Feedback, Confidence and Job Search Behavior*

Tsegay Tekleselassie[a] Marc Witte[b,c] Jonas Radbruch[d,c] Lukas Hensel[e] Ingo E. Isphording[c]

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Abstract

We conduct a field experiment on how skill feedback influences job search outcomes. After eliciting beliefs about relative cognitive skill and willingness to pay (WTP) for feedback, we randomly inform about true skills. A theoretical framework with instrumental and ego motives predicts that effort responds stronger when feedback is both valued and encouraging. Consistent with these predictions, treated job seekers update beliefs and increase search effort, but effects are concentrated among underconfident individuals with positive WTP. In that group, employment and earnings increase, while overconfident individuals show little response. Targeting WTP improves cost-effectiveness, although WTP remains below delivery costs.

Keywords: job search, overconfidence, feedback, willingness-to-pay, field experiment

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1 Introduction

Individuals' subjective beliefs about the world influence behavior across many contexts, and biased beliefs can lead to adverse individual and aggregate outcomes (Dizon-Ross, 2019, Cullen and Perez-Truglia, 2022, Alesina et al., 2023, Jäger et al., 2024). Beliefs about one's own skills are a case in point, as they may affect key career-related decisions, such as occupational choices (Wiswall and Zafar, 2021, Lazear, 2016), educational investments (Wiswall and Zafar, 2015, Arcidiacono et al., 2010, Bobba and Frisancho, 2020), and workplace behavior (Hoffman and Burks, 2020, Huffman et al., 2022).

Beliefs about one's skills are particularly relevant in the context of job search. In directed search models, they are a key input in job seekers' strategies, affecting where and how intensively they search for jobs (Wright et al., 2021, Baley et al., 2022). However, individuals typically hold biased beliefs about their skills (Carranza et al., 2022, Bobba and Frisancho, 2020), which can distort their search strategies (Kiss ⓡ al., 2023). These distortions are particularly consequential in low-income countries such as Ethiopia — the setting of our study — where job seekers incur high search costs (Franklin, 2018, Abebe et al., 2021b). New information about skills–*feedback*–can help job seekers form more accurate beliefs and make better search decisions. However, ego-related motives may prevent them from actively seeking such feedback (Karlsson et al., 2009).

In this paper, we develop a conceptual framework that endogenizes overconfidence—i.e. the tendency of ranking one's own skills better than they are—and job seekers' demand for skill information, and links both to the effect of providing skill information. We assume that job seekers differ in their motives for seeking or avoiding feedback, and—in return—in their demand for information. Job seekers with *instrumental motives* value information because it helps optimize their search effort — those with higher perceived skills expect higher returns to effort and should search more intensively. Job seekers with *ego motives* derive utility from maintaining favorable self-perceptions and may avoid information that threatens their self-image (Köszegi, 2006, Eil and Rao, 2011). These motives jointly shape job seekers' demand for feedback, and their effort responses to information provision. Job seekers with ego motives do not incorporate all negative signals, generating baseline overconfidence and asymmetric responses to feedback: they update beliefs and increase effort when receiving encouraging information but forget discouraging news. Job seekers with instrumental motives adjust their search behavior, increasing effort in case of relevant encouragement. The framework thus predicts that job seekers who both hold instrumental motives and receive encouraging information react most to being provided feedback.

We test these predictions in a field experiment with 2,537 job seekers in Addis Ababa,

Ethiopia, a labor market characterized by high unemployment and significant information frictions. Participants attended a skill assessment center, where they completed a cognitive ability test, a central skill in the job search process[1], along with other cognitive and non-cognitive skill assessments. At the end of the assessment center, we asked job seekers how they believed they performed on the cognitive ability test, both absolutely and relative to other job seekers. As a key ingredient of our experiment, we elicited their WTP for feedback on their true test performance: average WTP corresponds to median hourly wages in this context, but almost a third of participants has a zero or even negative WTP.

Two weeks after the baseline assessment, a treatment group of participants was randomly assigned—independently of their WTP—to receive feedback on their cognitive ability test performance.[2] Feedback was provided relative to a benchmark population of job seekers applying to similar jobs. We analyze the effects of receiving feedback on belief updating, job search behavior, and outcomes up to two months after the assessment. Our conceptual framework motivates examining novel heterogeneity along two dimensions that reveal job seekers' underlying motives: initial confidence and willingness to pay for feedback. Initial underconfidence should be more prevalent among job seekers with instrumental motives, as ego motives generate overconfidence through selective forgetting. A positive WTP for feedback reveals instrumental motives, as only job seekers who perceive skills as decision-relevant value information for optimizing search effort.

Our experiment yields three sets of results, which are in line with the predictions of the model. First, job seekers adjust their beliefs in response to the feedback provided. Specifically, providing feedback reduces the absolute deviation of beliefs by 13% relative to the control mean immediately after receiving feedback, and by 7% at the endline, six weeks after treatment. The initial effects are especially pronounced among underconfident individuals, who adjust their beliefs more strongly than overconfident individuals.

Second, providing feedback significantly increases job search effort. At the endline, a composite index measure among treated job seekers is 0.08 standard deviations higher than for individuals in the control group. However, pre-specified heterogeneity analysis reveals that job seekers respond asymmetrically in their job search behavior. Initially underconfident job seekers increase their job search effort by 0.2 standard deviations. This is driven by a 5 percentage point increase in conducting any search, spending 0.36 more days per week on job search, and submitting 1.31 additional applications per month upon

[1]Firms identified general intelligence as the most relevant skill assessed at the center, and most job seekers considered it a key competency for the vacancies they applied to. General intelligence correlates with baseline labor market beliefs and job search success.

[2]This approach is based on an established experimental paradigm (e.g., Kiessling et al., 2022), which randomly overrides elicited preferences for receiving information.

receiving feedback. The effect on overconfident individuals is small (0.02 standard deviations) and insignificant, mirroring the asymmetric belief updating. Similarly, job seekers with positive WTP respond differently to feedback than those who do not demand the feedback, or would even pay to avoid it. We observe that individuals with a positive WTP — those who want to receive feedback — increase their job search effort by 0.11 standard deviations while individuals with a negative WTP do not alter their job search effort in response to the treatment.

Third, we analyze the interaction of confidence and WTP in predicting treatment effects. This analysis reveals that the treatment effects on job search are concentrated among job seekers who receive encouraging information that they actively sought to acquire, leading to significant improvements in their job search success. These underconfident individuals with a positive WTP for feedback increase their search effort by 0.23 standard deviations. Moreover, they also experience a rise of 0.17 standard deviations in their job search success index, mostly driven by a 20% (4 percentage points) increase in employment and a 31% increase in earnings conditional on working. These improvements are significantly larger than the effects for other groups — overconfident individuals or underconfident individuals with a low WTP — for whom we do not observe any positive treatment effects on job search behavior or success.

Finally, we provide direct survey evidence on motives for seeking feedback, consistent with our predictions on heterogeneous treatment effects. Underconfident individuals with positive WTP—the group with the strongest treatment response—are uniquely likely to report instrumental reasons for wanting feedback. In this group, baseline skill beliefs are also positively correlated with expected returns to search, indicating that feedback is decision-relevant. We do not observe this pattern in other groups. By contrast, we find no comparable heterogeneity in ego motives.

These results have implications for the cost-effectiveness of the intervention, which may be significantly enhanced by targeting job seekers based on their willingness to pay (WTP) for feedback. Job seekers with a positive WTP are willing to pay 40.92 Birr and yield higher returns from the intervention, rendering it cost-effective for this specific group, but not for others. Targeting feedback provision only to individuals with a positive WTP could reduce the need for subsidies, though not entirely eliminate it.[3] In our setting, the WTP alone does not fully cover the intervention's costs, which may explain why there exists no market solution providing such information.

[3]A feedback targeting strategy could be implemented through a self-selection mechanism in which individuals incur small costs (e.g., transportation or nominal participation fees) to access feedback and does not necessarily require ex-ante individual WTP measurements.

With our findings, we contribute to four strands of the literature. Our key contribution is to the literature on information frictions in labor markets. Compared to this literature, we demonstrate that low-intensity phone-based feedback about skills affects beliefs and labor market outcomes. This effect is not homogeneous: both prior beliefs and job seekers' demand for information influence the extent to which they adjust their effort and achieve improved labor market outcomes when their misaligned beliefs are corrected. Much of the existing literature has focused on firms that are uncertain about the abilities of workers (Carranza et al., 2022, Abebe et al., 2025, Abel et al., 2020, Bassi and Nansamba, 2021, Pallais et al., 2014, Hensel et al., 2023). On the job seeker side, Mueller and Spinnewijn (2023) review the recent literature linking beliefs to job search behavior and outcomes. Experimental studies of information frictions include information about labor market conditions (Jones and Santos, 2022, Altmann et al., 2018), such as knowledge about available vacancies (Belot et al., 2018, Altmann et al., 2022) or wage levels (Conlon et al., 2018, Balgova ⓡ al., 2023).[4] Related to our paper, Kiss ⓡ al. (2023) and Carranza et al. (2022) show that feedback about job seekers' comparative advantage in skills can redirect their search toward jobs that better align with their skills, leading to higher earnings. In contrast, we demonstrate that shifting beliefs about relative *skill levels* affect *search effort* and success. Another innovation of our study is that we show that treatment effects may differ based on feedback demand, i.e., unsolicited feedback can be ineffective. Our finding that an increase in search effort is associated with labor market success is in line with Vyborny ⓡ al. (2025), who document constant returns to search effort among job seekers in Pakistan.

More generally, we also contribute to the literature on active labor market interventions in developing countries (e.g. Alfonsi et al., 2017, Caria et al., 2023, Abel et al., 2019, Franklin, 2018, Banerjee and Sequeira, 2020, Kelley et al., 2024, Wheeler et al., 2022) by providing evidence on a relatively cheap and potentially scalable intervention that improves earnings for some workers. Our findings emphasize the importance and feasibility of targeting active labor market interventions by WTP to increase cost-effectiveness.

We also contribute to the literature on feedback interventions across diverse domains, including workplace settings (Blanes i Vidal and Nossol, 2011, Bradler et al., 2016) and education (Azmat and Iriberri, 2010, Tran and Zeckhauser, 2012, Azmat et al., 2019, Brade

[4]We also speak to theoretical literature on the role of information frictions in labor markets. Jovanovic (1979) famously studies how learning about match quality contributes to separations. Relatedly, Altonji and Pierret (2001) and Kahn and Lange (2014) study how employer learning about worker skills contributes to productivity and earnings. On the job seeker side, macro-models with imperfect information about skills can affect aggregate labor market efficiency (Guvenen et al., 2020, Lise and Postel-Vinay, 2020, Baley et al., 2022).

et al., 2022). These studies underscore the potential of feedback to shape motivation, performance, and decision making. However, findings are mixed and sometimes inconclusive (Villeval, 2020), with evidence that feedback can occasionally produce unexpected or unintended consequences, such as demotivation or disengagement (Azmat et al., 2019). Our findings emphasize the importance of heterogeneity in individuals' responses to feedback. Specifically, we show that the effectiveness of feedback interventions hinges on whether feedback is desired. Feedback aligned with an individual's demand yields more positive effects. In contrast, unsolicited feedback, especially when individuals cannot opt out, has no effect in this context. These findings call for more nuanced intervention designs that account for individual preferences and incorporate mechanisms to facilitate self-selection into feedback opportunities.

By demonstrating behavioral adjustments in response to updated beliefs, we also speak to the literature on demand for feedback and information avoidance in the laboratory and field. Previous studies show that individuals avoid feedback to protect their self-concept or maintain motivated beliefs in ego-relevant domains (Drobner and Goerg, 2024, Castagnetti and Schmacker, 2022, Dana et al., 2007), and in economically significant contexts such as consumer behavior (Sweeny et al., 2010), financial decision-making (Olafsson and Pagel, 2025, Karlsson et al., 2009), and health awareness (Oster et al., 2013, Thornton, 2008). Related, our study contributes to the literature on selective recall of positive information (Zimmermann, 2020, Chew et al., 2020) and belief-consistent information (Gödker et al., 2024, Huffman et al., 2022) by documenting a good news/bad news effect immediately after treatment, as well as selective recall concentrated among underconfident job seekers. An emerging strand of experimental research further explores heterogeneity in feedback demand, showing that demand may depend on factors such as price elasticity (Serra-Garcia and Szech, 2022), expected future utility (Ganguly and Tasoff, 2017), prior positive experiences (Petrishcheva, 2023), and personal characteristics (Coffman and Klinowski, 2022). We contribute to this literature in two main ways. First, we provide novel field evidence of heterogeneity in avoidance of ego-relevant information in the job search context, a domain characterized by uncertainty and significant economic stakes. Second, we document a systematic link between intended information avoidance and smaller causal effects of receiving the information, thereby linking individual information avoidance to the large literature on information experiments (Haaland et al., 2023).

The remainder of this paper proceeds as follows. Section 2 provides details on the experimental design, data collection, and context. Section 3 presents our theoretical framework. Section 4 summarizes the average and heterogeneous effects of the treatment on belief updating and job search outcomes. Section 5 explores how prior beliefs and the de-

mand for feedback interact. Section 6 discusses the cost-effectiveness of our intervention. Section 7 discusses the implications of our results for policymakers and concludes.

2 Context and experimental design

This section provides an overview of the labor market context as well as the design and implementation of the field experiment.

2.1 Context, sample, and baseline Survey

Our study is embedded in the operations of a recruitment agency in Addis Ababa, the capital of Ethiopia. The agency screens applicants for a variety of job vacancies on behalf of employers. All applicants who apply for a job posted by the recruitment agency are invited to attend an assessment center. As part of the screening process, applicants take assessments for various cognitive and non-cognitive skills. We provide more details about the assessment center in Appendix B.1.

The experiment took place between April and December 2022. At the beginning of the experiment, unemployment rates in urban areas remained high at close to 20%, despite strong GDP growth in the last 15 years (Ethiopian Statistical Services, 2022). Similar to the situation in other developing countries, the local labor market is characterized by frictions that affect the efficiency of labor market matching, including spatial (Franklin, 2018), liquidity (Abebe et al., 2021b), and various information frictions (e.g., about job seeker skills or offered earnings; Abebe et al., 2021a, 2025, Balgova ⓡ al., 2023). These frictions are likely to contribute to urban unemployment and, more broadly, to inefficient labor market outcomes (Donovan et al., 2023).

Our main sample consists of 2,537 job seekers in the assessment center at baseline, applying to 267 different vacancies from 201 firms.[5] These job seekers undergo two parts of the assessment center. The first part consists of a range of assessments of cognitive and non-cognitive skills — most importantly a Raven's Progressive Matrices ("Raven's"; Raven, 2003) test to measure job seekers' general intelligence. Performance in this test will serve as the basis for our feedback intervention. Other assessments include the Big 5 personality traits, grit, executive function (Stroop, 1935), and theory of mind ("Reading the Mind in the Eyes" (RME) test; Baron-Cohen et al., 2001). Job seekers know that information on

[5] In addition, we collected data on two auxiliary samples: 430 individuals are presented with an extended price list in the WTP elicitation, and 430 job seekers are assigned to an alternative "choice" treatment arm in which treated individuals directly choose whether to receive information.

their performance on these assessments will be forwarded to the firms that are recruiting, which also provides incentives to exert effort on the tests. If firms are interested in a candidate, they take over the following call back process. However, the probability of being hired for this particular vacancy is very low, as many vacancies remain unfilled.

The second part of the assessment center consists of a self-administered baseline survey measuring the participants' socioeconomic background, preferences, beliefs about themselves, labor market prospects, and recent job search experiences.[6] To avoid strategic responses, we truthfully inform job seekers that their responses in this part of the survey will not be forwarded to firms.

Sample description Column 1 of Table 1 presents information on the main sample of job seekers, while Columns 2 and 3 break down this information for the treatment and control groups, respectively. On average, participants are 26 years old, and 30% are women. The sample is relatively well-educated, with 71% of job seekers having at least some post-secondary education.

At baseline, job seekers spend a large amount of time and money on their job search. Yet, they only send relatively few applications and receive even fewer interview invitations in response. The average participant has spent 28 hours on a job search in the past week, sending an average of 7.5 applications, spending 700 Birr, which is 45% of the average weekly earnings of working individuals in the control group, and receiving less than two interview invitations.[7]

The ads used to recruit job seekers to the assessment center offer relatively high-quality, early career jobs. 53% of job seekers applied to jobs that required university degrees and a similar share applied to white collar positions. The average job requires only 1.45 years of work experience and pays 6,841 Birr per month, somewhat above the average monthly earnings in Ethiopia of 5,657 Birr (Ethiopian Statistical Services, 2022).

Taken together, we observe a rather young and highly educated sample of job seekers who invest a large amount of time and resources in a costly search. Any decisions about search effort are high-stakes. As a consequence, miscalibrated search effort choices might have important consequences for applicants' well-being.

[6]To facilitate understanding, job seekers can choose to complete the survey in either English or Amharic. In addition, they are encouraged to ask invigilators questions about any part of the survey that they do not understand.

[7]The low return to applications remains true after the start of the experiment. On average, in the control group the ratio of offers to applications over 30 days is less than three percent.

General intelligence Feedback provision and belief elicitation of this experiment center around a test of general intelligence.

We measure job seekers' general intelligence via a Raven's Progressive Matrices test ("Raven's", Raven (2003)). The Raven's score has been widely applied in research settings close to ours (Carranza et al., 2022, Abebe et al., 2021b), but is also popular among practitioners in real hiring settings (Chamorro-Premuzic and Furnham, 2010, De Kock and Schlechter, 2009). The test consists of 20 items, and the job seekers have 15 minutes to complete it. Appendix Figure A.2 displays an example Raven's matrix of intermediate difficulty.

We focus on general intelligence for three reasons. First, firms consider it the most relevant skill among those assessed in the center. When asked to select the two most relevant skills for their vacancies from a list of seven[8], 57% of the firms chose general intelligence (Hensel et al. (2023) report a similar number in a different sample of firms in Addis Ababa). Second, job seekers share this belief about general intelligence being important, with 61% reporting general intelligence as one of the two most relevant skills for the vacancy they applied for. Finally, general intelligence correlates with baseline labor market beliefs and success (Appendix Table A.1). It has also been shown to correlate with labor market success in other contexts (Ozawa et al., 2022, Case and Paxson, 2008).

Despite its perceived importance, job seekers may have substantial misperceptions about their level of general intelligence, in particular, relative to their competitors. This might be explained by the fact that the job search process is inherently individual, offering few opportunities to compare abilities against others. In addition, employers rarely provide callbacks or feedback to candidates they do not intend to interview. As a result, job seekers often lack clear signals about their relative standing, leaving them uncertain about their comparative abilities.

Elicitation and descriptions of beliefs about (relative) ability After completion, we ask job seekers to self-assess their performance on the Raven's test by estimating the number of items they solved correctly. In addition, job seekers are asked to indicate how many out of ten job seekers applying to similar jobs would perform worse, providing a decile rank. We provide details on the elicitation of beliefs in Appendix B.2.

As a benchmark for feedback provision, we compare beliefs against the actual relative ability in a comparison population. This comparison population consists of job seekers who took the same test under very similar conditions. The data was collected by Hensel

[8]General intelligence, emotional intelligence, language skills in Amharic and English, grit, reliability, emotional stability, and focus

et al. (2023). We standardize the ability within categories of job types (white, blue, pink, or gray collar). The distributions of test performance are very similar. However, the current population had marginally lower Raven's scores, with the median current job seeker scoring only at the 46th percentile of the reference distribution (Appendix Figure A.3).

Table 1 describes the test performance and beliefs about the test performance. On average, job seekers scored 8 out of 20 possible points on the Raven's Progressive Matrices test. They exhibit substantial misperceptions about their performance: in absolute terms, their beliefs deviate, on average, by 3.67 questions from their actual number of correctly answered questions. Similarly, job seekers misjudged their relative performance on the assessment, over- or underestimating their position by an average of 3.55 decile ranks, with 68% overestimating their position.[9]

Elicitation of willingness-to-pay As a key ingredient of the experiment, we elicit the participants' demand for the feedback we provide. We measure applicants' incentivized WTP for information about their relative performance in the general intelligence assessment. To stress the relevance of this information for participants, we truthfully provide the information that "managers are very interested in learning how applicants perform on this test." We then elicit the WTP in the spirit of Marschak et al. (1964) by having respondents choose between not receiving or receiving feedback on their relative performance for a monotonically decreasing price. The first choice is between (i) not receiving the feedback or (ii) receiving the feedback and paying 50 Birr, corresponding to approximately 1 USD or about 3% of the average weekly earnings of working individuals. If a respondent chooses not to receive the feedback, we gradually reduce the cost of the feedback: first to 25 Birr, then 10 Birr, 5 Birr and finally 0 Birr (which corresponds to receiving feedback for free). The procedure is stopped when participants switch from not wanting to receive feedback on their relative assessment performance to wanting to receive feedback.[10] If respondents still prefer not to receive feedback, even at a price of 0 Birr, we reverse the offer: subjects would receive an additional payment (first 5 Birr, then 10 Birr, and finally 25 Birr) along with feedback. We therefore measure the price level at which participants would rather give up money than receive feedback. To incentivize the truthful revelation of WTP, we

[9]Appendix Table A.2 shows the correlates of misperceptions. Both absolute belief bias and an indicator of overconfidence are mechanically correlated with performance on the general intelligence assessment (as there is less scope for being overconfident for job seekers with higher scores, and less scope for underconfidence for job seekers with lower scores). We observe a small, insignificant gender gap in overconfidence broadly in line with the existing literature. (Bandiera et al., 2022). Most covariates are not predictive of overconfidence, except personality traits of agreeableness and neuroticism are negatively predicting overconfidence.

