Delegated Decision-Making in Finance

Felix Holzmeister† Martin Holmén‡,* Michael Kirchler†‡ Matthias Stefan† Erik Wengström§¶

† University of Innsbruck, Department of Banking and Finance
‡ University of Gothenburg, Department of Economics, Centre for Finance
§ Lund University, Department of Economics
¶ Hanken School of Economics, Department of Finance and Economics

* Corresponding author: martin.holmen@gu.se

Abstract

We run an online experiment with finance professionals and subjects from the general population in Sweden. We examine drivers of clients’ delegation decisions, differences in decision-making quality between both groups, and professionals’ ability to implement portfolios that suit the clients’ risk attitudes. We find that clients’ trust in money managers increases the likelihood of delegating their decisions, whereas decision-making quality is associated with a decrease. We further show high variability among professionals’ perception of delegated risk levels and overlaps in portfolio risk across self-reported risk-levels of clients, indicating that communicating risk between clients and agents constitutes a potential pitfall in delegated investment decisions.

JEL: C93, G11, G41.
Keywords: Experimental finance, finance professionals, delegated decision-making.

We thank Pol Campos-Mercade, Alain Cohn, Dawei Fang, Christian König-Kersting, Michael Razen, Markus Walzl, seminar participants at the Berlin Behavioral Economics Colloquium and Seminar, the Helsinki GSE Colloquium, as well as conference participants of the Organizations and Society Workshop 2019 at the University of Innsbruck, the NOeG 2019 (Austrian Economic Association) in Graz, the SFB Workshop 2019 in Innsbruck, the Experimental Finance Conference 2019 in Copenhagen, the Decision-Making for Others Workshop in Nijmegen 2018, and the Workshop on Trust and Cooperation in Markets and Organizations in Stavanger 2019 for very valuable comments. We particularly thank Fredrik Bergdahl at Statistiska centralbyrån for the excellent collaboration on the project. Financial support from the Austrian Science Fund FWF (START-grant Y617-G11 and SFB F63), and the Swedish Research Council (grant 2015-01713) is gratefully acknowledged. This study was ethically approved by the review boards at Statistiska centralbyrån (SCB; Statistics Sweden) and in Gothenburg (Sweden).
1. Introduction

Given the complexity of financial products and markets, private investors often opt for delegating decisions to finance professionals. This involves decisions about portfolio investments, insurance and pension plans, and seeking advice on various other financial aspects, all of which have a potentially strong impact on a client’s wealth. The economic importance of delegated decision-making in finance is indicated by the large and growing market for financial advice and decision-making on behalf of clients. For instance, in 2017, the net asset value of US mutual funds equaled 18.8 trillion USD\(^1\), and over 271,000 professionals were employed as personal financial advisors in the United States\(^2\). Thus, it is surprising that research in economics and finance has predominantly focused on individual decision-making (e.g., Holt and Laury, 2002; Abdellaoui et al., 2011; Dohmen et al., 2011; Falk et al., 2018) without giving much consideration to how delegation decisions by clients and delegated investment decisions by finance professionals are actually taken (as emphasized by, e.g., Foerster et al., 2017; Kirchler et al., 2018a; Linnainmaa et al., 2019).

We study delegation decisions by laypeople and how finance professionals behave on their behalf by running a controlled lab-in-the field experiment implemented online with finance professionals (agents) and subjects from the general population (principals) in Sweden. We examine (i) the motivations and characteristics of principals delegating investment decisions, (ii) differences in decision-making quality between professionals and the general population, and (iii) the agents’ ability to construct portfolios that suit the risk preferences of principals.

The reasons why private (and, partly, also institutional) investors delegate investment decisions to professional money managers (e.g., financial advisers or fund managers) are not well understood. Straightforward potential explanations include that investors lack—or believe to lack—sufficient knowledge or information, or are time-constrained. An alternative motive for delegating investments may be the possibility to blame the agent if the investment does not turn out as expected (Shefrin, 2007; Chang et al., 2016).\(^3\) Moreover, Gennaioli et al. (2015) argue that investors delegate because they do not know much about finance and are too anxious to make investment decisions. Just like doctors, money managers are trusted, and they give investors confidence to take risks (see also Guiso et al., 2004, 2008, for the “trust channel” as a major motive of delegated investment decisions). In their theoretical framework Gennaioli et al. (2015) show that, under rational expectations, money managers enable investors to take more risk and, consequently, being better off.

However, since the seminal work of Jensen (1968) there is clear and persistent evidence that fund managers underperform passive benchmark indices after costs. The annual underperformance varies and mainly falls within the range of 0.6 and 2.0 percent (see, for instance, Gruber, 1996; Carhart, 1997; French, 2008). This insight renders the question of why people delegate their financial decisions more puzzling. Moreover, money managers have a strong incentive not to correct investors’ biased beliefs, because they enable charging higher fees (Mullainathan et al., 2012). This finding is also related to the credence goods characteristics of financial advice (Dulleck and Kerschbamer, 2006; Inderst and Ottaviani, 2012a,b,c), outlining the prevailing information asymmetry between advisers and clients.

---

1. https://perma.cc/5VUB-U98U
2. https://perma.cc/5RYT-CP6H
3. For a general account of shifting blame see also Bartling and Fischbacher (2012).
In addition, not only asymmetric information, but also monetary incentives of financial professionals and their role of intensifying conflicts of interest between clients and money managers are relevant in delegating financial investment decisions. Payment schemes have become a hotly debated topic in finance, as misaligned incentives have been portrayed as major contributors to the last financial crisis (Financial Crisis Inquiry Commission, 2011; Dewatripont and Freixas, 2012). In particular, high-powered payment schemes that align professionals’ incentives with clients’ returns (e.g., bonus schemes or tournament incentives) have been identified among the main drivers of excessive risk taking in financial markets (Jensen and Meckling, 1976; Rajan, 2006; Diamond and Rajan, 2009; Bebchuk and Spamann, 2010). Since this debate—in particular on bonus incentives—has spilled over to the public, incentives might also play a role for decisions whether to delegate.

A growing strand of literature uses experiments with student or general population samples to examine risk taking in delegated decision-making. Several studies report a “risky shift” in risk-taking, indicating that decision-makers take more risks or show less loss-averse behavior for others than for themselves (e.g., Sutter, 2009; Chakravarty et al., 2011; Andersson et al., 2016; Vieider et al., 2016). However, a substantial number of studies also find a “cautious shift” when the money of third parties is invested (Bolton and Ockenfels, 2010; Eriksen and Kvaløy, 2010)—see Füllbrunn and Luhan (2015) and Eriksen et al. (2017) for overviews. Andersson et al. (2019) run a large-scale study with a random population sample from Denmark. The agents face high-powered incentives to increase risk-taking on behalf of others through hedged compensation contracts or tournament incentives. The authors report that the decision-makers respond to these incentives, resulting in an increased risk exposure of the principals. Yet another strand of experimental studies suggests that even strong financial incentives hardly interfere with agents’ attempt to adhere to their clients’ preferences (see, e.g., Rud et al., 2018; Ifcher and Zarghamee, 2019; Kling et al., 2019).

