Do Men Really Have Greater Socio-emotional Skills than Women? Evidence from Tanzanian Youth *

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Abstract

Individuals' socio-emotional skills (SES) and their perceptions of their own SES both matter for labor market outcomes, as well as for a host of other economic and welfare outcomes. Men appear to have higher levels of SES than women, but this gender gap typically draws on self-reported measures. Few studies use measures beyond self-reports, or seek to measure multiple SES rigorously in large samples, especially in low-income countries. We deploy novel sets of self-reported and behavioral measures of 14 SES among over 4,000 male and female youth not in full-time education, employment or training (NEET), in urban and peri-urban Tanzania. We find that men score higher than women in all 12 positively-worded self-reported measures and that self-reports are strongly correlated with social desirability, cognitive ability, and internalized gender norms. Gender gaps on behavioral measures are only observed for a limited number of skills and far smaller in magnitude. There is a larger gap between self-reported and behavioral measures among men, and we provide suggestive evidence that this reflects men's overestimation of their own skills, rather than women's underestimation.

Keywords: youth employment, socioemotional skills, gender, social desirability, perceptions

JEL Classification: J16, J24, 015

1   Introduction

Global trends have increased the demand for jobs that are more intensive in skills that cannot be automated, such as socio-emotional skills (SES), including in low- and middle-income countries (Deming, 2017). Recent evidence shows that SES — the ability to understand emotions and navigate personal and social situations effectively —— are beneficial for educational outcomes (Chioda et al., 2021) and labor market outcomes (Prada et al. 2019; Allemand et al. 2023), as well as risky behavior, violence, psychosocial wellbeing and other outcomes (Ganimian et al. 2020; Bossuroy et al. 2022). Policymakers now recognize SES as foundational alongside literacy and numeracy, and that investing in SES has the potential to yield high economic returns (Cunningham et al., 2022). However, to identify which SES to focus on to improve both women and men's labor market outcomes, we require more accurate and comprehensive measurement of SES. In fact, not only do actual skill levels matter but perceptions of such skills affect individual economic outcomes and aspirations as well (Reuben et al. 2017; De Martino et al. 2022). Interventions leveraging SES to improve women's economic empowerment and gender equality have focused on equipping women with SES, in line with a growing literature suggesting a female disadvantage in SES (Ajayi et al. 2022; Ashraf et al. 2020; Bandiera et al. 2020; Edmonds et al. 2021). However, this gender gap is typically documented in self-reported measures, and hence it is important to understand if this reflects an actual gap, or rather overestimation by men or underestimation by women, both of which may have different implications for policy.

This paper deploys novel sets of self-reported and behavioral measures of 14 SES among a population of particular interest for active labor-market policies — over 4,000 male and female youth NEET individuals in urban and peri-urban Tanzania. We investigate the extent and correlates of gender differences in SES, as measured by self-reported scales and behavioral measures — which consist of situational judgement tests (SJTs) and tasks. Our main results are threefold. First, we find a significant male advantage in all raw self-reported SES measures except two negatively-valenced skills, with a gender gap of 0.20 standard

deviation units in the aggregate SES self-reported measure; but this male advantage is associated with higher social desirability bias, reports of more internalized regressive gender norms, and lower cognitive ability. Second, gender differences disappear for the majority of the skills when using behavioral measures. A small gender gap in behavioral measures is found for 3 skills and 2 sub-skills with a magnitude of 0.04 to 0.08 standard deviation units. Third, the gap in self-reported and behavioral measures is also higher at higher levels of social desirability and cognitive ability. The gap is also higher among men who are more likely to view men as generally better equipped with problem-solving and decision-making skills than women, while these beliefs are not correlated with the gap between self-reported SES and behaviorally-measured SES among women. We take this as suggestive evidence that the gap between self-reported skills and behaviorally-measured skills among men partly reflects men's overestimation of their own skills due to the internalization of regressive gender norms around men being more skilled in certain domains than women, rather than women's underestimation of their skills.

We expand existing literature in three ways. First, this paper contributes to a wider discussion on gender gaps in SES, which matters for designing policies aiming to improve both female and male labor market outcomes. There is mixed evidence on gender differences in self-reported SES levels. Napolitano et al. (2021) find no gender gap in measures of growth mindset, mastery orientation and grit among Indonesian adolescents. The data in the current paper are included in a recent cross-country study (Ajayi et al., 2022): using data from more than 40,000 individuals across 17 African countries. The study documents a significant male advantage in all self-reported skills except self-control. However, these gaps are often small to moderate in size, in line with the gender similarities hypothesis Hyde 2005. By examining 14 socio-emotional skills, this paper provides important evidence on whether SES training programs should target men or women, and whether curricula should focus on particular skills based on gender. We show additional evidence that gender gaps may be associated with tendencies to misreport or misperceive one's own skills, and that

these gender gaps may not persist when moving away from self-reported measures.

Second, our paper adds to fast-expanding literature on the challenges of self-reported SES measurement, especially nascent literature in low- and middle-income countries (LMICs) (Valerio et al. 2016; Laajaj and Macours 2021; Danon et al. 2023).[1] Accurately measuring SES remains a challenge, especially in LMICs, due to translation issues, low levels of literacy, response scales that can be difficult to remember or interpret, offline data collection, time requirements and western bias in scoring objective measures (Laajaj et al. 2019; Dinarte Diaz et al. 2022; Soto et al. 2021). Broader literature including from high-income countries has begun to highlight the importance of objective skills and traits measurement (Duckworth and Yeager, 2015). Self-reported skills measures face challenges including acquiescence bias, i.e., the tendency to agree with yes/no questions regardless of their content; reference bias, i.e. respondents' use of different comparison groups or frames of reference in rating their abilities; and social desirability bias, i.e., the tendency of subjects to respond to test items in such a way as to present themselves in socially acceptable terms. All of these biases may differ for men and women, especially if men and women compare themselves to different reference groups or have different ideas of which skills are socially desirable for their gender (Eagly and Wood 2012; Feingold 1994). This bias has necessitated innovations in measurement with more concrete scenario-based, observation-based or task-based measures, which rely less on subjective judgments, suffer less from reporting bias and have the potential to provide more accurate measures of skills (Duckworth and Yeager, 2015). We expand this line of work by examining a larger set of 14 SES, and systematically comparing self-reports and behavioral measures for each skill.

Third, this paper contributes to the literature on men's overestimation of their skills and abilities, which poses a particular concern when studying gender gaps using self-reports. If gender gaps are driven by men's overestimation of their own skill or societal beliefs that men are better at particular skills, policy may work to update social beliefs around men and

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[1]By contrast, Boon-Falleur et al. (2022) show how self-reported measures outperform behavioral tasks measuring SES in a high-income country school setting.

women's relative abilities, rather than focus on training seemingly less skilled women. Policy to update beliefs may be particularly relevant for (i) women's education and occupational aspirations and (ii) contexts where selections happen by interview or self-reported assessment – such as in hiring decisions, loan applications, or selection into a program. There is growing evidence on a gender gap in overconfidence (Beyer 1990; Lundeberg et al. 1994; Bengtsson et al. 2005; Niederle and Vesterlund 2007; Reuben et al. 2012, 2014, 2017). Overconfidence in one's own abilities helps explain why men predominate as leaders (as demonstrated by Reuben et al. (2012) in a lab setting in the US); and may contribute to gender differences in college major choices and labor market expectations (Reuben et al., 2017), sub-optimal educational/career choices (Wang and Degol, 2017), and sub-optimal hiring choices when employers use self-reports on performance (Reuben et al., 2014). Much of the evidence points to men overestimating their abilities rather than women underestimating their own (see for instance Bench et al. (2015) on STEM fields in the US). That said, a few studies have shown that women exhibit a gap between self-assessments of ability and actual ability — which influences education and employment aspirations (De Martino et al., 2022) — and may be driven by everyday sexism and the internalized belief that women are less capable (Correll 2004; Seron et al. 2016). In Uganda, Campos et al. (2015) found that women who worked in male-dominated occupations demonstrated greater self-efficacy and were less concerned with social judgments. Women were shown to rank lower than men on self-assessments of intelligence across 12 countries (Von Stumm et al., 2009) while no gender difference was observed in objective assessment (Jensen, 1999). A review of 46 meta-analyses supports the hypothesis that men and women are not vastly different psychologically, especially in low-income countries (Hyde 2005; Costa Jr et al. 2001), although evidence is scarce outside high-income countries. Men's overestimation and women underestimation of their own ability has been shown to be due in part to implicit gender stereotypes (Reuben et al., 2014). Our paper adds to this evidence by showing that the gap between men's (but not women's) self-reported skills and behaviorally-measured skills is correlated with their reports of beliefs

about gender norms such as men being more skilled in certain domains.

The remainder of the paper is organized as follows. In Section 2, we present the context, data and measurement methodology. In Section 3 we discuss the econometric methodology and results. In Section 4 we conclude and provide a discussion.

2 Context, data and methodology

2.1 Data source

Our analysis draws from data collected between April and June 2021, from 4,459 individuals spread over 40 communities in three Tanzanian cities: Dodoma, Dar es Salaam, and Iringa. The dataset constitutes the baseline of a randomized control trial, conducted in collaboration with BRAC, an international development organization. The study is designed to examine which SES are most teachable to vulnerable male and female youth, and which matter most for economic empowerment.[2] The analysis in this paper focuses on baseline information collected on demographics, respondent and parental education, SES, cognitive ability, social desirability, and gender attitudes.

