vida, por lo que necesita recibir una pensión. Sin embargo, [NOMBRE] no la puede solicitar en una AFP porque nunca cotizó. Considerando su situación, él/ella quiere saber cuál es la opción de pensión que más le conviene.

Perfil 8

Considere este perfil para responder las siguientes preguntas: [NOMBRE] (45 años) trabajaba como chef en un restaurante. Un día, mientras él/ella estaba descansado en su casa sufrió un accidente cerebrovascular. [NOMBRE] quedó con un severo daño neurológico que ya no le permite valerse por su propia cuenta. Si bien [NOMBRE] recibe una pensión de invalidez a partir de sus ahorros en una AFP, ésta es menor a una Pensión Garantizada Universal, por lo que él/ella requiere de otros ingresos para subsistir. Considerando su situación, él/ella quiere saber cuál es la opción de pensión que más le conviene.

A.5.2 In English

A.5.2.1 Instructions

En el Sistema de Pensiones de Chile existen dos mecanismos a través de los cuales uno puede acceder a una pensión: el sistema privado con los ahorros acumulados en las AFP y los beneficios públicos de pensión como la Pensión Garantizada Universal. A continuación le presentaremos el perfil de una persona que se quiere jubilar. Por favor, lea el perfil con atención y piense en esa persona cuando navegue por el sitio web que vendrá más adelante.

A.5.2.2 Profiles

Profile 1

Consider this profile to answer the following questions: [NAME] (65 years old) is anxious about retiring. He/she and her/his husband are in good health, they have finished paying the house dividends and their children are now independent. Furthermore, he/she managed to save some money separately, which he/she plans to use to cover possible future expenses, for example, an illness. [NAME] does not plan to leave an inheritance to anyone, except for her husband, who is already the beneficiary of her pension. Considering her situation, he/she wants to know which pension option is best for him/her.

Profile 2

Consider this profile to answer the following questions: [NAME] (65 years old) is thinking about retiring, since his health is a little affected and he does not want to work anymore. Although he/she has saved, he/she still has to finish paying the dividend on his/her house and has a daughter studying in college. university. Since [NAME]'s parents died after age 90, he/she does not want to risk running out of money if he/she lives a long life, but he/she needs to have a higher income for a few more years to be able to pay his/her expenses. Considering his/her situation, he/she wants to know which pension option is best for him/her.

Profile 3

Consider this profile to answer the following questions: [NAME] (65 years old) has practically decided to retire. He/she is not in good health and has a grandchild with developmental problems. Currently, [NAME] uses part of his savings to cover the expenses of her grandson and wants to ensure that he/she will not lack that support if he/she passes away. For this reason, he wants to leave his grandson an inheritance with the money he has accumulated in his pension fund, since he cannot be a beneficiary of a Life Annuity. Considering her situation, he/she wants to know which pension option is best for him/her.

Profile 4

Consider this profile to answer the following questions: [NAME] (65 years old) still has some doubts, but he has practically decided to retire. He/she is in good health, but pays all of her living expenses (including medical expenses) with the income he/she receives from rent. [NAME] knows that later he may have unexpected expenses, so he prefers to have control over his funds. Furthermore, he/she knows that he/she could leave those funds as an inheritance, if something were to happen to him/her before they are consumed. Considering his/her situation, he/she wants to know which pension option is best for him/her.

Profile 5

Consider this profile to answer the following questions: [NAME] (65 years old) dedicated most of his life to teaching. Since he could not find an outside job according to his needs, he/she decided to set up a daycare in his/her own home. [NAME] still has no intention of starting his retirement in his AFP, since he wants to continue working in his daycare, but he knows that he can apply for a State pension that would be useful for unforeseen expenses. Considering his/her situation, he/she wants to know which pension option is best for him/her.

Profile 6

Consider this profile to answer the following questions: [NAME] (65 years old) is a bricklayer. He never liked working in construction companies due to the labor conflicts that arose with his colleagues. Due to this, [NAME] decided to work independently in private homes, which caused him/her not to contribute to an AFP. Currently, [NAME] needs to continue working, but he wants to apply for a pension to earn more income. Considering his/her situation, he/she wants to know which pension option is best for him/her.

Profile 7

Consider this profile to answer the following questions: [NAME] (45 years old) worked in a home delivery company. One day, while he/she was riding up a hill on her bicycle, he/she fell down a ravine, which left [NAME] with tetraplegia. Due to the accident, he/she lost his/her ability to work for life, so he/she needs to receive a pension. However, [NAME] cannot apply for it in an AFP because she never contributed. Considering his/her situation, he/she wants to know which pension option is best for him/her.

Profile 8

Consider this profile to answer the following questions: [NAME] (45 years old) worked as a chef in a restaurant. One day while he/she was resting at her house she suffered a stroke. [NAME] was left with severe neurological damage that no longer allows her to fend for herself. Although [NAME] receives a disability pension from his/her savings in an AFP, this is less than a Universal Guaranteed Pension, so he/she requires other income to survive. Considering his/her situation, he/she wants to know which pension option is best for him/her.

A.6 Additional Screenshots

The following screenshots present the key elements of the websites used in the experiments. The exact information used and all of its content is available in the GitHub repository.



Figure A.2: Homepages of the four treatment prototypes of the Public Pension Benefits websites. Top-left is the Baseline, top-right is the baseline with videos, bottom-left is the profile structured homepage with information in text, and bottom right is the profile structured homepage with information in video.