In recent years, robo advice and algorithm-based investments have emerged as an alternative to traditional financial services. Although they promise to offer affordable advice in investment matters, tailored to the clients’ needs, several pitfalls remain (D’Acunto et al., 2019). Similar to the case of delegating to financial professionals, the decision to opt for robo advice is likely shaped by trust. Previous research from other decision domains provides evidence of algorithm aversion, with people distrusting advice and predictions based on algorithms more than those based on human judgement (Dietvorst et al., 2014; Harvey et al., 2017; Longoni et al., 2019). However, the evidence is mixed, and other studies report the opposite pattern of algorithm appreciation (Logg et al., 2017). To date, there is a lack of evidence on this issue in the realm of financial decision-making.

Given that finance professionals regularly make decisions on behalf of their clients and that there is a lack of knowledge regarding the motives for delegation among laypeople, it is surprising that no evidence on professionals’ fiduciary and clients’ delegation choices exists. In this paper, we report the results of an online experiment with participants from a sample of Swedish finance professionals and a representative sample of the Swedish general population. Via Statistiska centralbyrån (SCB; Statistics Sweden) invitations were sent to financial analysts, investment advisors, traders, fund managers, and financial brokers and to an equally large randomly selected sample of Swedish employees, excluding finance professionals. In particular, we address the following research questions:
RQ1: **What drives clients’ decision to delegate?** Which economic preferences and personal characteristics influence delegation decisions, and do clients delegate to increase risk-taking? Does knowledge about the agents’ financial incentives affect clients’ decision whether or not to delegate, and do clients prefer delegating to an investment algorithm over a finance professional?

RQ2: **Do finance professionals make better decisions?** Do finance professionals systematically outperform laypeople in terms of decision-making quality, and is the agents’ decision-making quality impacted by financial incentives and whether investment decisions are made on one’s own account or on behalf of others?

RQ3: **Can investment preferences be communicated?** Can professionals construct portfolios that match the riskiness requested by their principals, i.e., can risk be communicated between principals and agents such that risky decisions can be effectively delegated?

We set up six treatments, differing in (i) the subjects enrolled (finance professionals or general population subjects), (ii) the agent, participants from the general population could delegate to (investment algorithm, linearly incentivized or flat paid finance professional), and (iii) whether finance professionals decided on their own account or on behalf of a client. In 25 investment decisions, subjects had to allocate an endowment across two or five investment alternatives that differed in their expected payout, riskiness, and diversification potential. Subjects from the general population were thereafter given the opportunity to delegate their decisions, by replacing their own investments with those of a finance professional/investment algorithm. In total, 408 finance professionals and 550 people from the general population completed the experiment. A set of predefined variables of the subjects’ register data for those who completed the experiment were provided by SCB after the experiment.

Our study provides the following insights. First, we show that clients in our setting are most likely to delegate to an investment algorithm, followed by professionals with aligned incentives and professionals with fixed incentives. We further observe that clients’ propensity to delegate their decisions decreases with their own decision-making quality, but increases with trust in the agent and their propensity to shift blame on others. Moreover, clients delegating their decisions, on average, request the agents to take more risk than they perceive they took for themselves. Second, we find that the overall decision-making quality of finance professionals is not significantly higher compared to clients in our sample, leaving little room for delegation being superior for principals. Finally, we report that communication of investment preferences, based on the four risk-levels clients choose from when delegating their investment decisions, constitutes a potential pitfall. In particular, we find considerable overlaps in the risk of portfolios implemented by finance professionals on behalf of clients with varying investment preferences, which implies that clients requesting different levels of risk eventually may end up with very similar portfolios.

Our study adds to several emerging areas in the literature. First, we contribute to the expanding literature on delegated decision-making for third parties in financial frameworks. When it comes to the decision whether to delegate, our findings are in line with the literature on algorithm appreciation, trust, and blame-shifting. In particular, we provide evidence on the relevance of trust in financial professionals for delegation decisions (Lachance and Tang, 2012). This finding is also closely related to the rationale discussed by Gennaioli et al. (2015). Just as doctors are trusted by patients, “money doctors” (Gennaioli
et al., 2015) are trusted when investing money on behalf of their clients, even if the outcome is not significantly better. Our finding that many laypeople request professionals to take more risk, than they take themselves, is related to the notion that investors “are too nervous or anxious to make risky investments on their own” (Gennaioli et al., 2015, p.92). For these clients, delegation serves as a way to increase risk taking, and thereby expected returns.

Moreover, following our results, the communication of risk between money managers and clients appears to be difficult, as the same portfolio risk can be considered very differently by either party. Several studies show that clients’ portfolio risk depends on professionals’ risk attitudes (see, e.g. Foerster et al., 2017; Kirchler et al., 2018a; Linmainmaa et al., 2019). In an experimental study with finance professionals, Kirchler et al. (2018a) show that professionals’ beliefs about clients’ willingness to take risks do not explain risk taking, but professionals’ self-assessed risk attitude in financial matters does. Foerster et al. (2017) report results from Canadian households and financial advisers and show that advisor fixed effects explain considerably more variation in household portfolio risk than a broad set of investor attributes. Linmainmaa et al. (2019) provide evidence from a large sample of Canadian financial advisors and their clients. The authors show that most advisors invest their personal portfolios just as they advise their clients. Hence, we contribute by showing professionals’ difficulties in implementing a suitable level of risk when constructing portfolios for their clients. Furthermore, we add to the literature on incentives of money managers. Interestingly, we find that decision-making quality is not affected by the incentives professionals face, even though this seems to be expected by clients, who delegate more frequently to professionals with aligned incentives rather than with a flat compensation.

Second, we contribute to the small but growing corpus analyzing the behavior of finance professionals. Across studies, one major result is that professionals’ behavior tends to be closer to neoclassical benchmarks compared to student subjects and representative general population samples. For instance, professionals are less prone to anchoring than students (Kaustia et al., 2008), can better discern the quality of public signals in information cascades (Alevy et al., 2007), and produce price bubbles less likely in experimental asset markets (Weitzel et al., 2019). However, other studies point towards opposite results and show that professionals exhibit a higher degree of myopic loss aversion (Haigh and List, 2005), react more strongly to rank incentives (Kirchler et al., 2018b), show herd behavior (Cipriani and Guarino, 2009) and framing heuristics (Schwaiger et al., 2019), and behave in line with prospect theory (Abdellaoui et al., 2013). We contribute to the literature by showing that decision-making quality of finance professionals in portfolio decisions is not superior compared to our general population sample who selected themselves into the experiment.