2.2 Measuring socio-emotional skills

A measurement team including members of the research team for this paper developed a framework of 14 SES (Appendix Figure A1)— informed by existing frameworks, consultations with psychologists, focus group discussions, literature on which socio-emotional skills matter for labor outcomes, and theory on gender gaps in levels and returns to SES (Delaval-lade and Rouanet, 2020). The list of skills was designed to be as exhaustive and mutually exclusive as possible, and includes four sub-categories: self awareness skills (emotional awareness, self awareness); social awareness skills (listening, empathy); self management

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[2]The impact evaluation study compares the impact of SES training focused on different sets of SES. The results are expected to inform updates to one of BRAC's flagship programs, the Empowerment and Livelihood program (ELA), which provides training and mentorship via safe-spaces.

skills (emotional regulation, self-control, perseverance, personal initiative, problem solving and decision making); and relationship management skills (expressiveness, interpersonal relatedness, influence, negotiation, and collaboration).

For each of the 14 skills, our baseline survey included one self-report scale and one behavioral measure: either a SJT (for 9 skills) or a task-based measure (for 5 skills). The SES measures were rigorously developed over several years and validated in three Sub-Sahara African countries (Das et al. (2023) includes these results for self-reported measures). The measurement team conducted a review of existing measures and consulted with psychologists and practitioners. While the team sought to use existing measures, they were limited by the precise definition of skills in the 14-skill framework, and key limiting specifications such as low literacy and computer literacy requirements, the necessity of administering the survey offline by enumerators with tablets, survey fatigue, and avoiding proprietary measures such that measures could be made publicly available. Among the self-report scales, five skills are measured using original items, and nine are pieces and combinations of multiple scales with a few original items. For each skill, the self-report scale included 6 to 12 items and utilized a five-point Likert response scale.

For the behavioral measures, three are based on existing measures, and the remaining measures are original, designed by the measurement team. SJTs, used for 9 skills, each involve two to three scenarios. Each scenario is followed by a list of several "good" actions, associated with the successful use of a skill, and a few "poor" actions, associated with the poor use of a skill. Individuals are then asked their likelihood of taking each action. The scenarios were designed to examine SES in the context of economic empowerment, and constrain the context in which individuals reported their likely behaviors. Thus, they were expected to improve the comparability of responses from individuals with differing socioeconomic and demographic backgrounds. [3] The tasks used to measure the 5 remaining skills

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[3]Scenarios and responses were developed using critical incident sourcing and surveys of possible responses as recommended by Cabrera and Nguyen (2001). The list of actions following each scenario mirrors the content of the self-reported scales such that the included definitions are as similar as possible. Measures utilize an adapted format that allow for them to be administered verbally while minimizing cognitive load

include a simulated SMS conversation with responses encoded by enumerators to measure collaboration, an enumerator post-survey assessment to measure self control, responses to scenarios involving conflict,[4] a frustrating puzzle to measure perseverance,[5] and a listening prompt followed by enumerator assessments of active listening and questions to assess comprehension. Measurement examples are provided in Appendix Table A5.

After the measures were developed, they were iteratively adapted based on (i) an extensive translation process in each country where the measure was used; (ii) cognitive interviews assessing respondents' understanding; and (iii) iterative psychometric analysis using data from countries where these measures would be used (Nigeria, Cote d'Ivoire, and Tanzania), including an examination of polychoric correlations, internal reliability, split-sample exploratory and confirmatory factor analysis, and item response theory. This analysis was utilized to remove or revise ineffective items from both self-report scales and situational judgement tests.

Each skill score for self-report measures was based on a simple average of item responses [6]. Similarly, the scores for task-based measures were based on simple averages[7]. For SJTs, item lists for "good" actions, those associated with utilizing a given skill, were separated into scenario-based dimensions, and a geometric mean was used to combine them. The average score for the "poor" actions, those associated with poor use of a skill, were then subtracted from the score for "good" actions.

Final scores for individuals' skills were standardized by subtracting the mean and dividing

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for respondents.

[4]This task was adapted from one originally designed to measure negotiation. While the task was tested and could not capture negotiation, the adapted version captures aspects of empathy (Selman et al., 1986).

[5]Over the course of 4 rounds, individuals were asked to select an easy or difficult puzzle where they would need to count the number of triangles in a given figure. The task was adapted from one used in Alan et al. (2019).

[6]The team considered using factor scores, but analysis produced similar results and average scores were considered simpler to utilize and interpret.

[7]For empathy, an average was taken of items focused on the pleasure or happiness of the respondent after each scenario. For perseverance, an average was taken across 4 rounds of the game; for each round, the score was based on the difficulty of the puzzle and whether the individual answered or did not answer. Whether the response was correct or incorrect did not affect the score, and those who selected a difficult puzzle obtained more points. Those who quit after a given round received zero points.

by the standard deviation of the scores from the male sample. Scores for each skill category were than aggregated by calculating the geometric mean of the included individual skills. A modified geometric mean was utilized to prevent scores from zeroing out in the event that the score from one skill was zero.

2.3 Measuring other variables of interest

Cognitive ability is measured using a test inspired by Raven's matrices (Raven, 1936). For each of six pictures, individuals are given a score of 1 for a correct response and 0 for an incorrect response, then divided by a total of six questions such that the final average score falls between 0 and 1.

The social desirability index (SDI) utilized is based on the 8-item impression management dimension of a short form of the Balanced Inventory of Desirable Responding (BIDR; Hart et al. (2015)) with a 5-point Likert response scale. The items used to assess SDI generally include a series of actions that are deemed socially desirable but uncommon, or socially undesirable but common. Here, the team excluded the dimension of the longer-form BIDR that is focused on self-deceptive enhancement, primarily due to time limitations. An average of the responses to the eight included items is taken, resulting in a score falling between 1 and 5.

Finally, a variable on equitable beliefs is constructed based on the reversed Likert response to the statement *"By nature, men are better at problem solving and decision making than women."*. The score for each individual is an integer between 1 and 5 — and by its reverse nature, a higher score represents a more gender-equitable belief.

2.4 Sample description

The sample was selected using a community sampling frame of streets (a local administrative unit) which met the following criteria: they had at least 120 eligible young men and 120 eligible young women; community leaders confirmed interest in the program; and there was

an existing venue suitable for hosting a training. 40 communities were randomly selected from this list, stratified by city. Within selected communities, we conducted a listing to create a sampling frame of all eligible individuals, defined as those age 16 to 27, not in full-time education or attending boarding school, and not in full time formal salaried employment. From this listing, 60 women and 60 men were randomly selected per community. The final sample is restricted to respondents who answered all questions on SES and comprises an average of 111 individuals per community, of which 50 percent are women.

Table 1 displays summary statistics for the study sample. 73 percent of the sample was located in Dar es Salaam, 20 percent in Dodoma, and 8 percent in Iringa. Individuals have a mean age of 21 and mean of 9 years of education, slightly higher than that of their fathers (8.1 years) and mothers (7.6 years). The parental education level for male participants is slightly higher than that of female participants. Male participants score significantly higher on test of cognitive ability and report lower social desirability and less gender equitable beliefs regarding problem solving and decision-making skills, in line with prevailing evidence (e.g. Agut et al., 2022; Bordalo et al., 2019; Borgonovi et al., 2023). Table 2 includes summary statistics for each of the SES aggregates included in analysis, disaggregated by gender.[8] All scores are standardized based on the male sample.

3   Results

3.1   Empirical strategy

This paper is first concerned with estimating gender gaps in SES; and secondly explore the potential drivers of the gender gaps, if any. We first use an analysis of covariance (ANCOVA) estimator to assess whether there are gender gaps in self-reported and behavioral measures of SES. Here we examine each skill, at various levels of aggregation, in a separate regression.

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[8]Appendix Tables A1 and A2 show descriptive statistics for disaggregated self-reported and behavioral measures respectively.

Our analysis begins with first estimating the conditional gender gaps in SES controlling for basic socio-demographic characteristics. Next we expand the controls to include characteristics that might correlated with individuals' SES. These additional SES correlates include years of education, cognitive ability, social desirability, and internalized gender norms. Finally to test whether these additional correlates play a differential (moderating) role in explaining gender gap, we interact it with the gender dummy.

Thus our main estimating equation is as follows:

$$SES_i = \beta_0 + \beta_1 F_i + \beta_2 Edu_i + \beta_3 Edu_i * F_i + \beta_4 Cog_i + \beta_5 Cog_i * F_i \cdot$$
$$+\beta_6 SDI_i + \beta_7 SDI_i * F_i + \beta_8 Beliefs_i + \beta_9 Beliefs_i * F_i + \beta_{10} X_i' + \lambda_{e,c} + \varepsilon_i \tag{1}$$

SES_i is a skill for individual i, at various levels of aggregation of skills as described in Appendix Figure A1. We use two different types of SES measures: (i) a self-reported measure, and (ii) a behavioral measure, as described above. F_i is a binary variable for the respondent's gender. Edu_i is an interval variable ranging from 0 to 18 representing years of schooling. Cog_i is individual i's cognitive score ranging from 0 to 1 as described in Section 2.3. SDI_i is the SDI score ranging from 1 to 5 as described in Section 2.3. $Beliefs$ is a score ranging from 1 to 5 as described in Section 2.3. X_i' is a vector of socio-demographic controls including age and mother's and father's education, $\lambda_{e,c}$ are enumerator and city fixed effects, and ε_i is the error term which is robust to individual heteroskedasticity. Our estimates do not infer a causal relationship. Nonetheless we argue that our estimates are consistent conditional on socio-demographic controls in addition to enumerator and city fixed effects.

We argue that enumerators introduce noise specific to an individual enumerator, possibly due to the level of explanations they provide or other unintended nudges. Since enumerators [9] were randomly assigned to respondents, inclusion of enumerator fixed effects alleviates

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[9]Our baseline survey was administered by 52 enumerators (equally split by sex) organised into six teams of approximately nine members each. Each team was responsible for surveying respondents within their assigned city: four teams in Dar es Salam and one team each for Dodoma and Iringa. The geographically limited teams were formed, balancing administrative and logistical burdens as well as minimising survey biases. First, we purposely chose six team leaders, one for each team, for administrative purposes. Secondly, the remaining 46

this enumerator-specific measurement error and improves precision. This was in line with literature confirming the role of enumerator-specific influences on skill measurements (see Di Maio and Fiala, 2020; Laajaj and Macours, 2021; Rodriguez-Segura and Schueler, 2023).