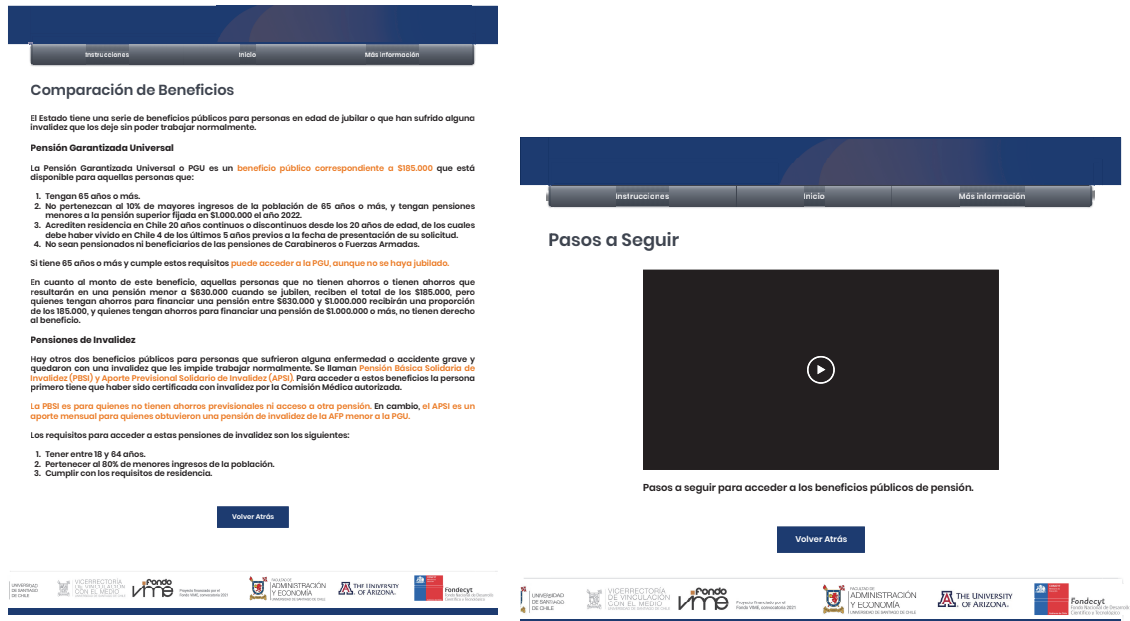


Figure A.3: Text versus Video Treatments for the Public Pension Benefits.

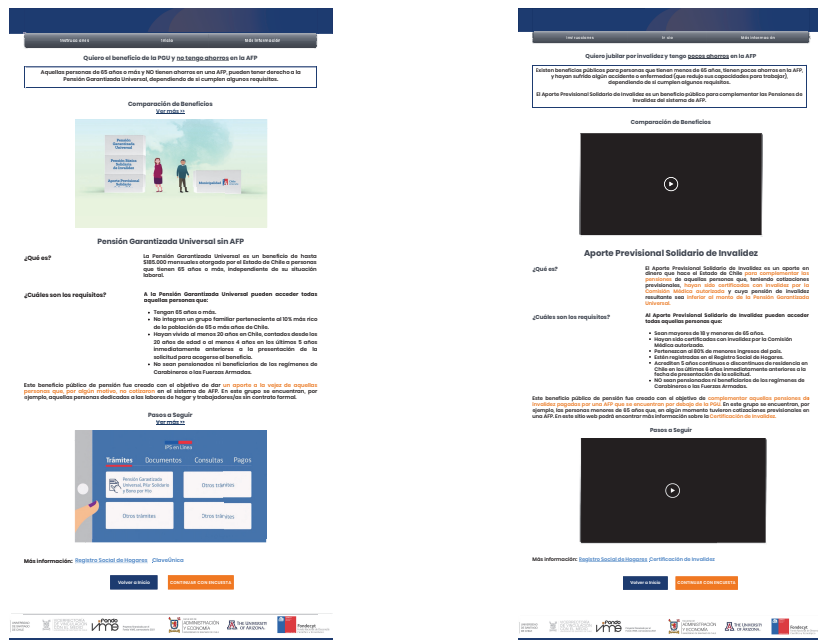


Figure A.4: Information observed by the person who clicked on the name of a pension scheme (Product treatment) or a retirement profile (Profile treatment), with text only (left) text and video (right) for the public retirement benefits.

Figures A.2, A.3 and A.4 are equivalent to Figures 2, 3, and A.5, but with the Public Benefit content. The experimental design made an effort to keep all graphical aspects, outside the experimental treatments, constant. This implied consistent use of the same colors, images, and visual references across all prototypes.



Figure A.5: Information observed by the person who clicked on the name of a pension scheme (product treatment) or a retirement profile (profile treatment), with text only (left) text and video (right) for the private retirement schemes.

A.7 Questionnaire correct responses

In this section, the correct answers for each knowledge question are given in bold font, in both Spanish and English.

For the Private System

Pregunta 1 - ¿Es obligatorio jubilarse a los 65 años para los hombres y a los 60 años para las mujeres? / Is it mandatory to retire at 65 years old for men and 60 for women?

1. Sí / Yes
2. **No**
3. No sabe / Doesn't know

Pregunta 2 - ¿Qué se debe hacer para iniciar un proceso de jubilación?/ What should you do to start the retirement process?

1. **Solicitar el Certificado de Saldo en la AFP / Request the Certificate of Balance in the AFP**
2. Contactar a alguien para que lo/la asesore / Contact someone to advise him/her.
3. No sabe / Doesn't know

Pregunta 3 - ¿Todas las personas que tienen ahorros en el sistema de AFP tienen posibilidad de elegir la modalidad de pensión de su preferencia? / Do all people who have savings in the AFP system have the possibility of choosing the type of pension of their preference?

1. Sí / Yes
2. No
3. No sabe / Doesn't know

Pregunta 4 - ¿Para qué sirve el SCOMP? / What is the function of the SCOMP?

1. **Para tener todas las ofertas de pensión que uno tiene disponible en un sólo lugar y poder comparar / To have all the pension offers available in one place, allowing to compare**
2. Para que las AFP y las Compañías de Seguros lucren con mi información / So that the Pension Fund Administrators (AFP) and Insurance Companies can profit from my information.
3. Únicamente para que un/a asesor/a previsional o agente de una Compañía de Seguros lo revise / Only for a pension advisor or an agent from an Insurance Company to review it.

Pregunta 5 - ¿Se puede hacer el trámite del SCOMP más de una vez? / Can the SCOMP process be done more than once?

1. **Sí / Yes**
2. No
3. No sabe / Doesn't know

Pregunta 6 - Con relación a la posibilidad de contratar servicios de asesoría previsional, ¿cuál de las siguientes alternativas es correcta? / Regarding the possibility of hiring pension advisory services, which of the following alternatives is correct?

1. **Es voluntario / It is voluntary**
2. Es obligatorio / It is mandatory
3. Depende de la modalidad de pensión / It depends on the pension plan's type.

Pregunta 7 - Una vez que se contrata la Renta Vitalicia / Retiro Programado / Modalidades Mixtas, ¿quién es propietario/a de los fondos acumulados en la cuenta de capitalización individual? / Once you choose annuities/programmed withdrawal/mixed modes, who owns the funds accumulated in the individual capitalization account?

Para Renta Vitalicia: La Compañía de Seguros / For Annuities: The Insurance Company Para Retiro Programado: El/la afiliado/a / For Programmed withdrawal: The affiliate Para Modalidades Mixtas: Ambos: La Compañía de Seguros y el/la afiliado/a / Mixed modes: Both: The insurance company and the affiliate

Public System

Pregunta 1 - ¿A qué edad puede solicitar los beneficios de vejez? / At what age can you apply for old age benefits?