2. Experimental Design

Recruitment and data collection. We conducted an online experiment in Sweden in cooperation with Statistiska centralbyrån (SCB; Statistics Sweden), who invited subjects for the experiment and provided a set of predefined variables of the subjects’ register data for those who completed the experiment. SCB sent out invitations (including a hyperlink to the online experiment and a personalized alphanumeric identifier serving as login credentials) to 8,215 finance professionals and a randomly selected representative sample
of 8,215 subjects from Sweden’s working general population, excluding finance professionals. The sample of finance professionals includes financial analysts and investment advisors, traders and fund managers, and financial brokers. For the general population, following Edin and Fredriksson (2000) and Böhm et al. (2018), we only include people with a declared labor income exceeding the minimum amount that qualifies for the earnings related part of the public pension system. Invitations were sent out in two waves. 20% of the sample were invited in the first week of 2019. Since no technical issues had arisen, the remaining 80% of the sample were invited in the third week of 2019.

Once participants logged in to the online software, programmed in oTree (Chen et al., 2016), using their personal identifier, they were presented with a detailed outline of the experiment. In particular, on the first screen, participants were informed that register data provided by SCB will be matched with the data collected in the experiment. Moreover, participants were informed that the study has been approved by the ethical review boards in Gothenburg and at Statistiska centralbyrån. Participants agreed upon the conditions and were directed to the instructions of the experiment. The data handling procedures ensured full pseudonymity of all participants. Further details and additional information on the recruitment, data collection, and experimental implementation are provided in Appendix A.

In total, 408 finance professionals and 550 people from the general population completed the experiment. The experiment was conducted in Swedish and took on average 45 minutes to complete. The average payment to participants was 238.9 Swedish Krona (SEK; SD = 122.3), which is approximately $30 given the exchange rate at the beginning of 2019. The experimental data was collected between January 4 and February 10, 2019.

Figure 1: Flow chart of the experiment. This figure illustrates the sequence of tasks for subjects in our experiment. First, participants were randomly assigned to one treatment and completed 25 investment decisions. Then, subjects from the general population could delegate their investment decision to an agent in a delegation decision stage. Finally, all subjects completed several side tasks, including self-reported items on economic preferences and supplementary survey questions, a financial literacy test, and a numeracy inventory.
The sequence of tasks within the experiment is graphically summarized in Figure 1 and described below. For detailed information on the main task, please refer to Appendix B. Details on the side tasks and questionnaires are provided in Appendix D. Analyses on subjects’ decision times across subject pools, treatments, and tasks are summarized in Appendix F, outlining high data quality due to moderate variance across all sub-samples.

**Register data.** In addition to the data collected in the online experiment, we obtained register data from SCB for each participant who completed the experiment. In particular, we received data on demographics (e.g., age, gender, income), occupational history (e.g., workplace, firm size), subjects’ education, their wealth history, and military records (e.g., scores of the military suitability tests). See Appendix A for further details on these variables. In the analysis of experimental results, we only use part of the registry data as control variables, in particular, participants’ gender (binary indicator for female), age (in years), net income from major employment in 2017 (in thousand SEK’s), and maximum education level (dichotomous indicators for high school education or less, university education smaller or equal to three years, and university education larger than three years).

**Experimental treatments.** Depending on the subject pool, participants were randomly assigned to one of the treatments listed in Table 1. Common to all treatments, both for finance professionals and for the general population sample, is the 25-item allocation decision task, which is described in detail below.

After having completed all items of the allocation decision task, participants from the general population (principals) had the opportunity to delegate their decisions to an agent. If principals opted for delegating their decisions, the experimental payoff depended on the agent’s rather than their own decisions.⁴

Depending on the treatment, the principals’ delegation was either to an investment algorithm programmed by the experimenters (GP-ALGO), a finance professional with aligned, i.e., linear, incentives (GP-ALIGNED), or a finance professional receiving a flat payment of 200 SEK for deciding on behalf of one or more clients (GP-FIXED). Note that, compared to the baseline condition GP-FIXED, treatment GP-ALIGNED modifies the incentive structure of the agent, while holding the type of agent constant. Treatment GP-ALGO modifies the type of agent from a human to an investment algorithm.

---

⁴ Note that we designed the experiment in a way that each participant made the investment decision first, but was informed about the opportunity to delegate the investment decisions only afterwards. Thus, principals do not actually delegate their decisions, but rather decide whether their own or the agent’s decisions are relevant for their payment. While in real-world applications, people usually do not make investment decisions prior to choosing whether or not to delegate, there are practical reasons for this design choice: First, the opportunity to delegate without prior decisions potentially leads to a high number of delegation in order to receive an experimental payment without spending any effort. Such considerations, however, are not in the focus of this project. Second, our design allows examining the allocation decisions of participants who chose to delegate. This way we can study whether or not delegation pays off for those who delegate as well as those who stick to their own decisions. Moreover, we can study risk communication between principals and agents by comparing clients’ and professionals’ investment decisions conditional on risk levels. However, we cannot account for other potential motives of delegation decisions such as principals’ unwillingness to get informed in financial matters. Thus, potential “clients” that do not want to engage in financial matters at all might have dropped out initially. For a comprehensive response rate analysis and a discussion of potential self-selection effects, please refer to Appendix E.
Table 1: Treatment overview. This table illustrates the randomly assigned between-subjects treatments for both samples, finance professionals and participants from the general population. The sample sizes per condition are indicated in Figure 1.

<table>
<thead>
<tr>
<th></th>
<th>Finance professionals</th>
<th>General population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>…make decisions…</td>
<td>…can delegate decisions to…</td>
</tr>
<tr>
<td><strong>FP-OWN</strong></td>
<td>on one’s own account</td>
<td><strong>GP-ALGO</strong></td>
</tr>
<tr>
<td><strong>FP-ALIGNED</strong></td>
<td>for third party (linear incentives)</td>
<td><strong>GP-ALIGNED</strong></td>
</tr>
<tr>
<td><strong>FP-FIXED</strong></td>
<td>for third party (flat payment)</td>
<td><strong>GP-FIXED</strong></td>
</tr>
</tbody>
</table>

If principals chose to delegate, they were asked to specify the risk (on a scale from 1 [no risk] to 4 [maximum return]) they wanted to be taken on their behalf by the agent,\(^5\) as well as their (maximum) willingness to pay for delegating the investment decisions (between 0 and 50 SEK, in steps of 5 SEK). At the end of the experiment, a “price” for delegating the decision to the agent (between 0 and 50 SEK) was randomly determined: If a participant’s willingness to pay was higher than this random number, his/her decisions were delegated to the agent at the randomly determined price (i.e., the agent’s decisions were payoff relevant for the principal); if not, no delegation took place and the principal’s decisions were relevant for the payment in the experiment.

