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## **The determinants of occupational sorting**

Evidence from Mozambique

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**Abstract:** We examine the link between individual characteristics and sorting into different occupations using data from university students in Mozambique. We provide a comprehensive approach combining the main determinants of occupational sorting identified in the literature in a single framework to test both the importance and mutual independence of different groups of factors: fixed personal characteristics, job characteristics, economic preferences, and personality traits. We widen the typical scope of analysis by including the non-profit sector and self-employment as alternative options to the public and private sectors, given their importance in the context of low-income countries. In line with previous work, we find that age and gender are important determinants of occupational choice. Our results give more weight to the importance of job characteristics as determinants of individuals' preferences compared to the effects of economic preferences and personality traits. We find a particularly surprising profile for those preferring the public sector, namely that they have a high propensity to cheat and a high score for neuroticism. Moreover, we do not find a significant effect of risk preferences or pro-sociality on the preference for this sector.

**Key words:** occupational choices, economic preferences, personal characteristics, Mozambique

**JEL classification:** C93, D91, J24, O12

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## 1 Introduction

Much modern scholarship on occupational sorting goes beyond the earliest human capital models, which posited that, for each individual, their chosen (preferred) job maximizes the expected net present value of earnings given their characteristics (e.g. ability). In addition to pecuniary incentives, a range of other factors have been marshalled to explain ex-ante occupational choices. These include preferences for non-wage job characteristics (e.g. working conditions), economic preferences (e.g. risk aversion), and personality traits (e.g. locus of control).

While a variety of studies have explored how different types of factors influence occupational sorting, important gaps remain. In particular, much of the literature tends to focus on specific types of non-pecuniary motives, such as risk preferences or intrinsic motivation (e.g. Falco 2014; Serra et al. 2011), leaving open the broader issue of how different groups of factors interact. Second, many studies focus on dichotomous occupational choices, such as between the public or private sector or between working for oneself versus working for others (e.g. Barfort et al. 2019; Kuhn 2000). This provides a restricted view of the complex set of choices facing workers, especially pertinent where other sectors, such as the non-profit or self-employment, are large. Third, the vast majority of the literature pertains to high-income countries with ‘thick’ labour markets. Occupational choice in low-income contexts remains less studied, but is arguably more complex, especially given more limited work opportunities as well as potential trade-offs between formal and informal work (Blattman and Dercon 2018).

In this study, we seek to address these gaps. Based on a detailed survey undertaken with university students in Mozambique and incorporating a range of lab-in-the-field experiments to elicit underlying preferences and behavioural traits, we compare the salience and direction of multiple distinct factors that might influence occupational sorting. Accounting for the complex nature of the labour market, including the important role of (typically foreign-funded) non-governmental agencies, we compare choices across four main occupational sectors: public, private, non-profit, and self-employment. In addition to conventional application of multinomial choice models, we add to the literature by running a (correlated) multinomial ordered choice model, which is better able to capture differences in the ordering of sectoral preferences, as well as the degree of confidence that individuals ascribe to their choices.

We find that age and gender do seem to matter for occupational choice, but mostly when considering the public and private sectors. The coefficients for the effects of personality traits are small in magnitude and generally non-significant. In contrast, the results provide evidence of the importance attributed to different job characteristics. Overall, we find a particularly surprising profile of respondents who prefer the public sector: female, with a high propensity to cheat and a high score for neuroticism, who do not consider the work conditions and content as important, and score lower in terms of commitment to public values. Furthermore, the results do not suggest a significant effect of risk preferences or pro-sociality on the preference for the public sector.

The remainder of the paper is organized as follows. Section 2 reviews the related literature, and Section 3 explains the data collection procedure and the methods applied. The results are discussed in Section 4, and Section 5 concludes.

## 2 Related literature

The existing literature on the determinants of occupational sorting has uncovered different aspects that influence the choices of individuals. On the one hand, preferences are related to pecuniary aspects of jobs, such as expected earnings, but also to non-wage job characteristics, including flexibility in working hours or the possibility of working from home (e.g. Mas and Pallais 2017). Wiswall and Zafar (2018)

document a preference for job security and flexibility in the working hours among a sample of students in the USA, while Eriksson and Kristensen (2014) show evidence of negative trade-offs between wage and fringe benefits (such as health insurance or employer-provided training) in a sample of Danish respondents. Moreover, both studies find differences by gender. Chowdhury et al.'s (2018) study in Vietnam corroborates the hypothesis that women have stronger preferences than men for non-wage job characteristics, namely having a formal contract, social insurance, health insurance, paid leave, and a shorter working week.