The second part of the analysis focuses on the correlates of the gap between an individual's self-reported skill and their score for the same skill using a behavioral measure. Our other key estimating equation is as follows:

$$SESGap_i = \beta_0 + \beta_1 F_i + \beta_2 Edu_i + \beta_3 Edu_i * F_i + \beta_4 Cog_i + \beta_5 Cog * F_i \cdot$$
$$+\beta_6 SDI_i + \beta_7 SDI_i * F_i + \beta_8 Beliefs_i + \beta_9 Beliefs_i * F_i \cdot \quad (2)$$
$$+\beta_{10} SESBehav_i + \beta_{11} X_i' + \lambda_{e,c} + \varepsilon_i$$

$SESGap_i$ is a measure of the gap obtained by subtracting the behavioral measure from the self-reported measure, akin to Reuben et al. (2017), for individual i, for a skill at various levels of skill aggregation as described in Appendix. Edu_i, Cog_i, SDI_i, $Beliefs_i$ and X_i', $\lambda_{e,c}$ and ε_i are as described above. $SESBehav_i$ is the behavioral measure for the skill considered in the outcome.

3.2 Gender gaps in SES?

We begin by reporting gender differences in aggregate SES scores in Table 3, obtained from a modified version of Equation 1. Here, our estimation excludes measures of cognition, education levels, social desirability and gender norms as well as their interaction with the gender dummy from Equation 1. For each (sub)aggregate, we present gender gap estimates using both a self-reported scale and a behavioral scale in Tables 3 and A3 as well as Figure A2. We also report gender gaps in scores for disaggregated SES measures in Figures 1 and

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enumerators chose a city with which they were familiar with logistical considerations. Enumerators who chose Dodoma and Iringa were automatically members of the single team assigned to these cities. Enumerators who chose Dar es Salam were randomly assigned to one of its four teams. These teams were then randomly assigned to communities within their assigned cities. Finally, within an assigned community, enumerators (members of a team) were randomly assigned to specific respondents without blocking by enumerator or respondent characteristics.

2. These gender gaps in the (dis)aggregated SES are adjusted for respondent's age, mother's and father's education as well as enumerator and city fixed effects.

Using self-reported measures we observe a gender gap — a significant male advantage — in overall SES scores. Specifically, Column 1 of Table 3 shows that young women report SES levels that are 0.20 standard deviation units lower than young men on average, after adjusting for differences in respondent's age, parental education as well as enumerator and city fixed effects. We find a similar conditional gender gap when we further partition self-reported SES into subaggregates. For example, we see 0.16 standard deviation units male advantage in awareness-related SES (Column 7 of Table 3) and 0.20 standard deviation units male advantage in management-related SES (Column 13 of Table 3). A similar gap is observed in intrapersonal (Column 1 of Table A3) and interpersonal (Column 7 of Table A3) SES subaggregates. Further examining disaggregated SES using the self-report measures, our results in Figures 1 and 2 indicate a conditional gender gap, ranging from 0.05 to 0.2 standard deviations, for all self-reported SES measures except self-control and a domain of listening – respectful listening. The magnitude of the gender gaps in self-reported measures persists even after accounting for variables (education and cognitive levels, social desirability and internalized gender norms) that are closely linked to individuals SES. For example, Column 2 of Table 3 shows male advantage marginally reduces to 0.17 standard deviations.

This observed gap could either be an actual gender gap in SES, a reflection of gender differences in reporting bias or in the self-perception of one's own SES, or a combination of the two. We first note that women seem to report levels statistically similar[10] to men in only two skills: self-control (Figure 1) and respectful listening (Figure 2). These two skills rely on negatively-framed scales, e.g., *"I say inappropriate things."* or *"Sometimes I can't stop myself from doing something, even if I know it is wrong"*[11]. This may indicate a

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[10]While estimates are statistically similar at conventional levels, coefficients' sign suggest women report higher levels compared to men in these two skills.

[11]In addition, items of opposite valence never loaded on the same scale. Issues arising from combining positively and negatively framed items has been documented in previous literature, see for instance Chyung et al. (2018).

reporting phenomenon wherein men are more likely to agree to statements whether positively or negatively framed. We argue that there is stronger acquiescence bias among men, which we provide evidence for below.

To investigate whether men's advantage in self-reported SES measures may be an artefact of self-reporting, we next turn to behavioral measures. Behavioral measures have the potential to be less biased than self-reports, since in SJTs the "desirable" answer may be less evident, and in task-based measures the objective is to measure the skill being performed directly. Columns 4, 10 and 16 of Table 3 estimate the conditional gender gap using the behavioral measures of SES. At the (sub)aggregate level, the magnitude of the gender difference in SES is at least five times smaller than that observed for self-reported scores, and barely achieves significance at conventional levels. We further find that gender differences persists in only three skills and two sub-skills out of the 14 SES disaggregated skills when we consider behavioral SES measures (Figures 1 and 2). Gender difference persists in skills mostly related to self-management SES (Figure A2). Specifically, we see persistent women's disadvantage in a dimension of listening – active listening – in addition to emotional regulation and perseverance; and marginally (significant at 10%) in PSDM and a dimension of interpersonal relatedness – networking. Overall, these results are more in line with Hyde (2005) and several other meta-analyses which have found that gender differences in SES are small.

3.3 Heterogeneity of the gender gap in SES

We next assess whether measures of cognition, education levels, social desirability and internalized gender norms are correlated with self-reported SES — and whether these correlations differ by gender, potentially explaining the purported gender gap in self-reported SES (and lack of gender gap in behaviorally-measured SES). For example, if self-reported measures are more correlated with social desirability bias relative to behavioural measures, and if men have higher levels of social desirability or the correlation is stronger among men, then this

may explain the pattern of gender gaps outlined above. Therefore, in addition to controls used in estimating conditional gender gap in Section 3.2, our regression equations in this section includes measures of cognition, education levels, social desirability and gender norms as well as their interaction with the gender dummy. This is our main estimation equation, as spelled out in Equation 1.

As expected, we see a positive correlation between cognition and SES levels irrespective of the type of measures used. Coefficients corresponding to cognition in Columns 2 and 5, 8 and 11, 14 and 17 of Table 3 are qualitatively similar between self-reported and behavioral measures. This correlation may reflect a true positive correlation between cognitive and non-cognitive skills, and/or that the skill measures are easier to understand and to answer positively for those with higher cognitive ability. We see a similar positive correlation between SES and education levels, though with a much weaker magnitude compared to cognitive skills. Our results however show, unlike education levels, there was a differential association between cognitive skills and the self-reported SES measures between women and men. Women have a stronger association between cognitive skills and self-reported SES compared to men. For example, compared to men of similar cognitive levels, women's overall self-reported SES is 0.22 standard deviations higher (Column 3 of Table 3). We see similar gender-differentiated margins when self-reported SES are further partitioned into either awareness-related versus management-related SES (Columns 9 and 15 of Table 3) or intrapersonal versus interpersonal SES (Columns 3 and 9 of Table A3). In contrast, we do not see gender-differentiated role of cognition and education levels when behavioral SES measures are used. This finding could indicate that young men and young women realize similar returns to education in terms of SES irrespective of their gender, or may indicate that selection into education based on SES does not vary by gender in this context.

Our results also show a significant positive correlation between social desirability and SES when using both self-reported and behavioral measures, but that the correlation corresponding to self-reported measures is almost twice that of behavioral measures (Columns 2 and 5,

8 and 11, 14 and 17 of Table 3). In addition, we find that the correlation between social desirability and self-reported measures of SES is smaller for women than for men. By contrast, the gender gap on these skills is not significantly correlated with social desirability when using behavioral SES measures (columns 6, 12 and 18 of Table 3). When behavioral measures are used, the nearly zero coefficients may indicate the absence of a gender-differentiated role for social desirability in SES when elicited via behavioural measures. Further exploration shows these results are robust to the inclusion of enumerator's gender and its interaction with the gender of the respondent.[12]

Next we examine whether gender equitable beliefs are associated with self-reported SES. We focus on respondents' endorsement[13] of a statement that men have greater *problem solving and decision making (PSDM)* skills. Our results in Columns 3, 9, and 15 of Table 3 show that men who show less endorsement that men have greater PSDM than women also have lower self-reported SES (significant at 5%). On the contrary, young men who show less endorsement that men have greater PSDM than women had higher SES levels when behavioural SES measures are used. Further, young women's view on gender equality in PDSM is not associated with their SES irrespective of whether self-reported or behavioural measures of SES are used. Taken together, these results could point to gender norms playing a role in how men report or perceive their skill levels.

3.4   Do young men overestimate their SES?

Three striking findings have emerged so far. First is the absence of gender gap in majority of SES when using behavioral measures. Second is a gender gap in self-reported measures that widens among youths who demonstrate higher social desirability, which again is largely absent when using behavioral SES measures. Third, young men who endorse gender unequal beliefs have higher self-reported SES; a pattern not observed among young women, and

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[12]Results are available upon request

[13]Our measure of gender beliefs is reversed such that higher score represents a more gender-equitable belief (See Section 2.3).

largely missing in both genders when using behavioral SES measures. We next correlate the gap between individuals' self-reported and their behavioral measure for the same skill with the covariates used in Section 3.3, in addition to controlling for their actual SES levels from the behavioral measures, by estimating OLS coefficients of Equation 2. If we interpret the behavioral SES measures as more objective, we can interpret the gap between self-report and behavioral skills as overestimation.[14]

If young women face pressure to conform to prevailing gender norms, say on modesty, we might expect them to either discount their skills or attenuate the likelihood to overestimate their skills. At the same time, gender norms might induce young men to overestimate their skills to a larger extent. While we cannot experimentally distinguish between female underestimation and male overestimation; our results so far suggests the latter. In either case, we would expect a gender gap in SES overestimation in favour of young men and also a positive correlation between levels of overestimation and social desirability but at differing levels between men and women.