Finance professionals were randomly assigned to one of three treatments in which they either made decisions on their own account (**FP-OWN**), or on behalf of subjects from the general population sample. When deciding on principals’ account, finance professionals either faced aligned incentives (i.e., they received exactly the same monetary payoff as their client; **FP-ALIGNED**), or were paid a flat fee of 200 SEK (**FP-FIXED**). Moreover, when deciding on behalf of others, finance professionals were asked to comply with a randomly assigned risk level (between 1 [no risk] and 4 [maximum return]). In case a participant from the general population delegated his/her decisions, he/she was matched with a participant from the finance professional sample (whose decisions has then been payoff relevant for the principal), based on the particular treatment and the stated risk level. All details about the delegation decision itself, the risk levels as a means to communicate the desired riskiness of the allocation decisions, the matching modalities, as well as the payment procedures were common knowledge.

---

\(^5\) The investment algorithm was programmed to construct investment portfolios, given the particular risk level, as follows: In each investment decision, the minimum variance portfolio and the maximum return portfolio were mapped to the endpoint options of the risk level scale, i.e., 1 and 4, respectively. Thus, risk level 1 was always associated with a sure payoff, whereas risk level 4 always involved a 100% investment in the asset with the highest expected return. For risk levels 2 and 3, portfolio weights were determined in equally sized steps between these fixed endpoints. For instance, if payoffs were 2.40 SEK / 0.00 SEK for asset A and 0.00 SEK / 0.80 SEK for asset B, then the risk-free portfolio was characterized by an investment of 25% in A and 75% in B, whereas the maximum return portfolio corresponded to an investment of 100% in A. Risk levels 2 and 3 were associated with portfolios investing 50% and 75% in A, respectively. To the participants the algorithm was described to be “programmed in such a way that it maximizes your expected profit conditional on the risk level you indicate below”.
Allocation decision task. The workhorse of our experiment is the allocation decision task as used by Banks et al. (2018). The task consists of 10 decisions with two binary assets in a first block, and 15 decisions with five binary assets in a second block. Participants were first presented with the task instructions for the first block. After reading the instructions, participants could only continue once they had correctly answered three comprehension questions. After the first ten decisions, participants were informed that five rather than two assets would be available for the remaining 15 decisions. Again, after the instructions, participants had to correctly answer three comprehension questions before proceeding with the task. The order of the two blocks was fixed for all subjects, but the order of decisions was randomized in each of the two blocks.

For each of the 25 items, participants were informed about the assets’ return per 1 sek invested depending on the outcome of a coin toss. The returns for each asset in the 25 investment decisions are depicted in Table B1, and the corresponding opportunity sets are illustrated in Figure B1 in Appendix B. Participants were endowed with 100 sek per item and had to allocate the entire endowment on the available assets. At the end of the experiment, one of their own or—in case a client opts for delegating the decisions—one of the agent’s decisions was randomly chosen, and a simulated coin toss determined the participant’s payoff. Returns were paid on top of the endowment, i.e., payments could not fall below 100 sek.

Decision-making quality measures. The allocation decision task used in this experimental set-up allows quantifying decision-making quality based on four different measures. In particular, closely following Banks et al. (2018), in addition to the expected return (ER) and the standard deviation (SD) of the chosen portfolios we determine a decision-making quality index that comprises the following measures:

- For each decision, we determine violations of the first order stochastic dominance principle (FOSD; Hadar and Russell, 1969). In particular, we calculate the difference between the expected return of the chosen portfolio and the highest possible expected return of a portfolio that guarantees the same minimum payoff as the chosen one. On the participant level, the measures of FOSD are averaged across all decisions, except for two opportunity sets for which expected returns of all assets were identical.

- To quantify violations of the General Axiom of Revealed Preferences (GARP), we utilize the Money Pump Index (MPI; Echenique et al., 2011), i.e., the monetary amount a potential arbitrageur could make by exploiting a subject’s violations in revealed preferences. On the participant level, we calculate the mean money pump cost over all pairwise combinations of opportunity sets.

- Participants’ failure to minimize risk (FMR; Banks et al., 2018) is calculated based on the decisions in the two opportunity sets for which returns of all allocations were identical, such that the risk-free portfolio (second-order) dominates all other feasible portfolios. A subject’s measure of FMR is calculated as the mean standard deviation over the two opportunity sets.

- Participants’ financial competence (FC; Banks et al., 2018) is measured based on the portfolio choices in each of four opportunity sets that were identical in the two-assets- and the five-assets-frame and/or that were mirrored versions of another opportunity set. A participant’s measure of FC is defined as the mean absolute difference in expected returns across all identical opportunity sets.
For each participant, the predicted values of a principal component analysis of the four measures, \textit{FOSD}, \textit{GARP}, \textit{FMR}, and \textit{FC}, constitute our decision-making quality index (\textit{DMQI}). Detailed descriptions on how each of the decision-making measures is defined are provided in Appendix C.

\textbf{Questionnaires.} After the allocation decisions (but prior to the choice whether or not to delegate), all participants were asked to self-assess the overall level of risk taken across the 25 items of the allocation decision task on a scale from 1 to 4, i.e., on the same scale as when choosing the risk level in delegating the risky decisions. In addition, we included the following set of non-incentivized survey items at the end of the experiment: All participants were asked about (i) their self-assessed risk attitude in general and in financial decisions (Dohmen et al., 2011; Falk et al., 2016), (ii) their willingness to abstain from something today for a future benefit (Falk et al., 2016), (iii) their trust in mankind in general, in persons from the finance industry, and in financial algorithms, (iv) their proneness to shift blame on others (Wilson et al., 1990), and (v) their level of prosociality in a hypothetical charitable giving setting (Falk et al., 2018). Furthermore, we included a 5-item questionnaire on delegation and advice-seeking in financial decisions, which was only posed to participants that indicate that they have been active in the financial market. Afterwards, all participants had four minutes to answer an 8-item Rasch-validated numeracy inventory (Weller et al., 2013), including two questions on cognitive reflection. In addition, participants had to provide their self-assessment of the number of correct answers in the numeracy questionnaire as well as of their ranking compared to a random sample of the Swedish population. These assessments allow us constructing two measures of overconfidence (overestimation and overplacement). Finally, participants had three minutes to answer a 6-item financial literacy questionnaire based on van Rooij et al., 2011. For further details regarding the survey items, please refer to Appendix D.