On the other hand, preferences are affected by the characteristics of individuals that go beyond their demography (e.g. age, gender) and ability, including their economic preferences. Bonin et al. (2007) and Fouarge et al. (2014) find a link between willingness to take risks and the earnings risk of occupations in Germany and the Netherlands, respectively, while Falco (2014) shows that more risk-averse workers are less likely to sort into informal jobs in Ghana.

Others have analysed the role of intrinsic motivation (or, related, public service or pro-social motivation) in self-selection of individuals, both in theory (see Auriol and Brilon 2014; Besley and Ghatak 2005; Delfgaauw and Dur 2008; Dur and Van Lent 2018; Francois 2000; Prendergast 2007) and empirically. For instance, data from incentivized behavioural games suggests that intrinsically motivated agents self-select into the German police force (Friebel et al. 2019). Furthermore, pro-social motivation is a predictor of the decision of health professionals to work in the non-profit sector in Ethiopia (Serra et al. 2011), and there is also evidence of a link between pro-social preferences and self-selection into the public sector among health students in Tanzania (Kolstad and Lindkvist 2013). Related work has examined the hypothesis that financial incentives lead to crowding out of intrinsic motivation. While Ashraf et al. (2016) and Deserranno (2019) corroborate this hypothesis in their analyses of the health sector in Zambia and Uganda, respectively, Dal Bó et al. (2013) find no evidence of this crowding-out effect.

Additionally, recent studies find a link between dishonesty levels and selection into the public sector. The link seems to be context-specific. While there is evidence that less honest people self-select into the public sector in India (Hanna and Wang 2017), this result was challenged in the case of Russia (Gans-Morse et al. 2021), and the opposite was shown in Denmark (Barfort et al. 2019).

A parallel strand of work has called attention to the effects of personality traits on labour market outcomes, namely through occupational matching (see, e.g. Almlund et al. 2011).<sup>1</sup> While personality traits are frequently discussed within systemic taxonomies, the Big Five being one the most widely used (see, e.g. Almlund et al. 2011; John and Thomsen 2014), particular facets of traits have also been the object of analysis.<sup>2</sup> An example in point is locus of control—the extent to which individuals believe that their actions cause the life events they encounter (or, conversely, that life events are beyond their control)—which has been linked to preferences for jobs with performance appraisals (Heywood et al. 2017) and for public sector positions (Hanna and Wang 2017). Of particular relevance is also the Public Sector Motivation (PSM) scale. Well-established within the field of public administration, it has been used to gather respondents' inclination to work in the public sector through questions on dimensions of self-sacrifice, compassion, public service, and public values (for an application, see, e.g. Dal Bó et al. 2013).

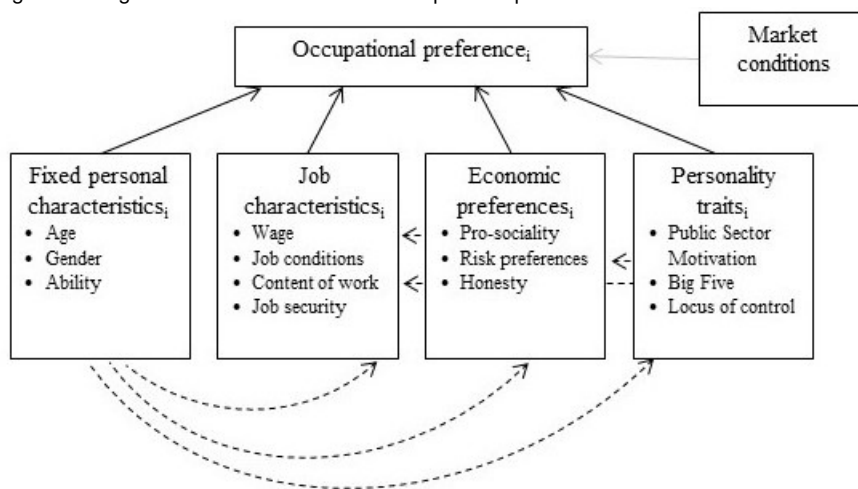
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<sup>1</sup> According to Becker et al. (2012), economic preferences (risk, time, and social preferences) and personality have complementary roles when considering explanations for different life outcomes, namely within the realm of labour markets.