Consistent with these expectations, results in Table 4 show a higher degree of overestimation in SES among young men relative to young women. For example, young men's overestimation of their overall SES is 0.19 standard deviations higher compared to young women (Columns 1 of Table 4). Columns 4 and 7 of Table 4 shows similar gender gap in overestimation when SES is sub-aggregated as awareness-related and management-related SES. Similarly, Columns 1 and 4 of Table A4 shows a similar gender gap in overestimation when SES is sub-aggregated as intrapersonal and interpersonal SES. These results hold for each disaggregated SES, except for self-control (Figures 3 and 4). Moreover, we find the level of SES overestimation by both men and women positively correlate with their levels of education and cognition (Columns 2, 5 and 8).

Results in Columns 3, 6 and 9 of Table 4 and Columns 3 and 6 of Table A4 provide further evidence that gender norms are associated with skills (mis)perception. First, although young

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[14]Studies indicate both men and women tend to rate their own abilities higher than their actual performance (Bordalo et al. 2019; Exley and Kessler 2022).

women were more likely to overestimate their SES when facing higher social desirability, the magnitude of overestimation was significantly lower compared to men. Secondly, if women seemed modesty to be more socially desirable, we would expect the relationship between social desirability and self-reported scores to be negative for women. However, in Table 3, women's self-reported scores have a positive relationship with social desirability, though the magnitude is smaller than that of men. Thirdly, the more young men endorse that men are more skilled than women at PSDM, the more they overreport their own skills conditional on a given level of behaviorally-measured skills and social desirability bias. Finally, unlike men, gender attitudes among young women do not correlate with their own skills overestimation. These results provide further suggestive evidence that the gender gap in skills self-assessment reflects men's overestimation of their own skills. This suggestive evidence of men's overestimation of SES in Tanzania is in line with lab experiments in the United States using assessments of mathematical ability Bench et al. 2015, knowledge of popular culture, and cognitive ability Beyer 1990.

4   Conclusion

Using innovative SES measures, based on self-reports, situational judgment tests and behavioral tasks all validated in Sub-Saharan Africa, we provide novel evidence on gender differences in SES. Among urban youth in Tanzania, we find that men report significantly higher levels than women on all 14 skills except the two negatively valenced scales – self-control and listening. The gender gap corresponds to a 0.20 standard deviation unit difference on the all-skill aggregate measure.

Gender differences in self-reports are driven by (i) individuals at the higher end of the social desirability distribution, with men displaying a stronger tendency to align their responses to what they deem socially acceptable relative to women; (ii) individuals with lower levels of cognitive ability, with the association between cognitive ability and SES stronger

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among women; and (iii) men who hold the belief that men in general have stronger problem-solving and decision-making skills than women, suggesting that self-reports partly reflect internalized gender norms.

We further show that the male advantage in widely used self-reported SES measures disappears for the majority of skills, when behavioral measures such as situational judgment tests and tasks are administered. Behavioral measures show weaker correlations with social desirability, suggesting that they may be less prone to biased reporting. Further, for men, holding regressive beliefs around men's and women's relative skills is linked with lower behavioral measures but higher self-reports.

Finally, the gap between self-reported and behavioral skill measures is significantly higher for young men than for young women (18 standard deviation units higher). While among women there is no correlation between the assessment gap and beliefs around men and women's relative problem-solving abilities, this assessment gap is higher for men who hold regressive gender views. This may suggest that the skills assessment gap reflects men's over-estimation of their own skills due to gender norms, rather than women's underestimation. In addition, the gender gap in skills overestimation is wider at high levels of social desirability, with men's skills assessment more strongly correlated with their assessment of socially acceptable responses.

These results have important implications for policies seeking to reduce the gender gap in socio-emotional skills and equip women with the skills that are critical for their employability and success on the labor market in low-income settings. The results call for caution on several accounts: first, when measuring socio-emotional skills, especially when using self-reports; second, when targeting women with socio-emotional skills trainings to address the gender gap in employability, since women may be as well equipped as men but less prone to skills' overestimation, and overinflated claims of gender differences may be costly in the workplace (Hyde, 2005). In contexts where the gap in skills' perception might be more a reflection of men overestimating their skills than of women lagging behind in actual skill levels, the

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gender gap in skills assessment may be more accurately addressed by updating men's beliefs over their individual abilities, as well as their social beliefs around men and women's relative SES abilities. Interventions recalibrating misperceptions about others have indeed shown to generally work (Bursztyn and Yang, 2022). Such programs may successfully reshape men's (and women's) perceptions of gender attributes and regressive gender attitudes in low-income country settings include classroom discussions in India (Dhar et al., 2022) or video-based community sensitization in Niger (Bossuroy et al., 2022).

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Tables

Table 1: Descriptive statistics - Control variables

		Men (1)		Women (2)	t-test difference		
Variable	N	Mean/SE	N	Mean/SE	(1)-(2)	Min	Max
Dar es Salaam	2231	0.725 [0.009]	2228	0.725 [0.009]	-0.000	0	1
Dodoma	2231	0.200 [0.008]	2228	0.200 [0.008]	-0.000	0	1
Age in years	2231	21.080 [0.057]	2228	21.048 [0.061]	0.032	16	27
Years of education	2231	9.120 [0.069]	2228	8.996 [0.069]	0.124	0	14
Father's education	2231	8.071 [0.056]	2228	7.785 [0.050]	0.286***	0	15
Mother's education	2231	7.576 [0.054]	2228	7.426 [0.049]	0.150**	0	14
Cognitive Ability	2231	0.719 [0.005]	2228	0.686 [0.005]	0.033***	0	1
Social desirability index	2231	3.412 [0.010]	2228	3.442 [0.010]	-0.030**	1.50	5.00
Equitable beliefs regarding PSDM abilities	2231	2.353 [0.023]	2228	2.997 [0.025]	-0.644***	1.00	5.00

Notes: The values displayed for t-tests are the differences in the means across the groups. PSDM = Problem-solving and decision-making. *** p ≤ 0.01, ** p ≤ 0.05, * p ≤ 0.1.

Table 2: Descriptive statistics - Aggregate self-reported and behavioral measures

		Men (1)		Women (2)	t-test difference		
Variable	N	Mean/SE	N	Mean/SE	(1)-(2)	Min	Max
Self-reported: All	2231	-0.000 [0.021]	2228	-0.194 [0.020]	0.194***	-6.894	3.164
Self-reported: Intra	2231	-0.000 [0.021]	2228	-0.177 [0.021]	0.177***	-6.522	3.153
Self-reported: Inter	2231	0.000 [0.021]	2228	-0.186 [0.020]	0.186***	-7.887	2.979
Self-reported: Awareness	2231	-0.000 [0.021]	2228	-0.159 [0.021]	0.159***	-7.995	2.890
Self-reported: Management	2231	0.000 [0.021]	2228	-0.195 [0.020]	0.195***	-7.281	3.200
Self-reported: Self Awareness	2231	0.000 [0.021]	2228	-0.161 [0.021]	0.161***	-8.372	2.417
Self-reported: Social Awareness	2231	-0.000 [0.021]	2228	-0.110 [0.021]	0.110***	-5.327	2.599
Self-reported: Self Management	2231	-0.000 [0.021]	2228	-0.168 [0.021]	0.168***	-6.755	3.209
Self-reported: Rel Management	2231	0.000 [0.021]	2228	-0.188 [0.020]	0.188***	-8.524	2.715
Behavioral: All	2231	-0.000 [0.021]	2228	-0.030 [0.021]	0.030	-4.573	3.511
Behavioral: Intra	2231	0.000 [0.021]	2228	-0.029 [0.021]	0.029	-6.783	3.028
Behavioral: Inter	2231	0.000 [0.021]	2228	-0.021 [0.021]	0.021	-3.397	4.145
Behavioral: Awareness	2231	-0.000 [0.021]	2228	-0.002 [0.020]	0.002	-5.074	2.060
Behavioral: Management	2231	-0.000 [0.021]	2228	-0.038 [0.021]	0.038	-3.672	3.808
Behavioral: Self Awareness	2231	0.000 [0.021]	2228	0.019 [0.021]	-0.019	-6.765	1.215
Behavioral: Social Awareness	2231	0.000 [0.021]	2228	-0.025 [0.020]	0.025	-4.286	2.003
Behavioral: Self Management	2231	-0.000 [0.021]	2228	-0.057 [0.022]	0.057*	-5.895	3.784
Behavioral: Rel Management	2231	-0.000 [0.021]	2228	-0.012 [0.021]	0.012	-2.921	3.800

Notes: The value displayed for t-tests are the differences in the means across the groups. *** p ≤ 0.01, ** p ≤ 0.05, * p ≤ 0.1.