\section*{3. Results}

In the following, we first answer research question 1 by examining principals’ decisions to delegate across treatments and identifying potential drivers of the choice whether or not to delegate. In a second step, in order to address research question 2, we examine differences in decision-making quality between subject pools and treatments, serving as a basis for analyzing the effectiveness of delegation. Finally, we examine the communication of risk between principals and agents, providing us with answers to the third research question.

Descriptive results regarding the samples of finance professionals and the general population, the responses to the questionnaires, and the decision-making quality measures are presented in Tables E1 to Table E4 in Appendix E. Note that detailed descriptions on each of the decision-making measures used in this section are provided in Appendix C.

Throughout the presentation of the results, we indicate standardized effect sizes in terms of marginal effects at the means (\textit{MEM}) for non-linear models, and in terms of (absolute) values of Cohen’s \textit{d} for linear models. \textit{d} is approximated by \( d \approx \beta / (SE \cdot \sqrt{n}) \), with \( \beta \) denoting the respective regression coefficient and \( SE \) referring to the corresponding standard error.
Result 1 – Delegation Decisions. Delegation rates among principals are highest to the investment algorithm, followed by professionals facing aligned incentives. Principals’ propensity to delegate their decisions increases with trust in the respective agent and their willingness to shift blame on others, but decreases with their own decision-making quality (DMQI). When delegating their decisions, principals, on average, request the agent to take more risk than they perceive to be taken in their own decision.

Support: Panel (A) in Figure 2 reports estimates of logit regressions of the binary delegation choice on treatment indicators. We find that delegation rates increase from a base level of 16.9% in treatment GP-FIXED to 25.9% in treatment GP-ALIGNED (MEM = 0.090, p = 0.034, n = 550) and to 37.9% in treatment GP-ALGO (MEM = 0.210, p < 0.001, n = 550), respectively. This result suggests that principals’ delegation decisions depend on both whom they are delegating to (i.e., an algorithm or a finance professional) and what incentives the agent faces (fixed or aligned compensation). However, the principals’ willingness to pay for delegating their decisions to the agent does not significantly differ between the treatments (see Table G1 in Appendix G).

Panel (B) in Figure 2 illustrates the principals’ desired levels of risk conditional on the risk perception of their own investment decision when delegating their decisions to the agent. On average, principals tend to ask the agent to take higher levels of risk (m = 2.84, sd = 0.69) than they perceive they implemented themselves when deciding on their own behalf (m = 2.58, sd = 0.76; paired-sample t-test: t(147) = 4.081, p < 0.001, n = 148).

Figure 2: Delegation frequency and desired vs. perceived risk level of principals. Panel (A) depicts the share of principals opting for delegating their investment decisions to the agent conditional on the treatment. Error bars indicate standard errors of the mean (SEM); p-values are based on a logit regression of delegation on treatment indicators (see model (1) in Table 2). Panel (B) shows principals’ desired risk levels when delegating their investment decisions to the agent conditional on the perceived riskiness of their own decisions (n = 148).
In a second step, we investigate whether behavioral and cognitive measures systematically impact principals’ decision whether to delegate their decisions to the agent. As indicated by the estimates reported in model (3) of Table 2, the odds of delegating one’s decision (relative to the delegation rate of 16.9% in the FP-FIXED condition) are expected to decrease by 22.8% (MEM = 0.045, p = 0.006, n = 550) for a one standard deviation increase in principals’ decision-making quality index (DMQI). Principals’ trust in the agent turns out to have the largest effect on the delegation decision: a one standard deviation increase in (self-reported) trust, on average, implies an increase in the odds of delegating one’s decision to the agent by 98.8% (MEM = 0.115, p < 0.001, n = 550). Similarly, the likelihood for delegating one’s investment decisions tends to increase with a higher propensity for shifting blame to others (MEM = 0.043, p = 0.016, n = 550). Notably, neither numeracy skills and financial literacy scores, nor our measures of overconfidence, nor participants’ (self-reported) risk tolerance show any explanatory power with respect to principals’ delegation decisions. All results are robust to the inclusion of control variables (see models (2) and (4) in Table 2).

Result 2 – Decision-Making Quality. Finance professionals deciding on their own account show higher decision-making quality compared to subjects from the general population only for moderate levels of risk tolerance and above. Moreover, professionals’ decision-making quality does not significantly differ when deciding on behalf of clients, neither when being paid a flat fee, nor when facing aligned incentives. On average, delegating the decisions does not pay off for principals. While finance professionals do indeed yield slightly higher returns than the general population (conditional on the risk level), their portfolios also imply higher portfolio risk. 

Support: Given our experimental setup, clients can—assuming that individual-level risk preferences are perfectly mapped by the agents’ decision—only benefit from delegating their investment decisions, if the agents show superior decision-making quality. Thus, in a first step, we compare the decision-making quality index (DMQI) between finance professionals deciding on their own behalf and the general population. A two-sample t-test suggests that finance professionals are indeed less prone to poor decisions (d = 0.281, t(685) = 2.942, p = 0.003, n = 687; see model (1) in Table G2 in Appendix G). However, by design, errors in decision-making are less likely, if the decision-maker is risk tolerant.7 Indeed, finance professionals deciding on their own account are significantly less risk averse, in terms of both the mean portfolio risk (SD) taken in the 25 investment decisions (two-sample t-test; d = 0.506, t(685) = 5.302, p < 0.001, n = 687) as well as self-reported risk attitudes in financial matters (two-sample t-test; d = 0.818, t(685) = 8.570, p < 0.001, n = 687). Figure 3 shows the linear prediction of decision-making quality based on ordinary least squares regressions of DMQI on a subject pool indicator, the portfolio risk (SD), and the interaction of

---

6 For descriptive results on self-rated trust levels, self-reported risk tolerance, numeracy skills, financial literacy, overestimation, and overplacement, please refer to Figures E2–E4 in Appendix G.
7 For instance, consider a risk neutral decision-maker: Choosing an allocation in the task is straightforward as he/she will simply invest the entire endowment in the asset yielding the highest expected return. On the other hand, consider a highly risk averse decision-maker: In order to hedge risks, the decision-maker has to choose well-balanced portfolios. Apparently, the likelihood of violating the principle of first order stochastic dominance (FOSD) and/or the generalized axiom of revealed preferences (GARP) is considerably larger for allocations in the interior of the opportunity sets, compared to boundary allocations.
Table 2: Determinants of delegation decisions. This table reports marginal effects estimates from logit regressions of the binary choice whether to delegate the investment decisions to the agent on treatment indicators, a set of experimental measures, and self-reported measures. Robust standard errors are reported in parentheses. * $p < 0.05$, ** $p < 0.005$.