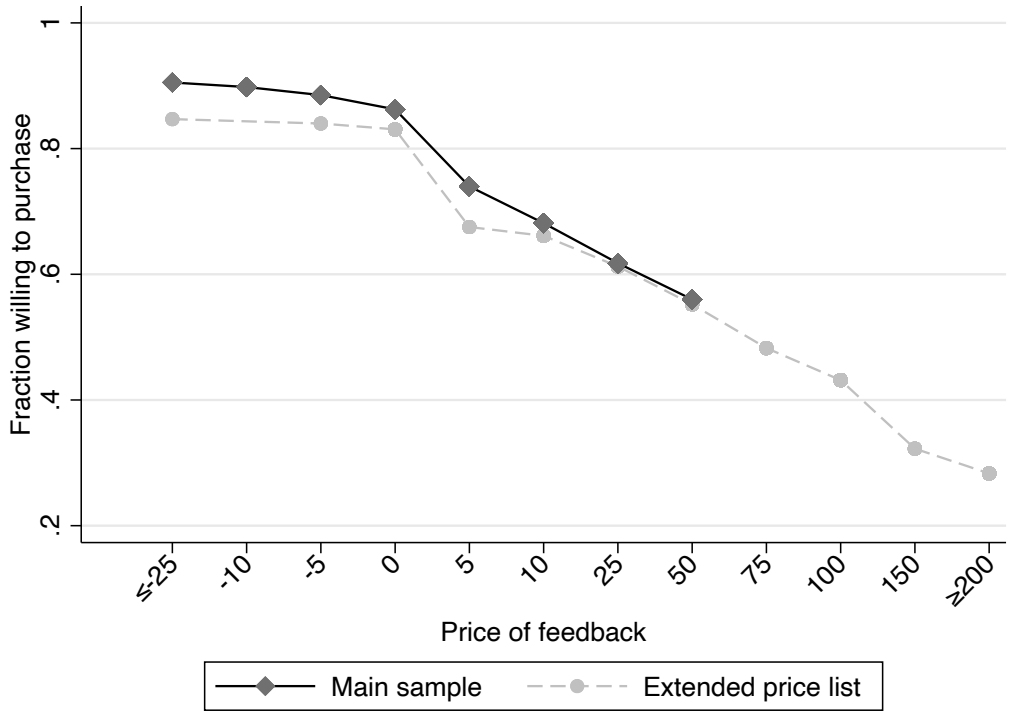
[10]As a substantial part of the sample demanded feedback even at the highest price, we adjusted the price list for a subsample to start with 200 Birr.

Table 1: Descriptive Statistics and Balance

	All	Control	Treatment	Difference (2)-(3)
Demography				
Female	0.30	0.31	0.29	0.01
	(0.46)	(0.46)	(0.46)	[0.68]
Age	26.02	26.14	25.90	0.24
	(4.19)	(4.38)	(3.99)	[1.44]
Post-secondary education	0.71	0.71	0.70	0.00
	(0.46)	(0.46)	(0.46)	[0.18]
Search behavior and outcomes				
Search Time(Hours)	28.04	27.95	28.12	-0.17
	(31.52)	(31.49)	(31.57)	[-0.13]
Number of Applications	7.46	7.40	7.52	-0.12
	(9.12)	(9.17)	(9.07)	[-0.34]
Job Search Expenditure	700.61	698.44	702.80	-4.36
	(925.97)	(925.31)	(927.00)	[-0.12]
Interview invitations	1.87	1.90	1.85	0.05
	(2.32)	(2.39)	(2.25)	[0.51]
Vacancy characteristics				
Offered salary	6,840.70	6,795.01	6,886.79	-91.79
	(4,608.06)	(4,626.29)	(4,590.96)	[-0.50]
Requires degree	0.53	0.52	0.53	-0.02
	(0.50)	(0.50)	(0.50)	[-0.87]
Minimum years of exp.	1.45	1.44	1.46	-0.02
	(1.72)	(1.74)	(1.71)	[-0.28]
White collar	0.53	0.53	0.54	-0.02
	(0.50)	(0.50)	(0.50)	[-0.95]
Pink collar	0.15	0.15	0.14	0.01
	(0.36)	(0.36)	(0.35)	[0.63]
Performance				
Raven Scores	8.14	8.09	8.20	-0.12
	(5.45)	(5.46)	(5.44)	[-0.54]
True rank	4.59	4.56	4.61	-0.05
	(3.08)	(3.08)	(3.08)	[-0.43]
Ability/Beliefs				
Pre-treatment belief	6.80	6.85	6.74	0.10
	(2.61)	(2.61)	(2.60)	[1.01]
Absolute bias, baseline	3.67	3.69	3.65	0.04
	(2.58)	(2.57)	(2.58)	[0.43]
Overconfident baseline belief	0.68	0.68	0.67	0.01
	(0.47)	(0.47)	(0.47)	[0.41]
WTP For Feedback (Birr)	23.08	23.36	22.79	0.57
	(33.47)	(33.16)	(33.78)	[0.43]
Observations	2,537	1,274	1,263	2,537

Note: **Table 1 displays baseline means and standard deviations (in parentheses) of covariates for the sample of job seekers who participated in the experiment and in the endline survey.** The last column displays the difference between treatment and control and shows t-statistics in square brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figure 1: Demand for Feedback



Notes: **Figure 1 displays the elicited demand for feedback.** The y-axis indicates the fraction of individuals demanding feedback about their relative performance on an assessment of general intelligence at a given price in Ethiopian Birr. The main sample consists of all baseline individuals. The auxiliary sample measured willingness-to-pay for feedback in the same population with an extended price list (N=431).

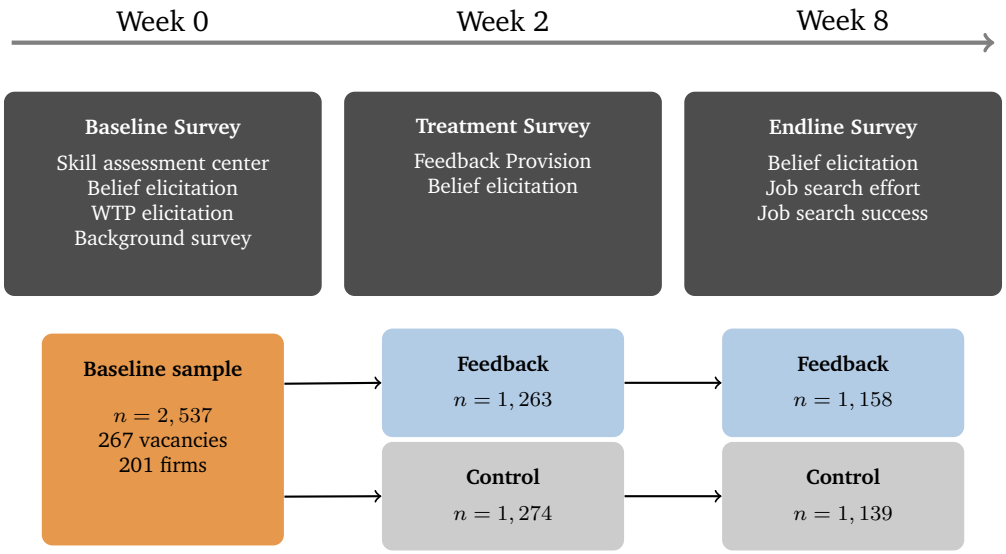
inform the subjects that the elicited purchase price for feedback will be implemented for a subset of individuals.[11] Further details on the elicitation and translation of instructions are provided in the Appendix B.3.

Figure 1 shows the elicited demand for feedback. We see that demand is generally high but elastic. On average, job seekers are willing to pay 23 Birr for feedback. However, there is substantial heterogeneity between job seekers. About 71% of job seekers have a positive WTP, while 29% are not willing to pay for performance feedback, with 15% even having a negative WTP, so they have to be paid to receive feedback.[12]

[11]Payout is implemented by adjusting each individual's lump-sum payment based on their willingness to pay (WTP) for feedback. If they had a positive WTP, we deduct that amount. If they had a negative WTP, we add that amount.

[12]In Appendix Table A.3, we explore the correlates of demand for feedback. We find that sociodemographic characteristics, including gender, personality traits, and skills beliefs, are associated with the demand for information in our context. Uncertainty about one's own relative ability is not associated with demand for feedback. We further do not find that WTP is differentially predicted by proxies for financial resources. WTP thus rather displays information preferences than liquidity constraints.

Figure 2: Overview of Experimental Design



Notes: **Figure 2 displays the study timeline and sample sizes.**

We validate the elicited WTP as a meaningful measure of demand for feedback by showing its predictive validity in the field in two ways. First, in an auxiliary sample of 437 participants, individuals were given the opportunity to actively take up the feedback or to deny it instead of being provided with it. In this "choice" sample, the elicited WTP is positively correlated with the actual take-up of feedback, thus being predictive for revealed behavior (Appendix Table B.1). Moreover, WTP is positively correlated with the INCOM measure, a psychometric tool that captures social comparison tendencies (Gibbons and Buunk, 1999).

2.2 Experimental design

We use the elicited ability, beliefs, and WTP to examine the heterogeneous effect of experimentally varying feedback on the relative ability. Figure 2 displays the timeline of the field experiment. We re-contact participants by telephone approximately two weeks after they participated in the assessment center. As part of this *treatment survey*, we conduct our intervention which provides feedback to a random subgroup of individuals. Approximately 8 weeks after the initial screening, we contact the subjects for the second time by telephone to measure beliefs and job search behavior in the *endline survey*. In the following, we describe in more detail the data collected in each of the surveys, as well as the treatment that is provided in the second survey.

2.2.1 Treatments and treatment survey

About two weeks after the initial assessment center, job seekers are contacted for the treatment survey. For this survey, we randomly assign participants to a treatment and a control group using a weekly batch randomization strategy.[13]

Job seekers in the treatment group receive information about their relative ability compared to other job seekers and whether their relative performance was better or worse than their expected relative performance, using their self-assessed beliefs from the baseline as a reference. Job seekers in the control group do not receive feedback. We provide feedback to the treatment group using the following script:

> *"[X] out of 10 people were as good as you or performed better than you in the same test on general intelligence. In other words, [10 - X] out of 10 people performed worse than you on the same test. This means that you performed [WORSE/SAME/BETTER] than you expected on this test."*

To ensure that the information is understood and to alleviate the concern that subjects might avoid the information by not listening to the enumerator, we ask participants to repeat the information about how many out of the 10 individuals in the comparison population performed worse. If any participant cannot state the information correctly, the information is explained again by the enumerator.

After the treatment module, we elicit job search plans and expectations for all participants. At the end of the survey, we also obtain measures of their beliefs about their ability relative to current job seekers.

2.2.2 Endline survey

Approximately six weeks after the treatment survey, we contact all participants by phone, including both treatment and control groups. This survey again focuses on questions about job search, labor market expectations, and employment outcomes. We use these measures to construct our main outcomes of search effort and success indices. We also once more elicit job seekers' relative ability beliefs. In addition, we elicit recall of the provided information in the treatment group. For this purpose, we incentive job seekers to recall the exact relative decile rank they were informed about in the treatment survey. More details are provided in Appendix B.5.

[13] We stratify the sample in weekly batches by baseline overconfidence and sign of WTP to improve balance across key heterogeneity dimensions that we aim to study.

Attrition The level of attrition in our sample is low. Of the 2,537 individuals in our baseline sample, we managed to contact 2,297 individuals at endline, which leads to an attrition rate of 9% (Appendix Table A.4). There are no significant differences in attrition for any of the subgroups considered in the study.[14]

3 Conceptual framework

We develop a conceptual framework with job seekers who choose whether to acquire (and attend to) information about their relative skills and how much effort to exert in job search. We outline the conceptual framework here and relegate formal exposition and proofs of propositions to Appendix C. The framework is designed to fix ideas about the heterogeneity in effort responses that individuals exhibit in response to new information.

3.1 Set up

Two motives govern how skill beliefs affect utility. An *ego motive* rewards favorable beliefs and an *instrumental motive* that values accuracy because beliefs affect effort choices. In particular, each job seeker i is characterized by two binary motive parameters. The ego motive is $\alpha_i \in \{0, \alpha\}$. If $\alpha_i = \alpha > 0$, holding higher skill beliefs yields direct belief utility, i.e. there is a hedonic value of holding a particular belief (Benabou and Tirole, 2002, Köszegi, 2006, Golman et al., 2017, Drobner and Goerg, 2024). The instrumental motive is $\phi_i \in \{0, \phi\}$. If $\phi_i = \phi > 0$, higher skills increase the marginal return to search effort (or job seekers perceive such complementarity), so accurate skill information increases utility through better calibrated search effort decisions. This heterogeneity may reflect the fact that some job seekers are unable to credibly signal their skills to employers while others have credible signals (Abebe et al., 2021a). The population thus consists of four types with none, either, or both motives.

True relative skill is denoted by $s_i \in [0, 1]$ (interpretable as a percentile rank). Each job seeker holds a baseline belief $\hat{s}_i$ about s_i. The conceptual framework focuses on how these beliefs, together with the motive profile (α_i, ϕ_i), determine the demand for feedback and how receiving skill information affects job search effort.

We model this as a two-period problem. Period 1 describes how baseline beliefs $\hat{s}_{i,1}$ are formed endogenously through a combination of loss-aversion and reference dependence

[14] To ensure treatment receipt, the information was followed by a comprehension check in which participants were asked to repeat the feedback. Enumerators re-explained the information until participants could state it correctly, ensuring near-universal effective treatment receipt.

(see Appendix C.2 for details). In particular, job seekers with an ego motive strategically ignore or forget unfavorable information to preserve ego utility, which leads to, on average, overconfidence in baseline beliefs. This matches the fact that, at baseline, 68% of job seekers are overconfident.

Period 2 is the object of interest for search behavior. At the beginning of period 2, job seekers start from a baseline belief $\hat{s}_i$about their true skill level s_i. Individuals might receive unbiased information about their skills and update their beliefs. If the gain from updating exceeds the cost of forgetting, their belief $\hat{s}_{i,2}$ equals the true relative skill s_i; otherwise $\hat{s}_{i,2} = \hat{s}_i$. If individuals do not receive new information, $\hat{s}_{i,2} = \hat{s}_i$ by default. They then choose search effort based on their beliefs, which their search effort may differ from the optimal search effort choice if they belief does not equal their skill level.

We conceptualize the utility of a job seeker in Period-2 as follows:

$$U_{2i} = e_i + \phi_i s_i e_i - \frac{\gamma}{2} e_i^2 + \alpha_i \mu(\hat{s}_{i,2} - \hat{s}_i) - \delta I_{forget,i} \tag{1}$$

Search effort is denoted by e_i and has quadratically increasing costs with coefficient $\gamma > 0$. Returns to search effort consist of two parts: skill-independent returns e_i, normalized to unity, and skill-dependent returns governed by the marginal return to search effort. When $\phi_i = 0$, returns are independent of skill level, synonymous with no instrumental motive for seeking feedback. The functional form implicitly assumes that search effort has constant marginal returns and labor market success increases in search effort, conditional on an individual's skill level, in line with recent evidence from Pakistani job seekers (e.g., Vyborny ⓡ al., 2025).

The term $\mu(\hat{s}_{i,2} - \hat{s}_i)$ describes how updating one's beliefs affects utility, subject to the presence of the ego motive and loss aversion in μ. We assume $\mu(x) = x$ for $x \geq 0$ and $\mu(x) = -\infty$ for $x < 0$. Indicator $I_{\text{forget,i}}$ equals one if the individual chooses to forget newly acquired information. The cost of forgetting is $\delta > 0$.[15]

Optimal search effort Optimal search effort depends on the cost of searching, skill level, and the return to skill, ϕ_i (i.e., the instrumental motive):

$$e_i^*(s_i) = \frac{1 + \phi_i s_i}{\gamma}. \tag{2}$$

[15]We model forgetting as a binary, costly choice. After observing the period-2 signal, individuals either incorporate it (updating to $\hat{s}_{i,2}$) or discard it and retain their prior belief ($\hat{s}_{i,2} = \hat{s}_i$). By setting $\mu(x) = -\infty$ for $x < 0$ we assume that loss aversion is sufficiently strong such that it is optimal for job seekers to forget all negative information. This assumption is mainly for analytical convenience. An alternative assumption that loss aversion is sufficiently strong that at least some negative news is forgotten would yield qualitatively similar results. Appendix C.2 lays out the belief updating process in detail.

For individuals without instrumental motives ($\phi_i = 0$), optimal effort depends only on the baseline return (normalized to 1) and decreases in γ. For individuals with instrumental motives ($\phi_i = \phi$), optimal effort increases in the skill level and depends on both the baseline return to and the cost of effort γ.

Choices of individuals, however, will be governed by their beliefs about their skills $\hat{s}_{i,2}$. If individuals know their true skill level, they choose the optimal effort level. However, if they are uncertain about their skill level, their effort choices will be ex-post suboptimal. This effect is amplified if individuals' expected skill level deviates from the Bayesian benchmark. This pattern implies that information about individuals skills has value for job seekers with instrumental motives.

Willingness to Pay for skill information First, we are interested in understanding which individuals are interested in acquiring information about their relative skills, when they are offered an additional unbiased signal about s_i in period 2. We define the willingness to pay for information as the expected utility gain from learning about one's true skill level, taking their corresponding effort choices as given:

$$WTP_i(\hat{s}_i) = \mathbb{E}\left[U_{2i}(e^*(\hat{s}_{i,2}), \hat{s}_{i,2}) \,|\hat{s}_i\right] - \mathbb{E}[U_{2i}(e^*(\hat{s}_i), \hat{s}_i)]\,. \tag{3}$$

In (3), $\hat{s}_{i,2}$ is either equal to the true skill level s_i or the baseline belief $\hat{s}_i$, depending on whether job seekers forget the information ($I_{\text{forget},i} = 1$) or not ($I_{\text{forget},i} = 0$). This willingness to pay is determined by the presence and interplay of the ego and instrumental motives and by individuals' baseline belief $\hat{s}_i$.

Individuals with neither motive (Type 1: $\alpha_i = 0$, $\phi_i = 0$) have zero WTP, as optimal search effort and utility do not depend on relative skills. Individuals with only an instrumental motive (Type 2: $\alpha_i = 0$, $\phi_i = \phi$) have strictly positive WTP_i^{instr}, since effort depends on skills and information is valuable under uncertainty about s_i.

For individuals with an ego motive (Type 3: $\alpha_i = \alpha$, $\phi_i = 0$), the willingness to pay depends on their baseline belief $\hat{s}_i$. job seekers with high expected skills anticipate that additional information is more likely to be negative and, hence, forgotten. If the cost of forgetting is sufficiently high, this leads them to avoid the information and have a negative WTP. Job seekers with relatively low level of skill beliefs may value the chance of receiving good news more and thus value the opportunity to receive information about their skills.[16]

For individuals holding both motives (Type 4: $\alpha_i = \alpha$, $\phi_i = \phi$), the willingness to pay is determined by two opposing forces. The instrumental motive makes information valuable

[16]This holds for intermediate ranges of $\frac{\alpha}{\delta}$. For very small values of $\frac{\alpha}{\delta}$ the cost of forgetting dominates and all job seekers with $\alpha_i = \alpha$ will have a negative WTP for information.

because it removes misperceptions about skills and thus better calibrates effort choices to actual skill levels. The ego motive, however, can either raise or lower WTP depending on baseline belief levels.

Under the additional assumption that the instrumental gains from better-calibrated effort are sufficiently large relative to the forgetting cost, WTP among these individuals remains positive. This assumption of strong instrumental motives is plausible given that only 15% of job seekers have a negative WTP for information about skills.

Overall, the different motives imply that we can differentiate job seekers along two observable dimensions: they differ both in baseline confidence (under- vs. overconfident) and in their valuation of information (positive vs. negative WTP). Ego motives can generate a negative WTP among the overconfident, whereas instrumental motives and ego-motives can generate a positive WTP.

The effect of information on search effort In our experiment, we provide job seekers with information about their true skills, independent of their initial beliefs and their willingness to pay for such information. We then study how correcting initial misperceptions affects search effort. Upon receiving unbiased information about true skill s_i, job seekers adjust their effort depending on their baseline beliefs and underlying motives, in particular on whether they hold the instrumental motive. This heterogeneity follows directly from comparing optimal effort with and without incorporating the information into the beliefs.

$$TE_i = e^*(\hat{s}_{i,2}) - e^*(\hat{s}_i) = \frac{\phi_i(\hat{s}_{i,2} - \hat{s}_i)}{\gamma}. \tag{4}$$

Equation 4 implies that job seekers without instrumental motives ($\phi_i = 0$) do not respond to information, whereas those with instrumental motives react if they update their beliefs.

3.2 Testable Predictions of effort-treatment heterogeneity by baseline confidence and WTP

Our conceptual framework has clear predictions for average and heterogeneous treatment effects of providing information about skills. While we cannot observe the four motive types directly in the data, we do observe two outcome-relevant dimensions that provide a link to the motives: (i) baseline confidence (under- vs. overconfidence, measured as the difference between baseline beliefs and assessed skill decile) and (ii) willingness to

pay (WTP).[17] Based on these two dimensions, we can derive testable predictions for effort responses.

Average treatment effect. Our conceptual framework implies that the effect of providing skill information to the population of job seekers increase average search effort (Appendix Proposition 2). This is because job seeker Types 1–3 exhibiting zero average effects and Type 4, on average, showing positive effects.

Heterogeneity by baseline confidence. Equation 4 yields straightforward predictions about how treatment effects on search effort differ by baseline confidence (Appendix Proposition 4). Underconfident individuals with $s_i > \hat{s}_i)$, on average, increase their search effort. Overconfident individuals with $s_i < \hat{s}_i)$, on average, decrease their search effort. This is driven by the fact that, for job seekers with instrumental motives, the returns to search effort increase in job seekers' skills levels. Moreover, the absolute effect size is larger among underconfident individuals as overconfident individuals with ego-motives will choose to forget the signal.

Heterogeneity by WTP. Under reasonable parameter restrictions where instrumental gains dominate forgetting costs, job seekers with $WTP_i \leq 0$ are predicted to not respond to skill information. This is because this group does not include job seekers with instrumental motives whose effort decision differs with skills. In contrast, job seekers with $WTP_i > 0$ are more likely to have instrumental motives and therefore react to the treatment. Moreover, the average treatment effect among job seekers with $WTP_i > 0$ is positive following the same logic as for average treatment effects (Appendix Proposition 5).