1. **A partir de los 65 años / From the age of 65**
2. A partir de los 60 años para mujeres y de los 65 para hombres / Starting at 60 years for women and 65 for men.
3. No sabe / Doesn't know

Pregunta 2 - ¿Qué se necesita para realizar la solicitud de beneficios en línea? / What is required to apply for benefits online?

1. **Tener ClaveÚnica / To have a ClaveUnica**
2. Contactar a alguien para que lo/la asesore / Contact someone to advise her/him
3. No sabe / Doesn't know

Pregunta 3 - ¿Puede un/a extranjero/a acceder a los beneficios de pensiones? / Can a foreigner access pensions benefits?

1. **Sí / Yes**
2. No
3. No sabe / Doesn't know

Pregunta 4 - ¿Cómo se financia la Pensión Garantizada Universal? / How is the Universal Guaranteed Pension financed?

1. **A través del Estado con los impuestos / Through the State, with taxes**
2. Con sus ahorros previsionales / With their pension savings
3. Ambos: con impuestos y ahorros previsionales / Both: with taxes and pension savings.
4. No sabe / Doesn't know

Pregunta 5 - ¿Por qué motivo a alguien le podrían rechazar el acceso a los beneficios? / For what reason might someone be denied access to benefits?

1. **Por encontrarse dentro del 9% de mayores ingresos / For being in the 9% of higher income**
2. Por haber vivido los últimos 25 años en Chile / For having lived in Chile for the last 25 years.
3. Por encontrarse dentro del 50% de menores ingresos / For being within the bottom 50% of income earners.
4. No sabe / Doesn't know

Pregunta 6 - ¿Es necesario estar jubilado/a para acceder a la Pensión Garantizada Universal? / Is it necessary to be retired to access to the Universal Guaranteed Pension?

1. Sí / Yes
2. No
3. No sabe / Doesn't know

Pregunta 7 - ¿En qué monto fue fijada la Pensión Superior en 2022? / In what amount was the Superior Pension set in 2022?

1. **\$1.000.000 / \$1,000,000 CLP**
2. \$630.000 / \$630,000 CLP
3. \$200.000 / \$200,000 CLP
4. No sabe / Doesn't know

A.8 Attrition Statistics

As can be observed in Table [A.2](#), attrition is not associated with the treatments. The estimations in Model 4 are misspecified because the number of people that opted out is so low, it is not possible to estimate a model that includes basic sociodemographic control variables.

Table A.2: Columns 1 and 2 present logit models of the likelihood of completing the tutorial vs dropping out at the website stage. Columns 3-4 are logit models of whether a person chose to respond to the comprehension questions or not.

	Finish Tutorial		Opt into Comprehension Test	
	(1)	(2)	(3)	(4)
Profile _i	0.387 (0.322)	0.378 (0.326)	-0.871 (0.847)	-0.984 (0.858)
Video _j	0.051 (0.291)	0.079 (0.294)	-1.661 (1.103)	-1.755 (1.116)
Profile _i *Video _j	-0.690 (0.428)	-0.689 (0.433)	2.076 (1.438)	2.132 (1.458)
Age		-0.013 (0.022)		-0.039 (0.075)
Male		0.249 (0.220)		-0.003 (0.641)
High School		0.727* (0.317)		-1.106 (0.981)
University or technical college		0.650* (0.263)		-0.535 (0.870)
Private healthcare		-0.161 (0.236)		-17.516 (1,389.746)
Constant	1.369*** (0.204)	1.534 (1.342)	-3.118*** (0.457)	0.313 (4.481)
Observations	572	572	458	458
Log Likelihood	-283.514	-278.197	-50.243	-44.835
Akaike Inf. Crit.	575.028	574.393	108.486	107.670

Note: *p<0.05; **p<0.01; ***p<0.001

Table A.3: Columns 1 and 2 present logit models of the likelihood of completing the tutorial vs dropping out at the website stage. Columns 3-4 are logit models of whether a person chose to respond to the comprehension questions or not - for the lab sample

	Finish Tutorial		Select Comp Q.	
	(1)	(2)	(3)	(4)
Profile _i	-17.001 (1,463.436)	-17.387 (2,082.552)	-0.386 (0.934)	-0.337 (0.971)
Video _j	-16.270 (1,463.436)	-16.062 (2,082.552)	-1.137 (1.171)	-1.177 (1.202)
Profile _i *Video _j	15.651 (1,463.436)	15.047 (2,082.552)	0.485 (1.707)	0.428 (1.747)
Age		-0.510** (0.173)		-0.278 (0.309)
Male		-0.004 (0.729)		2.205* (1.099)
High School		2.325 (1.663)		14.533 (7,582.364)
University or technical college		1.152 (1.699)		-1.195 (7,775.773)
Private healthcare		3.877* (1.855)		0.515 (0.917)
Constant	19.566 (1,463.436)	29.372 (2,082.557)	-2.833*** (0.594)	-13.000 (7,582.367)
Observations	222	222	209	209
Log Likelihood	-44.137	-27.906	-29.925	-24.996
Akaike Inf. Crit.	96.274	73.811	67.849	67.993

Note:

*p<0.05; **p<0.01; ***p<0.001

Table A.3 presents the attrition tables for the Lab subject pool. The results are similar to those for the online subjects presented in Table A.2.

Table A.4: Multinomial logit models of treatment assignment by socio-demographic characteristics for the sub-group that observed the Private Pensions information - balance test

	T.Profile	T.Video	T.Video and Profile
	(1)	(2)	(3)
Age	0.002 (0.043)	-0.031 (0.041)	0.055 (0.042)
Male	0.175 (0.383)	-0.098 (0.355)	-0.061 (0.371)
High School	0.086 (0.619)	0.390 (0.565)	0.118 (0.565)
University or technical college	0.127 (0.467)	0.038 (0.443)	-0.402 (0.454)
Private healthcare	0.349 (0.393)	0.203 (0.371)	-0.415 (0.397)
Mid Fin. Lit.	-0.312 (0.423)	0.104 (0.405)	-0.062 (0.415)
High Fin. Lit.	0.315 (0.655)	0.911 (0.617)	0.223 (0.669)
Constant	-0.562 (2.537)	1.553 (2.430)	-2.980 (2.562)
Observations	256		
Akaike Inf. Crit.	739.464	739.464	739.464

Note: *p<0.05; **p<0.01; ***p<0.001

Table A.4 presents multinomial estimations of treatment assignment as a function of age, gender, level of education, private healthcare scheme (a proxy for income), and financial literacy. As can be observed, the treatments are balanced across all these characteristics.