<table>
<thead>
<tr>
<th>Treatment Indicators:</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GP-ALIGNED</strong></td>
<td>0.090*</td>
<td>0.084*</td>
<td>0.062</td>
<td>0.053</td>
</tr>
<tr>
<td></td>
<td>(0.043)</td>
<td>(0.043)</td>
<td>(0.042)</td>
<td>(0.042)</td>
</tr>
<tr>
<td><strong>GP-ALGO</strong></td>
<td>0.210**</td>
<td>0.209**</td>
<td>0.196**</td>
<td>0.190**</td>
</tr>
<tr>
<td></td>
<td>(0.045)</td>
<td>(0.045)</td>
<td>(0.043)</td>
<td>(0.043)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experimental Measures:</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision Making Quality Index</td>
<td>$-0.044^*$</td>
<td>$-0.041^*$</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.016)</td>
<td>(0.015)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Literacy Score (Std.)</td>
<td>$-0.006$</td>
<td>0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.033)</td>
<td>(0.033)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numeracy Score (Std.)</td>
<td>$-0.040$</td>
<td>$-0.047$</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.043)</td>
<td>(0.044)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overestimation (Std.)</td>
<td>$-0.032$</td>
<td>$-0.033$</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.021)</td>
<td>(0.021)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overplacement (Std.)</td>
<td>$-0.010$</td>
<td>$-0.017$</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.025)</td>
<td>(0.025)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Self-Reported Measures:</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Tolerance (Std.)</td>
<td>0.008</td>
<td>0.007</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.019)</td>
<td>(0.019)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blame Shifting (Std.)</td>
<td>0.041*</td>
<td>0.044*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.018)</td>
<td>(0.019)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust in Agent (Std.)</td>
<td>0.115**</td>
<td>0.122**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.018)</td>
<td>(0.018)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Controls</th>
<th>no</th>
<th>yes</th>
<th>no</th>
<th>yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wald $\chi^2$</td>
<td>19.788</td>
<td>25.863</td>
<td>59.687</td>
<td>65.216</td>
</tr>
<tr>
<td>$p &gt; \chi^2$</td>
<td>0.000</td>
<td>0.001</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Pseudo $R^2$</td>
<td>0.032</td>
<td>0.041</td>
<td>0.127</td>
<td>0.143</td>
</tr>
<tr>
<td>Observations</td>
<td>550</td>
<td>550</td>
<td>550</td>
<td>550</td>
</tr>
</tbody>
</table>

Notes: Treatment (GP-FIXED) serves as reference condition. All self-reported measures are standardized scores. “Trust in Agent” refers to a combined variable of trust in finance professionals and financial algorithms, conditional of the treatment. “Blame Shifting” refers to the mean of two standardized survey items on shifting blame on others and resisting the temptation to shift blame on others. “Controls” include gender (binary indicator for female), age (in years), net income from major employment in 2017 (in thousand $s$), and maximum education level (dichotomous indicators for high school education or less, university education smaller or equal to three years, and university education larger than three years).

the dummy variable and SD, separated for treatments (see model (3) in Tables G2 and G3 in Appendix G, respectively). As illustrated in panel (A) of Figure 3, controlling for risk attitudes when comparing the DMQI between the pools reveals that finance professionals significantly outperform the general population sample in terms of decision-making quality only for moderate to high levels of portfolio risk.
In a second step, we examine if finance professionals’ decision-making quality is systematically impacted by whether they decide on behalf of clients or on their own account, and whether the incentive scheme affects the proneness to errors in decision-making. A plain comparison of DMQI shows that—compared to deciding for clients and receiving a flat payment (FP-FIXED)—finance professionals tend to perform better when facing aligned incentives (FP-ALIGNED; \(d = 0.100, t(405) = 2.019, p = 0.044, n = 408\)), and when deciding on their own account (FP-OWN; \(d = 0.132, t(405) = 2.656, p = 0.008, n = 408\)); see model (1) in Table G3 in Appendix G). The difference in DMQI between the treatments FP-ALIGNED and FP-OWN is insignificant (Wald test; \(F(1,405) = 0.426, p = 0.514, n = 408\)). However, as illustrated in panels (B) and (C) in Figure 3, the rather small differences in decision-making quality between finance professionals deciding on clients’ behalf and the general population sample turn out being insignificant once we again control for varying levels of portfolio risk (see model (2) in Table G3 in Appendix G for details). Finally, panel (D) in Figure 3 depicts the linear predictions of DMQI conditional on mean portfolio risk for the three treatments FP-OWN, FP-ALIGNED, and FP-FIXED, emphasizing that finance professionals’ decision-making quality is neither systematically affected by whether decisions are made on one’s own behalf or on clients’ accounts, nor by the compensation scheme the decision-maker faces (see model (3) in Table G3 in Appendix G for details).

As indicated by Result 1, clients take into consideration the agents’ incentive structure when deciding whether or not to delegate their investment decisions. The latter finding, however, suggests that clients’ expectations regarding the agents’ performance—as reflected in the difference between delegation rates in treatment GP-FIXED and GP-ALIGNED—are not justified by the performance data, as professionals do not perform systematically better when facing aligned incentives.\(^8\)

Table 3 summarizes the average decision-making quality (DMQI), expected portfolio returns, and portfolio risk, separated for finance professionals deciding on behalf of clients (FP-FIXED and FP-ALIGNED) and those principals who choose to delegate their decisions, conditional on the risk level principals and agents are matched on, as well as two-sample t-tests for each risk level. As already indicated by Result 2, finance professionals do not significantly outperform laypeople in terms of decision-making quality for any of the four risk levels. Comparing the mean expected returns and portfolio risk associated with the allocation decisions suggests that, conditional on the risk level, finance professionals tend to generate weakly (and mainly insignificantly) higher returns, but at the cost of higher portfolio risk. Thus, overall, principals’ delegation decisions to professionals (agents) do not result in more efficient portfolio allocations in terms of risk-adjusted returns, not even before potential costs of delegation.