Heterogeneity by baseline confidence and WTP. Putting these two dimensions together yields four empirically observable groups (under/overconfidence $\times$ positive/non-positive WTP). Our key prediction is that treatment effects are positive and largest in absolute terms among underconfident job seekers with a positive WTP for skill information. Overconfident job seekers with $WTP_i > 0$ are predicted to decrease effort if they incorporate discouraging information, but they exhibit attenuated or zero reductions as ego motives induces forgetting for Type 4 job seekers. Job seekers with non-positive WTP have

[17] The mapping from observables to motive types is generally many-to-one. For example, underconfident job seekers with $WTP_i > 0$ may include both instrumental types (who increase effort) and ego-only types who seek "good news" but do not adjust effort when learning skill. Thus, the model's sharp individual-level predictions translate into average effects that can be attenuated by type mixing within each observable group.

a zero effort response regardless of baseline confidence, as they do not have instrumental motives. Appendix Proposition 6 formally characterizes this joint heterogeneity.

4 The effects of feedback provision

In this section, we present the results of our field experiment, organized around the model's predictions. We begin by examining effects on immediate and persistent belief updating, and information recall (Section 4.1). Second, we analyze effects on job search effort and success (Section 4.2). We test the model predictions empirically by estimating average and heterogeneous treatment effects of our experiment. We estimate the average effect of our feedback treatment using the following regression equation:

$$y_i = \alpha_0 + \alpha_1 T_i + \delta X_i + \rho_v + \varepsilon_i \tag{5}$$

The coefficient α_1 estimates the average treatment effect of receiving feedback on one's relative ability, denoted by T_i. We report effects on different types of outcomes y_i: (immediate and persistent) absolute biases in beliefs, job search effort, and job search success. We select the baseline control variables X_i using the post-double selection method proposed by Belloni et al. (2014).[18]

By default, we include the deciles of relative ability (as measured by the Raven's score) and fixed effects on the level of randomization strata ρ_v, defined by the week of data collection, overconfident baseline beliefs, and WTP for feedback.[19]

To examine how initially overconfident or underconfident job seekers respond differently to feedback, we estimate the following equation.

$$y_i = \beta_0 + \beta_1 \left(T_i \times I_{underconfident}\right) + \beta_2 \left(T_i \times I_{overconfident}\right) + \delta X_i + \tau_v + \varepsilon_i \tag{6}$$

$I_{overconfident}$ denotes a binary indicator of overconfident baseline beliefs. The indicator takes a value of one for overconfident job seekers who overestimate their true position by

[18] Belloni et al. (2014) applies LASSO regression in two stages: first, to select controls that predict the outcome, and second, to select controls that predict the treatment. The final regression includes the union of these selected controls. We select covariates from a comprehensive set of controls, including demographic variables (age, gender, post-secondary education), personality traits (Big 5, grit, Stroop score, Reading the Mind in The Eyes test, and competitiveness), previous feedback reception, baseline search behavior (hours, applications, and reservation wage), and baseline labor market beliefs (wage expectations, beliefs about the likelihood of being hired for an applied vacancy, and beliefs about the returns to job search).

[19] We pre-specified including strata fixed effects and LASSO-selected covariates. As a robustness check, we conduct a regression excluding control variables but retaining strata fixed effects for identification. These analyses confirm our results in sign, magnitude, and statistical significance. The results are presented in Appendix Tables A.5 to A.8.

at least one decile rank and takes a value of zero for job seekers with accurate beliefs or who underestimate their rank. The indicator $I_{underconfident}$ measures the inverse, taking the value of one for job seekers who underestimate their rank, and zero for overconfident job seekers. To rely on a binary measure for simplicity, we additionally code job seekers with accurate beliefs as underconfident.[20] Remaining terms and fixed effects are defined as in equation 5.

Finally, to examine how job seekers with positive WTP for feedback react differently to feedback compared to those with zero or negative WTP, we estimate the following equation:

$$y_i = \gamma_0 + \gamma_1 \left(T_i \times I_{WTP>0}\right) + \gamma_2 \left(T_i \times I_{WTP\leq 0}\right) + \delta X_i + \phi_v + \varepsilon_i \tag{7}$$

$I_{WTP>0}$ denotes a binary indicator of having a positive WTP for feedback. The indicator $I_{WTP\leq 0}$ again measures the inverse, taking the value of one for individuals who have a non-positive WTP for feedback. Remaining terms are defined as in equation 5.

4.1 Belief updating and recall

Belief updating We first examine how individuals update their beliefs about their relative ability in response to the treatment. Specifically, we analyze the effects of feedback on the absolute bias in beliefs during the treatment and endline surveys. We examine average effects (Equation 5), as well as heterogeneity by overconfidence (Equation 6), and WTP (Equation 7).

Columns 1 and 2 of Table 2 show that individuals who receive feedback about their relative ability update their beliefs, making them more consistent with the provided information compared to the control group. Immediately after receiving the information during the treatment survey, treated job seekers reduce their absolute deviation of beliefs from the assessment result by 0.51 deciles ($se = 0.07$, Column 1), corresponding to a reduction of approximately 13% relative to the control group mean.[21]

The effect size becomes smaller in the endline survey (Column 2), about 6 weeks after

[20] Correct beliefs account for just 9% of the sample. Our results are robust to excluding individuals whose beliefs align with the assessment results (Appendix Tables A.9 to A.11).

[21] Similar to Zimmermann (2020), we observe conservative updating, with individuals not entirely aligning their beliefs with the information provided. This conservative updating can be explained by several factors. First, even under perfect Bayesian updating, beliefs would only shift in the signal's direction, with the magnitude depending on the precision of prior beliefs and the signal. In addition, we elicit post-treatment beliefs relative to current job seekers, whereas feedback is provided relative to past job seekers. Despite the strong correlation between the two (Appendix Figure A.3), respondents may perceive treatment information as distinct.

Table 2: Beliefs and Feedback

	Absolute deviation of beliefs					
Timing:	Treat. (1)	Endline (2)	Treat. (3)	Endline (4)	Treat. (5)	Endline (6)
Feedback	-0.51***	-0.29***				
	(0.07)	(0.07)				
Underconfident × Feedback			-0.51***	-0.24**		
			(0.12)	(0.12)		
Overconfident × Feedback			-0.50***	-0.31***		
			(0.09)	(0.09)		
WTP >0 × Feedback					-0.48***	-0.20**
					(0.09)	(0.09)
WTP ≤ 0 × Feedback					-0.57***	-0.51***
					(0.14)	(0.13)
Control Mean	3.91	4.22				
— Underconfident			2.25	2.27		
— Overconfident			4.69	5.15		
— WTP>0					3.88	4.20
— WTP≤ 0					3.99	4.27
Δ effect			-0.017	0.071	0.085	0.307**
			(0.151)	(0.150)	(0.167)	(0.156)
Δ rel. effect			-0.122**	-0.045	0.018	0.071*
			(0.056)	(0.055)	(0.042)	(0.037)
N	2,537	2,297	2,537	2,297	2,537	2,297

Notes: **Table 2 shows treatment effects on the absolute deviation of belief deciles from the assessed skill level.** Columns 1, 3, and 5 show effects on beliefs elicited in the treatment survey after treatment administration. Columns 2, 4, and 6 show effects on the same measures at endline four to six weeks after treatment. Columns 1 and 2 show average treatment effects. Columns 3 and 4 show effect heterogeneity by baseline confidence. Columns 5 and 6 show effect heterogeneity by whether individuals report a positive WTP for feedback. Specifications include control variables selected using LASSO and stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

information provision, but remains significant at about 0.29 deciles or around 7% relative to the control group mean ($se = 0.07$). Thus, while the impact of receiving information about relative ability persists, the extent to which beliefs are adjusted in response to the information diminishes over time.[22]

We observe similar reductions in the absolute deviation in both treatment and endline survey for initially overconfident and underconfident individuals (Columns 3 and 4). For underconfident individuals, this leads to an upward revision of their perceived ability, whereas overconfident individuals adjust their perceived ability downward.

Although the absolute effects are similar, the relative effects differ significantly. At baseline, the belief deviation is smaller among underconfident individuals, as overconfident individuals tend to overestimate their ability more strongly than underconfident individuals underestimate theirs. Consequently, the relative treatment effect is about twice as large for the initially underconfident individuals compared to initially overconfident individuals. This difference in relative treatment effects is statistically significant ($\Delta = -12.2\%$, $se = 6\%$). However, by the endline survey, this difference decreases to a statistically insignificant -4.5% ($se = 6\%$).[23] Appendix Figure A.4 visualizes the differential response of overconfident and underconfident individuals to the treatment non-parametrically.

With respect to WTP, we observe that feedback provision led to a correction of belief deviations for both WTP groups (Columns 5 and 6). Immediately after treatment, individuals with positive and negative WTP updated their beliefs to a similar extent, both in absolute terms ($\Delta = 0.085$, $se = 0.167$) and relative terms ($\Delta = 1.8\%$, $se = 4.2\%$). However, by the endline survey, we find a significantly stronger adjustment among individuals with a negative WTP, though the difference is relatively small in relative terms ($\Delta = 7.1\%$, $se = 3.7\%$).When comparing relative belief updating by WTP among the overconfident only, the difference is even smaller and insignificant ($\Delta = 4.9\%$, $se = 4.1\%$).[24]

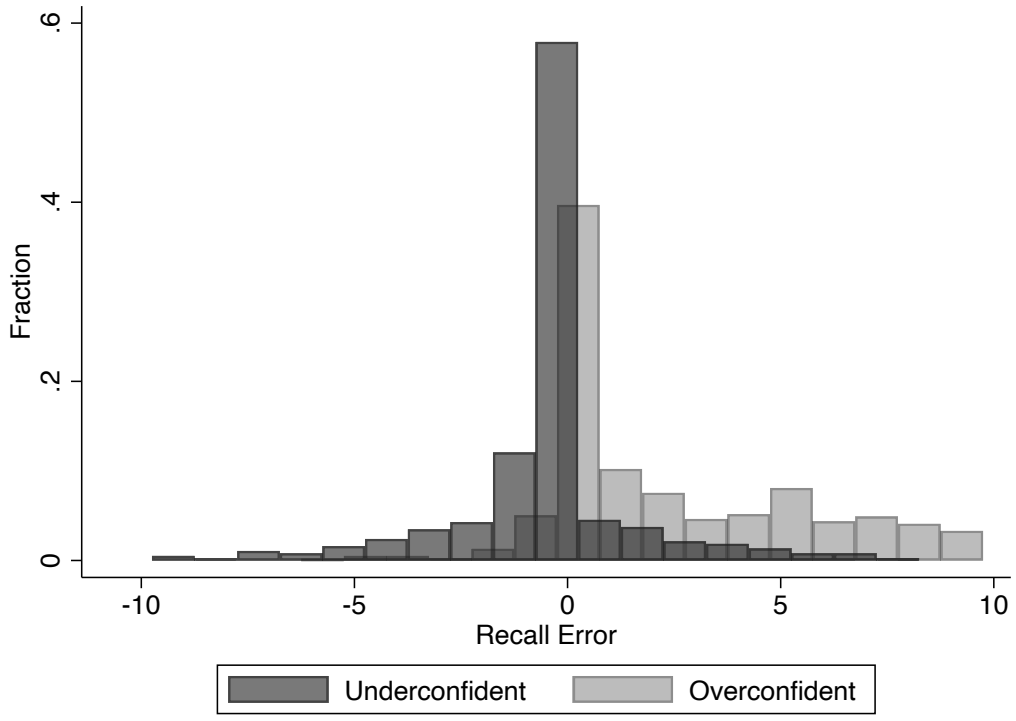
Recall of information We further investigate to what extent potentially selective recall can account for the heterogeneous and diminishing effects of feedback on belief updating. Individuals may simply forget the information over time. However, this forgetting may or

[22]We cannot rule out that persistent effects are confounded by differential search patterns and labor market experiences among the treated and untreated, as described in Section 4.2.

[23]In a robustness check, we exclude individuals whose prior beliefs perfectly align with the provided information, and thus cannot further reduce their belief deviation. We find a more pronounced difference of -14% ($se = 7\%$) (Appendix Table A.9). However, we still do not observe discernible differences at the endline.

[24]Note that endline belief updating is a function of selective processing of the experimental information and of information that is acquired endogenously through changes in search behavior. For example, we observe that job seekers with positive WTP search more, which may lead to them acquiring additional information that reduces the informativeness of the skill signal we provide.

Figure 3: Incentivized Recall by confidence



Notes: **Figure 3 displays the deviation of recalled treatment information from the provided treatment information in decile ranks.** We distinguish individuals who underestimated or overestimated the information at baseline.

may not be selective, thereby systematically serving the formation of beliefs.

To examine such heterogeneity, we obtained incentivized recall measures of the treatment information during the follow-up survey for the treatment group. Figure 3 shows the distribution of recall error for overconfident and underconfident individuals in the treatment group. While a substantial number of participants in both groups correctly recall the information, underconfident individuals demonstrate higher recall accuracy. Specifically, 58% of underconfident individuals accurately remember the provided information, compared to only 40% of initially overconfident individuals. This difference is statistically significant (Appendix Table A.6), even when controlling for vacancy fixed effects.

Discussion Taken together, we observe strong evidence that individuals update their beliefs about their relative ability in response to our intervention. This effect is relatively stronger for underconfident individuals. These patterns align with the selective forgetting mechanism formalized in our theoretical framework. Job seekers with ego motives (Types 3 and 4) selectively forget negative signals, generating asymmetric belief updating in re-

sponse to treatment. The stronger updating among underconfident job seekers—whose belief deviations decrease by 18% immediately after treatment—compared to overconfident job seekers—whose deviations decrease by only 4% at endline—is consistent with this mechanism. Underconfident individuals receive encouraging information which they retain, regardless of whether they hold an ego motive. Overconfident individuals receive discouraging information and may forget if they hold the ego motive.

With this pattern, we provide field evidence for a 'good news, bad news' effect driven by the selective recall of provided information, complementing earlier findings from laboratory experiments: individuals who receive positive information about themselves are more likely to persistently incorporate this information into their beliefs (Eil and Rao, 2011). Selective recall has been demonstrated as a mechanism behind asymmetric updating by Zimmermann (2020) in a laboratory setting: the effects of negative feedback, unlike positive feedback, are substantially mitigated over time, a discrepancy explained by significantly lower precision in recalling negative feedback. Similarly, recent findings by Huffman et al. (2022) show that managers have asymmetric memories regarding past performance.

4.2 Job search behavior and success

We now examine whether information provision affects job search behavior and success. Our theoretical framework implies, beyond a positive average treatment effect on job search effort, differences in unobservable motives revealed through WTP and initial overconfidence, motivating the analysis of heterogeneous effects along these dimensions.

Search effort We start by analyzing the effects of information provision on job search effort. For this purpose, we construct a job search effort index following Anderson (2008), which comprises four components: whether the respondent searched for a job, the number of days spent searching, job search expenditures (all elicited for the last seven days), and the number of job applications submitted since the treatment survey. Columns 1 to 3 of Table 3 display the results. Treated individuals experience a 0.08 standard deviation increase in their effort index ($se = 0.04$).[25]

This positive effect is predominantly driven by underconfident individuals, who exhibit

[25]With these effects on search effort we differ from related findings by Kiss ⓡ al. (2023) who find effects of skill information on horizontal targeting but not search effort. The difference between our findings may be due to differences in dimensionality: while Kiss ⓡ al. (2023) simultaneously provide information about several skill dimensions, we focus on one single skill dimension of cognitive ability, which makes the overall skill level more salient and does not necessarily give rise to considerations of comparative skill advantages.

Table 3: Job Search Behavior and Success

	Search effort index			Search success index		
	ATE	Conf. het.	WTP het.	ATE	Conf. het.	WTP het.
	(1)	(2)	(3)	(4)	(5)	(6)
Feedback	0.08*			-0.02		
	(0.04)			(0.04)		
Underconfident × Feedback		0.20***			0.09	
		(0.08)			(0.07)	
Overconfident × Feedback		0.02			-0.07	
		(0.05)			(0.05)	
WTP >0 × Feedback			0.11**			0.00
			(0.05)			(0.05)
WTP ≤ 0 × Feedback			0.01			-0.06
			(0.08)			(0.08)
Δ effect		0.18**	0.10		0.16*	0.06
		(0.09)	(0.09)		(0.09)	(0.09)
Mean outcome	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
N	2,297	2,297	2,297	2,297	2,297	2,297

Notes: **Table 3 displays treatment effects on search behavior and outcomes at endline.** Columns 1 to 3 show treatment effects on an Anderson (2008) search effort index of four components: any search in the last 7 days (dummy), number of days searched in the last 7 days, expenditures on job search in the last 7 days, and the number of job applications submitted since the treatment survey. Columns 4 to 6 show effects on an Anderson (2008) labor market success index of four components: number of job offers since treatment survey, an indicator for working in the last 7 days, hours worked in the last 7 days, and earnings in the last 7 days. Columns 1 and 4 display average treatment effects. Columns 2 and 5 display effects by prior beliefs. Columns 3 and 6 display effects by whether individuals report a positive WTP for feedback. Specifications include control variables selected using LASSO and stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

a significant increase of 0.20 standard deviations ($se = 0.08$) in search effort (Column 2). Overconfident individuals display a small and statistically insignificant change in their search effort, with a point estimate of 0.02 standard deviations ($se = 0.05$). The difference in effects between the two groups is statistically significant ($\Delta = 0.18$, $se = 0.09$). These results suggest that our intervention has the potential to benefit initially underconfident individuals without demotivating initially overconfident ones. In addition, the pattern in effects on search effort is consistent with the stronger relative effects observed in the reduction of biased beliefs for initially underconfident individuals.

Column 3 shows heterogeneity by WTP for feedback. We find a positive effect for job seekers with a positive WTP ($\gamma_1 = 0.11sd$, $se = 0.05$), while there is no effect on those with a non-positive WTP ($\gamma_2 = 0.01sd$, $se = 0.08$). The difference between the two groups is not significant ($\Delta = 0.10$ standard deviations, $se = 0.09$), but the magnitude is sizable. Different from the heterogeneity by overconfidence, this pattern does not reflect the respective patterns of belief updating (Column 5, Table 2). We will revisit this discrepancy in Section 5, where we examine how WTP interacts with initial levels of overconfidence to create these patterns.[26]

Labor market success To examine the extent to which changes in search effort translate into increased job search success, we construct a job search success index following Anderson (2008). This index includes the number of job offers (since the treatment survey), a binary indicator for employment status, and earnings (winsorized at the 99^{th} percentile) and hours worked (all measured over the last seven days).

Qualitatively, we find similar patterns in job search success as we found for job search effort, yet these remain insignificant. We observe a positive effect on job search success for underconfident individuals, which remains statistically insignificant ($\beta_1 = 0.09$, $se = 0.07$), but substantially larger than the impact on overconfident job seekers ($\beta_2 = -0.07$, $se = 0.05$). The difference of 0.16 standard deviation is statistically significant at the 10% level ($se = 0.09$).

For heterogeneity by WTP, we qualitatively observe a similar difference as for job search, with a zero effect for individuals with a positive WTP and a negative effect on job search success for individuals with a negative WTP. However, point estimates and the

[26]Appendix Table A.12 presents the effects on each component of the search effort index. We find that the positive effects on the search index are not driven by increased monetary expenses but rather by more time spent and more job applications submitted. In particular, our results show that the intervention, on average, increased the number of applications by 0.61 ($se = 0.27$), with increases of 1.31 ($se = 0.43$) for underconfident individuals and 0.64 ($se = 0.35$) for job seekers with positive WTP, respectively. We also observe an increase in the number of days spent searching and, specifically for the underconfident group, a 5 percentage point increase in the fraction of individuals engaged in job searching.

difference of 0.06 standard deviations ($se = 0.09$) remain insignificant.[27]

Discussion The observed patterns strongly align with our theoretical predictions. The positive average treatment effect on job search effort aligns with the framework's prediction that asymmetric responses among job seekers with both ego and instrumental motives generate positive population-level effects. The concentration of effects among initially underconfident individuals confirms the asymmetric response predicted by the framework: underconfident job seekers receive encouraging feedback, update their beliefs substantially, and increase search effort. In contrast, overconfident job seekers receive discouraging information and do not measurably change their effort levels. This is consistent with the small negative effect predict caused selective forgetting our framework predicts. Similar differential responses to encouraging versus discouraging news have been documented in various field settings (e.g., Karlsson et al., 2009, Sweeny et al., 2010, Oster et al., 2013), though not specifically for labor market behavior. The effects on job search success exhibit a qualitatively similar pattern though only the difference between overconfident and underconfident job seekers is significant. This could be due to the limited time (approximately 3 months) that elapsed between treatment and endline survey, which may be insufficient for effort adjustments to translate fully into employment outcomes.

The observed heterogeneity by WTP also supports the model's predictions: we observe significantly stronger effects for individuals with positive WTP, consistent with positive WTP revealing instrumental motives. However, the effect size among those with positive WTP is modest relative to the underconfidence effect (0.11sd vs 0.20sd), suggesting heterogeneity within the positive WTP group. In theoretical terms, the smaller effect size may reflect that this group also contains overconfident job seekers with only instrumental motives who pull down the positive average effect. In contrast, job seekers with the combination of positive WTP and initial underconfidence all respond weakly positively, leading to larger predicted effects. We examine this prediction in Section 5.

Further heterogeneity We find limited evidence of further heterogeneity in treatment effects on search effort or success. Appendix Table A.14 shows that the treatment effects do not differ significantly by sex, age, or education level. None of the observed differences

[27]Appendix Table A.13 presents results on each component of the success indicator. The positive effects for underconfident individuals are primarily driven by an increase in earnings. Underconfident individuals experience an increase in earnings of 127 Birr ($se = 72$), which is significantly higher compared to overconfident individuals ($\Delta = 185$, $se = 86$). Furthermore, the treatment impact on earnings differs also between individuals with positive and non-positive WTP, with a difference of 139 Birr ($se = 82$) in earnings. The effects on other components are smaller and not statistically significant, though the differences between groups are generally positive and sizable relative to the control mean.

are statistically significant, most are small in magnitude, and the signs are inconsistent across outcomes. Although younger individuals increase their search effort by 0.11 standard deviations ($se = 0.05$), suggesting that the information may be more beneficial for less experienced individuals, this increase does not translate into improved labor market success.