<sup>2</sup> The Big Five traits are: (1) openness to experience (intellect), including new cultural or aesthetic experiences; (2) conscientiousness, which relates to organization and sense of responsibility; (3) extroversion, which refers to an inclination to gather energy from being and interacting with others more than with oneself; (4) agreeableness, which is characterized by cooperative and altruistic behaviour; and (5) neuroticism, which is associated with emotional instability and relates to the response to stress and emotional situations (Almlund et al. 2011: 17).

We contribute to the existing literature in three ways. First, as described above, a significant part of this work draws attention to specific types of factors, overlooking potential relations between groups of factors. We fill this gap and follow a smaller group of studies in considering different groups of aspects simultaneously. For instance, Barfort et al. (2019) and Gans-Morse et al. (2021) consider the role of different factors—such as dishonest behaviour and pro-social versus pecuniary motivations—affecting self-selection into the public sector.<sup>3</sup> We group the different aspects according to the sets represented schematically in Figure 1: fixed personal characteristics, job characteristics, economic preferences, and personality traits. Full lines represent the direct effects of these factors, whereas dashed lines account for the fact that it is plausible to assume that they are related to each other. While one should bear in mind that the subjective perceptions of market conditions are also likely to affect occupational choices (represented by the grey line), we do not consider this direct effect in this paper, since all participants were surveyed at approximately the same time, and we did not include detailed questions of this nature in the survey.

Figure 1: Diagram of the determinants of occupational preferences and the links between them



Source: authors' elaboration.

Second, we depart from the focus on specific sectors, or the dichotomous choice between the public and private sectors assumed in many studies, and widen the scope of analysis by including other occupational options, namely the non-profit sector and self-employment, both of which are distinct and non-trivial types of employment in low-income countries. In developing countries, the non-profit sector is a relevant co-producer or, in extreme settings, full substitute of the state in the provision of social services (Brandsen and Pestoff 2006; Casey 2020; Hogg 2020; Lim and Endo 2016). In this respect, closest to our analysis is Harris (2019), who considers preferences for occupational choice between public and private sectors, self-employment, and the development sector. Her findings for Sierra Leone confirm the importance of considering the last of these sectors, showing that the largest share of skilled job-seekers opts for early-career employment in a donor organization, or international and national non-governmental organizations (NGOs). Moreover, our analysis contributes to recent work on the effects of channelling aid through non-profit organizations (see, e.g. Aldashev et al. 2018; Koch and Schulpen 2018).

To the best of our knowledge, this is the first study to consider both different factors simultaneously and a broad range of occupational choices in a developing country. This points to our third contribution, which relates to the context of this study. While the volume of work exploring the determinants of occupational choices in developing countries is growing (as illustrated by some of the references included in the

<sup>3</sup> See also, for example, Dohmen and Falk (2010) examining the selection of teachers, or Buurman et al. (2012) comparing employees in the public and private sectors.

previous paragraphs), the literature has in great part focused on high-income countries. We bridge this gap by considering the case of Mozambique, a low-income country with lower educational attainment and reduced technical specialization of its population, similar to countries in the same income group. Most graduates who get a job are employed in the private sector (about 45 per cent), followed by the public sector and NGOs (Jones et al. 2018, 2019). Recent surveys suggest that there is a preference for working in the public sector (with an emphasis on the areas of education, arts and humanities, and health), followed by the private sector and NGOs (see Jones et al. 2018, 2019). Still, recent graduates in Mozambique face a challenging work environment, where the formal sector remains small and there is high competition for jobs (Jones et al. 2020).

### **3 Data and methods**

#### **3.1 Data collection**

In line with previous studies, our participants are university students. They study at the University Eduardo Mondlane, the oldest and most reputable university in Mozambique, located in the capital, Maputo. After obtaining permission from the rector of the university to implement the questionnaire, we sought authorization and collaboration from the directors of the Faculties of Agronomy, Natural Sciences, Economics, Education, and Letters and Social Sciences. Based on their availability and the schedules of the students, we were able to make use of the class times of students from the first to the fourth year of the 12 courses described in Table 1, which shows the course distribution of the 1,060 participants. These courses each present different occupational options, and by including participants from different study areas we allow for more heterogeneity in the obtained sample. We ran the data collection sessions in August 2019.