Even though delegation has a very modest effect on decision quality, it could still be effective in terms of changing the risk profile of the investor. Result 1 reveals that, on average, principals ask the agents to

\(^8\) In Appendix F, we report detailed analyses on decision times across subject pools, treatments, and tasks. We observe, for instance, that professionals take more time when deciding for clients compared to when deciding on their on behalf, and compared to clients’ own decisions in the two-asset opportunity sets (see Table F2 for details). However, in the five-asset cases, differences in time spent between clients and professionals vanish, suggesting that clients took the more complex tasks seriously. Together with Result 2, these findings might indicate that professionals really strive for meeting clients’ expectations (i.e., desired risk levels), even though it does not translate into better performance in our sample. Furthermore, we examine potential learning effects in the investment task and the impact of the time spent per investment decision on decision-making quality. While we identify a significant decrease in the average time spent per investment decision for subsequent decisions in both subject pools, we report that the time spent per decision does not significantly impact decision-making quality, neither among the general population, nor the finance professionals sample; please refer to Appendix F for details.
Figure 3: Decision-making quality (DMQI) conditional on portfolio risk. This table shows linear predictions of the decision-making quality index (DMQI) conditional on the mean standard deviation (SD) across the 25 items in the allocation decision task (normalized to 1) after ordinary least squares regressions (see Tables G2 and G3 in Appendix G). Panels (A)–(C). Predictions of DMQI separated for the general population sample (pooled across treatments) and finance professionals deciding on their own behalf (FP-OWN), finance professionals deciding on behalf of clients receiving a flat payment (FP-FIXED), and finance professionals deciding on behalf of clients facing aligned incentives (FP-ALIGNED), respectively. Panel (D) Predictions of finance professionals’ DMQI separated for the three treatments FP-FIXED, FP-ALIGNED, and FP-OWN.

For the analysis, we start with only considering those clients who delegate their decision and request the agent to take more risk than they perceive they took by themselves (n_{GP-FIXED} = 10, n_{GP-ALIGNED} = 14, n_{GP-ALGO} = 26). In a second step, we identify all agents who serve as potential “matching partner” for the clients, i.e., those finance professionals in the corresponding treatment...
Table 3: Mean decision-making quality, mean expected return, and mean portfolio risk by risk level.
This table summarizes the means of the decision-making quality index (DMQI), expected returns, and portfolio risk of principals who choose to delegate their decisions (excluding the treatment GP-ALGO) and finance professionals deciding on behalf of clients, conditional on the risk levels indicated by clients and risk levels agents’ are asked to comply with. \( n_1 \) and \( n_2 \) refer to the row-wise sample size of the general population and of finance professionals, respectively. Standard deviations are reported in parentheses. \( t \)-statistics and standard errors (se) are based on two-sample \( t \)-tests with \( n_1 + n_2 - 2 \) degrees of freedom. * \( p < 0.05 \), ** \( p < 0.005 \).

<table>
<thead>
<tr>
<th>Decision Making Quality (DMQI):</th>
<th>Gen. Pop.</th>
<th>Fin. Prof.</th>
<th>t-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>( RL-1 ) ( (n_1 = 1, n_2 = 77) )</td>
<td>-0.13</td>
<td>0.08</td>
<td>.</td>
</tr>
<tr>
<td>( RL-2 ) ( (n_1 = 27, n_2 = 60) )</td>
<td>-0.13 (0.89)</td>
<td>-0.21 (1.28)</td>
<td>0.285 [0.273]</td>
</tr>
<tr>
<td>( RL-3 ) ( (n_1 = 43, n_2 = 68) )</td>
<td>-0.43 (2.45)</td>
<td>0.15 (0.67)</td>
<td>-1.861 [0.314]</td>
</tr>
<tr>
<td>( RL-4 ) ( (n_1 = 8, n_2 = 66) )</td>
<td>-0.36 (1.15)</td>
<td>0.05 (1.76)</td>
<td>-0.643 [0.639]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean Expected Return (ER):</th>
<th>Gen. Pop.</th>
<th>Fin. Prof.</th>
<th>t-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>( RL-1 ) ( (n_1 = 1, n_2 = 77) )</td>
<td>141.97</td>
<td>140.61 (14.50)</td>
<td>.</td>
</tr>
<tr>
<td>( RL-2 ) ( (n_1 = 27, n_2 = 60) )</td>
<td>145.25 (10.38)</td>
<td>147.93 (15.50)</td>
<td>-0.816 [3.275]</td>
</tr>
<tr>
<td>( RL-3 ) ( (n_1 = 43, n_2 = 68) )</td>
<td>151.95 (10.77)</td>
<td>155.56 (11.77)</td>
<td>-1.625 [2.220]</td>
</tr>
<tr>
<td>( RL-4 ) ( (n_1 = 8, n_2 = 66) )</td>
<td>155.42 (8.42)</td>
<td>174.37 (13.31)</td>
<td>-3.919** [4.834]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean Portfolio Risk (SD):</th>
<th>Gen. Pop.</th>
<th>Fin. Prof.</th>
<th>t-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>( RL-1 ) ( (n_1 = 1, n_2 = 77) )</td>
<td>46.01</td>
<td>42.10 (36.85)</td>
<td>.</td>
</tr>
<tr>
<td>( RL-2 ) ( (n_1 = 27, n_2 = 60) )</td>
<td>53.73 (21.06)</td>
<td>61.16 (36.92)</td>
<td>-0.975 [7.623]</td>
</tr>
<tr>
<td>( RL-3 ) ( (n_1 = 43, n_2 = 68) )</td>
<td>72.65 (23.84)</td>
<td>80.67 (30.07)</td>
<td>-1.477 [5.423]</td>
</tr>
<tr>
<td>( RL-4 ) ( (n_1 = 8, n_2 = 66) )</td>
<td>79.76 (16.46)</td>
<td>136.91 (41.23)</td>
<td>-3.864** [14.792]</td>
</tr>
</tbody>
</table>

Our finding that delegating investment decisions to finance professionals does not pay off in terms of decision quality, has to be seen in light of a potential sample selection bias in our study. Some of the differences in socio-demographic characteristics between the subjects in the experiment and those that did not take part are significant (see Table E1 in Appendix E). For both subject pools, the number of participants with a University degree is clearly higher in our sample than among those that did not participate. The high level of education in our sample might explain the high levels of decision-making quality among the general population sample (see Appendix C for details). However, this biased sample selection could also be relevant in real-world markets where private investors are usually a biased sample from the general population too, e.g., with males, older and wealthier people with higher financial sophistication being over-represented (Collins, 2012; Hackethal et al., 2012; Calcagno and Monticone, 2015). Given both effects being active simultaneously, we are cautious in generalizing our findings of Result 2.