Table A.5: Multinomial logit models of treatment assignment by socio-demographic characteristics for the sub-group that observed the Public Benefits information - balance test

	T.Profile	T.Video	T.Video and Profile
	(1)	(2)	(3)
Age	0.011 (0.045)	0.024 (0.046)	0.049 (0.044)
Male	-0.261 (0.430)	-0.239 (0.441)	-0.054 (0.429)
Education: High School	-0.867 (0.846)	-0.953 (0.806)	-0.673 (0.814)
University or technical college	-0.633 (0.796)	-1.216 (0.763)	-0.459 (0.750)
Private healthcare	-1.369* (0.610)	-0.910 (0.584)	-0.181 (0.515)
Mid Fin. Lit.	0.231 (0.460)	0.572 (0.488)	0.050 (0.452)
High Fin. Lit.	1.078 (0.679)	0.886 (0.735)	-0.007 (0.747)
Constant	0.159 (2.779)	-0.656 (2.817)	-2.316 (2.726)
Observations	199		
Akaike Inf. Crit.	582.026	582.026	582.026

Note: *p<0.05; **p<0.01; ***p<0.001

In Table A.5 there is a slight imbalance across people that have private healthcare, a proxy variable for income level, as only the people in the top 20% of income use private health insurance. This imbalance is caused because only 40/192 people in this treatment have private health insurance, but including health as a control variable in the estimations does not appreciably alter the coefficients of the models presented in the manuscript.

Table A.6: Multinomial logit models of Treatment assignment by socio-demographic characteristics for the lab sample - balance test

	T.Profile	T.Video	T.Video and Profile
	(1)	(2)	(3)
Age	0.017 (0.101)	0.092 (0.097)	0.013 (0.101)
Male	0.073 (0.415)	0.201 (0.411)	-0.002 (0.425)
Private healthcare	-0.254 (0.474)	-0.710 (0.500)	0.184 (0.458)
Mid Fin. Lit.	0.279 (0.421)	-0.340 (0.422)	0.279 (0.433)
High Fin. Lit.	-0.478 (0.707)	-1.542 (0.861)	-0.103 (0.673)
Constant	-0.426 (2.131)	-1.646 (2.054)	-0.553 (2.138)
Observations	204		

Note: *p<0.05; **p<0.01; ***p<0.001

As can be observed in Table A.6, there are no substantive imbalances in the lab subject group. Age, gender, private healthcare, and financial literacy are all distributed equivalently across treatments. Education is not included in this model as participants were either undergraduate or graduate students.

A.9 Heterogeneity tests

To test for potential heterogeneous treatment effects we adopt the Bayesian Additive Regression Trees (BART) machine learning strategy with 1100 iterations (Hill 2011, Gerber & Green 2012, Dorie et al. 2022). This approach estimates conditional average treatment effects (CATEs) of the Video treatment for each participant based on accessing private/public retirement information, their gender and financial literacy, separating the online and lab samples.

Private vs Public retirement information Figure A.6a presents the BART conditional CATE estimations for the retirement-aged population of the online sample ordered from lowest to highest, controlling for gender and financial literacy – as participants could self-select into what information they were interested in. The magnitude of the effect is always positive, ranging from 0.5-1 in line with estimations presented in the main data sections. The bottom half represents the CATE level of people who accessed the public or private retirement information websites. In this approach, an interaction is observed when there is a clear color pattern, for example, if all coefficients for people who access the public benefits website were on one side and the coefficients for people who observed the private retirement information on the other. In Figure A.6 the pattern is not clear. Figure A.6b indicates that people who observed both websites present high

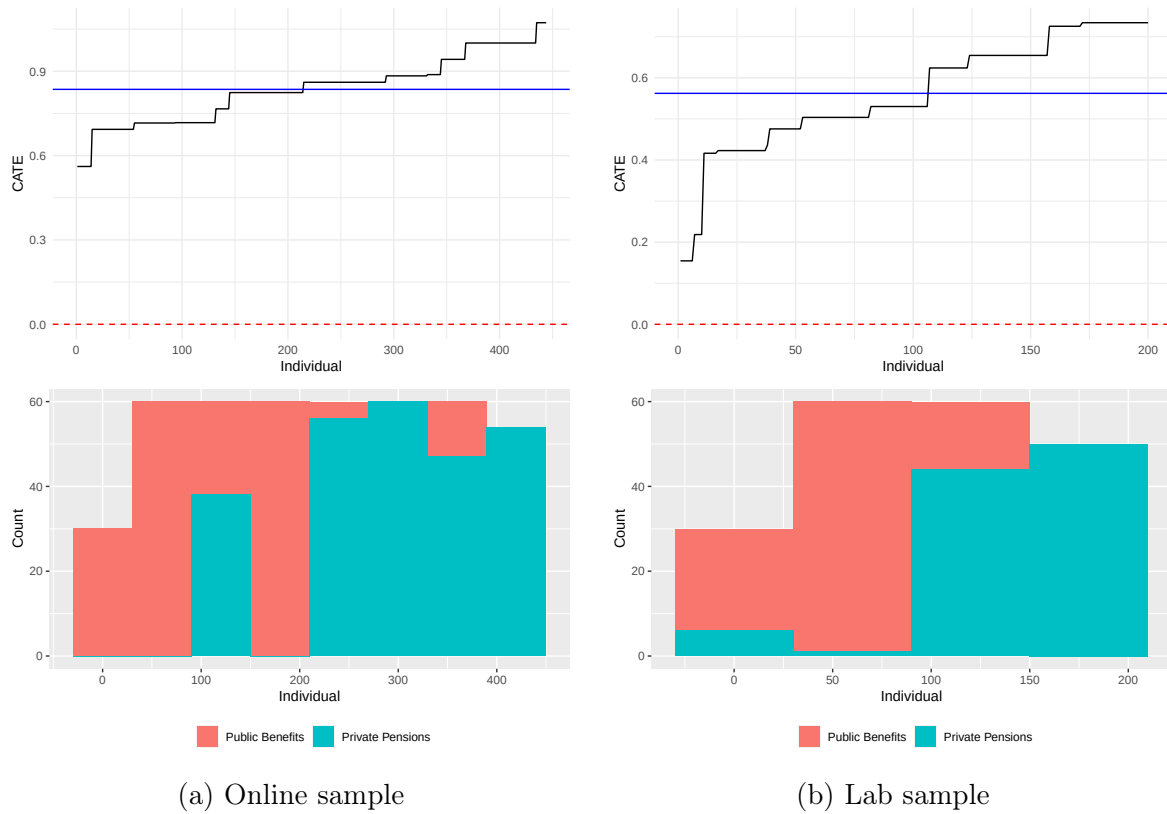
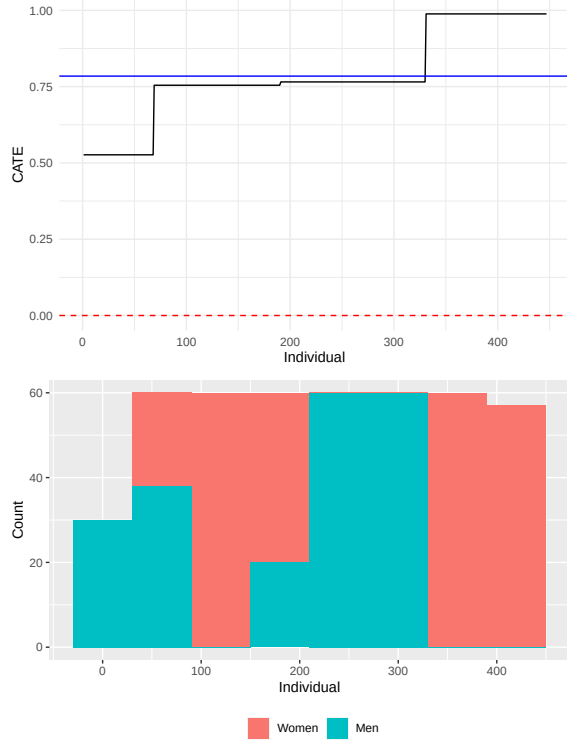