Table 3: All/Awareness/Management - Self-reported and behavioral measures

	All						Awareness						Management					
	Self-reported			Behavioral			Self-reported			Behavioral			Self-reported			Behavioral		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Women	-0.20***	-0.17***	0.05	-0.04	-0.05**	-0.02	-0.16***	-0.14***	-0.05	-0.03	-0.02	-0.10	-0.20***	-0.17***	0.09	-0.03	-0.05*	0.03
	(0.03)	(0.03)	(0.24)	(0.02)	(0.02)	(0.19)	(0.03)	(0.03)	(0.24)	(0.02)	(0.02)	(0.18)	(0.03)	(0.03)	(0.24)	(0.02)	(0.02)	(0.21)
Years of education		0.03***	0.03***		0.02***	0.02***		0.03***	0.03***		0.01**	0.01		0.03***	0.03***		0.02***	0.02***
		(0.00)	(0.01)		(0.00)	(0.01)		(0.00)	(0.01)		(0.00)	(0.01)		(0.00)	(0.01)		(0.00)	(0.01)
Years of education X Women			0.01			0.00			0.01			0.01			0.01			0.00
			(0.01)			(0.01)			(0.01)			(0.01)			(0.01)			(0.01)
Cognitive Ability		0.40***	0.29***		0.40***	0.35***		0.34***	0.24***		0.18***	0.16**		0.40***	0.29***		0.41***	0.35***
		(0.07)	(0.09)		(0.06)	(0.08)		(0.07)	(0.09)		(0.06)	(0.07)		(0.07)	(0.09)		(0.06)	(0.08)
Cognitive Ability X Women			0.22**			0.11			0.19*			0.03			0.22**			0.12
			(0.11)			(0.10)			(0.11)			(0.09)			(0.11)			(0.10)
Social desirability index		0.49***	0.57***		0.19***	0.20***		0.45***	0.52***		0.02	0.01		0.47***	0.55***		0.23***	0.25***
		(0.04)	(0.05)		(0.03)	(0.04)		(0.04)	(0.05)		(0.03)	(0.04)		(0.04)	(0.05)		(0.03)	(0.04)
Social desirability X Women			-0.16**			-0.02			-0.13**			0.02			-0.16**			-0.04
			(0.07)			(0.05)			(0.07)			(0.05)			(0.07)			(0.05)
Equitable beliefs regarding		-0.03*	-0.05**		0.04***	0.05***		-0.02	-0.05**		0.00	0.02		-0.03*	-0.04**		0.05***	0.06***
PSDM abilities		(0.01)	(0.02)		(0.01)	(0.02)		(0.01)	(0.02)		(0.01)	(0.01)		(0.01)	(0.02)		(0.01)	(0.02)
Equitable beliefs X Women			0.04*			-0.03			0.07**			-0.03			0.03			-0.02
			(0.03)			(0.02)			(0.03)			(0.02)			(0.03)			(0.02)
p(Edu. + Edu. X Women = 0)			0.00			0.00			0.00			0.02			0.00			0.00
p(CA + CA X Women = 0)			0.00			0.00			0.00			0.01			0.00			0.00
p(SD + SD X Women = 0)			0.00			0.00			0.00			0.37			0.00			0.00
p(Equit. + Equit. X Women = 0)			0.84			0.10			0.45			0.44			0.58			0.02
Observations	4459	4459	4459	4459	4459	4459	4459	4459	4459	4459	4459	4459	4459	4459	4459	4459	4459	4459
R-squared	0.12	0.20	0.20	0.40	0.42	0.42	0.11	0.17	0.17	0.46	0.46	0.46	0.12	0.19	0.19	0.35	0.38	0.38

Notes: Results presented are OLS estimates that include controls for enumerator, age, father's education, mother's education and city. Outcome measures are standardized naive scores. Robust standard errors in parentheses. PSDM = Problem-solving and decision-making. Edu. = Years of education. CA = Cognitive Ability. SD = Social Desirability. Equit. = Equitable beliefs. *** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.1$.

Table 4: All/Awareness/Management - Gap between self-reported and behavioral measures

	All SR-Behavioral gap			Awareness SR-Behavioral gap			Management SR-Behavioral gap		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Women	-0.19***	-0.16***	0.06	-0.16***	-0.14***	-0.04	-0.19***	-0.16***	0.09
	(0.03)	(0.03)	(0.23)	(0.03)	(0.03)	(0.24)	(0.03)	(0.03)	(0.24)
Behavioral measure	-0.75***	-0.80***	-0.80***	-0.88***	-0.90***	-0.90***	-0.79***	-0.84***	-0.84***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Years of education		0.03***	0.02***		0.03***	0.03***		0.03***	0.02***
		(0.00)	(0.01)		(0.00)	(0.01)		(0.00)	(0.01)
Years of education X Women			0.01			0.01			0.01
			(0.01)			(0.01)			(0.01)
Cognitive Ability		0.32***	0.22**		0.32***	0.22***		0.33***	0.23***
		(0.07)	(0.09)		(0.07)	(0.09)		(0.07)	(0.09)
Cognitive Ability X Women			0.20*			0.19*			0.20*
			(0.10)			(0.11)			(0.11)
Social desirability index		0.45***	0.53***		0.45***	0.52***		0.43***	0.51***
		(0.04)	(0.05)		(0.04)	(0.05)		(0.04)	(0.05)
Social desirability X Women			-0.16**			-0.14**			-0.16**
			(0.06)			(0.07)			(0.07)
Equitable beliefs regarding		-0.03**	-0.06***		-0.02	-0.05**		-0.04**	-0.05**
PSDM abilities		(0.01)	(0.02)		(0.01)	(0.02)		(0.01)	(0.02)
Equitable beliefs X Women			0.05*			0.07**			0.04
			(0.03)			(0.03)			(0.03)
p(Edu. + Edu. X Women = 0)			0.00			0.00			0.00
p(CA + CA X Women = 0)			0.00			0.00			0.00
p(SD + SD X Women = 0)			0.00			0.00			0.00
p(Equit. + Equit. X Women = 0)			0.64			0.42			0.37
Observations	4459	4459	4459	4459	4459	4459	4459	4459	4459
R-squared	0.43	0.47	0.47	0.46	0.50	0.50	0.47	0.51	0.51

Notes: Results presented are OLS estimates that include controls for enumerator, age, father's education, mother's education and city. Outcome measures are standardized naive scores. Robust standard errors in parentheses. SR = Self-reported. PSDM = Problem-solving and decision-making. Edu. = Years of education. CA = Cognitive Ability. SD = Social Desirability. Equit. = Equitable beliefs. *** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.1$
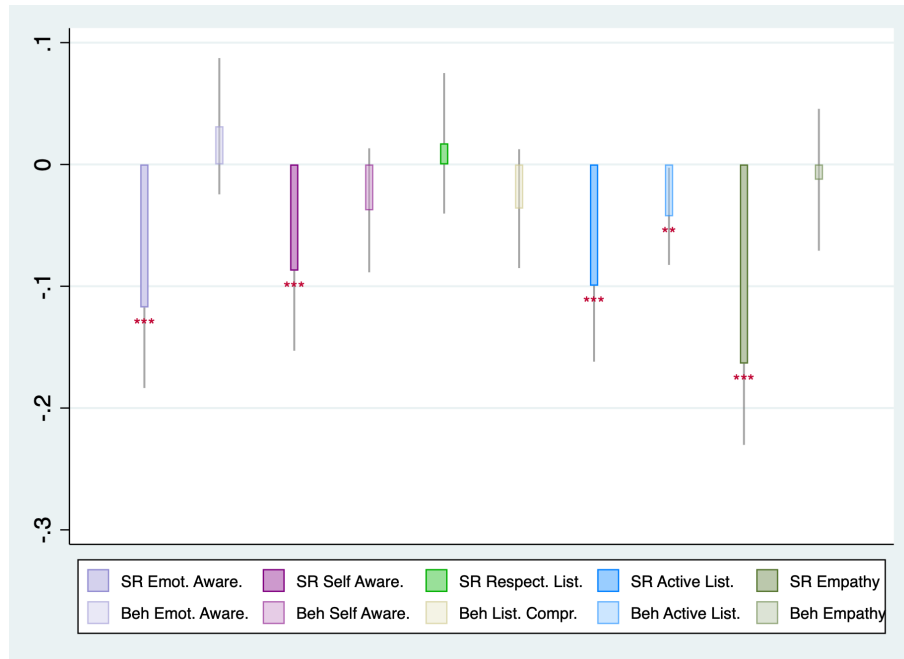
Figures

Figure 1: Awareness - Female advantage on self-reported and behavioral measures

Notes: Emot. Aware. = Emotional Awareness; Self Aware. = Self Awareness; Respect. List. = Respectful Listening; Active List. = Active Listening; List. Compr. = Listening Comprehension.
*** p ≤ 0.01, ** p ≤ 0.05, * p ≤ 0.1

Figure 2: Management - Female advantage on self-reported and behavioral measures
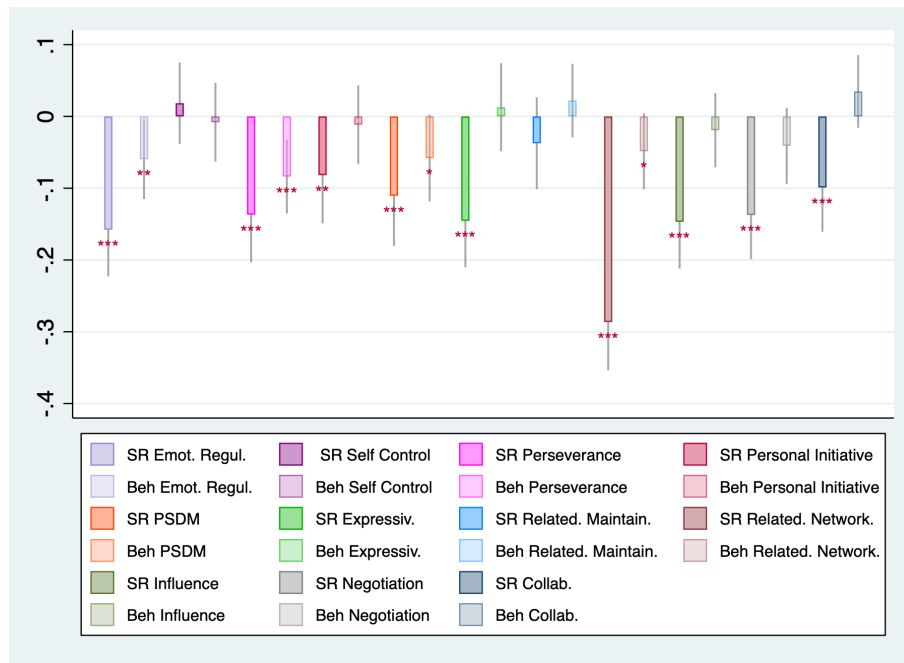
Notes: Emot. Regul. = Emotional Regulation; PSDM = Problem-solving and Decision-making; Expressiv. = Expressiveness; Related. Network. = Relatedness - Networking; Related. Maintain. = Relatedness - Maintaining relationships; Collab. = Collaboration.
*** p ≤ 0.01, ** p ≤ 0.05, * p ≤ 0.1