5 Treatment effects by demand for feedback and confidence

Having demonstrated that both initial confidence and WTP separately predict treatment effects, we now examine how these two dimensions interact in shaping individual responses to information.

Our theoretical framework suggests that confidence and WTP are jointly predictive of treatment effects. A positive WTP ensures a high prevalence of types with instrumental motives, while underconfidence rules out selective forgetting and harmonizes the direction of treatment effects. Job seekers with positive WTP who are overconfident forget the information if they have ego motives, which attenuates the treatment effect in this group. Finally, job seekers with negative WTP do not hold instrumental motives and thus do not adjust their search effort, regardless of their confidence level. Appendix Table A.15 describes the prevalence of each group. Almost a quarter of the sample (23%) is underconfident with positive WTP. The largest group (49%) is overconfident with positive WTP, reflecting the sample's high baseline overconfidence and overall positive demand for feedback. 19% are overconfident with non-positive WTP and only 10% are underconfident with non-positive WTP.

Empirical specification We estimate separate treatment effects according to a combined version of equations 6 and 7, further distinguishing both overconfident and underconfident individuals by their WTP:

$$\begin{aligned} y_i = \varphi_1 \left(\mathbf{T_i} \times I^{WTP>0}_{overconfident}\right) + \varphi_2 \left(\mathbf{T_i} \times I^{WTP>0}_{underconfident}\right) + \varphi_3 \left(\mathbf{T_i} \times I^{WTP<=0}_{overconfident}\right) \\ + \varphi_4 \left(\mathbf{T_i} \times I^{WTP<=0}_{underconfident}\right) + \delta\, X_i + \gamma I + \rho_v + \varepsilon_i \end{aligned} \tag{8}$$

The coefficients φ represent estimates of the effects of the treatment in the respective subgroups.[28] Although not prespecified, this analysis naturally extends our prespecified

[28] As demonstrated in Appendix Table A.3, there is only a weak positive correlation between overcon-

heterogeneity analysis along both WTP and initial confidence levels in line with theoretical predictions.

5.1 Treatment effects on job search effort

We start with directly presenting treatment effects on search effort and success, delegating results on belief updating as a potential mechanism to the discussion section. Heterogeneous effects by both initial overconfidence and willingness to pay reveal that the impact of the treatment on search effort is exclusively driven by initially underconfident individuals who show a positive willingness to pay for feedback (Column 1, Table 4). Individuals exhibit a 0.23 standard deviation increase in search effort ($se = 0.09$) in response to the information, while treatment effect estimates in the other three groups remain small (ranging from -0.06 to 0.04 standard deviations) and statistically insignificant. The treatment effect for underconfident individuals with positive WTP further exceeds the pooled treatment effect for the other three groups by 0.20sd ($se = 0.10$). This pattern also holds for nonbinary measures of confidence: Appendix Figure A.5 shows that the treatment effect increases in the degree of underconfidence of the individuals. However, there is no relationship between the baseline bias of beliefs and the size of the search effort treatment effect among the overconfident. Underconfident individuals with a high WTP also show the strongest effects in most components of the effort index (Appendix Table A.16).

Discussion The observed pattern — effects on effort concentrated among underconfident job seekers with positive WTP — strongly supports the predictions of our theoretical framework. The absence of detectable effects among overconfident individuals with positive WTP suggests that this group largely includes overconfident Type 4 job seekers who selectively forget discouraging information, maintaining effort unchanged or Type 3 job seekers who lack instrumental motives entirely. The null effect confirms that selective forgetting and the absence of instrumental motives may prevent behavioral responses even when information is initially demanded. Similarly, both groups with non-positive WTP exhibit null effects, consistent with these groups lacking instrumental motives.

fidence and WTP for feedback. That means that our subgroup analysis is reasonably powered, with the possible exception of the underconfident, non-positive WTP group which only consists of 224 individuals. Hence, we interpret the results for this group with caution.

Table 4: Main Treatment Effects by WTP and Confidence

	Search effort index	Success index
	(1)	(2)
UC & pos WTP	0.23**	0.17**
	(0.09)	(0.08)
UC & non-pos WTP	-0.06	-0.16
	(0.14)	(0.14)
OC & pos WTP	0.04	-0.03
	(0.06)	(0.06)
OC & non-pos WTP	0.03	-0.08
	(0.09)	(0.10)
UC & pos WTP - Other	0.20**	0.23**
	(0.10)	(0.10)
N	2,297	2,297

Notes: **Table 4 shows that positive treatment effects on search effort and success are driven by underconfident individuals with positive WTP for feedback.** Rows display treatment effect estimates obtained using equation 8. "UC & pos WTP - Other" displays the difference in treatment effect between underconfident individuals with positive WTP for feedback and the rest of the sample. Column 1 shows effects on a search effort index described in Table 3. Column 2 shows effects on a search success index also described in Table 3. Specifications include control variables selected using LASSO and stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

5.2 Treatment effects on job search success

The treatment effects on job search success (Column 2, Table 4) are also driven by initially underconfident individuals with a positive WTP, aligning with the effects on effort. We observe a positive treatment effect on search success of 0.17 standard deviations in this group ($se = 0.08$), whereas treatment effect estimates for the other groups are negative but insignificant throughout, ranging from -0.03 to -0.16 standard deviations. Consequently, the treatment effect for underconfident individuals with a positive WTP is 0.23 standard deviations higher than the combined treatment effect in the other groups ($se = 0.10$).

The analysis of the individual components of the search success index (Appendix Table A.17) reveals that these positive effects among underconfident individuals with a positive WTP are driven by both a 4 percentage point increase in offers and employment ($se = 0.03$ for both) and a substantial increase of 174 Birr in earnings ($se = 97$). The relative effect sizes for those measures are large, ranging from 20% of the control mean for employment to 57% for unconditional earnings. This earnings effect remains substantial at 31% of the control when conditioning on individuals who work, but becomes statistically insignificant

(497 Birr, $se = 402$, Column 2 of Appendix Table A.18). The magnitude of the point estimate is large and consistent with treated individuals moving to better-paid jobs rather than merely increasing employment at the extensive margin. Appendix Figure A.6 shows that this effect is driven by increases in the top quartile of the earnings distribution, but not by outliers.

The earnings effect seems to some extent be driven by an increase in the number of days worked, though imprecise estimates make this analysis more speculative. We observe an unconditional increase in the number of work days by 0.15 days (15% of the control mean, $se = 0.17$, Column 3 of Appendix Table A.17), and earnings per day worked increase by 39 Birr (10% of the control mean, $se = 118$, Column 3 of Appendix Table A.18).

While the earnings effects are large, they are only slightly above those found in Carranza et al. (2022) and Kiss ⓡ al. (2023), who report increases in earnings of 16 ihs-points and 26% of the control mean, respectively.

We also find suggestive evidence that overconfident individuals with a non-positive WTP exhibit negative effects on earnings, both conditional and unconditional on working. Unconditionally, they earn 147 Birr less ($se = 89$), and conditionally on working, the negative effect increases to 591 Birr ($se = 355$). We caution against overinterpreting these results due to small sample sizes and the lack of significant index effects; however, this pattern suggests that feedback on skills in principle may negatively impact certain individuals, particularly those with a non-positive WTP.

Search effort and earnings The findings reveal that for underconfident individuals with a positive WTP the search effort as well as earnings increase. The fact that earnings also increase can potentially be explained by two mechanisms. First, job seekers receive more job offers due to their increased job search effort, for example, they increase the number of applications sent. This increase in offers allows them to be more selective in the jobs that they accept. Second, they might target higher-paying jobs in line with their updated beliefs about their relative skill. To shed further light on this, we analyze the returns to applications and targeting of applications and find suggestive evidence in favor of the first but not the second explanation.

Column 1 of Appendix Table A.19 shows that, for underconfident individuals with positive WTP, the returns to each application remain relatively unchanged ($\alpha_1 = 0.003$; $se = 0.008$). However, we observe an increase in the fraction of individuals who reject a job offer by 2 percentage points ($se = 1.9$; Column 2).[29] This is a sizable increase of 53%

[29]This measure is imputed, as we do not directly observe the number of rejected job offers. Specifically, employed individuals are coded as having rejected an offer if they have received two or more job offers. In

relative to the control mean of 0.038, but it is not statistically significant. Yet, this provides suggestive evidence that underconfident individuals with positive WTP were more selective in deciding which jobs they accepted.

We find no evidence for the second explanation of jobs being differentially targeted. During the treatment survey, we asked individuals about the level of general intelligence required for the jobs that they plan to apply for on a five-point Likert scale. Column 7 of Appendix Table A.19 shows no effect on this targeting measure ($\alpha_1 = 0.001$sd; $se = 0.089$). We also find insignificant impacts that are small relative to the control mean on wage expectations ($\alpha_1 = -289.5$ Birr; $se = 432$; control mean 9223; Column 4) and reservation wages ($\alpha_1 = -118$ Birr; $se = 214$; control mean 5723; Column 8). Overall, these results suggest that the positive effect observed for underconfident individuals with a positive WTP is more likely due to receiving more job offers and subsequently rejecting some, rather than a result of differential targeting of jobs.[30]

Belief updating and targeting We further examine in how far the observed heterogeneity in treatment effects in search effort and success is associated to differential effects on on wage expectations or reservation wages across groups (Columns 4 and 8 of Appendix Table A.19) that could explain their increased job search effort and success, despite some evidence of a statistically significant effect on reservation wages for underconfident individuals with non-positive WTP. Together, these findings suggest that differences in how individuals update their wage beliefs are an unlikely explanation for the observed treatment effect heterogeneity.

5.3 Direct evidence on motives

The above results reveal that positive treatment effects are concentrated among initially underconfident individuals with positive WTP, while the three other groups exhibit insignificant effects. Our framework implies that a key driver of this heterogeneity is the share of job seekers who hold instrumental motives ($\phi_i = \phi$), as only they adjust their search effort to perceived skill levels (Equation 2). The share among overconfident job seekers with positive WTP is lower, as long as at least some job seekers with only ego motives have a positive WTP. Conversely, the share of individuals with instrumental motives

contrast, non-working individuals are coded as having rejected an offer if they have received at least one job offer.

[30] We also observe some changes in wage expectations and reservation wages and offer rejection for underconfident individuals with a weakly negative WTP, which do not translate into employment effects. However, we are careful in interpreting these results due to the small cell size ($N = 224$) and the imprecise nature of our results.

Table 5: Correlation between Skill Beliefs and Expected Return to Effort

	Expected returns to effort		
	Index (inversed) (1)	# apps per interview (2)	# apps per offer (3)
UC & pos WTP × *Pre-Beliefs*	0.04***	-2.98***	-2.10***
	(0.01)	(0.86)	(0.69)
UC & non-pos WTP × *Pre-Beliefs*	0.02	-0.92	-1.48
	(0.02)	(1.05)	(1.27)
OC & pos WTP × *Pre-Beliefs*	-0.00	0.59	-0.10
	(0.02)	(1.36)	(1.60)
OC & non-pos WTP × *Pre-Beliefs*	-0.01	1.76**	-1.17
	(0.01)	(0.72)	(1.73)
UC & pos WTP - Other	2,537	2,537	2,537

Notes: **Table 5 shows that, only for underconfident individuals with positive WTP, baseline beliefs about skills are positively correlated with expected returns to search effort.** Row display the regression coefficient in each group without additional control variables. Column 1 shows correlations with an index of expected returns to sending applications (higher values indicating higher returns to effort). Columns 2 and 3 show correlations with the two index components: number of applications required per interview invitation and per job offer. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

should be lower among individuals with negative or zero WTP, regardless of confidence level. More generally, the framework treats incentivized stated demand (WTP) and initial overconfidence as empirical proxies for the prevalence of unobservable motives.[31]

In this section, we provide evidence for the distribution of individuals' motives across the four groups. Specifically, we examine two observable correlates of instrumental motives: First, we study how perceived returns search effort and skill beliefs differ across groups. Second, we explore how self-stated instrumental and ego reasons for positive or negative willingness to pay differ across groups.

We examine survey patterns which are indicative for the presence of instrumental motives. First, we examine the extent to which baseline beliefs about relative ability in deciles — the belief dimension directly influenced by feedback — are correlated with indicators of expected returns to search effort. A positive association is indicative of the presence of instrumental motives in the population.[32]

The results in Table 5 show significant positive correlations between skill beliefs and

[31] A potential concern is that WTP may proxy for financial resources rather than information preferences. The existing correlates analysis (Appendix Table A.3) shows that WTP is not differentially predicted by proxies for financial resources, lending credence to a preference-based interpretation.

[32] In the context of our framework, this correlation is sufficient to show the presence of instrumental motives. However, we acknowledge that this correlation may be confounded by omitted variables that influence both skill beliefs and perceived returns to search effort. We unfortunately lack questions on the perceived role of skills in the job search process which would allow a more direct analysis.

Table 6: Stated Reasons for WTP

	Heterogeneity by WTP and confidence			
	WTP >0 $\times$ OC	WTP >0 $\times$ UC	WTP $<=0$ $\times$ OC	WTP $<=0$ $\times$ UC
	(1)	(2)	(3)	(4)
Informational value	-0.002	0.052**	-0.037*	-0.013
	(0.021)	(0.018)	(0.017)	(0.013)
Emotional value	0.015	-0.003	-0.039	0.027
	(0.043)	(0.036)	(0.034)	(0.026)
Observations	2297	2297	2297	2297

Notes: **Table 6 reports coefficients from linear probability models predicting whether respondents belong to one of four groups defined by confidence and WTP.** The explanatory variables denote whether informational or emotional reasons were cited as reasons for job seekers' stated WTP. Each column represents a separate regression with one group indicator as dependent variable. Coefficients show the percentage-point difference in citing each type of motive for underconfident versus overconfident job seekers within each WTP category. "Informational value" equals one if the respondent cited wanting to know which jobs to apply for or how many applications to send. "Emotional value" equals one if the respondent cited wanting to know how smart they are, whether they are better than expected, fear of learning they are less smart, or already knowing their ability level. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

expected returns to search index, a composite of the number of applications to secure an interview and to receive an offer, as well as an inverted index of both, only among underconfident individuals with a positive WTP for feedback. This result suggests a higher prevalence of the informational motive among job seekers with revealed positive WTP, and specifically among those with both positive WTP and initial underconfidence.

Second, we document differences in self-reported reasons for positive or negative WTP for feedback as elicited during the baseline assessment.[33] Table 6 shows that whether positive WTP for feedback is predicted by self-reported informational value differs by initial confidence. Citing informational motives does not predict a positive WTP per se, but it does significantly predict belonging to the group of underconfident job seekers holding positive WTP: job seekers wanting to know which jobs to apply for or how many applications to send. This pattern is consistent with the underconfident $\times$ positive WTP group consisting

[33]At baseline, respondents who indicated positive or negative WTP were asked to select all applicable reasons from a list. We code responses as citing "informational value" if respondents selected "want to know which jobs I can get" or "want to know how many jobs I should apply for." We code responses as citing "emotional value" if respondents selected "want to know how smart I am," "want to know whether I am better than I thought," "might learn that I am less smart," or "know already how smart I am." Respondents could select multiple reasons.

disproportionally job seekers who hold both ego and instrumental motives, while the overconfident $\times$ positive WTP group additionally includes substantial more job seekers who value information for ego reasons alone. In contrast, among individuals with non-positive WTP, informational motives negatively associate with overconfidence. Importantly, we observe no significant differences in emotional or ego-based reasons by confidence level within either WTP group, consistent with ego motives being similarly prevalent. These patterns provide direct evidence that instrumental motives are concentrated among underconfident individuals with positive WTP, validating one of the framework's key explanation for why treatment effects concentrate in this group.

Taken together, we find that underconfident individuals with positive WTP are substantially more likely than other groups to explicitly state instrumental reasons for their positive WTP and exhibit correlations between skill beliefs and expected search returns. This supports the model's implication that this particular group—which drives the positive treatment effects of information provision—predominantly consists of job seekers holding instrumental motives. Underconfident job seekers with positive WTP respond behaviorally to information because they both value skills as decision-relevant and receive encouraging information that they retain. In contrast, other groups either lack instrumental motives or selectively forget discouraging information, preventing belief updates from translating into behavioral change. This distinction aligns with recent theoretical work by Yang (2024), which formalizes heterogeneity in the incorporation of belief changes into subsequent actions.

6 Implications for cost efficiency and targeting of interventions

A unique feature of our setup is the elicitation of individual demand for feedback before it is given. Such a setup would, in principle, allow for targeted information provision only to those individuals who have a positive WTP for it. In the following, we demonstrate that such targeting may have implications for cost-effectiveness considerations. We also show that a targeted feedback provision would reduce, but not eliminate, the need for subsidies to scale the intervention to all job seekers with positive demand for feedback.

Overall, our current randomized implementation of the feedback intervention is not cost effective. The total average variable costs of 514.5 Birr per participant are not offset by the very small estimated average increase in weekly earnings of only 3 Birr. The total average intervention costs consist of average intervention costs of 428 Birr, of which 191

Birr accrue for screening and 237 Birr for feedback provision, primarily driven by rent and personnel costs.[34] These estimates are conservative, as the screening surveys also covered content unrelated to the intervention. Furthermore, we also include in the total average intervention costs the private transportation costs of job seekers (50 Birr for the round-trip bus fare) and their opportunity cost of time (36.5 Birr, based on half-day earnings from the control group).

However, incorporating the respondents' WTP allows us to focus on an alternative, policy-relevant estimate: by considering heterogeneous demand for feedback, the intervention could be offered exclusively to individuals with a positive WTP. We examine the cost-efficiency implications of such WTP-targeted interventions under two scenarios.

First, we examine a scenario in which all individuals with positive WTP receive feedback. Among these individuals, the average effect of treatment on weekly earnings is 44 Birr (equivalent to 189 Birr per month) (Appendix Table A.13), which corresponds to 37% of the total average cost of the intervention. Such targeting does not necessarily have to rely on an ex-ante measurement of WTP. Alternatively, it can be achieved through a self-selection mechanism, where only those individuals with a positive WTP actively seek out information. Self-selection can be easily facilitated if accessing feedback requires individuals to take an active step that also involves costs (such as paying for transportation to a screening center or covering a nominal fee for participation). These individual-level costs act as a natural screening mechanism, effectively inducing the selection of those who value feedback the most.

Second, we consider a scenario in which policymakers can specifically target underconfident individuals with a positive WTP, thus targeting the particular subgroup benefiting the most from the intervention. Such a mechanism requires active ex-ante screening with respect to overconfidence and WTP, that is all job seekers with a positive WTP would participate in the screening survey. In this case, the intervention would be most cost-effective: the average variable cost per 'fully' treated individual would be $(191+50+36.5)/0.316 + 237 = 1{,}115.17$ Birr (where 0.316 is the share of underconfident individuals among the population of individuals with positive WTP (Appendix Table A.15), as costs for feedback provision are only incurred for underconfident individuals). The impact on weekly earnings of 173 Birr (scaled to 692 Birr per month) makes up 62% of the one-off cost of the intervention (Appendix Table A.17).

Our results thus provide proof of concept that the intervention becomes more cost-

[34] We exclude the fixed costs of screening the reference population to obtain the skill distribution from this calculation. These fixed costs will be negligible relative to the cost of implementing the intervention at scale. Moreover, policymakers could use pre-existing data to avoid having to collect new benchmark data.

effective the more targeted it is, with limited need for additional screening. Once we take into account individuals' demand for information, our benefit-cost ratios align with estimates from similar interventions documented in the literature. Caria and Lessing (2019) report monthly earnings increases between 36% and 56% of the one-off cost, and Kiss ⓡ al. (2023) document a ratio of 61%.

In addition to enabling a more targeted analysis of cost effectiveness, the WTP measure also helps determine whether job seekers are willing to bear the intervention cost, a key factor in assessing the feasibility of private market provision. On average, job seekers with a positive WTP are willing to pay 40.92 Birr for the feedback provision. However, this amount covers only about 10% of the intervention's total average variable costs.

This gap suggests that, while individuals value the feedback, their willingness to pay falls short of the intervention's actual costs, which may explain why private market actors do not provide such services. This misalignment between individual valuations of the intervention and the cost of provision highlights the additional need for subsidies or publicly funded initiatives to address this market failure. However, while job seekers' willingness to pay is insufficient to cover the total provision cost, it almost covers the private cost of attending the screening center. Thus, the subsidies required to incentivize people to attend the screening survey would be moderate.

7 Conclusion

In this study, we document that returns to providing ability feedback are not uniform, but strongly depend on how individuals incorporate their beliefs in their decision making process. We develop a framework in which motives—seeking feedback either for instrumental or ego reasons—are revealed through initial overconfidence and demand for information. This framework motivates a field experiment among job seekers in Addis Ababa, Ethiopia, in which we provide feedback about relative cognitive ability after eliciting willingness to pay for the provided information.

We document that job seekers adjust their beliefs about relative ability towards competitors in response to the feedback provided. In line with theoretical predictions, feedback provision leads to significant but heterogeneous increases in job search effort. Underconfident job seekers and those with positive willingness to pay react more strongly to the provided information. Specifically, treatment effects are concentrated among initially underconfident individuals who actively demanded the provided information. For this subgroup, information provision leads to higher job search effort and increased job search success. We provide suggestive evidence that these heterogeneous treatment effects can

be explained by pre-existing differences in motives that are predictable from observable characteristics. Specifically, the presence of instrumental motives indicates that the provided information is decision-relevant only for a specific subpopulation. By highlighting this relationship, we contribute to a growing literature studying the relevance of beliefs for decision-making processes (Enke et al., 2024, Charles et al., 2024, Yang, 2024). Our results suggest that future work should more explicitly explore mental models underlying information demand (similar to Andre et al., 2022, for the case of inflation expectations and economic behavior).