Figure A.6: BART estimations for website content heterogeneity –private versus public pension information – controlling for gender and financial literacy.

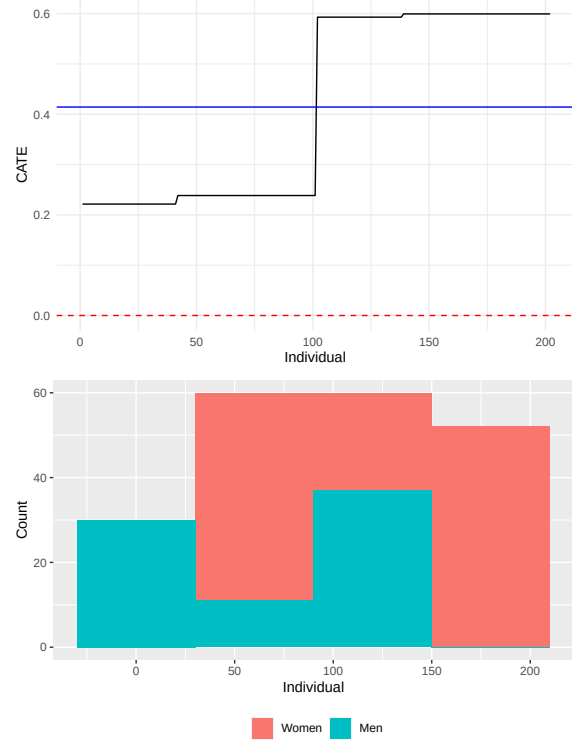
and low CATE estimations. Figure A.6b, however, suggests that student participants in the lab may have gained more from the videos when randomly assigned to the private retirement website. More research is needed to understand why this may be the case. Overall, the Video treatment is positive in both scenarios, with simpler public benefits information and more complex private retirement information.

Gender Figures A.7a and A.7b present the CATE estimations conditional on gender and whether the person accessed the public or private retirement information. The effects are always positive and vary from 0.5 to 1 in the online sample, in line with the main estimates in Table 4, and from 0.2 to 0.6 for the lab sample. The bottom half represents the gender of the person located at each CATE level, and there are no clear patterns. In the online sample (Figure A.7a) and the lab sample (Figure A.7b) women and men are located on both the high and the low end of the CATE estimations. It could be argued that women are slightly more predominant on the higher levels, but the interaction is not evident.

Financial Literacy Figure A.8a presents CATE estimations for correct responses conditional on financial literacy and private/public information websites, for the online sample. People of lower financial literacy might tend to concentrate on the middle to lower ranges of CATE, and people with higher levels of financial literacy in the mid to high ranges of CATE. However, this pattern is reversed in the lab subject pool (Figure and A.8b) where highly financially literate students presented the lowest treatment effects. The relatively smaller number of observations in the student sample (202 obs) may reduce

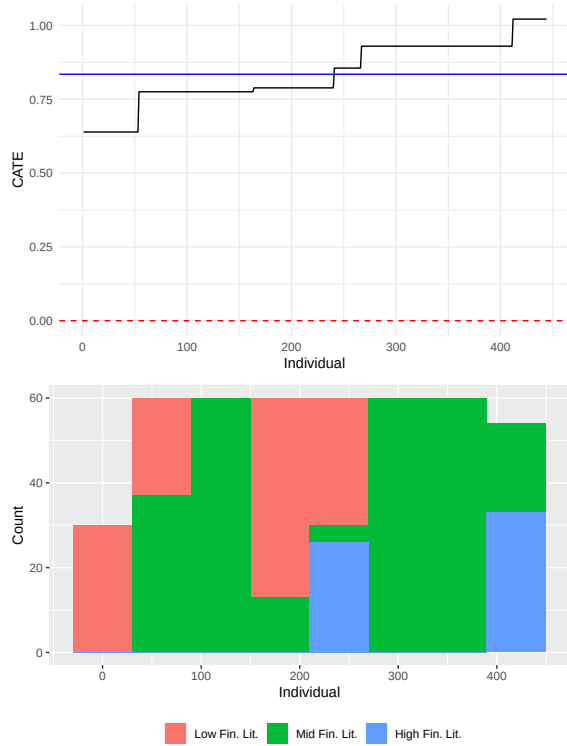


(a) Online sample

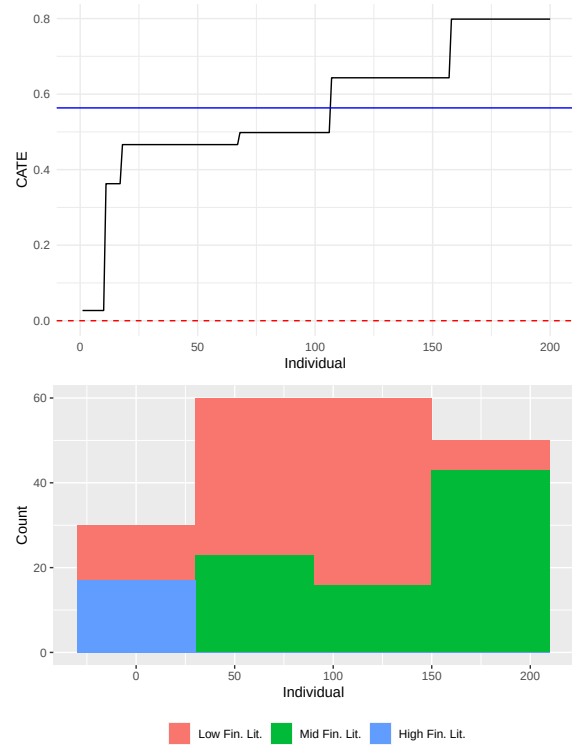


(b) Lab sample

Figure A.7: BART estimations for gender heterogeneity controlling for Private versus Public pension websites.