Figure 3: Awareness - Female advantage on gap between self-reported and behavioral measures
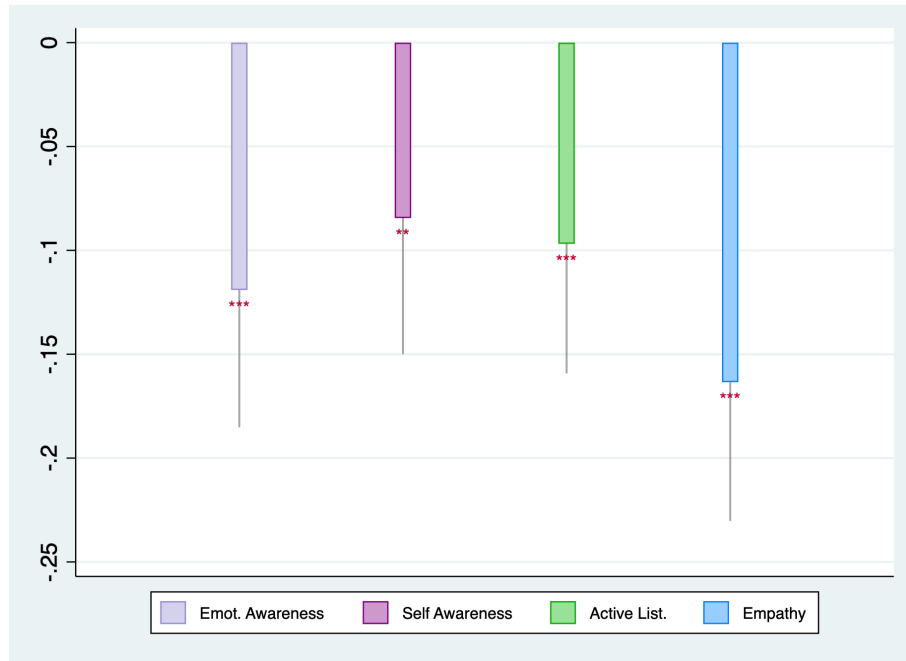
Notes: Emot. Awareness = Emotional Awareness. Active List. = Active Listening.
*** p ≤ 0.01, ** p ≤ 0.05, * p ≤ 0.1

Figure 4: Management - Female advantage on gap between self-reported and behavioral measures
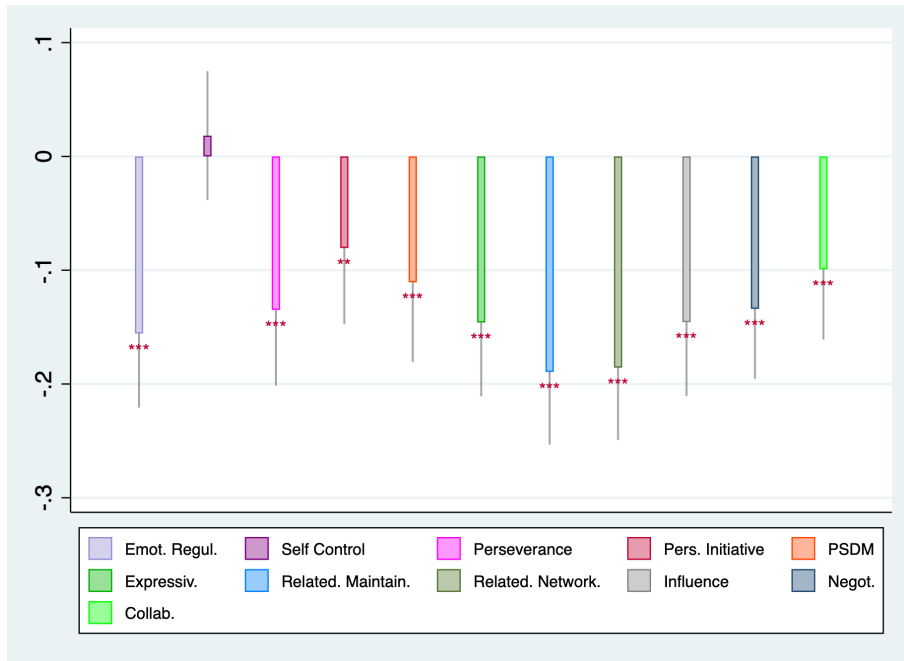
Notes: Emot. Regul. = Emotional Regulation; Pers. Initiative = Personal Initiative; PSDM = Problem-solving and Decision-making; Expressiv. = Expressiveness; Collab. = Collaboration; Related. Network. = Relatedness - Networking; Related. Maintain. = Relatedness - Maintaining relationships; Negot. = Negotiation; Collab. = Collaboration.

*** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.1$

Appendix

Figure A1: Skills definitions with levels of skills aggregation

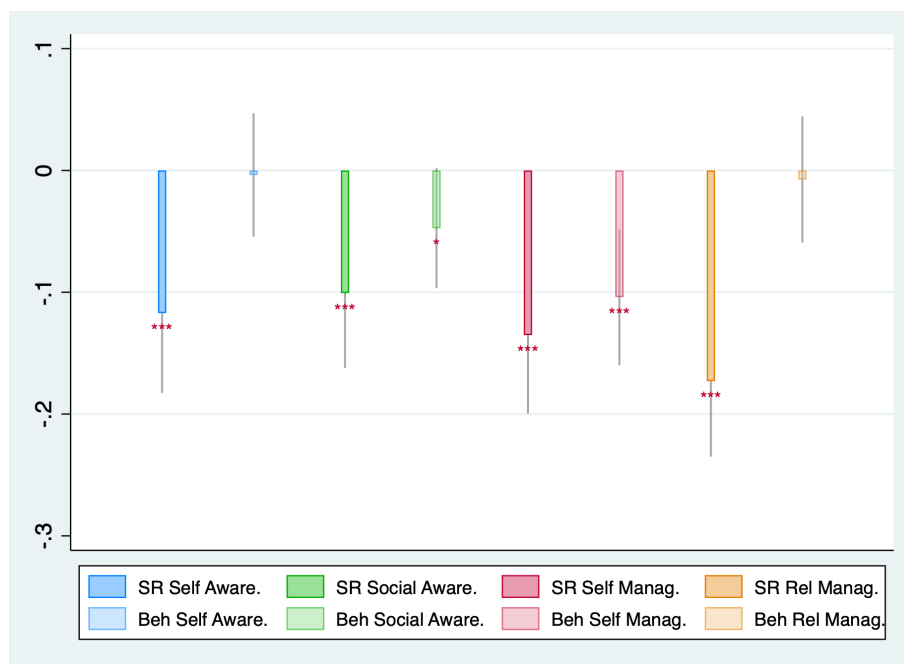|	Intrapersonal	Interpersonal
Awareness	**Self-awareness** *Emotional Awareness*: identifying and accepting one's emotions *Self-awareness*: identifying and interpreting one's own thoughts and behaviors and to evaluate one's strengths and weaknesses	**Social Awareness** *Listening*: attending to what other people are saying, taking time to understand other's point of view, asking clarifying questions and not interrupting at inappropriate times *Empathy*: understand another's viewpoint or thoughts and have emotional concern for another's situation or experience
Management	**Self-management** *Emotional Regulation*: maintaining or changing one's own emotions by controlling one's thoughts and behavioral responses *Self-control*: focusing one's attention, staying on task, breaking habits, restraining impulses and keeping good self-discipline *Personal Initiative*: developing long-term goal, to seek opportunities to improve one's self and to be motivated to put these plans and goals into action *Perseverance*: sustaining effort despite setbacks *Problem-solving and decision-making*: approaching a problem by gathering information, generating a number of solutions and evaluating the consequences of these solutions before acting	**Relationship Management** *Expressiveness*: explaining ideas in a way that others will understand and openly expressing one's opinion *Interpersonal Relatedness*: taking actions intended to build trust and benefit others, initiating and maintaining relationships and being respectful, encouraging and caring for others *Interpersonal Influence*: communicating in a manner that changes other's perspectives and adapting one's behavior in situationally appropriate ways to influence others *Negotiation*: identifying one's own and others' interests and changing one's behaviors as a strategy for resolving interpersonal problems and achieving one's goals *Collaboration*: considering different perspective, listening and communicating in groups of two or more people, identifying situations involving group problem-solving and decision-making, and organizing and coordinating team members to create shared plans and goals.