Students were between 17 and 56 years old, around 54 per cent of the students were female, and 76 per cent were born in the city of Maputo or within Maputo Province.<sup>4</sup> Only 27 per cent reported having had a job in the past, which suggests that most of them have not been exposed to a work environment yet. The distribution in terms of year of studies was balanced, with close to 2 per cent of students in their first year, 20 per cent in their second, 26 per cent in their third, and the remaining 29 per cent having been at university for three years or more.

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<sup>4</sup> Despite the recent introduction of quotas to enrol students from different provinces, the population of students at the university is dominated by individuals from these two provinces.

Table 1: Distribution of participants by course

Course (Faculty)	Freq.	Percent
Public Administration and Political Science (LSC)	253	23.87
Environmental Education (EDU)	152	14.34
Agronomic Engineering (AGR)	128	12.08
Organization and Management of Education (EDU)	112	10.57
Management (ECO)	78	7.36
Geographic Information (SCI)	76	7.17
Mathematics (SCI)	74	6.98
Early Childhood Education (EDU)	71	6.70
Accounting (ECO)	59	5.57
Economics (ECO)	35	3.30
Statistics (SCI)	22	2.08
Total	1,060	100.00

Note: Public Administration and Political Science are two different courses. LSC refers to the Faculty of Letters and Social Sciences, EDU to the Faculty of Education, AGR to the Faculty of Agronomy, ECO to the Faculty of Economics, and SCI to the Faculty of Sciences.

Source: authors' compilation based on study data.

The students were not informed prior to the session, but were told at their arrival to the classroom that they were invited to contribute to a study about students' attitudes towards the world and their decisions in situations of uncertainty. They were informed that the questionnaire included different groups of questions and small games, that the estimated time for completion was 30 minutes, and that they would receive a reward worth at least MZN40.<sup>5</sup> Those who chose to participate were assured of anonymity in the treatment of the information collected and filled in a consent form before starting the questionnaire.<sup>6</sup>

The questionnaire opened with a dictator game and a lottery, as well as questions on basic demographic characteristics and occupational preferences. These were followed by four rounds of a dice game intertwined with three groups of opinion questions.<sup>7</sup> The questionnaire was completed on paper and the dice game was played by rolling a dice inside a plastic cup. In order to guarantee the privacy of the participants, they were asked to sit with enough space between each other and, although present in the room, members of the team refrained from any intervention other than answering questions raised by the participants. At the end of the session, students handed their individual documents (which included a payment sheet reporting the results of the games) to the team members and received the corresponding payment.

### 3.2 Variables

#### *Questionnaire*

We describe the variables used in Table A1 in Appendix A and include some descriptive statistics in Table 2. Our dependent variables are the preferred option among the occupational choices as well as the ordering of preferences between different occupational choices: public sector, private sector (which also includes the option of working for the family business), non-profit sector, and self-employment. These were obtained by asking respondents directly to rank the different options, in addition to requesting that they indicate their degree of certainty for each choice.

<sup>5</sup> On average, participants received a total of MZN100, corresponding to approximately US\$1.5, which in the Mozambican context is equivalent to around half the daily minimum wage.

<sup>6</sup> Ethical approval for the research project was obtained from UNU-WIDER in June 2019.

<sup>7</sup> The questionnaire content and structure followed very closely the one applied by Barfort et al. (2019).