Our results inform the practical design of feedback and information interventions from a policy perspective. Our findings suggest that targeting and personalizing interventions by taking into account individual demand may help to increase cost-effectiveness. In this regard, our findings help to explain a puzzle in the literature: if information interventions are highly cost-effective, why are they not offered by the private sector? We find that the job seekers' WTP for the intervention is insufficient to cover its cost. Future work could explore why job seekers' WTP is relatively low, for example, by considering whether the low perceived information relevance may be a target parameter on its own, similar to interventions informing about the effectiveness of a treatment to shift demand (Roth et al., 2024).

Finally, our results highlight the importance of accounting for individual information demand to avoid potential negative effects on those who prefer not to receive the information. Information provision has been shown to have the potential for severe unintended consequences (Ciancio et al., 2025). Switching the default from automatically providing information to offering it for voluntary take-up may effectively leverage cost-efficient and scalable interventions while minimizing these unintended negative consequences for individuals who do not actively seek the information.

Will the effects we observe persist if skill feedback targeted at underconfident individuals with positive WTP is scaled up? Our results suggest that improved labor market outcomes are driven by increased search effort. With constant labor demand and no unfilled vacancies, this could merely redistribute job offers without raising overall employment. However, greater search effort may improve match quality by expanding the applicant pool, consistent with the observed earnings gains for underconfident individuals with positive WTP. Additionally, Hensel et al. (2023) show that many firms in Addis Ababa receive few applications, leaving vacancies unfilled. In this context, increased search effort could yield positive aggregate effects by raising the number of successful matches and enhancing match quality.

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Appendix – For Online Publication

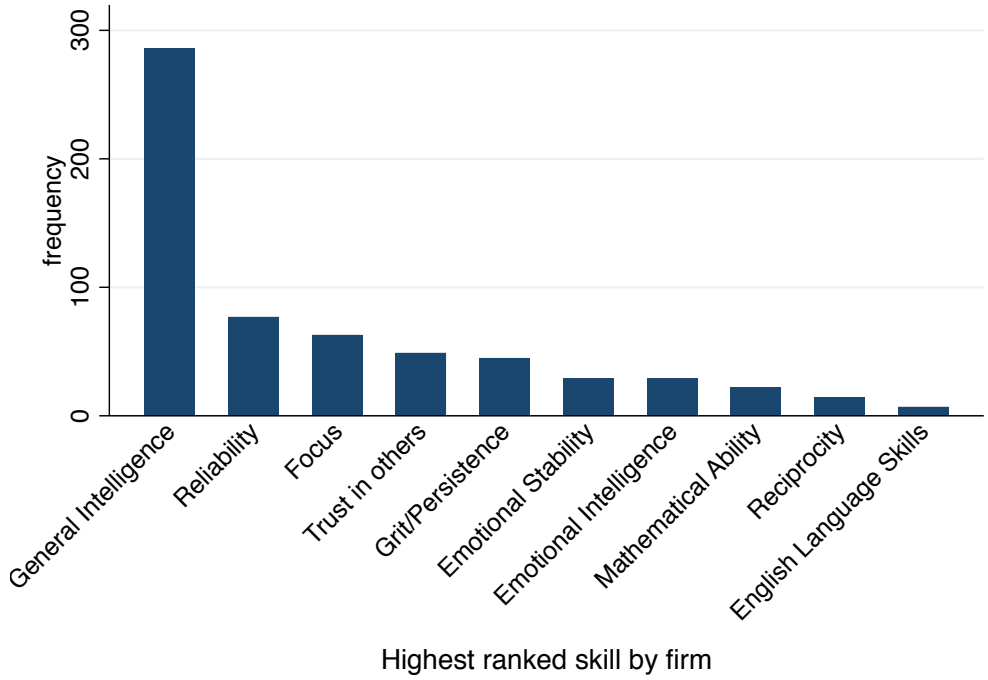
A Exhibits

This Appendix Section contains additional exhibits referred to in the main text. Section A.1 contains additional figures. Figure A.1 shows that firms in Addis Ababa value general intelligence as a skill. Figure A.2 illustrates a sample problem from Raven's Progressive Matrices. Figure A.3 shows that the choice reference group does not influence the rank measure very much. Figure A.5 shows how treatment effects among individuals with a positive WTP vary by confidence. Figure A.6 shows the distribution of endline earnings among underconfident individuals with a positive WTP.

Section A.2 contains additional tables mentioned in the main text. Table A.1 shows correlations of standardized Raven's scores with baseline labor market beliefs and outcomes. Table A.2 displays the correlates of overconfidence. Table A.3 displays the correlates of having a positive WTP for feedback. Table A.4 displays the treatment effects and correlates of attrition. Table A.5 shows treatment effects on belief updating without control variables. Table A.6 shows differences in recall rates by confidence. Table A.7 shows main treatment effects without control variables. Table A.8 shows main treatment effects for all four subgroups without control variables. Tables A.9 to A.11 show main treatment effects excluding individuals with initially aligned skill beliefs. Table A.12 shows the main effects on the search effort index components. Table A.13 shows the main effects on the search success index components. Table A.14 shows additional heterogeneity by gender, age, and education level. Table A.15 displays the number and share of individuals in each confidence-WTP bin. Table A.16 shows treatment effects on the search effort index components by WTP and confidence. Table A.17 shows treatment effects on the search success index components by WTP and confidence. Table A.18 shows treatment effects on the work quality conditional on working by WTP and confidence. Table A.19 shows treatment effects on additional outcomes exploring mechanisms by WTP and confidence. Table B.1 provides evidence on the validity of the WTP elicitation.

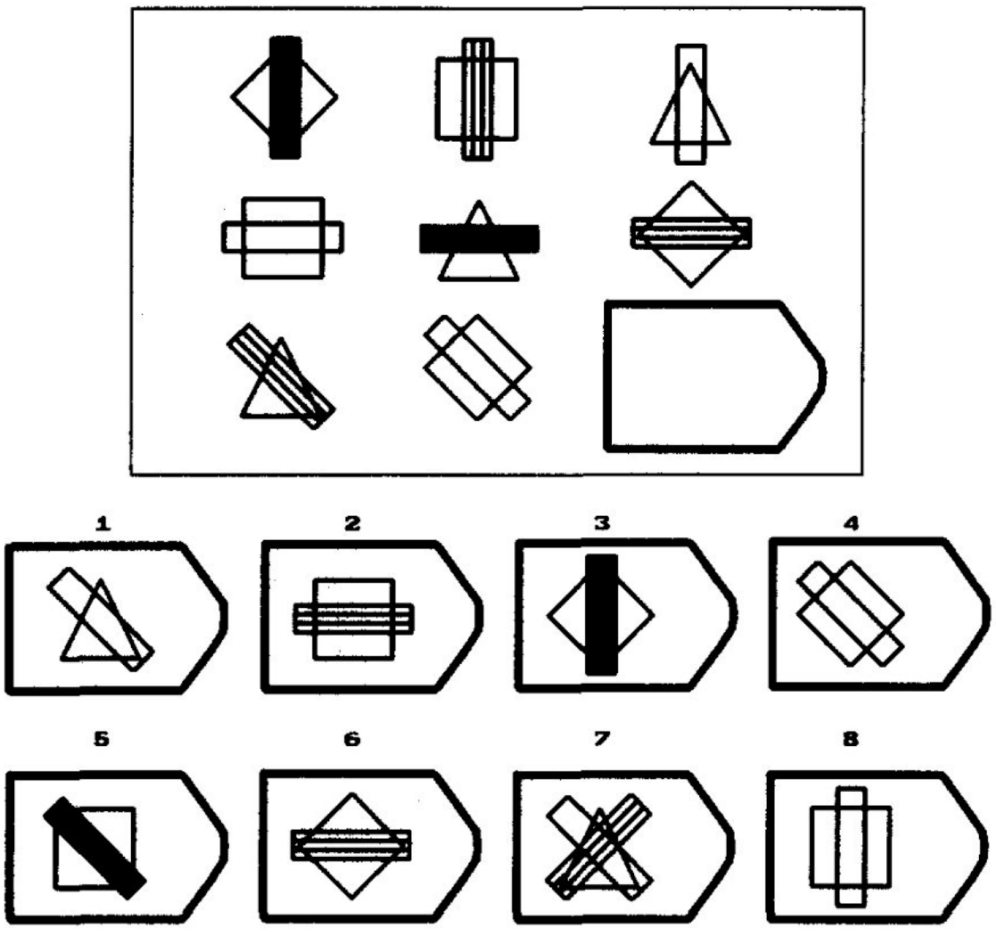
A.1 Appendix Figures

Figure A.1: Demand for Skills



Notes: **Figure A.1 shows the ranking of cognitive and non-cognitive skills in a sample of small- and medium firms based in Addis Ababa recruited in 2019 by Hensel et al. (2023).** The sample is geographically spread out and represents manufacturing, trade, and service sector firms. Firms are selected to have between 5 and 50 employees and to be interested in using a subsidy for formal vacancy posting (Hensel et al., 2023).

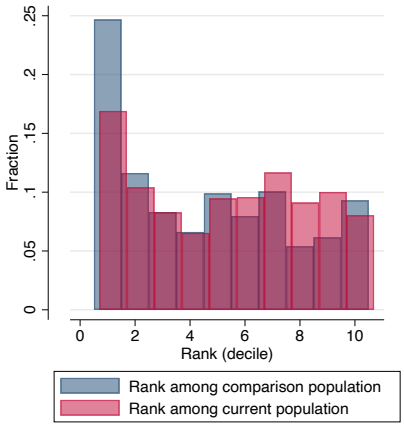
Figure A.2: Example Matrix from Raven's Progressive Matrices Test



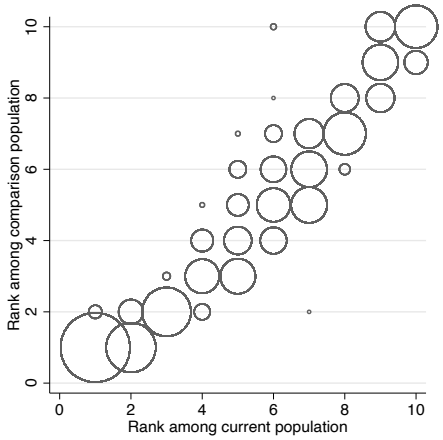
Notes: **Figure A.2** illustrates a sample problem from Raven's Progressive Matrices, a nonverbal intelligence test. The task requires identifying the missing piece that completes the pattern in the top grid from the options provided below.

Figure A.3: Ranks Among Experimental and Comparison Population

(a) Distribution

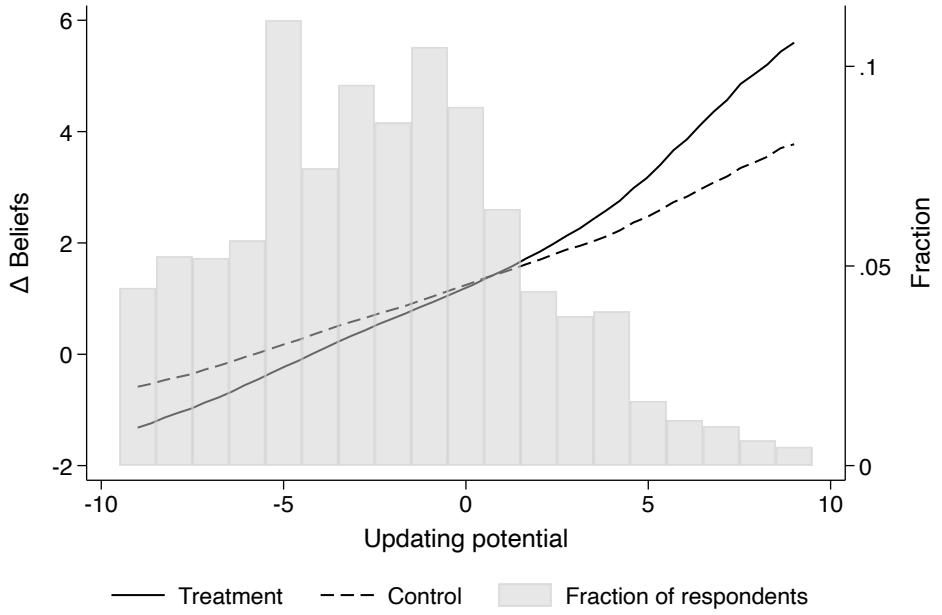


(b) Correlation



Notes: **Figure A.3 shows that decile ranks relative to our comparison sample are strongly correlated with decile ranks in our experimental sample.** Figure A.3(a) compares ranks relative to our comparison sample to ranks in the experimental sample. Figure A.3(b) shows the correlation between ranks relative to our comparison sample and ranks relative to the experimental sample. The comparison sample is based on the sample of job seekers used in Hensel et al. (2023).

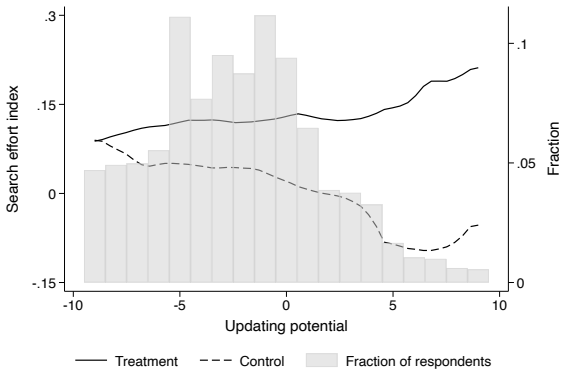
Figure A.4: Non-Parametric Treatment Effects on Beliefs about Relative Ability



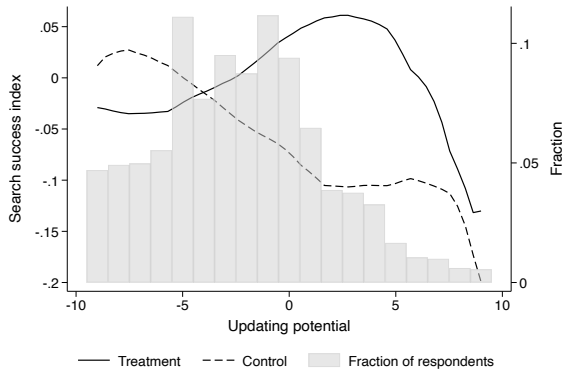
Notes: **Figure A.4 shows that treatment effects on the difference between treatment survey and baseline skill beliefs varies by updating potential.** It shows local polynomial regressions of the difference between treatment beliefs about skill decile relative to current job seekers and baseline beliefs about skill decile relative to a pre-experimental group of job seekers by treatment group. Updating potential is defined as pre-treatment beliefs about skill decile minus assessed decile. Positive values indicate underconfidence. Local polynomial regression uses an Epanechnikov kernel with a bandwidth of 2.5.

Figure A.5: Non-Parametric Treatment Effects among Individuals with Positive WTP

(a) Search effort index



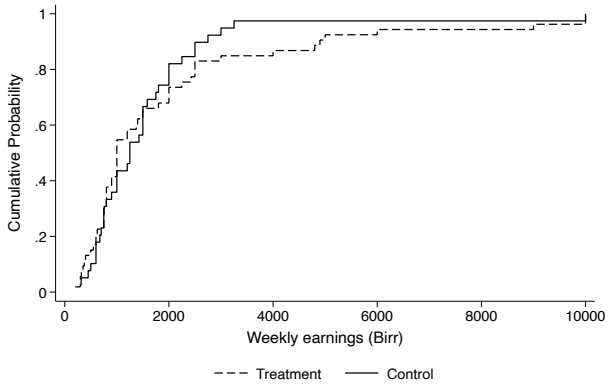
(b) Search success index



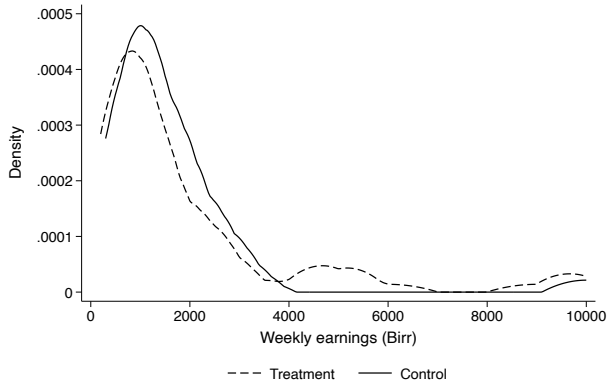
Notes: **Figure A.5 shows that treatment effects increase the degree of underconfidence among individuals with positive WTP.** It shows local polynomial regressions of search effort and success on updating potential by treatment group. Updating potential is defined as pre-treatment beliefs about skill decile minus assessed decile. Positive values indicate underconfidence. Local polynomial regression uses an Epanechnikov kernel with a bandwidth of 2.5. Figure A.5 (a) shows results for the search effort index. Figure A.5 (b) shows results for the search success index.

Figure A.6: Earnings Conditional on Working Among the Underconfident with Positive WTP

(a) Cumulative distribution function



(b) Probability density function



Notes: **Figure A.6 shows that positive treatment effects on earnings conditional on working among the underconfident with positive WTP are not driven by the lower and middle parts of the earnings distribution.** Sample restricted to underconfident job seekers with positive WTP who worked in the last 7 days. Figure A.6 (a) shows the cumulative distribution function of earnings in the last 7 days. Figure A.6 (b) shows the probability density function of earnings in the last 7 days.

A.2 Appendix Tables

Table A.1: Correlates of Raven's Scores at Baseline

	Return to Effort Index		Expected wage		Reservation wage		Month ft work exp.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Raven Score (std)	0.09***	0.06***	304.18***	256.25***	273.69***	201.47**	1.27***	1.24**
	(0.02)	(0.02)	(89.52)	(95.42)	(81.54)	(87.26)	(0.45)	(0.49)
Vacancy FE	No	Yes	No	Yes	No	Yes	No	Yes
Mean	0.00	0.00	7389.42	7389.42	6797.66	6797.66	13.58	13.58
N	2537	2459	2537	2459	2537	2459	2537	2459

Notes: **Table A.1 shows that standardized Raven's scores correlate with baseline labor market beliefs and outcomes.** Columns 1 to 2 show correlations with an Anderson (2008) index of beliefs about the returns to search effort. This index consists of beliefs about the number of required applications per interview and job offer (reverse coded). Columns 3 and 4 show correlations with expected monthly wages conditional on working. Columns 5 and 6 show correlations with reservation wages. Columns 7 and 8 show correlations with months of full-time work experience. Even columns control for vacancy fixed effects. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.2: Correlates of Deviation in Beliefs

	Bias in Beliefs				Overconfidence
	(1)	(2)	(3)	(4)	(5)
Ability/Beliefs					
Raven Score	-0.518***			-0.540***	-0.056***
	(0.010)			(0.011)	(0.001)
Demography					
Female		0.147		-0.150	-0.016
		(0.172)		(0.121)	(0.016)
Age (std)		0.182**		0.081	0.005
		(0.079)		(0.055)	(0.007)
Post-secondary education		-0.639***		0.263**	0.010
		(0.172)		(0.121)	(0.016)
Personality					
Openness (std.)			0.393***	0.105	0.014
			(0.107)	(0.075)	(0.010)
Conscientiousness (std.)			-0.217*	-0.034	-0.011
			(0.118)	(0.083)	(0.011)
Extraversion (std.)			-0.102	0.063	-0.003
			(0.081)	(0.057)	(0.008)
Agreeableness (std.)			-0.529***	-0.231***	-0.017
			(0.109)	(0.077)	(0.010)
Neuroticism (std.)			-0.204*	-0.212***	-0.016
			(0.105)	(0.074)	(0.010)
Grit (std)			0.092	0.151**	0.019**
			(0.098)	(0.069)	(0.009)
Stroop score (std)			-0.544***	0.040	-0.001
			(0.077)	(0.055)	(0.007)
RME score (std)			-0.438***	0.100	0.009
			(0.087)	(0.063)	(0.009)
Competetivesness (std)			-0.001	0.211***	0.014*
			(0.085)	(0.060)	(0.008)
Feedback type					
Ever searched for feedback				0.060	0.025
				(0.141)	(0.019)
Ever received feedback				0.031	-0.009
				(0.137)	(0.018)
Mean Outcome	2.21	2.21	2.21	2.21	0.68
R-Squared	0.52	0.01	0.05	0.54	0.42
N	2,537	2,537	2,537	2,537	2,537

Notes: **Table A.2 shows the predictors of the deviation of baseline beliefs from the assessment result.** Columns 1 to 4 show predictors of the absolute deviation of beliefs from the assessment result. Column 5 shows the predictors of a a dummy indicating overconfidence. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.3: Correlates of Positive WTP for Feedback

	(1)	(2)	(3)	(4)
Raven Score (std)	-0.006			0.021
	(0.012)			(0.013)
Overconfident baseline belief	0.027			0.048*
	(0.025)			(0.025)
Update Potential (abs.)	-0.007*			-0.007*
	(0.004)			(0.004)
Belief Certainty	0.009			0.007
	(0.006)			(0.006)
Demography				
Female		-0.082***		-0.070***
		(0.020)		(0.020)
Age (std)		-0.016*		-0.003
		(0.009)		(0.009)
Post-secondary education		0.002		0.009
		(0.020)		(0.020)
Personality				
Openness (std.)			-0.027**	-0.027**
			(0.012)	(0.012)
Conscientiousness (std.)			-0.006	-0.013
			(0.014)	(0.014)
Extraversion (std.)			0.003	0.002
			(0.009)	(0.009)
Agreeableness (std.)			0.012	0.017
			(0.013)	(0.013)
Neuroticism (std.)			0.040***	0.041***
			(0.012)	(0.012)
Grit (std)			-0.026**	-0.029***
			(0.011)	(0.011)
Stroop score (std)			0.020**	0.015*
			(0.009)	(0.009)
RME score (std)			-0.046***	-0.043***
			(0.010)	(0.010)
Competetivesness (std)			-0.008	-0.012
			(0.010)	(0.010)
Feedback type				
Ever searched for feedback				-0.006
				(0.023)
Ever received feedback				0.041*
				(0.023)
Mean Outcome	0.71	0.71	0.71	0.71
R-Squared	0.00	0.01	0.05	0.06
N	2,537	2,537	2,537	2,537