(a) Online sample



(b) Lab sample

Figure A.8: BART estimations for financial literacy heterogeneity, controlling for Private and Public information treatments.

the reliability of the interaction estimations, however, this difference in pattern suggests there is no clear interaction between financial literacy and the effect of the Video treatment.

A.10 Self-reported evaluations of the websites

The preregistered hypotheses of this study included the expectation that self-reported evaluations of the websites would be higher for people who experienced the Profile and/or Video treatments. This expectation, however, is not observable in the online sample of a retirement-aged population. Overall websites were evaluated well, online participants found the website navigation easy with a mean of 4.37 out of 5 points, the information sufficient to make a decision with a mean of 7.92 out of 10 points, and 8.34 out of 10 would recommend it to a friend or family member – see Table A.7). Evaluations that are equivalent in the student sample – Table A.8.

Table A.7: The table presents OLS models of online self-reported measures of evaluating the questions: “How easy was it to find the information you were looking for?” (1-5 scale), “Is the information available on the website sufficient to make a decision?” (0-10 scale) and “Considering your experience on this website, how likely are you to recommend it to a family member or friend?” (0-10 scale). Model estimations include heteroscedasticity-robust standard errors.

	Easy	Useful	Recommend
	(1)	(2)	(3)
Profile _i	−0.154 (0.119)	−0.006 (0.269)	−0.047 (0.274)
Video _j	−0.034 (0.105)	0.321 (0.240)	0.431 (0.252)
Profile _i *Video _j	0.012 (0.162)	−0.395 (0.375)	−0.264 (0.368)
Mid Fin. Lit.	−0.042 (0.089)	−0.321 (0.204)	−0.451* (0.194)
High Fin. Lit.	0.206 (0.125)	0.103 (0.263)	−0.080 (0.262)
Constant	4.379*** (0.091)	7.929*** (0.222)	8.347*** (0.214)
Observations	455	455	455
R ²	0.016	0.014	0.02
Adjusted R ²	0.005	0.003	0.009

Note: *p<0.05; **p<0.01; ***p<0.001

Table A.8: The table presents OLS models of lab self-reported measures of evaluating the questions: “How easy was it to find the information you were looking for?” (1-5 scale), “Is the information available on the website sufficient to make a decision?” (0-10 scale) and “Considering your experience on this website, how likely are you to recommend it to a family member or friend?” (0-10 scale). Model estimations include heteroscedasticity-robust standard errors.

	Easy (1)	Useful (2)	Recommend (3)
Profile _i	0.354* (0.159)	0.265 (0.340)	−0.148 (0.362)
Video _j	0.409** (0.153)	0.411 (0.349)	0.212 (0.291)
Profile _i *Video _j	−0.487* (0.207)	−0.280 (0.481)	0.493 (0.468)
Mid Fin. Lit.	−0.025 (0.109)	−0.261 (0.256)	−0.276 (0.253)
High Fin. Lit.	0.136 (0.169)	1.010*** (0.281)	0.306 (0.326)
Constant	4.274*** (0.149)	7.720*** (0.286)	8.215*** (0.244)
Observations	204	204	204
R ²	0.046	0.045	0.035
Adjusted R ²	0.022	0.021	0.01

Note: *p<0.05; **p<0.01; ***p<0.001

The students in the sample did find websites with videos easier for finding the information they were looking for than when there was only text. However, other self-reported measures do not improve with the video. There is not sufficient evidence to suggest that the treatments had a substantive impact on user experience.

Treatment	Mean Promoter	s.d. Promoter	Net Promoter Score	Number of Responses
Baseline	8.11	2.16	36.28	113.00
Profile	8.07	1.97	32.41	108.00
Video	8.51	1.71	45.76	118.00
Profile and Video	8.23	1.97	35.85	106.00

Table A.9: Online responses to the question: “Considering your experience on this website, how likely are you to recommend it to a family member or friend?” (0-10 scale).

Tables A.9 for the online subject pool and A.10 for the lab indicate that the level evaluation of the websites is very high, with a mean recommendation value close to 8 (from a 0-10 scale), and overall positive that vary from 26-57, scores that are considered good (above 20) and favorable (above 50) by Bain & Company. In line with previous

Treatment	Mean	s.d.	Net	Number of
	Promoter	Promoter	Promoter Score	Responses
Baseline	8.16	1.57	29.41	51.00
Profile	7.94	2.18	26.00	50.00
Video	8.40	1.36	40.38	52.00
Profile and Video	8.68	1.55	57.45	47.00

Table A.10: Lab responses to the question: “Considering your experience on this website, how likely are you to recommend it to a family member or friend?” (0-10 scale)

results, the scores are substantively higher for the treatments that include a video, and lowest for the profile-text combo. The result is consistent between the retirement-age population that participated in the online version of the experiment and students in the laboratory.

A.11 Alternative model estimations

Table A.11: Number of correct responses as a function of treatment and literacy level, Online data (OLS estimates with heteroscedasticity-robust standard errors)

	Number of correct responses					
	Full Online	Private	Public	Female	Male	Doesn't know
	(1)	(2)	(3)	(4)	(5)	(6)
Profile _i	−0.115 (0.205)	0.073 (0.313)	−0.277 (0.271)	−0.117 (0.292)	−0.111 (0.284)	−0.252 (0.360)
Video _j	0.863*** (0.173)	0.824** (0.282)	0.889*** (0.219)	1.014*** (0.238)	0.689** (0.254)	1.011*** (0.272)
Profile _i *Video _j	−0.157 (0.272)	−0.318 (0.420)	−0.007 (0.357)	−0.282 (0.366)	−0.016 (0.405)	−0.113 (0.481)
Constant	4.708*** (0.130)	4.644*** (0.209)	4.750*** (0.166)	4.617*** (0.194)	4.811*** (0.167)	4.509*** (0.194)
Observations	447	190	257	239	208	181
R ²	0.076	0.052	0.099	0.1	0.054	0.092
Adjusted R ²	0.07	0.037	0.088	0.088	0.04	0.077

Note: *p<0.05; **p<0.01; ***p<0.001

Table A.11 presents equivalent models to Table 4 of the main manuscript, without controlling for individual characteristics. As can be observed, there are no substantive or significant differences. The Video treatment maintains its strong impact on learning.