Table 2: Descriptive statistics

Variable	Mean	Std dev.	Min.	Max.	Total
Age (raw)	22.53	4.82	17.00	56.00	1,027
Male	0.46	0.50	0.00	1.00	1,038
Ability	0.01	0.97	-3.26	3.54	1,038
Prefer wage	0.24	0.43	0.00	1.00	1,038
Prefer conditions	0.43	0.50	0.00	1.00	1,038
Prefer content	0.07	0.26	0.00	1.00	1,038
Prefer security	0.20	0.40	0.00	1.00	1,038
Pro-social	0.42	0.49	0.00	1.00	1,038
Risk averse	0.25	0.43	0.00	1.00	1,038
Risk loving	0.18	0.38	0.00	1.00	1,038
Cheat rate	0.23	0.19	-0.20	1.00	1,038
PSM self-sacrifice (raw)	3.36	0.79	1.00	5.00	1,038
PSM compassion (raw)	4.52	0.69	1.00	5.00	1,036
PSM public service (raw)	4.74	0.44	1.00	5.00	1,036
PSM public values (raw)	4.63	0.55	1.25	5.00	1,036
B5 extraversion (raw)	2.72	1.01	1.00	5.00	1,035
B5 agreeableness (raw)	3.23	1.02	1.00	5.00	1,036
B5 conscientiousness (raw)	3.78	1.04	1.00	5.00	1,034
B5 neuroticism (raw)	2.87	1.32	1.00	5.00	1,034
B5 openness (raw)	3.64	1.08	1.00	5.00	1,034
Locus of control	3.99	1.18	1.00	5.00	1,038

Note: age is represented in number of years. PSM refers to public service motivation and B5 refers to a component of the Big Five. For these variables, the values presented refer to the unit-wise observed average score for personality (Likert scale) questions. See more details about the variables in Tables A1 and A2 in Appendix A.

Source: authors' compilation based on study data.

This was followed by a question to obtain a ranking of different job characteristics according to their importance when selecting a job: wage level, work conditions, content of work, and job security. We consider individual dummies for each characteristic, which take the value of 1 if they were selected as the most important characteristic among the options.

The variables on fixed personal characteristics were elicited through sociodemographic questions. We asked participants to indicate their age and their grade of entry to the university course. Age was standardized across the sample of participants. We used the grade of entry as a measure of participants' ability and standardized this variable by course. Finally, we asked participants to indicate their gender.

Direct questions were also used to collect data on participants' personalities, following previous questionnaires tested in the literature. The items related to public service motivation were taken from a 16-item questionnaire from Kim et al. (2013), which covers dimensions of self-sacrifice, compassion, attraction to public service, and commitment to public values. For the Big Five personality traits, we used a translation of the ten-item short version of the original Inventory (Rammstedt and John 2007).<sup>8</sup> As described in more detail in Table A2 in Appendix A, we obtained five variables for scores on extraversion, agreeableness, conscientiousness, neuroticism, and openness. For both groups of variables, overall scores in each dimension were derived with multiple correspondence analysis. Finally, we assessed participants' locus of control based on their answer to the question 'Some believe they have full control over how life evolves, while others think that their own actions do not influence how things happen. Where would you position yourself?' (used also in Barfort et al. 2019). Respondents answered by choosing a score on a scale from 1, 'No influence' (external locus), to 5, 'A lot of influence' (internal locus).

<sup>8</sup> Retrieved from <https://www.ocf.berkeley.edu/~johnlab/bfi.htm> on 12 August 2020.



### *Incentivized behavioural games*

Participants were asked to play a simple dictator game in the beginning of the questionnaire. We offered them MZN50 to thank them for their participation, but gave them the possibility of donating all or part of this value to one of five charities to support the victims of Cyclones Idai and Kenneth.<sup>9</sup> If the respondent chose to donate, the amount was increased by up to MZN12.<sup>10</sup> We use the choice of the respondent as a measure of his/her pro-social preferences, and include a dummy for pro-social behaviour if the choice was greater than MZN17.

We also asked participants to play a lottery game in order to elicit their risk preferences. They were told that we would select around one-tenth of the participants to play a coin game at the end of the session, where they could win an additional amount of money depending on their choice among five different lotteries that represented different degrees of risk. The most risky lottery would add MZN200 to their payoff in the case of heads and nothing in the case of tails, and the least risky would entail a payoff of MZN80 in either case. Two dummies were created based on their choices: risk loving if the respondent chose the riskiest option, and risk averse if the respondent chose the least risky option.