Notes: **Table A.3 shows the predictors of having a positive WTP for information about skills.** Columns 1 to 4 include different set of control variables. Sample consists of all baseline individuals, regardless of whether they were included in the experimental study. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.4: Treatment Effects on Attrition

	Attritted	
	(1)	(2)
UC & pos WTP	-0.02	-0.02
	(0.02)	(0.02)
UC & non-pos WTP	-0.04	-0.04
	(0.04)	(0.04)
OC & pos WTP	-0.03	-0.03
	(0.02)	(0.02)
OC & non-pos WTP	-0.01	-0.01
	(0.02)	(0.03)
UC & pos WTP - Other	0.00	0.00
	(0.03)	(0.03)
Control mean	0.09	0.09
Controls	No	Yes
N	2,537	2,537

Notes: **Table A.4 shows that differences in attrition between treatment groups are small and insignificant for all considered sub groups.** Outcome is a dummy indicating attrition between treatment survey and endline. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.5: Beliefs and Feedback without Controls

Timing:	Absolute deviation of beliefs			
	Treat. (1)	Endline (2)	Treat. (3)	Endline (4)
Feedback	-0.503***	-0.260***		
	(0.091)	(0.100)		
Underconfident × Feedback			-0.570***	-0.269*
			(0.133)	(0.150)
Overconfident × Feedback			-0.473***	-0.269**
			(0.119)	(0.129)
Control Mean	3.91	4.22		
— Underconfident			2.25	2.27
— Overconfident			4.69	5.15
Δ effect			0.096	0.000
			(0.178)	(0.200)
Δ rel. effect			0.152**	0.066
			(0.064)	(0.071)
N	2,537	2,297	2,537	2,297

Notes: **Table A.5 shows treatment effects on the absolute deviation of belief deciles from the assessed skill level not including control variables.** Columns 1 and 3 show effects on beliefs elicited in the treatment survey after treatment administration. Columns 2 and 4 show effects on the same measures at endline four to six weeks after treatment. Columns 1 and 2 show average treatment effects. Columns 3 and 4 show heterogeneity by baseline confidence. Specifications include stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.6: Determinants of Recall Accuracy

	(1)	(2)	(3)	(4)
Overconfident	-0.182***	-0.174***	-0.183***	-0.168***
	(0.031)	(0.035)	(0.031)	(0.035)
Left Out Mean Outcome	0.58	0.58	0.58	0.58
N	1,126	1,055	1,126	1,055
Vacancy FE	No	Yes	No	Yes
Controls	No	No	Yes	Yes

Notes: **Table A.6 shows differences by confidence in the likelihood of correctly recalling the provided information among the treated individuals at endline.** The outcome equals one if the information is recalled correctly and zero otherwise. Controls include gender, age, and education. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.7: Job Search Behavior and Success without Controls

	Search effort index			Search success index		
	ATE	Conf. het.	WTP het.	ATE	Conf. het.	WTP het.
	(1)	(2)	(3)	(4)	(5)	(6)
Feedback	0.08*			-0.01		
	(0.04)			(0.04)		
Underconfident × Feedback		0.16**			0.11	
		(0.07)			(0.07)	
Overconfident × Feedback		0.03			-0.06	
		(0.05)			(0.05)	
WTP >0 × Feedback			0.11**			0.02
			(0.05)			(0.05)
WTP ≤ 0 × Feedback			0.00			-0.07
			(0.08)			(0.08)
Δ effect		0.13	0.10		0.17**	0.09
		(0.09)	(0.09)		(0.09)	(0.09)
Mean outcome	-0.00	-0.00	-0.00	0.00	0.00	0.00
N	2,292	2,292	2,292	2,292	2,292	2,292

Notes: **Table A.7 displays treatment effects on search behavior and outcomes at endline not including control variables.** Columns 1 to 3 show treatment effects on an Anderson (2008) search effort index of four components: an indicator for any search in the last 7 days, number of days searched in the last 7 days, expenditures on job search in the last 7 days, and the number of applications submitted since the treatment survey. Columns 4 to 6 show effects on an Anderson (2008) labor market success index of four components: number of job offers since treatment survey, an indicator for working in the last 7 days, hours worked in the last 7 days, and earnings in the last 7 days. Columns 1 and 4 display average treatment effects. Columns 2 and 5 display effects by prior beliefs. Columns 3 and 6 display effects by whether individuals report a positive WTP for feedback. Specifications include stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.8: Main Treatment Effects by WTP and Confidence without Controls

	Search effort index	Success index
	(1)	(2)
UC & pos WTP	0.23***	0.20**
	(0.09)	(0.08)
UC & non-pos WTP	-0.04	-0.17
	(0.14)	(0.14)
OC & pos WTP	0.03	-0.02
	(0.07)	(0.06)
OC & non-pos WTP	0.03	-0.09
	(0.09)	(0.10)
UC & pos WTP - Other	0.21**	0.26***
	(0.10)	(0.10)
N	2,297	2,297

Notes: **Table A.8 shows that positive treatment effects on search effort and success are driven by underconfident individuals with positive WTP for feedback even when not including control variables.** Rows display treatment effect estimates obtained using equation 8. "UC & pos WTP - Other" displays the difference in treatment effect between underconfident individuals with positive WTP for feedback and the rest of the sample. Columns 1 shows effects on a search effort index described in Table 3. Column 2 shows effects on a search success index also described in Table 3. Specifications include stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.9: Beliefs and Feedback without Aligned Individuals

Timing:	Absolute deviation of beliefs					
	Treat. (1)	Endline (2)	Treat. (3)	Endline (4)	Treat. (5)	Endline (6)
Feedback	-0.54***	-0.28***				
	(0.08)	(0.08)				
Underconfident × Feedback			-0.64***	-0.18		
			(0.14)	(0.13)		
Overconfident × Feedback			-0.50***	-0.31***		
			(0.09)	(0.09)		
WTP >0 × Feedback					-0.51***	-0.17*
					(0.09)	(0.09)
WTP ≤ 0 × Feedback					-0.61***	-0.54***
					(0.15)	(0.14)
Control Mean	4.09	4.39				
— Underconfident			2.31	2.17		
— Overconfident			4.69	5.15		
— WTP>0					4.08	4.38
— WTP≤ 0					4.12	4.40
Δ effect			-0.141	0.130	0.103	0.366**
			(0.168)	(0.163)	(0.175)	(0.166)
Δ rel. effect			-0.171***	-0.024	0.024	0.083**
			(0.063)	(0.064)	(0.043)	(0.038)
N	2,309	2,084	2,309	2,084	2,309	2,084

Notes: **Table A.9 shows treatment effects on the absolute deviation of belief deciles from the assessed skill level dropping individuals whose baseline beliefs align with the assessment.** Columns 1, 3, and 5 show effects on beliefs elicited in the treatment survey after treatment administration. Columns 2, 4, and 6 show effects on the same measures are endline four to six weeks after treatment. Columns 1 and 2 show average treatment effects. Columns 3 and 4 show heterogeneity by baseline confidence. Columns 5 and 6 show heterogeneity by WTP for feedback. Specifications include control variables selected using LASSO and stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.10: Job Search Behavior and Success without Aligned Individuals

	Search effort index			Search success index		
	ATE	Conf. het.	WTP het.	ATE	Conf. het.	WTP het.
	(1)	(2)	(3)	(4)	(5)	(6)
Feedback	0.04			-0.02		
	(0.05)			(0.04)		
Underconfident × Feedback		0.15			0.07	
		(0.10)			(0.09)	
Overconfident × Feedback		0.00			-0.06	
		(0.06)			(0.05)	
WTP $>$ 0 × Feedback			0.07			0.01
			(0.06)			(0.05)
WTP $\leq$ 0 × Feedback			-0.01			-0.09
			(0.08)			(0.08)
Δ effect		0.15	0.08		0.13	0.10
		(0.11)	(0.10)		(0.10)	(0.10)
Mean outcome	0.01	0.01	0.01	0.01	0.01	0.01
N	1,983	1,983	1,983	1,983	1,983	1,983

Notes: **Table A.10 displays treatment effects on search behavior and outcomes at endline dropping individuals whose baseline beliefs align with the assessment.** Columns 1 to 3 show treatment effects on an Anderson (2008) search effort index of four components: an indicator for any search in the last 7 days, number of days searched in the last 7 days, expenditures on job search in the last 7 days, and the number of applications submitted since the treatment survey. Columns 4 to 6 show effects on an Anderson (2008) labor market success index of four components: number of job offers since treatment survey, an indicator for working in the last 7 days, hours worked in the last 7 days, and earnings in the last 7 days (winsorized at the 99^{th} percentile). Columns 1 and 4 display average treatment effects. Columns 2 and 5 display effects by prior beliefs. Columns 3 and 6 display effects by whether individuals report a positive WTP for feedback. Specifications include control variables selected using LASSO and stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.11: Main Treatment Effects by WTP and Confidence without Aligned Individuals

	Search effort index	Success index
	(1)	(2)
UC & pos WTP	0.22*	0.19*
	(0.11)	(0.10)
UC & non-pos WTP	0.03	-0.19
	(0.17)	(0.16)
OC & pos WTP	0.01	-0.06
	(0.07)	(0.06)
OC & non-pos WTP	-0.02	-0.06
	(0.10)	(0.10)
UC & pos WTP - Other	0.20	0.26**
	(0.12)	(0.11)
N	1,983	1,983

Notes: **Table A.11 shows that positive treatment effects on search effort and success are driven by underconfident individuals with positive WTP for feedback even when dropping individuals whose baseline beliefs align with the assessment.** Rows display treatment effect estimates obtained using equation 8. "UC $\&$ pos WTP - Other" displays the difference in treatment effect between underconfident individuals with positive WTP for feedback and the rest of the sample. Column 1 shows effects on a search effort index described in Table 3. Column 2 shows effects on a search success index also described in Table 3. Specifications include control variables selected using LASSO and stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.12: Search Effort Index Components

	Any search			Days searched			# applications			Search expenditure		
	ATE	Conf. het.	WTP het.	ATE	Conf. het.	WTP het.	ATE	Conf. het.	WTP het.	ATE	Conf. het.	WTP het.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Feedback	0.01			0.16*			0.61**			-2.14		
	(0.01)			(0.10)			(0.27)			(14.90)		
Underconfident × Feedback		0.05**			0.36**			1.31***			-30.04	
		(0.02)			(0.18)			(0.43)			(24.39)	
Overconfident × Feedback		-0.01			0.07			0.26			11.09	
		(0.02)			(0.11)			(0.34)			(18.88)	
WTP >0 × Feedback			0.02			0.27**			0.64*			1.50
			(0.02)			(0.11)			(0.35)			(17.42)
WTP ≤ 0 × Feedback			-0.01			-0.08			0.52			-9.35
			(0.03)			(0.18)			(0.38)			(26.72)
Δ effect		0.06**	0.03		0.29	0.35		1.05*	0.12		-41.13	10.85
		(0.03)	(0.03)		(0.21)	(0.22)		(0.55)	(0.52)		(31.15)	(31.23)
Mean outcome	0.88	0.88	0.88	3.81	3.81	3.81	5.29	5.29	5.29	230.36	230.36	230.36
N	2,297	2,297	2,297	2,297	2,297	2,297	2,297	2,297	2,297	2,297	2,297	2,297

Notes: **Table A.12 shows that positive treatment effects on the search effort index are driven by non-monetary domains of search effort.** Columns 1 to 3 show effects on a dummy indicating any search in the last seven days. Columns 4 to 6 show effects on the number of days searched in the last seven days. Columns 7 to 9 show effects on the number of applications sent since treatment. Columns 10 to 12 show effects on job search expenditure in the last seven days. Columns 1, 4, 7, and 10 display average treatment effects. Columns 2, 5, 8, and 11 show treatment effect heterogeneity by confidence level. Columns 3, 6, 9, and 12 show treatment effect heterogeneity by WTP. Specifications include control variables selected using LASSO and stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.13: Labor Market Success Index Components

	# offers			Any work			# days worked			Earnings		
	ATE	Conf. het.	WTP het.	ATE	Conf. het.	WTP het.	ATE	Conf. het.	WTP het.	ATE	Conf. het.	WTP het.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Feedback	0.00			-0.01			-0.03			3.44		
	(0.01)			(0.02)			(0.09)			(40.64)		
Underconfident × Feedback		0.00			0.02			0.06			127.32*	
		(0.02)			(0.03)			(0.15)			(71.80)	
Overconfident × Feedback		0.00			-0.03			-0.07			-57.81	
		(0.02)			(0.02)			(0.11)			(48.77)	
WTP >0 × Feedback			0.01			-0.00			0.06			44.45
			(0.02)			(0.02)			(0.10)			(50.45)
WTP ≤ 0 × Feedback			-0.01			-0.03			-0.24			-94.97
			(0.03)			(0.03)			(0.17)			(64.87)
Δ effect		0.00	0.02		0.05	0.03		0.13	0.30		185.13**	139.42*
		(0.03)	(0.03)		(0.03)	(0.04)		(0.18)	(0.20)		(86.36)	(81.66)
Mean outcome	0.09	0.09	0.09	0.19	0.19	0.19	0.98	0.98	0.98	306.86	306.86	306.86
N	2,297	2,297	2,297	2,278	2,278	2,278	2,297	2,297	2,297	2,278	2,278	2,278

Notes: **Table A.13 shows treatment effects on the components of the labor market success index.** Columns 1 to 3 show effects on the number of job offers since treatment. Columns 4 to 6 show effects on a dummy indicating any work for pay in the last 7 days. Columns 7 to 9 show effects on the hours worked in the last 7 days. Columns 10 to 12 show effects on job earnings in the last 7 days (winsorized at the 99^{th} percentile). Columns 1, 4, 7, and 10 display average treatment effects. Columns 2, 5, 8, and 11 show treatment effect heterogeneity by confidence level. Columns 3, 6, 9, and 12 show treatment effect heterogeneity by WTP. Specifications include control variables selected using LASSO and stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.14: Heterogeneous Effects on Search Behavior and Success

	Abs. dev. of beliefs			Search effort index			Search success index		
	Gender	Age	Educ	Gender	Age	Educ	Gender	Age	Educ
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Female=0 × Feedback	-0.52***			0.08			-0.04		
	(0.09)			(0.05)			(0.05)		
Female=1 × Feedback	-0.48***			0.05			0.08		
	(0.14)			(0.07)			(0.07)		
Above med. age=0 × Feedback		-0.44***			0.11**			-0.02	
		(0.10)			(0.05)			(0.05)	
Above med. age=1 × Feedback		-0.59***			0.00			0.04	
		(0.11)			(0.08)			(0.07)	
Post-secondary education=0 × Feedback			-0.43***			0.11			-0.14*
			(0.14)			(0.08)			(0.07)
Post-secondary education=1 × Feedback			-0.54***			0.06			0.05
			(0.09)			(0.05)			(0.05)
Δ effect	-0.04	0.15	0.12	0.03	0.11	0.05	-0.11	-0.06	-0.19**
	(0.17)	(0.15)	(0.16)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
Mean outcome	3.91	3.91	3.91	0.00	0.00	0.00	0.00	0.00	0.00
N	2,537	2,537	2,537	2,297	2,297	2,297	2,297	2,297	2,297

Notes: **Table A.14 displays treatment effect heterogeneity by gender, age, and education levels.** Columns 1 to 3 show treatment effects on the absolute deviation of skill beliefs from the assessed decile. Columns 4 to 6 show effects on an Anderson (2008) search effort index with four components: an indicator for any search in the last 7 days, number of days searched in the last 7 days, expenditures on job search in the last 7 days, and the number of applications submitted since the treatment survey. Columns 7 to 9 show effects on an Anderson (2008) labor market success index with four components: number of job offers since treatment survey, an indicator for working in the last 7 days, hours worked in the last 7 days, and earnings in the last 7 days. Columns 1, 4, and 7 report heterogeneity by gender. Columns 2, 5, and 8 report heterogeneity by having below median age. Columns 3, 6, and 9 report heterogeneity by having some post-secondary education. Specifications include control variables selected using LASSO and stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.15: Number of People in Each Heterogeneity Group

Initial Confidence	WTP for Feedback	N	Share
Overconfident, receives discouraging news	WTP> 0 Want to receive information	1236	49%
	WTP≤ 0 Does not want to receive information	483	19%
Underconfident, receives encouraging news	WTP> 0 Wants to receive information	572	23%
	WTP≤ 0 Does not want to receive information	246	10%

Notes: **Table A.15 shows the joint distribution of skill belief and WTP for feedback.** The underconfident category includes individuals with aligned skills beliefs. Percentages do not add to 100 because of rounding.

Table A.16: Search Effort Treatment Effects by WTP and Confidence

	Index components			
	Any	Days searched	# Applications	Search expenditure
	(1)	(2)	(3)	(4)
UC & pos WTP	0.06**	0.38*	1.61***	2.57
	(0.03)	(0.21)	(0.56)	(24.42)
UC & non-pos WTP	0.03	0.28	0.56	-108.81**
	(0.05)	(0.33)	(0.63)	(51.03)
OC & pos WTP	-0.00	0.21	0.15	-0.01
	(0.02)	(0.13)	(0.44)	(22.96)
OC & non-pos WTP	-0.02	-0.26	0.51	41.42
	(0.03)	(0.22)	(0.48)	(32.95)
UC & pos WTP - Other	0.07**	0.29	1.32**	5.35
	(0.03)	(0.24)	(0.63)	(29.40)
Control mean	0.88	3.81	5.29	230.36
N	2297	2297	2297	2297

Notes: **Table A.16 shows that positive treatment effects on search effort among underconfident individuals with positive WTP for feedback are driven by three of the four search effort measures.** Rows display treatment effect estimates obtained using equation 8. "UC & pos WTP - Other" displays the difference in treatment effect between underconfident individuals with positive WTP for feedback and the rest of the sample. Column 1 shows effects on a dummy of job search in the last 7 days. Column 2 shows effects on the days of job search in the last seven days. Column 3 shows effects on the number of applications since the treatment survey. Column 4 shows impacts on job search expenditure. Specifications include control variables selected using LASSO and stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.17: Treatment Effects on Search Success by WTP and Confidence

	Index components			
	# offers	Any work	# days worked	Earnings
	(1)	(2)	(3)	(4)
UC & pos WTP	0.04	0.04	0.15	173.63*
	(0.03)	(0.03)	(0.17)	(96.83)
UC & non-pos WTP	-0.08	-0.01	-0.19	15.41
	(0.05)	(0.06)	(0.30)	(80.08)
OC & pos WTP	-0.01	-0.01	0.01	-19.86
	(0.02)	(0.02)	(0.12)	(58.05)
OC & non-pos WTP	0.02	-0.05	-0.28	-146.76*
	(0.04)	(0.04)	(0.21)	(89.15)
UC & pos WTP - Other	0.05	0.06	0.24	224.50**
	(0.03)	(0.04)	(0.20)	(105.49)
Control mean	0.09	0.20	0.98	306.86
N	2297	2297	2297	2278

Notes: **Table A.17 shows that positive treatment effects on search success among underconfident individuals with positive WTP for feedback is mostly driven by the number of offers and earnings.** Rows display treatment effect estimates obtained using equation 7. "UC & pos WTP - Other" displays the difference in treatment effect between underconfident individuals with positive WTP for feedback and the rest of the sample. Column 1 shows effects on the number of job offers since the treatment survey. Column 2 shows effects on a dummy indicating any work for pay. Column 3 shows the impact on the number of days worked in the last seven days. Column 4 shows effects on earnings in the last 7 days in Birr (winsorized at the 99^{th} percentile). Specifications include control variables selected using LASSO and stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.18: Treatment Effects on Work Quality by WTP and Confidence

	Work quality (conditional on working)		
	# days worked	Earnings	Daily earnings
	(1)	(2)	(3)
UC & pos WTP	0.07	497.09	38.61
	(0.40)	(401.92)	(117.65)
UC & non-pos WTP	-0.52	-31.77	41.17
	(0.48)	(268.23)	(67.82)
OC & pos WTP	0.40*	77.43	-48.34
	(0.23)	(268.44)	(93.03)
OC & non-pos WTP	0.01	-590.99*	-83.90
	(0.34)	(355.03)	(77.68)
UC & pos WTP - Other	-0.11	646.42	96.44
	(0.44)	(433.75)	(132.07)
Control mean	4.90	1584.76	379.53
N	439	439	434

Notes: **Table A.18 shows that positive treatment effects on earnings conditional on working remain positive.** Rows display treatment effect estimates obtained using equation 7. "UC & pos WTP - Other" displays the difference in treatment effect between underconfident individuals with positive WTP for feedback and the rest of the sample. Column 1 shows effects on the number of days worked. Column 2 shows effects on earnings in the last seven days (winsorized at the 99^{th} percentile). Column 3 shows effects on average daily wages. Specifications include control variables selected using LASSO and stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.19: Additional Outcomes by WTP and Confidence

	Search outcomes		Beliefs		Aspirations		Targeting	Reservation
	Offers per app	Any rejection	E[Off/app]	E[Earnings]	Earnings	Perm. job	gen. int. (std)	Earnings
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
UC & pos WTP	0.003	0.020	0.009	-289.524	-3844.040	0.037	0.001	-118.483
	(0.008)	(0.019)	(0.022)	(432.278)	(6827.956)	(0.044)	(0.088)	(214.212)
UC & non-pos WTP	-0.010	-0.055**	-0.034	522.655	-6512.229	0.085	0.233*	575.743**
	(0.016)	(0.026)	(0.034)	(565.694)	(7565.605)	(0.067)	(0.123)	(264.805)
OC & pos WTP	-0.005	-0.000	-0.004	-147.020	-469.598	0.001	0.012	82.184
	(0.005)	(0.010)	(0.014)	(235.768)	(4445.834)	(0.030)	(0.057)	(131.769)
OC & non-pos WTP	0.004	0.015	-0.085***	-445.704	-8968.109	0.052	-0.020	-146.332
	(0.010)	(0.021)	(0.023)	(459.118)	(7900.899)	(0.047)	(0.085)	(203.636)
UC & pos WTP - Other	0.007	0.022	0.039	-145.191	300.427	0.008	-0.027	-198.136
	(0.009)	(0.021)	(0.024)	(475.403)	(7759.620)	(0.050)	(0.098)	(237.867)
Control mean	0.023	0.038	0.444	9222.606	47266.286	0.474	-0.000	5723.126
N	2296	2297	2537	2537	2297	2297	2478	2537
Survey	Endline	Endline	Treat.	Treat.	Endline	Endline	Treat.	Treat.