Table A.12: Number of correct responses for different sub-groups of the Lab sample (OLS estimates with heteroscedasticity-robust standard errors)

	Number of correct responses				
	Full Lab	Private	Public	Female	Male
	(1)	(2)	(3)	(4)	(5)
Profile _i	0.121 (0.255)	0.426 (0.338)	−0.154 (0.367)	0.484 (0.318)	−0.447 (0.401)
Video _j	0.639* (0.266)	0.551 (0.389)	0.731* (0.362)	0.882** (0.330)	0.262 (0.429)
Profile _i *Video _j	−0.444 (0.376)	−0.760 (0.534)	−0.160 (0.518)	−0.907 (0.497)	0.297 (0.546)
Constant	5.059*** (0.187)	5.115*** (0.263)	5.000*** (0.265)	4.774*** (0.213)	5.500*** (0.320)
Observations	202	101	101	124	78
R ²	0.033	0.024	0.068	0.049	0.045
Adjusted R ²	0.018	−0.006	0.039	0.026	0.006
<i>Note:</i> *p<0.05; **p<0.01; ***p<0.001					

In the lab, the estimations without controls are less precise than the models with controls. The Video treatment is always positive but loses its statistical significance at the 0.05 level in the smaller subsets of the population.

References

- Anderson, K. (1994), ‘Impulsivity, caffeine, and task difficulty: A within-subjects test of the yerkes-dodson law’, *Personality and Individual Differences* **16**(6), 813–829.
- Anderson, M. & Perrin, A. (2017), ‘Tech adoption climbs among older adults’, *Pew Research Center report*.
- Berk, R. A. (2009), ‘Multimedia teaching with video clips: Tv, movies, youtube, and mtvu in the college classroom.’, *International Journal of Technology in Teaching & Learning* **5**(1), 1–21.
- Breaban, A. & Noussair, C. N. (2018), ‘Emotional state and market behavior’, *Review of Finance* **22**(1), 279–309.
- Bruun, A., Law, E. L.-C., Heintz, M. & Alkly, L. H. (2016), Understanding the relationship between frustration and the severity of usability problems: What can psychophysiological data (not) tell us?, in ‘Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems’, pp. 3975–3987.
- Camerer, C. F., Dreber, A., Forsell, E., Ho, T.-H., Huber, J., Johannesson, M., Kirchler, M., Almenberg, J., Altmejd, A., Chan, T., Heikensten, E., Holzmeister, F., Imai, T.,

- Isaksson, S., Nave, G., Pfeiffer, T., Razen, M. & Wu, H. (2016), ‘Evaluating replicability of laboratory experiments in economics’, *Science* pp. 1433–1436.
- Camerer, C. F., Dreber, A. & Johannesson, M. (2019), ‘Replication and other practices for improving scientific quality in experimental economics’, *Handbook of research methods and applications in experimental economics* pp. 83–102.
- Centro UC, d. E. y. E. L., de Previsión Social, I. et al. (2017), ‘Evaluación del pilar solidario en el financiamiento de la canasta de consumo, los ingresos y la pobreza multidimensional de hombres y mujeres adultos mayores’.
- de Grip, A., Fouarge, D. & Montizaan, R. (2020), ‘Redistribution of individual pension wealth to survivor pensions: Evidence from a stated preferences analysis’, *Journal of Economic Behavior & Organization* **173**, 402–421.
- den Uyl, M. & van Kuilenburg, H. (2005), ‘The facereader: Online facial expression recognition’, *Proceedings of Measuring Behavior* pp. 589–590.
- Dorie, V., Perrett, G., Hill, J. L. & Goodrich, B. (2022), ‘Stan and bart for causal inference: Estimating heterogeneous treatment effects using the power of stan and the flexibility of machine learning’, *Entropy* **24**(12).
URL: <https://www.mdpi.com/1099-4300/24/12/1782>
- Duch, R., Granados, P., Laroze, D., Lopez, M., Ormeño, M. & Quintanilla, X. (2021), ‘Choice architecture improves pension selection’, *Applied Economics* **53**(20), 2256–2274.
- Duch, R., Laroze, D., Robinson, T. & Beramendi, P. (2020), ‘Multi-modes for detecting experimental measurement error’, *Political Analysis* **28**(2), 263–283.
- Fiala, L. & Noussair, C. N. (2017), ‘Charitable giving, emotions, and the default effect’, *Economic Inquiry* **55**(4), 1792–1812.
- Forlizzi, J. & Battarbee, K. (2004), Understanding experience in interactive systems, in ‘Proceedings of the 5th conference on Designing interactive systems: processes, practices, methods, and techniques’, pp. 261–268.
- Gerber, A. S. & Green, D. P. (2012), *Field experiments: Design, analysis, and interpretation*, WW Norton.
- Granados, P., Dominguez, X. & Quintanilla, L. (2019), ‘A 10 años de la reforma de pensiones 2008’.
URL: https://www.spensiones.cl/portal/institucional/594/articles-13726_recurso_1.pdf
- Hasler, A. & Lusardi, A. (2017), The gender gap in financial literacy: A global perspective, Technical report, Global Financial Literacy Excellence Center, The George Washington University School of Business.
- Heidig, S., Müller, J. & Reichelt, M. (2015), ‘Emotional design in multimedia learning: Differentiation on relevant design features and their effects on emotions and learning’, *Computers in Human Behavior* **44**, 81 – 95.
URL: <http://www.sciencedirect.com/science/article/pii/S0747563214005883>