Figure A2: Female advantage on self-reported and behavioral aggregate measures

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Table A1: Descriptive statistics - Disaggregated self-reported measures

| | | Men | | Women | t-test | | |
| | | (1) | | (2) | difference | | |
Variable	N	Mean/SE	N	Mean/SE	(1)-(2)	Min	Max
Emotional Awareness	2231	-0.000	2228	-0.148	0.148***	-5.321	2.128
		[0.021]		[0.021]			
Self Awareness	2231	0.000	2228	-0.133	0.133***	-6.098	2.091
		[0.021]		[0.020]			
Emotional Regulation	2231	-0.000	2228	-0.167	0.167***	-7.585	2.290
		[0.021]		[0.021]			
Self control	2231	0.000	2228	0.066	-0.066**	-2.352	2.041
		[0.021]		[0.020]			
Perseverance	2231	-0.000	2228	-0.165	0.165***	-5.549	2.165
		[0.021]		[0.022]			
Personal initiative	2231	-0.000	2228	-0.133	0.133***	-6.988	2.183
		[0.021]		[0.022]			
Problem-solving and	2231	-0.000	2228	-0.183	0.183***	-7.835	2.436
Decision-making		[0.021]		[0.021]			
Listening	2231	-0.000	2228	0.040	-0.040	-2.314	1.521
		[0.021]		[0.021]			
Listening 2	2231	-0.000	2228	-0.113	0.113***	-5.325	2.043
		[0.021]		[0.021]			
Empathy	2231	0.000	2228	-0.200	0.200***	-7.799	2.242
		[0.021]		[0.021]			
Expressiveness	2231	0.000	2228	-0.164	0.164***	-4.428	2.505
		[0.021]		[0.021]			
Relatedness	2231	0.000	2228	-0.198	0.198***	-5.481	2.216
		[0.021]		[0.021]			
Influence	2231	-0.000	2228	-0.175	0.175***	-6.429	2.198
		[0.021]		[0.021]			
Negotiation	2231	-0.000	2228	-0.124	0.124***	-5.083	2.207
		[0.021]		[0.021]			
Collaboration	2231	0.000	2228	-0.119	0.119***	-5.194	2.136
		[0.021]		[0.020]			
GSE	2231	-0.000	2228	-0.223	0.223***	-6.240	2.572
		[0.021]		[0.021]			

Notes: The value displayed for t-tests are the differences in the means across the groups. *** p ≤ 0.01, ** p ≤ 0.05, * p ≤ 0.1.

Table A2: Descriptive statistics - Disaggregated behavioral measures

Variable		Men (1)		Women (2)	t-test difference		
	N	Mean/SE	N	Mean/SE	(1)-(2)	Min	Max
Emotional Awareness	2231	-0.000	2228	0.052	-0.052*	-4.613	1.109
		[0.021]		[0.021]			
Self Awareness	2231	0.000	2228	-0.020	0.020	-6.844	0.948
		[0.021]		[0.021]			
Emotional Regulation	2231	-0.000	2228	-0.047	0.047	-2.936	2.823
		[0.021]		[0.021]			
Self control	2231	-0.000	2228	-0.022	0.022	-4	2
		[0.021]		[0.021]			
Perseverance	2231	-0.000	2228	-0.073	0.073**	-1.282	2.537
		[0.021]		[0.020]			
Personal Initiative	2231	0.000	2228	0.025	-0.025	-6.855	1.002
		[0.021]		[0.021]			
Problem-solving and Decision-making	2231	-0.000	2228	-0.023	0.023	-4.091	5.447
		[0.021]		[0.022]			
Listening	2231	-0.000	2228	-0.018	0.018	-2.904	1.041
		[0.021]		[0.021]			
Active Listening	2231	-0.000	2228	-0.005	0.005	-2.243	1.047
		[0.021]		[0.021]			
Listening Comprehension	2231	0.000	2228	-0.042	0.042	-5.164	0.813
		[0.021]		[0.021]			
Empathy	2231	0.000	2228	-0.018	0.018	-4.521	1.818
		[0.021]		[0.020]			
Expressiveness	2231	-0.000	2228	-0.001	0.001	-3	2
		[0.021]		[0.021]			
Relatedness	2231	-0.000	2228	0.012	-0.012	-4.270	2.424
		[0.021]		[0.021]			
Relatedness: Maintaining relationships	2231	-0.000	2228	0.021	-0.021	-3.092	2.500
		[0.021]		[0.021]			
Relatedness: Initiating Relationships	2231	0.000	2228	-0.010	0.010	-5.817	1.061
		[0.021]		[0.021]			
Influence	2231	-0.000	2228	-0.033	0.033	-3.258	2.481
		[0.021]		[0.021]			
Negotiation	2231	-0.000	2228	-0.042	0.042	-3.237	3.222
		[0.021]		[0.021]			
Collaboration	2231	-0.000	2228	0.030	-0.030	-1.836	1.170
		[0.021]		[0.021]			
GSE	2231	-0.000	2228	-0.007	0.007	-4	2
		[0.021]		[0.021]			

Notes: The value displayed for t-tests are the differences in the means across the groups. *** p $\leq$ 0.01, ** p $\leq$ 0.05, * p $\leq$ 0.1.

Table A3: Intrapersonal/Interpersonal - Self-reported and behavioral measures

	Intrapersonal						Interpersonal					
	Self-reported			Behavioral			Self-reported			Behavioral		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Women	-0.18***	-0.15***	-0.03	-0.04*	-0.05**	-0.19	-0.19***	-0.17***	0.13	-0.02	-0.03	0.13
	(0.03)	(0.03)	(0.24)	(0.03)	(0.03)	(0.21)	(0.03)	(0.03)	(0.24)	(0.02)	(0.02)	(0.19)
Years of education		0.03***	0.02***		0.02***	0.02***		0.03***	0.03***		0.01***	0.01**
		(0.00)	(0.01)		(0.00)	(0.01)		(0.00)	(0.01)		(0.00)	(0.00)
Years of education X Women			0.01			0.00			0.00			0.00
			(0.01)			(0.01)			(0.01)			(0.01)
Cognitive Ability		0.38***	0.27***		0.38***	0.31***		0.37***	0.27***		0.29***	0.26***
		(0.07)	(0.08)		(0.07)	(0.08)		(0.07)	(0.09)		(0.06)	(0.07)
Cognitive Ability X Women			0.23**			0.13			0.19*			0.05
			(0.11)			(0.11)			(0.11)			(0.09)
Social desirability index		0.43***	0.50***		0.12***	0.10***		0.49***	0.56***		0.19***	0.22***
		(0.04)	(0.05)		(0.03)	(0.04)		(0.04)	(0.05)		(0.03)	(0.04)
Social desirability X Women			-0.15**			0.05			-0.15**			-0.07
			(0.07)			(0.05)			(0.07)			(0.05)
Equitable beliefs regarding PSDM abilities		-0.03**	-0.06***		0.03***	0.07***		-0.02	-0.03		0.03**	0.02
		(0.02)	(0.02)		(0.01)	(0.02)		(0.01)	(0.02)		(0.01)	(0.02)
Equitable beliefs X Women			0.06**			-0.06***			0.02			0.01
			(0.03)			(0.02)			(0.03)			(0.02)
p(Edu. + Edu. X Women = 0)			0.00			0.00			0.00			0.01
p(CA + CA X Women = 0)			0.00			0.00			0.00			0.00
p(SD + SD X Women = 0)			0.00			0.00			0.00			0.00
p(Equit. + Equit. X Women = 0)			0.94			0.93			0.78			0.02
Observations	4459	4459	4459	4459	4459	4459	4459	4459	4459	4459	4459	4459
R-squared	0.10	0.16	0.16	0.33	0.34	0.34	0.12	0.19	0.19	0.41	0.42	0.42

Notes: Results presented are OLS estimates that include controls for enumerator, age, father's education, mother's education and city. Outcome measures are standardized naive scores. Robust standard errors in parentheses. PSDM = Problem-solving and decision-making. Edu. = Years of education. CA = Cognitive Ability. SD = Social Desirability. Equit. = Equitable beliefs. *** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.1$. Controls: Enumerator, age, father's education, mother's education and city.

Table A4: Intrapersonal/Interpersonal - Gap between self-reported and behavioral measures

	Intrapersonal SR-Behavioral gap			Interpersonal SR-Behavioral gap		
	(1)	(2)	(3)	(4)	(5)	(6)
Women	-0.17***	-0.15***	-0.01	-0.18***	-0.17***	0.11
	(0.03)	(0.03)	(0.24)	(0.03)	(0.03)	(0.24)
Behavioral measure	-0.84***	-0.88***	-0.88***	-0.80***	-0.85***	-0.85***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Years of education		0.03***	0.02***		0.03***	0.03***
		(0.00)	(0.01)		(0.00)	(0.01)
Years of education X Women			0.01			0.00
			(0.01)			(0.01)
Cognitive Ability		0.34***	0.23***		0.32***	0.23**
		(0.07)	(0.08)		(0.07)	(0.09)
Cognitive Ability X Women			0.21**			0.19*
			(0.11)			(0.11)
Social desirability index		0.41***	0.49***		0.46***	0.53***
		(0.04)	(0.05)		(0.04)	(0.05)
Social desirability X Women			-0.16**			-0.14**
			(0.07)			(0.06)
Equitable beliefs regarding		-0.04**	-0.07***		-0.02	-0.03
PSDM abilities		(0.01)	(0.02)		(0.01)	(0.02)
Equitable beliefs X Women			0.07**			0.02
			(0.03)			(0.03)
p(Edu. + Edu. X Women = 0)			0.00			0.00
p(CA + CA X Women = 0)			0.00			0.00
p(SD + SD X Women = 0)			0.00			0.00
p(Equit. + Equit. X Women = 0)			0.93			0.56
Observations	4459	4459	4459	4459	4459	4459
R-squared	0.47	0.50	0.50	0.45	0.49	0.49

Notes: Results presented are OLS estimates that include controls for enumerator, age, father's education, mother's education and city. Outcome measures are standardized naive scores. Robust standard errors in parentheses. SR = Self-reported. PSDM = Problem-solving and decision-making. Edu. = Years of education. CA = Cognitive Ability. SD = Social Desirability. Equit. = Equitable beliefs. *** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.1$.

Table A5: Examples of self-reported and behavioral measures

Emotional Awareness

Examples of self-reported items

"I know why my feelings change from one moment to another."

"I recognize what I am feeling."

"I can usually describe what I am feeling at the moment in great detail."

"I try to notice my thoughts without judging them."

"I am able to accept the thoughts and feelings I have."