\( \text{FP-FIXED} \) refers to the test statistics reported refer to coefficient tests of the indicator variable "agent" in ordinary least squares regressions of the portfolio risk in the 25 investment decisions on the indicator variable, controlling for delegation risk (dummy variables) with standard errors being clustered on the individual level.
Result 3 – Communication of Risk. Professionals show difficulties in constructing portfolios conditional on the risk levels clients indicate. In particular, portfolio risk is widely dispersed for all risk levels, suggesting that principals indicating a low or high risk level when delegating their decisions might end up with very similar portfolio risks. This challenge in communicating risk between parties may be exaggerated by significant differences in the perception of risk between principals and agents.

Support: As illustrated in panel (A) of Figure 4, the distributions of mean portfolio risk (in terms of average standard deviation) vastly overlap for the different risk levels (see also Figure G2 in Appendix G). While the mean portfolio risk increases significantly with the risk level \( (p < 0.001 \text{ for all pairwise comparisons}; \text{see Table G4 in Appendix G for details) eyeballing the distributions reveals that almost the full range of risk might be associated with each level. This result implies that clients indicating different levels of risk when delegating their investment decisions can eventually end up with similar levels of portfolio risk. For example, 25% of the portfolios constructed by finance professionals for principals indicating risk level 2/4 exhibit more risk than 50% of the allocations designed for risk level 3/4; even more problematic, about 25% of the portfolios designated for risk level 1/4 implies higher risk than 25% of the allocations constructed for risk level 3/4.

Comparing finance professionals’ risk perception of the portfolios constructed on behalf of clients \( (m = 2.54, sd = 0.97) \) with the risk levels they are asked to comply with \( (m = 2.45, sd = 1.14) \) in panel (B) of Figure 4 shows that, on average, finance professionals strive to follow the intentions of potential clients.

Figure 4: Portfolio risk conditional on risk level and clients’ desired risk vs. principals’ perceived risk. Panel (A) shows finance professionals’ portfolio risk when deciding on behalf of clients conditional on the risk levels they are asked to comply with. In particular, the figure illustrates the distribution (Gaussian kernel) of the average standard deviation of the 25 allocations in the investment task (normalized to 1), conditional on the risk level \( (RL-1 \ldots RL-4) \) indicated by principals, on whose account finance professionals are asked to decide in treatments FP-FIXED and FP-ALIGNED. Panel (B) shows the risk level agents are asked to comply with when deciding on behalf of clients vs. agents’ perception of the riskiness of their actual decisions \( (n = 271) \).
Figure 5: Portfolio risk conditional on risk perception. This figure shows cumulative distributions and boxplots of the mean standard deviation of the 25 allocations in the investment task (normalized to 1), conditional on the perceived riskiness of their choices (RL-1 ... RL-4), separated for the general population sample (pooled across all treatments) and the sample of finance professionals deciding on behalf of clients (i.e., FP-FIXED and FP-ALIGNED). P-values reported for sample comparisons are based on two-sample Kolmogorov-Smirnov tests.

The challenge agents face when deciding on behalf of principals is further intensified by significant differences in risk perception. As illustrated in Figure 5, the distributions of portfolio risk associated with risk levels differ significantly between the general population and the finance professional sample.10 For risk levels 1 and 2, portfolio risk of subjects from the general population, on average, exceeds the risk of portfolios implemented by finance professionals deciding on behalf of clients. However, this effect reverses for risk levels 3 and 4. This result indicates that clients compose more similar portfolios across the risk spectrum than professionals do.

4. Conclusion

In this paper, we report a controlled lab-in-the field (online) experiment with finance professionals (serving as money managers) and subjects from the general population in Sweden (serving as clients). We examined (i) the motivations and characteristics of clients to delegate investment decisions, (ii) differences in decision-making quality between professionals and clients, and (iii) professionals’ ability to construct portfolios that suit the risk attitudes of clients well.

10 Figure 5 depicts comparisons of the general population sample, pooled across all treatments, and the sample of finance professionals deciding on behalf of clients (FP-FIXED and FP-ALIGNED). Comparing the portfolio risk (SD) of the general population to the portfolio risk of finance professionals deciding on their own account (FP-OWN) for each of the four perceived risk levels reveals that the association of actual portfolio risk with the risk spectrum only significantly differs for risk level 4 (Kolmogorov-Smirnov tests; RL-1: $D = 0.354, p = 0.180, n = 60$; RL-2: $D = 0.195, p = 0.108, n = 311$; RL-3: $D = 0.198, p = 0.100, n = 232$; RL-4: $D = 0.379, p = 0.007, n = 84$). However, comparing the portfolio risk associated with the four levels between finance professionals deciding on their own (FP-OWN) and those investing on behalf of clients (FP-FIXED and FP-ALIGNED) does not reveal any significant differences (Kolmogorov-Smirnov tests; RL-1: $D = 0.167, p = 0.358, n = 54$; RL-2: $D = 0.157, p = 0.450, n = 136$; RL-3: $D = 0.131, p = 0.663, n = 134$; RL-4: $D = 0.185, p = 0.566, n = 84$).
First, we found that investors delegated to the investment algorithm significantly more often than to professionals with aligned incentives and flat incentives. Furthermore, we reported that those investors with the highest levels of trust in professionals (investment algorithms) and those who are prone to shift blame on others delegated the most, whereas we found that principals’ own decision-making quality was negatively related to the delegation frequency. Second, we found that overall decision-making quality of professionals was not significantly better than that of subjects from the general population. Finally, we observed that professionals had difficulties in constructing portfolios conditional on the risk-levels clients indicated. In particular, we found strong overlaps in portfolio risks especially among three of the four risk classes.

Our study has implications for real-world delegation decisions: first, clients with low decision-making quality and/or high level of trust in professionals/algorithms are indeed the ones that delegate more frequently. This result highlights the importance of establishing trust in the finance industry in general and in money managers in particular, as it appears to be one of the major motives for delegation decisions. However, professionals’ decision-making quality is only marginally and not significantly better than that of clients. We still conclude that for the clients that trust professionals or financial algorithms, delegation is probably a good choice, as they “purchase” slightly better decisions and are confident that professionals do it well. In other words, “money doctors” (Gennaioli et al., 2015) are trusted when investing money of their clients, even when the outcome is not significantly better.

Second, our results indicate that some clients use delegation as way of increasing the risk of their portfolio, but the feasibility of this objective is hampered by our finding that professionals face troubles in correctly implementing clients’ expected portfolio risk-level. The issue of risk communication is particularly relevant for real-world delegation of financial decisions and related to the empirical studies of Foerster et al. (2017) and Linnainmaa et al. (2019). Both studies show that financial advisers typically invest personally just as they advise their clients. Thus, we conclude that a better match of advisers and clients in terms of risk preferences and potentially also with respect to risk perception (Holzmeister et al., 2019) might be beneficial both for clients and financial institutions.
References