- Hill, J. L. (2011), ‘Bayesian nonparametric modeling for causal inference’, *Journal of Computational and Graphical Statistics* **20**(1), 217–240.
- Hoffmann, R., Cam, M.-A. & Camilleri, A. R. (2019), ‘Deciding to invest responsibly: Choice architecture and demographics in an incentivised retirement savings experiment’, *Journal of Behavioral and Experimental Economics* **80**, 219–230.
- Ipsos Chile (2015), ‘Séptima encuesta de acceso, usos y usuarios de internet’. http://www.subtel.gob.cl/wp-content/uploads/2015/04/Informe-VII-Encuesta-de-Acceso-Usos-y-Usuarios-de-Internet_VF.pdf, [Accessed: 14-05-2018].
- Iyengar, S. & Lepper, M. (2001), ‘When choice is demotivating: Can one desire too much of a good thing?’, *Journal of personality and social psychology* **79**, 995–1006.
- Johnson, E. J., Shu, S. B., Dellaert, B. G. C., Fox, C., Goldstein, D. G., Haeubl, G., Lar- rick, R. P., Payne, J. W., Peters, E., Schkade, D., Wansink, B. & Weber, E. U. (2012), ‘Beyond nudges: Tools of a choice architecture’, *Marketing Letters* **23**(2, SI), 487–504.
- Karppinen, P. (2005), ‘Meaningful learning with digital and online videos: Theoretical perspectives’, *AACE Journal* **13**(3), 233–250.
URL: <https://www.learntechlib.org/p/6021>
- Kelly, M., Lyng, C., McGrath, M. & Cannon, G. (2009), ‘A multi-method study to determine the effectiveness of, and student attitudes to, online instructional videos for teaching clinical nursing skills’, *Nurse education today* **29**(3), 292–300.
- Kinjo, K. & Ebina, T. (2015), ‘Paradox of choice and consumer nonpurchase behavior’, *Ai & Society* **30**(2), 291–297.
- Knörzer, L., Brünken, R. & Park, B. (2016), ‘Facilitators or suppressors: Effects of experimentally induced emotions on multimedia learning’, *Learning and Instruction* **44**, 97 – 107.
URL: <http://www.sciencedirect.com/science/article/pii/S0959475216300263>
- Krijnen, J. M., Tannenbaum, D. & Fox, C. R. (2017), ‘Choice architecture 2.0: Behavioral policy as an implicit social interaction’, *Behavioral Science & Policy* **3**(2), i–18.
- Landerretche, O. & Martínez, C. (2013), ‘Voluntary savings, financial behavior, and pension finance literacy: evidence from chile’, *Journal of Pension Economics & Finance* **12**(3), 251–297.
- Levitt, S. D. & List, J. A. (2007), ‘What do laboratory experiments measuring social preferences reveal about the real world?’, *Journal of Economic Perspectives* **21**(2), 153–174.
- Lewinski, P., den Uyl, M. & Butler, C. (2014), ‘Automated facial coding: Validation of basic emotions and faces aus in facereader’, *Journal of Neuroscience, Psychology and Economics* **7**(4), 227–236.
- Lim Fat, M. J., Doja, A., Barrowman, N. & Sell, E. (2011), ‘Youtube videos as a teaching tool and patient resource for infantile spasms’, *Journal of Child Neurology* **26**(7), 804–809.

- Luisardi, A., Samek, A., Arie, K., Glinert, L., Hung, A. & Heinberg, A. (2017), 'Visual tools and narratives: new ways to improve financial literacy', *Journal of Pension Economics & Finance* **16**(3), 297–323.
- Lusardi, A. & Mitchell, O. S. (2008), 'Planning and financial literacy: How do women fare?', *American Economic Review* **98**(2), 413–17.
- Lusardi, A. & Mitchell, O. S. (2011), 'Financial literacy around the world: an overview', *Journal of Pension Economics & Finance* **10**(4), 497–508.
- Lusardi, A. & Mitchell, O. S. (2014), 'The economic importance of financial literacy: Theory and evidence', *Journal of Economic Literature* **52**(1), 5–44.
URL: <http://www.aeaweb.org/articles?id=10.1257/jel.52.1.5>
- Mayer, R. E. & Moreno, R. (2003), 'Nine ways to reduce cognitive load in multimedia learning', *Educational psychologist* **38**(1), 43–52.
- Nam, Y. & Loibl, C. (2021), 'Financial capability and financial planning at the verge of retirement age', *Journal of Family and Economic Issues* **42**(1), 133–150.
- OECD (2017), 'Chile oecd public governance reviews 2017 scan report on the citizen participation in the constitutional process'.
- Pereira, A. G. & Afonso, L. E. (2020), 'Automatic enrollment and employer match: an experiment with the choice of pension plans', *Revista de Gestão* **27**(3), 281–299.
- Prescott, C. (2021), 'Internet users, uk: 2020', *Internet use in the UK* .
- Robazza, C., Bortoli, L. & Nougier, V. (1998), 'Physiological arousal and performance in elite archers: A field study', *European Psychologist* **3**(4), 263–270.
- Scheibehenne, B., Greifeneder, R. & Todd, P. M. (2010), 'Can there ever be too many options? a meta-analytic review of choice overload', *Journal of consumer research* **37**(3), 409–425.
- Schwartz, B. (2004), *The paradox of choice: Why more is less*, Ecco New York.
- Stone, D., Jarrett, C., Woodroffe, M. & Minocha, S. (2005), *User interface design and evaluation*, Elsevier.
- Stone, D. L. & University, O., eds (2005), *User interface design and evaluation*, Morgan Kaufmann series in interactive technologies, Elsevier : Morgan Kaufmann, Amsterdam; Boston, Mass.
- Sundén, A. E. & Surette, B. J. (1998), 'Gender differences in the allocation of assets in retirement savings plans', *The American Economic Review* **88**(2), 207–211.
- Superintendencia de Pensiones (2019), 'Sistema de pensiones'. <https://www.previsionsocial.gob.cl/sps/seguridad-social/sistema-de-pensiones/>, [Accessed: 19-Feb-2019].
- Taylor, S. E. & Thompson, S. C. (1982), 'Stalking the elusive "vividness" effect.', *Psychological review* **89**(2), 155.

- Terzis, V., Moridis, C. & Economides, A. (2010), ‘Measuring instant emotions during a self-assessment test: The use of facereader’, *Proceedings of Measuring Behavior* pp. 192 – 195.
- Um, E., Plass, J., Hayward, E. & Homer, B. (2012), ‘Emotional design in multimedia learning’, *Journal of Educational Psychology* **104**(2), 485–498.
- UNDP (2018), ‘Communicating development cooperation to domestic audiences: Approaches and implications for south-south cooperation providers’.
- van Leeuwen, B., Noussair, C. N., Offerman, T., Suetens, S., van de Ven, J. & van Veelen, M. (2018), ‘Predictably angry: Facial cues provide a credible signal of destructive behavior’, *Management Science* **64**(7), 3352–3364.
- Watters, P. A., Martin, F. & Schreter, Z. (1997), ‘Caffeine and cognitive performance: The nonlinear yerkes-dodson law’, *Human Psychopharmacology: Clinical and Experimental* **12**(3), 249–257.
- Wesbroom, K. (2004), ‘Pension schemes and the internet — a survey’, *Pensions: An International Journal* **9**(4), 348–361.
URL: <https://doi.org/10.1057/palgrave.pm.5940277>
- Xue, R., Gepp, A., O’Neill, T. J., Stern, S. & Vanstone, B. J. (2020), ‘Financial well-being amongst elderly Australians: the role of consumption patterns and financial literacy’, *Accounting & Finance* **60**(4), 4361–4386.
- Yerkes, R. M. & Dodson, J. D. (1908), ‘The relation of strength of stimulus to rapidity of habit-formation’, *Journal of Comparative Neurology and Psychology* **18**(5), 459 – 482.