Example of a situational judgment test

"You needed to complete a task for your boss, $name1, but you were late! Your boss gets angry and says ""how can you be so irresponsible and stupid""?

b. How likely are you to: Notice how your boss's words made you feel

c. How likely are you to: Notice whether your feelings have caused any physical sensation in your body

c2. How long are you likely to feel stressed or upset: Less than an hour, a few hours, the whole day, a few days, or longer

d. How likely are you to: Identify that you are feeling shame

e. How likely are you to: Reflect on other times that people's words made you feel this way

Self Awareness

Examples of self-reported items

"I understand my own behaviors."

"I am aware of my thoughts."

"I monitor my thinking to ensure it is accurate."

"I analyze my behavior after I make mistakes."

Example of a situation judgment test

"You like your job, and customers seem to love you. But your boss, $name4. has criticized your performance at work. $pronoun3 only gave you 2 out of 5 stars on your performance review."

a. How likely are you to: Stay confident in your abilities

c. How likely are you to: Take time to think about how you can improve

d. How likely are you to: Sit down and talk to $name4 about why you received poor marks

hx. What skills and strengths do you have that will make you a good candidate for a new job in retail? Please list all of your SKILLS AND STRENGTHS. If you prefer, you can say "Don't know" or "None".

ix. What weaknesses would make you a poor candidate for a new job in retail? Please list all of your WEAKNESSES. If you prefer, you can say "Don't know" or "None".

Emotional Regulation

Examples of self-reported items

"When I feel nervous, I know what to do to feel more relaxed."

"When I feel sad, I know how to take my mind off my problems."

"When I am angry at someone, I can calm down before talking to them."

"When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm."

Example of a situational judgment test

You are in charge of the decorations for an annual meeting. Your employee, $name3, was supposed to bring the flowers and they didn't reach on time for the meeting. The customer is angry at you and threatening to not work with you next year. You feel ashamed that you failed the customer.

"a. How likely are you to: Yell at your employee, $name3"

b. How likely are you to: Talk to your employee immediately so they know how angry you are.

c. How likely are you to: Become so stressed that you get upset at others

e. How likely are you to: Take time to relax and calm down before you talk to your employee

f. How likely are you to: Discuss your stress with someone you trust

g. How likely are you to: Change how you think about the situation so you're less angry

d. How long are you likely to feel stressed or upset: Less than an hour, a few hours, the whole day, a few days, or longer

Self-Control

Examples of self-reported items

"I say inappropriate things."

"Pleasure and fun sometimes keep me from getting work done."

"I do things that feel good in the moment, but I will regretlater on."

"Sometimes I can't stop myself from doing something, even if I know it is wrong."

Examples of Enumerator post-survey questions:

It was easy for respondent to focus on what he/she was doing.

Respondent rushed through the activities without being really attentive.

Task: Continuous Performance Task (CPT-X):

"In this task, you will be shown a list of letters, one by one. You job here is, to figure out whether each letter is an X, or not an X. Each time you see an X. Do NOT touch the screen. If you are shown another letter, you answer by touching the screen quickly. Try and answer quickly while maintaining focus. Touch the screen when you are ready to start. You will start by doing some exercises as examples."

Perseverance

Examples of self-reported items

"I finish whatever I begin."

"Setbacks don't discourage me."

"I am diligent."

"When work is difficult, I keep up my effort."

Triangle Task

After viewing example puzzles, Which version of the game do you want to play for the next: Easy or Difficult

You have 60 seconds to count the number of triangles in the figure.

Would you like to continue, or end the game?

2 practice rounds, 4 test rounds

Personal Initiative

Examples of self-reported items

"I actively tackle problems."

"Whenever something goes wrong, I search for a solution immediately."

"Whenever there is a chance to get actively involved, I take it."

"I take action immediately even when others don't."

Example of a situational judgment test

SJT1. Imagine you want to open a clothing shop and you have some savings. Unfortunately, you know very little about the clothing business. You ask your friends or family, and they also do not know about the business.

b. How likely is it that you will: Do research on clothing shops online in your spare time

c. How likely is it that you will: Look for a training

You do not know any clothing shop owners,

d.How likely is it that you will: Find some clothing shop owners to ask for advice

f. How likely is it that you will: Open the shop and learn the business as you go.

Problem-solving and decision-making

Examples of self-reported items

"I solve most problems if I put in the necessary effort."

"I can find creative solutions to unplanned problems."

"I can always solve difficult problems if I try hard enough."

"If someone needs input on a problem, I can come up with many suggestions."

Example of a situational judgment test

"Your are part of a group organizing an annual festival for the surrounding 5 neighborhoods! $name1 was in charge of publicizing the event, but you just found out that most don't know when the event is, some have never heard of it, and hardly anyone is planning to come! The event is in two days."

b. How likely is it that you will: Contact $name1 to ask what went wrong?

c. How likely is it that you will: Contact $name1 to ask what methods of advertising were used?

d. How likely is it that you will: Think of as many ideas as possible for solving this problem.

e. How likely is it that you will: Contact friends to ask for help coming up with as many ideas as possible.

f. How likely is it that you will: Solve this problem and have high event attendance

Listening

Examples of self-reported items

"I ask questions to understand the other person's position on an issue."

"When I am listening to someone, I make sure they know I am interested in what they are saying."

"When I am listening to someone, I show them that I am open to their ideas."

"When I am listening to someone, I ask questions that show my understanding of what they are saying.

"I begin talking before the other person finishes talking."

"If I have something to say that is important, I will interrupt the other person." (reverse)

"I share my opinion without listening to others' opinions." (reverse)

Example of a situational judgment test

"Imagine that I am your neighbor. I just found about a new business that you would like to learn about! Feel free to ask questions if you want to know more about the business. Ready?

My friend, \$name5, just started a business where he processes rice and sells different products made of rice. They are making a lot of money: Tsh 45,000 per week. They attended a training for a few hours a day for 2 months. The training is held every 6 months in training centers all over our region. The best part is that little investment or equipment is required. Two other friends went into the same business- one made the same amount- the other made a bit less because they made some mistakes.Should you pursue this business?"

4 active listening questions: e.g. Enumerator: as you were saying the story, did the respondent show they were listening, by using body language, e.g. nodding?

Enumerator: as you were saying the story, did the respondent show they were listening by making comments, e.g. "oh really" "yes" "mmhmm" etc. ?

4 Listening comprehension questions: e.g. What income did \$name5 make per week?

Empathy

Examples of self-reported items

"When I'm upset at someone, I usually try to imagine myself in their situation to better understand them."

"Before judging somebody, I try to imagine how I would feel if I were in their place."

"I ask questions to understand the other person's position on a given issue."

"I always try to understand the feelings of people I trust."

"If someone is hurt, it makes me upset."

Task: Rate level of pleasure and arousal for self and the other individual after hearing a list of scenarios

Expressiveness

Examples of self-reported items

"I ask for what I need when I need it."

"I think it's good to ask for what I want."

"I find it easy to explain my perspective to others."

Example of a situational judgment test

Imagine you are attending a community meeting, and they are deciding whether to build a school, a clinic, or a road. The meeting has 30 men and 30 women, including your spouse. How likely are you to: Stand up and share your opinion about the road

You are curious about how long each project will take: How likely are you to speak up and ask this question?

You have the idea that everyone should vote to decide which project to choose: How likely are you to: Discuss your idea with the person sitting next to you?

How likely are you to: Share your idea with the group without hesitation?

Relatedness: 2 dimensions

Examples of self-reported items

"I listen patiently when people tell me their problems."

"When I see that someone is going through a difficult time, I help out the best I can."

"I give my friends and family encouragement when they need it."

Example of a situational judgment test

A customer, $name3, who you have seen before but don't know well comes to your shop. $name3 really wants to buy rice but they have had troubles this week and they don't have enough money to pay this time. There are others in line and $name3 is taking time.

Which picture best describes your tone?

Which picture best describes your tone?

How likely are you to

Dismiss $name3

Tell $name3 to return when they have money

Allow $name3 to pay back later

Make sure $name3 know you are assessing their trustworthiness

Encourage $name3 to share why they cannot pay

Reassure $name3 that things will get better

Influence

Examples of self-reported items

"Other people do what I ask them to do."

"When someone disagrees with me, I know how to adjust my argument to change their opinion."

"I am good at getting people to help me when I need it."

Example of a situational judgment test

You want to start a new business, making banana chips with a new method. To start the business, you need your family's support because it will affect their financial situation. Currently your family does not want you to start the business.

How likely is it that you will: Try to convince your family to let you start the business

How likely is it that you will: Ask questions to understand why your family opposes you

How likely is it that you will: Analyze your family's behavior carefully, to decide the best time to convince them

How likely is it that you will: Discuss the benefits and consequences of starting the business with them

Would you use any other methods to persuade your family?

Now imagine that your brother recently failed in his business. Would you use any other methods to persuade your family?

How likely is it that you will: Not be able to change your family's perspective.

Negotiation

Examples of self-reported items

"When I disagree with someone, I try to understand how that person feels."

"When I disagree with someone, I am still able to listen to the other person's perspective."

"When I disagree with someone, I am able to give up some things I want to solve our disagreement."

Example of a situational judgment test

Your work has become busier and you have less time for household responsibilities. If you have help at home, your income could increase! However, your 15 year old son does not want to help with cleaning or caring for the younger children. If he has extra time, he just wants to play football with his friends.

How likely is it that you will: Accept the situation and don't say anything

How likely is it that you will: Tell him he has to do some household work and has no choice

How likely is it that you will: Explain that if he helps, the whole family will benefit

How likely is it that you will: Allow him to go play football if he completes his responsibilities

Collaboration

Examples of self-reported items

"When I work with others, I tell others my ideas and ask for theirs in return."

"I can tell when a problem should solved by a team of many people instead of one person alone."

"When I don't know a solution to a problem, I can brainstorm with a group of people to get better ideas."

Task: Simulated SMS conversation to find a market stand: "Looks like the group has sent you a message. Which of these responses, is most like how you would respond in this situation?"