Notes: **Table A.19 provides evidence on the mechanisms driving treatment effects on labor market success.** Rows display treatment effect estimates obtained using equation 7. "UC & pos WTP - Other" displays the difference in treatment effect between underconfident individuals with positive WTP for feedback and the rest of the sample. Column 1 shows effects on the number of offers per application in the last 30 days at endline. Column 2 shows effects on a dummy indicating an imputed offer rejection in the last thirty days. For working individuals, we define any rejection as having received at least 2 offers in the last 30 days. For non-working individuals, we define any rejection as having received at least one offer in the last 30 days. Column 3 shows effects on the ratio of expected offers to planned applications. Column 4 shows effects on expected wages. Columns 5 and 6 show effects on aspirations. Column 7 shows effects on a standardized measure of planning to target jobs with high general intelligence requirements (both measured in the treatment survey) and column 8 shows effects on reservation wages (both measured in the treatment survey). Specifications include control variables selected using LASSO and stratification fixed effects. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

B Context and experimental design

B.1 Details on the assessment center

The recruitment agency involved in this experiment runs a job seeker assessment center. The setup is part of a larger research and policy project, called the "Addis Ababa Labor Market Project". This project represents a collaboration between researchers and policy makers at the Policy Studies Institute in Addis Ababa and private sector firms, dedicated to understanding and improving labor market dynamics in Ethiopia's largest city.

Located in the center of Addis Ababa, the assessment center plays a key role in the selection of job seekers on behalf of potential employers. This screening process involves a range of cognitive and non-cognitive skills assessments, providing a comprehensive profile of a job seeker's abilities and potential fit for various job vacancies.

In the assessment center, all assessments are completed individually by job seekers using tablets, under the careful supervision of the center's team, which is comprised of research managers and enumerators. At this stage of the screening process, no hiring firm staff members are involved. This helps ensure a level of objectivity and standardization between all applicants, which is crucial to the robustness of the research experiment.

Participants usually attend the assessment center only once. However, in cases where an individual may return for another assessment, the experimental design accounts for this by ensuring that the individual is included in the feedback intervention just once, using the person's first assessment.

A separate research paper (Balgova ⓡ al., 2023) uses the Addis Ababa Labor Market Project to understand what characteristics of job advertisements induce job seekers to apply to a vacancy. Specifically, the paper studies the effect of randomly revealing wage information in vacancies on the selection of applicants. All applicants in the assessment center have been recruited through that study's research design. Balgova ⓡ al. (2023) ends with the recruitment of applicants to the assessment center. This is where the present paper begins, taking the sample of recruited job seekers as its baseline sample and then implementing a new field experiment, independent from and orthogonal to the prior selection experiment.

B.2 Belief elicitation

Eliciting beliefs in baseline During the initial data collection, participants are asked to compare their performance on the Raven's test to that of a previous group of job seekers:

Think of 10 job seekers in Addis Ababa who applied to similar positions and took the same test in a previous study. How many of these 10 applicants would perform worse than you on this general intelligence test?

Eliciting beliefs in Treatment Survey and Endline Beliefs in treatment and endline survey are elicited by asking participants to compare themselves with the current population.

Treatment Survey *Think about job seekers in Addis Ababa who are currently looking for similar jobs as you do. Out of 10 current job seekers: How many of these 10 job seekers would perform worse than you on a similar test of general intelligence?*

Endline Survey *Think back to your visit in our test center a few weeks ago. You came to our test center as you applied for a position as Jobtitle. In the test center, you took a test of general intelligence. Now, think about job seekers in Addis Ababa who look for similar jobs as you did when you came to our test center. Out of 10 job seekers currently searching for similar jobs as you did back then: How many of these 10 job seekers would perform worse than you on a similar test of general intelligence?*

B.3 Details of WTP elicitation

We elicit job seekers' WTP for feedback using the following question:

> *Think of 10 job seekers in Addis Ababa who applied to similar positions and took the same test in a previous study. Would you like to know how many of these 10 job seekers performed worse than you on this general intelligence test? In the following, we present you with several choices that give you the opportunity to receive this information. Your choices allow us to understand how valuable this information is to you. At the end of our study, we randomly select ten people and offer them a bonus of 50 Birr. If you are selected, the choice you make now determines the total bonus you receive and whether you receive information about your performance on the test. You can use the bonus to pay for the information or even receive an extra bonus. We will implement one of the choices for real. You should think carefully about your choice, as they can have real consequences.*

We then ask applicants whether they would prefer i) to receive no information about their performance on the general intelligence test or ii) to receive information about their performance on the test and pay [X] Birr. As soon as the respondent chooses the latter 'paying for the information' option, the WTP elicitation stops. Otherwise, if the respondent chooses the former 'no-information' option, the elicitation continues with a lower value for [X], i.e., a lower price.

We start with $X = 50$ Birr. If the respondent prefers not receiving the information, we continue with $X = 25$ Birr; if the respondent still prefers not receiving the information, we use $X = 10$ Birr, then $X = 5$ Birr, and then $X = 0$ Birr (i.e., not receiving the information vs. receiving the information for free).[1] If, at this point, the respondent still prefers not receiving the information, the 'price becomes negative', i.e., a payment towards the respondent. We then phrase the two alternatives as i) receiving no information about the performance on the 'test of general intelligence' vs. ii) receiving information about the performance on the test and 'receiving an extra bonus of [X] Birr'. We start with a bonus of $X = 5$ Birr, and if the respondent still prefers no information, we continue with $X = 10$ Birr and finally $X = 25$ Birr.[2]

[1] For an auxiliary sample of 229 individuals, we use an extended price list that starts at 200 Birr, then 150 Birr, 100 Birr, 75 Birr, before continuing as previously with 50 Birr.

[2] Several weeks after the assessment center and all subsequent surveys are concluded, we randomly select the ten respondents whose WTP we implement, after endowing them with 50 Birr. This is to ensure that none of the young job seekers directly has to send money to the research team and instead gets their WTP deducted from the endowment.

Validation We randomized an additional small subset of individuals who participated in the assessment center into a 'choice treatment' arm, which allowed them to self-select whether to receive feedback about their relative ability. In particular, during the treatment survey, subjects were reminded whether they indicated a high or low WTP and then were offered to receive 10 Birr but not the information, or to not receive the 10 Birr but the information. Columns 1 to 3 of Appendix Table B.1 present the results. WTP correlates positively with the take-up of the information. Having a positive WTP is associated with an 11.3 percentage points higher likelihood of choosing the information ($p < 0.1$). A one standard deviation increase in the categorical (Birr) measure of WTP is associated with a 3.8 (3.7) percentage points increase in the likelihood of taking up the information. Furthermore, Columns 5 and 6 show evidence that the non-binary measure of WTP correlates with a measure of an individual's tendency toward social comparisons in the control group (INCOM scale, Gibbons and Buunk (1999)).

Table B.1: WTP, information take-up and the desire to compare

	Information take-up		INCOM scale (only control)			
	(1)	(2)	(3)	(4)	(5)	(6)
WTP > 0	0.113*			0.064		
	(0.060)			(0.080)		
Categorical WTP (std)		0.038*			0.057**	
		(0.021)			(0.027)	
Birr WTP (std)			0.037*			0.059**
			(0.021)			(0.027)
R-Squared	0.01	0.01	0.01	0.00	0.00	0.00
N	437	437	437	1,147	1,147	1,147

Notes: **Table B.1 provides evidence on the validity of the WTP elicitation.** Columns 1 and 2 depict the correlation of the WTP and the actual choice behavior in an additional 'Choice Treatment'. For this purpose, we randomized a small subset of participants into a 'Choice Treatment,' allowing them to decide whether to receive feedback about their relative abilities. Participants were reminded of their previously indicated WTP for receiving this feedback. They were then given a choice: receive a compensation of 10 Birr and forego the feedback, or forfeit the 10 Birr in exchange for receiving information about their relative ability. The outcome in Columns 1 to 3 is a binary outcome indicating if they chose to receive the information. Columns 4 to 6 depict the correlation of the WTP and the INCOM scale. The INCOM scale was only assessed during the endline survey. We, therefore, restrict this analysis to the control group. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

B.4 Details information treatment

During the treatment survey, we provided respondents in the treatment group with true information about their relative performance.

A translation of the wording is given below:

> *During the screening session in which you participated last week, you took a test of general intelligence. After the test, we asked you how you compared to other job seekers who applied to similar positions and took the test in a previous study.*
>
> *You believed that [rank prior minus 10] out of 10 people were as good as you or did better than you in the same test.*
>
> *In other words, you believed that [rank prior] out of 10 people performed worse than you in the same test.*
>
> *Today we would like to give you feedback about how you actually compared to other job seekers in the same test on general intelligence.*
>
> *[Decile rank minus 10] out of 10 people were as good as you or did better than you in the same test on general intelligence. In other words, [decile rank] out of 10 people performed worse than you in the same test. That means you performed [better than / worse than / the same as] expected on this test.*

B.5 Details recall of information

In the endline survey, we ask individuals who received feedback to recall the information provided to them. To motivate accurate recall, we offer a reward of 10 Ethiopian Birr for correctly recalling the information. This reward represents approximately one third of the total appreciation token for participating in the entire call and is roughly equivalent to 50% of the median hourly wage in Addis Ababa, making it a significant incentive for most participants.

The recall task requires participants to remember how many people out of 10, who had applied for similar positions and completed the same test, performed as well as or better than they did. We validate their responses against our records to determine the accuracy of their recall. Those who accurately remember the information receive the incentive.

A translation of the wording is given below:

> *Finally, we would like to ask you if you remember how you performed in our test center on [screening date]. We want to know if you remember how you compared to other job seekers in the same general intelligence test. We told you this information when we called you briefly at [call date]. If you remember the information correctly, we will transfer you an additional 10 Birr (in addition to the 30 Birr you will get for participating in this call). How many job seekers out of 10 performed worse than you on the general intelligence test in a previous study?*

C Appendix: Details for the conceptual framework

This Appendix Section contains the full details of the conceptual framework underlying Section 3 and collects the assumptions and propositions referenced in the main text, as well as their mathematical derivations and proofs.

C.1 Setup and timeline

There is a continuum of job seekers indexed by i. True relative skill is $s_i \in [0,1]$. Each job seeker is characterized by two binary motive parameters: an ego motive $\alpha_i \in \{0, \alpha\}$ and an instrumental motive $\phi_i \in \{0, \phi\}$ with $\alpha, \phi > 0$. The ego motive yields belief utility from favorable beliefs about skill; the instrumental motive makes the marginal return to search effort increasing in skill.

The model has two periods. In period 1, job seekers receive a noisy signal a_i about s_i and form baseline beliefs (potentially selectively). In period 2, they may obtain (and potentially forget) an unbiased signal revealing s_i, and choose job search effort.

C.2 Period 1: Endogenous baseline beliefs

Skills are uniformly distributed, $s_i \sim U(0,1)$. Initial beliefs are unbiased but uninformative: $\hat{s}_0 = 1/2$. Each job seeker observes a signal $a_i \sim U(0,1)$ that is positively correlated with s_i. We assume the joint density is generated by a Farlie–Gumbel–Morgenstern copula with parameter $\theta = 1$,

$$f(s_i, a_i) = 1 + (1 - 2s_i)(1 - 2a_i), \tag{9}$$

which preserves uniform marginals and implies $\text{Corr}(s_i, a_i) = 1/3$.

After observing a_i, job seekers either incorporate the signal (update) or discard it (forget) at cost δ. Their Period-1 utility is only based on their beliefs.

$$U_{1i} = \alpha_i \, \mu(\hat{s}_{i,1}(a_i) - \hat{s}_0) - \delta \, I_{\text{forget},i}. \tag{10}$$

Loss Aversion Belief-based utility depends on changes in skill beliefs via the piecewise-linear, loss-averse function

$$\mu(x) = \begin{cases} x & \text{if } x \geq 0, \\ -\infty & \text{if } x < 0, \end{cases} \tag{11}$$

Forgetting (discarding) information is a binary choice with utility cost $\delta > 0$. We assume that loss aversion is sufficiently strong to induce ego-motivated job seekers to forget all

negative information. δ induces a cost of forgetting that affects job seekers' WTP and does not affect whether job seekers forget the information with our assumptions.[3]

Bayesian benchmark (no ego motive). If $\alpha_i = 0$, the agent has no incentive to discard information and updates beliefs about s_i according to Bayes' rule. Under (9), the posterior mean is

$$\hat{s}_{i,1}^{\text{Bayes}}(a_i) = \mathbb{E}[s_i \mid a_i] = \frac{1 + a_i}{3}. \tag{12}$$

Ego motive and selective forgetting. If $\alpha_i = \alpha$, belief utility is reference-dependent around $\hat{s}_0$ and loss-averse per equation (11). This that ego-motivated agents incorporate the signal only when it would increase beliefs relative to $\hat{s}_0$. Since (12) exceeds $1/2$ if and only if $a_i > 1/2$, ego-motivated agents update for $a_i > 1/2$ and otherwise discard the signal and retain $\hat{s}_{i,1} = \hat{s}_0$.

Proposition 1 (Overconfidence in baseline beliefs)**.** *The share of overconfident job seekers with $\hat{s}_{i,1} > s_i$ at the end of period 1 exceeds $1/2$. Proof in Appendix C.5.1.*

C.3 Period 2: Effort choice and information demand

At the start of period 2, job seekers hold a baseline belief $\hat{s}_i$ about s_i (which can be taken as the period-1 belief $\hat{s}_{i,1}$). They may obtain an unbiased signal that reveals s_i. After observing (or not observing) this information, they hold an end-of-period belief $\hat{s}_{i,2} \in \{\hat{s}_i, s_i\}$, where $\hat{s}_{i,2} = s_i$ if information is incorporated and $\hat{s}_{i,2} = \hat{s}_i$ if it is not incorporated (including the case of forgetting).

Period-2 utility is

$$U_{2i} = e_i + \phi_i s_i e_i - \frac{\gamma}{2} e_i^2 + \alpha_i \, \mu(\hat{s}_{i,2} - \hat{s}_i) - \delta \, I_{\text{forget},i} \tag{13}$$

with $\gamma > 0$.

C.4 Effort Decision

Individuals choose their search effort to maximize their expected utility. Taking expectations of equation 13, taking the derivative with respect to $\hat{s}_2$, and rearranging the first order condition yields the following expression for individuals' effort choices:

[3] An alternative parameterization would be to let $\mu(x) = \lambda x$ with $\lambda > 1$ for $x < 0$. This would lead to partial forgetting for sufficiently large λ with similar overall predictions for relevant parameter ranges.

$$e^*(\hat{s}_2) = \frac{1 + \phi_i \hat{s}_2}{\gamma}$$

This implies that search effort increases in skills beliefs for individuals with instrumental motives ($\phi_i > 0$). To see why, take the derivative with respect to $\hat{s}_2$ yields:

$$\frac{de^*}{d\hat{s}_2} = \frac{\phi_i}{\gamma} \geq 0$$

Willingness to pay for skill information. We define willingness to pay for learning true skill as the expected gain from having access to the unbiased signal, accounting for the option to discard the information:

$$WTP_i(\hat{s}_i) = \mathbb{E}\left[U_{2i}(e^*(\hat{s}_{i,2}), \hat{s}_{i,2}) \,|\hat{s}_i\right] - \mathbb{E}[U_{2i}(e^*(\hat{s}_i), \hat{s}_i)]\,. \tag{14}$$

We make two additional assumptions to characterize population level willingness-to-pay for information. Assumption 1 ensures that some individuals with ego motives have negative WTP for information, matching the fact that we observe a sizable share of individuals with negative WTP in the data.

Assumption 1 (Forgetting is sufficiently costly to induce negative WTP)**.** *We assume that* $\frac{\alpha}{\delta} < 4.5$ *to ensure that at least some individuals with only ego motives have negative WTP for information about skills.*

Assumption 2 ensures that all individuals with instrumental motives have a positive WTP.[4]

Assumption 2 (Instrumental gains dominate forgetting costs)**.** *For job seekers with both motives (*$\alpha_i = \alpha$ *and* $\phi_i = \phi$*), the expected instrumental value of improved calibration is sufficiently large relative to* δ *so that* $WTP_i > 0$*.*

Proposition 2 (WTP by motive type)**.** *For intermediate ranges of* α/δ*, willingness to pay for skill information can be negative, zero, or positive and differs systematically by motive type. In particular:*

(i) If $\alpha_i = 0$ *and* $\phi_i = 0$*, then* $WTP_i = 0$*.*

(ii) If $\alpha_i = 0$ *and* $\phi_i = \phi$*, then* $WTP_i > 0$*.*

[4]This streamlines the derivation of treatment effect predictions. Allowing Type 4 individuals to have negative WTP would lead to a small positive average treatment effect on search effort among the group of individuals with negative WTP, all other things being equal.

(iii) If $\alpha_i = \alpha$ and $\phi_i = 0$, then under Assumption 1 WTP_i depends on baseline confidence and is negative for sufficiently optimistic baseline beliefs.

(iv) If $\alpha_i = \alpha$ and $\phi_i = \phi$, then under Assumption 2, $WTP_i > 0$.

Effort treatment effect of information. Define the treatment effect on effort from receiving the unbiased signal as

$$TE_i \equiv e_i^*(\hat{s}_{i,2}) - e_i^*(\hat{s}_i) = \frac{\phi_i(\hat{s}_{i,2} - \hat{s}_i)}{\gamma}. \tag{15}$$

Based on the above definition and the derived belief updating patterns, we obtain Propositions 3 to 6 about treatment effects on search effort (Proofs are displayed in Appendix Section C.5. These Propositions directly match to the treatment effect regressions in Sections 4 and 5.

Proposition 3 (Average effort response)**.** *job seekers have positive expected treatment effects on search effort: $\mathbb{E}[TE_i] > 0$.*

Proposition 4 (Effort response by baseline confidence)**.**

a. Ex-post underconfident job seekers have positive expected treatment effects: $\mathbb{E}[TE_i \mid \hat{s}_i \leq s] > 0$.

b. Ex-post overconfident job seekers have negative expected treatment effects: $\mathbb{E}[TE_i \mid \hat{s}_i > s] < 0$.

c. The average absolute expected search effort effect is larger for underconfident than for overconfident job seekers: $|\mathbb{E}[TE_i \mid \hat{s}_i \leq s_i]| > |\mathbb{E}[TE_i \mid \hat{s}_i > s]|$.

Proposition 5 (Effort response by baseline WTP)**.** *job seekers' expected search effort treatment effects differ by their WTP for information:*

a. job seekers with positive WTP have a positive expected treatment effect: $\mathbb{E}[TE_i \mid WTP_i > 0] > 0$.

b. job seekers with weakly negative WTP have zero expected treatment effects: $\mathbb{E}[TE_i \mid WTP_i > 0] > \mathbb{E}[TE_i \mid WTP_i \leq 0] = 0$.

Proposition 6 (Effort response by baseline confidence and WTP)**.** *Underconfident job seekers with positive WTP have positive and the largest expected treatment effects:*

$$\begin{aligned}&\mathbb{E}[TE_i \mid WTP_i > 0 \,\&\, \hat{s}_i \leq s] > |\mathbb{E}[TE_i \mid WTP_i > 0 \,\&\, \hat{s}_i > s]|\\ &> \mathbb{E}[TE_i \mid WTP_i \leq 0 \,\&\, \hat{s}_i \leq s] = \mathbb{E}[TE_i \mid WTP_i \leq 0 \,\&\, \hat{s}_i > s] \quad = 0\end{aligned}$$

C.5 Mathematical proofs

C.5.1 Proof of Proposition 1.

With these assumptions, we can calculate the share of ex-post overconfident job seekers with $\hat{s}(a_i) > s_i$ at the end of period 1 by separately looking at job seekers who forget the information and those who update their beliefs.

The share of individuals with ego motives ($\alpha_i = \alpha$) who are ex-post overconfident among people who choose to forget a_i is given by:

$$\begin{aligned}share_{OC,forgetter} &= P(s_i < 0.5 | a_i \leq 0.5)\\ &= \int_0^{0.5}\int_0^{0.5} f(s_i|a_i)ds_i f(a_i|a_i \leq 0.5)da_i\\ &= 2\int_0^{0.5}\int_0^{0.5}(1+(1-2s_i)(1-2a_i))ds_i da_i\\ &= \frac{5}{8}\end{aligned} \tag{16}$$

The share of overconfident job seekers among those who decide to not forget the signal is:

$$\begin{aligned}share_{OC,updater} &= P(s_i < \hat{s}(a_i) | a_i > 0.5))\\ &= \int_{0.5}^{1}\int_0^{\hat{s}(a_i)} f(s_i|a_i)ds_i f(a_i|a_i > 0.5)da_i\\ &= 2\int_{0.5}^{1}\int_0^{\frac{1+a_i}{3}}(1+(1-2s_i)(1-2a_i))ds_i da_i\\ &= \frac{67}{144} < 0.5\end{aligned} \tag{17}$$

Combining these two results yields a total share of overconfident individuals among

those with ego motives is $\omega = 157/288 > 0.5$.[5]

The share of overconfident individuals among those without ego motives is:

$$\begin{aligned} share_{OC,\alpha_i=0} &= P(s_i < \hat{s}(a_i)) \\ &= \int_0^1 \int_0^{\hat{s}(a_i)} f(s_i|a_i) ds_i f(a_i) da_i \\ &= \int_0^1 \int_0^{\frac{1+a_i}{3}} (1 + (1-2s_i)(1-2a_i)) ds_i da_i \\ &= \frac{1}{2} \end{aligned} \tag{18}$$

Hence, all job seekers without ego motives ($\alpha_i = 0$) update rationally and are ex-post equally likely to be over and underconfident. Averaging across types, these results imply that the share of overconfident individuals in the population is greater than 50%. This proves Proposition 1.

C.5.2 Proof of Proposition 2

We prove Proposition 2 by considering how knowing their true skill level s_i affects the utility of the four types of job seekers. Equation 3 in the main text defines job seekers' WTP as the difference in expected utility between knowing the true skill level and relying on baseline beliefs $\hat{s}_i$.

WTP with $\alpha_i = 0$ and $\phi_i = 0$ (Type 1)

For individuals with non-instrumental and non–belief-based utility, we have $\phi_i = 0$ and $\alpha_i = 0$. The optimal search effort in this case is $e^{**} = \frac{1}{\gamma}$ and does not depend on the skill level. Hence, the WTP equation is independent of the skill level or skill beliefs:

$$\begin{aligned} WTP_i(none) &= \mathbb{E}[U_{2i}(e^{**})] - \mathbb{E}[U_{2i}(\mathbb{E}[e^{**}])] \\ &= e^{**} - \frac{\gamma}{2} e^{**2} - e^{**} + \frac{\gamma}{2} e^{**2} = 0 \end{aligned}$$

Hence, job seekers with neither belief-based nor instrumental motives have 0 WTP for information about skills. This proves part a. of Proposition 2.

[5] Note that the numerical values in this model should not be interpreted as quantitative predictions. Rather, we set up the model to provide qualitative descriptions and highlight mechanisms.

WTP with $\alpha_i = \alpha$ and $\phi_i = 0$ (Type 2)

We show that, depending on the realization of a_i, WTP can be negative or positive for job seekers with only belief-based motives.

The WTP is defined as the expected utility of the information option minus the utility of retaining the prior:

$$WTP(ego) = \mathbb{E}\left[\max\left(\alpha\mu(s - \hat{s}_i), -\delta\right)\right]$$

$$\begin{aligned}
\mathbb{E}[WTP^{ego}(\hat{s}_i)] &= \underbrace{\alpha \int_{\hat{s}_i}^{1} (s - \hat{s}_i) f(s|\hat{s}_i) ds}_{Gain>0} \underbrace{-\delta \int_{0}^{\hat{s}_i} f(s|\hat{s}_i) ds}_{Forget<0} \\
&= \alpha \int_{\hat{s}_i}^{1} (s - \hat{s}_i)(1 + (1 - 2a_i(\hat{s}_i))(1 - 2s)) ds \\
&\quad -\delta \int_{0}^{\hat{s}_i} (1 + (1 - 2a_i(\hat{s}_i))(1 - 2s)) ds \\
&= \left(\frac{\alpha(2a_i(\hat{s}_i) - 1)}{3}\right) \hat{s}_i^3 + (\alpha(1 - a_i(\hat{s}_i)) + \delta(1 - 2a_i(\hat{s}_i))\, \hat{s}_i^2 \\
&\quad + (2\delta(a_i(\hat{s}_i) - 1) - \alpha)\, \hat{s}_i + \frac{\alpha(a_i(\hat{s}_i) + 1)}{3}
\end{aligned}$$

Where $a_i(\hat{s}_i)$ is the signal a_i implied by baseline beliefs. We assume that individuals who forget the information belief that they received a signal $a_i = 0.5$.

To show that WTP can turn negative, we consider an individual with the most optimistic belief in after Period 1 ($\hat{s}_i = \frac{2}{3}$ and $a_i(\frac{2}{3}) = 1$). In this case the WTP becomes:

$$\mathbb{E}[WTP^{ego}(\frac{2}{3})] = \frac{8\alpha - 36\delta}{81}$$

Hence, we get $\mathbb{E}[WTP^{ego}(1)] < 0$ iff $\frac{\alpha}{\delta} < \frac{9}{2}$. That is if the belief based utility gain is not too large relative to the psychological cost of forgetting. If gain from positive beliefs is too strong relative to the cost of forgetting, individuals would always have a positive WTP.

To explore when the WTP turns positive, we explore the lower bound $\hat{s}_i(0.5) = 0.5 = a_i$. This yields

$$\mathbb{E}[WTP^{ego}(0.5)] = \frac{1}{8}\alpha - \frac{1}{2}\delta$$

This yields $\mathbb{E}[WTP^{ego}(0.5)] > 0$ iff $\frac{\alpha}{\delta} > 4$. That is if the belief based utility gain is not too small relative to the psychological cost of forgetting. If it were too small, individuals would always have a negative WTP for information.

Overall, this implies that Type 2 job seekers have a share of $1 - \eta_2 > 0$ of job seekers with negative WTP.

WTP with $\alpha_i = 0$ and $\phi_i = \phi$ (Type 3)

The WTP for individuals with only instrumental motives hinges on their expected utility gain from learning their true skill level and adjusting their search effort accordingly.

The WTP for perfect information about s is defined as the difference in expected utility between the informed and uninformed cases:

$$\begin{aligned}
WPT_i^{instr}(\hat{s}_i) &= \mathbb{E}[U_{2i}(e^*(s)] - \mathbb{E}[U_{2i}(e^*(\hat{s}_i)] \\
&= \frac{1+\phi\hat{s}_i}{\gamma} + \frac{\phi}{\gamma}\mathbb{E}[s(1+\phi s)] - \frac{1}{2\gamma}\mathbb{E}[(1+\phi s)^2] \\
&\quad -\frac{1+\phi\hat{s}_i}{\gamma} - \frac{\phi}{\gamma}\mathbb{E}[s(1+\phi\hat{s}_i)] + \frac{1}{2\gamma}\mathbb{E}[(1+\phi\hat{s}_i)^2] \\
&= \frac{\phi}{\gamma}(\hat{s}_i + \phi\mathbb{E}[s^2])] - \frac{1}{2\gamma}(1 + 2\phi\hat{s}_i + \phi^2\mathbb{E}[s_i^2]) \\
&\quad -\frac{\phi}{\gamma}(\hat{s}_i + \phi\hat{s}_i^2)] + \frac{1}{2\gamma}(1 + 2\phi\hat{s}_i + \phi^2\hat{s}_i^2) \\
&= \frac{\phi^2}{2\gamma}\left(\mathbb{E}[s^2] - \hat{s}_i^2\right) = \frac{\phi^2}{2\gamma}var(s) > 0 \;\forall\; a_i
\end{aligned}$$

This implies that job seekers with instrumental motives have a positive WTP for feedback. This proves part c. of Proposition 2.

WTP with $\alpha_i = \alpha$ and $\phi_i = \phi$ (Type 4)

Finally, consider the WTP of type 4 job seekers with both motives. The ego-based component of their utility ($\alpha(\mu(\hat{s}_{i,2} - \hat{s}_i) - \delta I_{forget,i}$) will not change, as they will also choose to forget all negative news because of strong loss aversion. Hence, their beliefs will be indistinguishable from those with just ego motives. However, their WTP will be strictly higher because the signal also has an instrumental value to these job seekers. This instrumental value is lower than the for Type 3 job seekers because the selective forgetting reduces the usefulness of the signal in terms of adjusting job-search.

The WTP for the second period signal s is defined as the difference in expected utility

between the informed and uninformed cases:

$$
\begin{aligned}
WPT_i^{both}(\hat{s}_i) &= \overbrace{P(s > \hat{s}_i)\mathbb{E}\left[U(s)|s > \hat{s}_i\right]}^{\text{Updating}} + \overbrace{P(s \leq \hat{s}_i)\mathbb{E}\left[U(> \hat{s}_i)|s \leq \hat{s}_i\right]}^{\text{Forgetting}} \\
&\quad - \underbrace{\mathbb{E}\left[U(\hat{s}_i)\right]}_{\text{No signal}} + WTP_i^{ego}(\hat{s}_i) \\
&= P(s > \hat{s}_i)\mathbb{E}\left[U(s)|s > \hat{s}_i\right] + P(s \leq \hat{s}_i)\mathbb{E}\left[U(\hat{s}_i)|s \leq \hat{s}_i\right] \\
&\quad - P(s > \hat{s}_i)\mathbb{E}\left[U(\hat{s}_i)|s > \hat{s}_i\right] - P(s \leq \ \hat{s}_i)\mathbb{E}\left[U(\hat{s}_i)|s \leq \hat{s}_i\right] \\
&\quad + WTP_i^{ego}(a_i) \\
&= P(s > \hat{s}_i)\underbrace{\left(\mathbb{E}\left[U(s)|s > \hat{s}_i\right] - \mathbb{E}\left[U(\hat{s}_i)|s > \hat{s}_i\right]\right)}_{>0\text{; as adjustment dominates}} + WTP_i^{ego}(a_i)
\end{aligned}
$$

Assumption 2 ensures that WPT_i^{both} is positive for all job seekers. Technically, is sufficient to assume that $WPT_i^{both}(\frac{2}{3}) > 0$ as this implies that $WPT_i^{both}(\hat{s}_i) > 0 \ \forall \ \hat{s}_i \in [\frac{1}{3}, \frac{2}{3}]$. This is sufficient to ensure the heterogeneity by WTP we derive in Propositions 6.[6] This proves part d. of Proposition 2.

Proof of Proposition 3: Average Treatment Effect

To analyze the population average treatment effect, we only consider job seeker Types 3 and 4. Job seekers of Types 1 and 2 have $\phi_i = 0$ and hence zero average treatment effects.

Type 3 job seekers of with only instrumental motives also have zero a expected average treatment effect. Intuitively, belief updating is unbiased and the optimal effort function is linear in skills. Hence, negative and positive effort responses will offset each other in the population. Formally, we can show that:

[6] It is not a necessary condition. Alternative sufficient conditions involve relative shares of Type 2 to Type 1 and 3 job seekers to ensure that the positive treatment effect among Type 4 job seekers with positive WTP is not outweighed by a large group of Type 2 job seekers with 0 average treatment effects.

$$
\begin{aligned}
\mathbb{E}[TE_i^{Type\ 3}] &= \int_0^1 \int_0^1 \frac{\phi(s_- \hat{s}_i)}{\gamma} f(s, a_i) da_i ds \\
&= \int_0^1 \int_0^1 \frac{\phi\left(s - \frac{1+a_i}{3}\right)}{\gamma} (1 + (1-2a_i)(1-2s)) da_i ds \\
&= \frac{\phi}{\gamma} \int_0^1 \frac{4(2s-1)}{9} ds \\
&= \frac{\phi}{\gamma} \left[\frac{4}{9} - \frac{4}{9}\right] = 0
\end{aligned}
$$

This implies that the sign of the average treatment effect only depends on Type 4 job seekers. They will only ever increase their search effort in response to information, because we assume that they are sufficiently loss averse that they forget all negative news about their skills. Hence, the average treatment effect across all four types has to be positive.

C.5.3 Proof of Proposition 4: Treatment Effects by Beliefs

First, consider the effect sizes among Type 3 individuals. For underconfident individuals we get the following average treatment effect.

$$
\begin{aligned}
\mathbb{E}[TE_i^{Type\ 3} | \hat{s}_i \leq s] &= \int_0^1 \int_{\hat{s}_i}^1 \frac{\phi(s - \hat{s}_i)}{\gamma} f(s|a_i) ds f(a_i) da_i \\
&= \frac{\phi}{\gamma} \int_0^1 \int_{\frac{1+a_i}{3}}^1 \left(s - \frac{1+a_i}{3}\right) (1 + (1-2s)(1-2a_i))\, ds da_i \\
&= \frac{\phi}{\gamma} \int_0^1 \frac{2a_i^4 - 4a_i^3 - 6a_i^2 + 8a_i + 8}{81} da_i \\
&= \frac{47\phi}{405\gamma} > 0
\end{aligned}
$$

For overconfident individuals we obtain a symmetric, negative expression.

$$
\begin{aligned}
\mathbb{E}[TE_i^{Type\ 3} | \hat{s}_i > s_i] &= \int_0^1 \int_0^{\hat{s}_i} \frac{\phi(s - \hat{s}_i)}{\gamma} p_1(s|a_i) ds f(a_i) da_i \\
&= \int_0^1 \int_0^{\frac{1+a_i}{3}} \frac{\phi(s - \frac{1+a_i}{3})}{\gamma} \left(\frac{1 + (1-2s)(1-2a_i)}{a_i}\right) ds a_i da_i \\
&= -\frac{47\phi}{405\gamma} < 0
\end{aligned}
$$

This implies that the average *absolute* treatment effect among over- and underconfident Type 3 job seekers with just instrumental motives is the same.

Next, we consider the expected effect among underconfident Type 4 job seekers:

$$\begin{aligned}
\mathbb{E}[TE_i^{Type\ 4}|\hat{s}_i \leq s] &= \overbrace{\int_0^{0.5}\int_{0.5}^{1}\frac{\phi(s-0.5)}{\gamma}f(s|a_i)dsf(a_i)da_i}^{\text{Period 1 forgeters}} \\
&\quad + \underbrace{\int_{0.5}^{1}\int_{\hat{s}_i}^{1}\frac{\phi(s-\hat{s}_i)}{\gamma}f(s|a_i)dsf(a_i)da_i}_{\text{Period 1 updaters}} \\
&= \int_0^{0.5}\int_{0.5}^{1}\frac{\phi(s-0.5)}{\gamma}(1+(1-2s)(1-2a_i))dsda_i \\
&\quad + \int_{0.5}^{1}\int_{\frac{1+a_i}{3}}^{1}\frac{\phi(s-\frac{1+a_i}{3})}{\gamma}(1+(1-2s)(1-2a_i))dsda_i \\
&= \int_0^{0.5}\frac{\phi\left(4a_i+1\right)}{24\gamma}da_i + \int_{0.5}^{1}\frac{2\phi\left(a_i^4-2a_i^3-3a_i^2+4a_i+4\right)}{81\gamma}da_i \\
&= \frac{\phi}{24\gamma}+\frac{47\phi}{810\gamma} = \frac{323\phi}{3240\gamma} > 0
\end{aligned}$$

Overconfident Type 4 job seekers have zero treatment effects as they will choose to forget the information. Similarly, Type 1 and 2 job seekers have no instrumental motives and, hence, zero treatment effects.

Finally, to calculate the average expected treatment effect, we also need to take into account Type 1 and 2 job seekers without instrumental motives and zero expected treatment effects. Let us denote the share of type j job seeker as ψ_j with $\sum_{j=1}^{4}\psi_j = 1$. The share of overconfident individuals among Type 1 and 3 job seekers is 0.5. Moreover, we know from Proposition 1 that, among individuals with ego-motives, the share of overconfident job seekers is $\omega = 157/288 > 0.5$.

This allows us to denote the average treatment effect among underconfident individuals as:

$$\mathbb{E}[TE_i|\hat{s}_i \leq s] = \frac{0.5\psi_3\frac{47\phi}{405\gamma}+(1-\omega)\psi_4\frac{323\phi}{3240\gamma}}{0.5(\psi_1+\psi_3)+(1-\omega)(\psi_2+\psi_4)} > 0$$

This proves part a. of Proposition 4.

The equivalent expression for overconfident individuals is:

$$\mathbb{E}[TE_i|\hat{s}_i > s] = \frac{-0.5\psi_3 \frac{47\phi}{405\gamma}}{0.5(\psi_1+\psi_3)+\omega(\psi_2+\psi_4)} < 0$$

This proves part b. of Proposition 4.

Importantly, $\omega > 0.5$ directly yields $|\mathbb{E}[TE|\hat{s}_i \leq s]| > |\mathbb{E}[TE|\hat{s}_i > s]|$. Hence, the absolute search effort response is larger among underconfident individuals compared to overconfident individuals. This proves part c. of Proposition 4.

C.5.4 Proof of Proposition 5: Effects by WTP

Next, we explore treatment effect heterogeneity by whether individuals have a positive WTP for the information or not. Type 1 job seekers have 0 WTP and also zero treatment effects. Type 2 job seekers have a share $\eta_2 \in (0.5, 1]$ with positive WTP but all have zero treatment effects. Type 3 job seekers have positive WTP and zero expected treatment effects (as the effect of overconfident and underconfident cancel out).

Type 4 job seekers have all positive WTP as we assume that instrumental motives dominate their WTP.

The treatment effect among ex-post underconfident Type 4 individuals with positive WTP is the same as calculated previously:

$$\mathbb{E}[TE_i^{type\ 4}|\hat{s}_i < s] \quad = \quad \frac{323\phi}{3240\gamma}$$

As before, ex-post overconfident individuals with positive WTP have zero treatment effects. We also know the share of underconfident job seekers among Type 4 job seekers as $1-\omega = 131/288$:

This is sufficient to calculate the expected treatment effect among individuals with positive WTP as:

$$\mathbb{E}[TE_i|WTP > 0] \quad = \quad \frac{\psi_4 * (1-\omega)\mathbb{E}[TE_i^{type\ 4}|\hat{s}_i < s]}{\psi_4(1-\omega)+\psi_3+\psi_2\eta_2} > 0$$

Part b. With our assumption that instrumental motives dominate the ego motives, we obtain $WTP_i^{both}(a_i) > 0 \ \forall \ a_i$. In that case, only Type 1 and 2 job seekers have a non-positive WTP. Type 1 and 2 job seekers have no instrumental motives and, hence, zero treatment effects. This directly yields $\mathbb{E}[TE_i|WTP \leq 0] = 0$ and proves part b. of Proposition 5.

C.5.5 Proof of Proposition 6: Treatment Effects by WTP and Beliefs

Proposition 6 follows directly from our previous results. First note that, with our assumptions, job seekers with non-positive WTP will never react to the treatment. Among individuals with a positive WTP, we see the same heterogeneity as for Proposition 4. This implies that underconfident individuals with positive WTP have the largest average treatment effect.

To show this formally, we define the fraction of individuals in each of the four subgroups that adjust their search effort in response to receiving information about their true skill level. The denominators reflect the total size of each group, while the enumerators reflect the share of individuals in that group who react to the treatment.

$\hat{\mathbf{s}}_\mathbf{i} \leq \mathbf{s}$**,** $\mathbf{WTP} > \mathbf{0}$ There are two groups of job seekers with non-zero treatment effects in this subgroup. Underconfident Type 3 and 4 job seekers both increase their search effort in response to information. Furthermore, there is a share of $\xi_{+,UC} \in (0,1)$ underconfident Type 2 job seekers among the η_2 Type 2 job seekers with positive WTP. η_2 is either exactly zero or in $[0.5, 1)$.

We can calculate $\xi_{+,UC}$ explicitly. If η_2 is zero,$\xi_{+,UC}$ is trivially zero 0. If $\eta_2 \in [0.5, 1)$ we obtain the following:

$$\begin{aligned}
P_i^{Type2}(\hat{s}_i \leq s | WTP > 0) &= \frac{\int_{0.5}^{\eta_2}\int_{\hat{s}_i}^{1} f(s|a_i)ds f(a_i)da_i + \int_{0}^{0.5}\int_{0.5}^{1} f(s|a_i)ds f(a_i)da_i}{P(WTP>0)} \\
&= \frac{1}{\eta_2}\int_{0.5}^{\eta_2}\int_{\frac{1+a_i}{3}}^{1}(1+(1-2s)(1-2a_i))dsda_i \\
&\quad + \frac{1}{\eta_2}\int_{0}^{0.5}\int_{0.5}^{1}(1+(1-2s)(1-2a_i))dsda_i \\
&= \frac{-16\eta_2^4 + 32\eta_2^3 + 128\eta_2 - 13}{288\eta_2} = \xi_{+,UC} \in [\frac{108}{288}, \frac{131}{288}] < 0.5
\end{aligned}$$

Putting this together yields:

$$\mathbb{E}[TE_i | \hat{s}_i \leq s \& WTP > 0] = \frac{\psi_3 0.5 \mathbb{E}[TE_i^{Type\ 3} | \hat{s}_i \leq s] + \psi_4(1-\omega)\mathbb{E}[TE_i^{Type\ 4} | \hat{s}_i \leq s]}{\psi_2\eta_2\xi_{+,UC} + \psi_3 0.5 + \psi_4(1-\omega)} > 0$$

$\hat{s}_i > s$**, ,** $WTP > 0$ In this group, only type 3 job seekers have non-zero treatment effects. This is because overconfident type 4 job seekers always opt to forget the information.

Furthermore, there is a share $\xi_{+,OC} = 1 - \xi_{+,UC}$ of underconfident Type 2 job seekers with positive WTP if any Type 2 job seeker has a positive WTP.

$$\mathbb{E}[TE_i|\hat{s}_i > s \& WTP > 0] = \frac{\psi_3 0.5 \mathbb{E}[TE_i^{Type\ 3}|\hat{s}_i > s]}{\psi_2 \eta_2 \xi_{+,OC} + \psi_3 0.5 + \psi_4 \omega} < 0$$

To show that$|\mathbb{E}[TE_i|\hat{s}_i \leq s \& WTP > 0] \geq |\mathbb{E}[TE_i|\hat{s}_i > s \& WTP > 0]|$ We compare the denominator and numerator separately. The numerator for underconfident job seekers is larger iff $\psi_4(1-\omega)\mathbb{E}[TE_i^{Type\ 4}|\hat{s}_i \leq s] > 0$, which is trivially true. The denominator is smaller for underconfident job seekers iff:$\psi_4(1-2\omega) - \psi_2(1-2\xi_{+,UC}) < 0$, which holds as $\omega > 0.5$ and $\xi_{+,UC} < 0.5$. Intuitively, there are fewer underconfident than overconfident individuals among Type 2 and Type 4 job seekers as they forget negative news in Period 1. This is also true if we ignore high realizations of a_i that lead to a negative WTP. Based on this comparison.

$\hat{s}_i \leq s$**,** $WTP \leq 0$ There are only Type 1 and 2 individuals with zero expected treatment effects in this group.

$$|\mathbb{E}[TE_i|\hat{s}_i \leq s \& WTP \leq 0]| = 0$$

$\hat{s}_i > s$**,** $WTP \leq 0$ Assuming that instrumental motives dominate, there are also only individuals Type 1 and 2 individuals with zero expected treatment effects in this group. Hence, the expected treatment effect in this group is zero.

$$|\mathbb{E}[TE_{OC,WTP\leq 0}]| = \frac{0}{\psi_1 0.5 + \psi_2(1-\eta_2)} = 0$$

Together, these results are sufficient to prove Proposition 6.