In between different parts of the questionnaire, participants played four rounds of the dice game described in Barfort et al. (2019), which we then used to build the measure of propensity for dishonest behaviour (following Barfort et al. 2019; Fischbacher and Föllmi-heusi 2013; Hanna and Wang 2017).<sup>11</sup> The goal of the game was to guess the outcome of the dice roll, and participants were told that this would enable one to assess if they could guess in situations characterized by randomness. They were also informed about the two levels of remuneration for each roll: a correct guess would lead to a reward of MZN3, whereas an incorrect guess would be rewarded with MZN1. Participants received specific instructions on the steps to follow: (1) guess the outcome; (2) roll the dice inside the cup; (3) see the outcome of the roll and register the number guessed and whether the guess was correct or incorrect. In total, each player rolled the dice 40 times in four rounds of ten rolls. Even if we cannot know with certainty how honest the responses were, in line with Hanna and Wang (2017) and Barfort et al. (2019), we can obtain an individual estimate. The cheat rate for individual  $i$  included in the analysis is obtained with the formula  $c_i = 6/5 \times (t_i/40 - 1/6)$ , where  $t$  is the individual's self-reported number of correct guesses.

### **3.3 Methods**

Our empirical estimation is based on the conventional random utility model (Manski 1977; McFadden 1973) in which we presume there is a set of latent variables capturing the expected utility (preference) that individual  $i$  attributes to working in sector  $j$ . We represent this process as:

$$u_{ij}^* = \alpha_j + p_i' \beta_j + c_i' \gamma_j + e_i' \delta_j + t_i' \lambda_j + \varepsilon_{ij} \quad (1)$$

where  $p$  represents a vector of fixed personal characteristics (age, gender, and ability);  $c$  captures preferences for different job characteristics (wage, job conditions, content of work, and job security);  $e$  includes different economic preferences (pro-sociality, risk aversion, dishonesty); and  $t_i$  is a vector of

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<sup>9</sup> Cyclones Idai and Kenneth hit Mozambique just a few months before we started the data collection. The five charities included three international organizations (the Red Cross, UNICEF, and the World Food Programme), and two national organizations, one non-governmental (the Foundation for Community Development; *Fundacao para o Desenvolvimento da Comunidade*) and one governmental (the National Institute for Disaster Management; *Instituto Nacional de Gestao de Calamidades*).

<sup>10</sup>The total amount of donations has been distributed to the five charities according to the choices made by the participants.

<sup>11</sup>The main difference between the game in Barfort et al. (2019) and the one used by Hanna and Wang (2017) is that the payoff is based on whether participants guessed correctly or not, rather than on the reported outcome number of the dice roll.

personality traits (PSM and Big Five dimensions, as well as external locus of control). In turn, we posit that sector  $k$  is preferred (ranked highest) when:  $\forall j \in J : u_{ik}^* - u_{ij}^* \geq 0$ .

To capture these relations, we start by estimating conventional multinomial logit and probit models. Later, we consider more flexible models that permit inclusion of alternative-specific variables—namely, we use the alternative-specific multinomial probit model as well as the alternative-specific rank-ordered probit, which uses the full rank ordering of the job sectors. By estimating covariances between the error terms for the alternatives, these latter methods relax the assumption of independence of irrelevant alternatives, according to which the respondent’s ranking of occupational choices from a subset of the choice set of feasible options remains the same if this choice set of feasible options is changed (Dasvik and Strøm 2006). In these regressions, we estimate the probability of preferring one sector over the others, not only from the probability of being the first choice, but also of being selected in a higher rank of preference than each of the other alternatives.

These models consider case-specific and alternative-specific variables. The case-specific variables are those related to individual respondents. We use a ranking probability obtained from the questionnaire as the alternative-specific variable in our estimations. As mentioned above, respondents were asked not only to consider each of their ranking choices of job preferences individually—for example, ‘Public sector, third in the order of preference’—but also to indicate their degree of confidence in this choice, which we consider as an indication of the ranking probability. Respondents used a scale from 0 to 10, where 0 was ‘I am not sure at all’ and 10 was ‘I am completely sure that this would be the option I would choose.’

## 4 Results

### 4.1 Baseline results

We first perform multinomial logit and probit estimations, considering the full set of explanatory variables.<sup>12</sup> The dependent variable is the preferred choice among the four alternatives. All estimations include year of entry fixed-effects and the potential common external factors that may have affected the responses within each of the sessions were accounted for by clustering the standard errors at the session level. The resulting marginal effects at the means are represented in Table 3, with columns (1)-(4) and columns (5)–(8) corresponding to the logit and probit estimates, respectively. Marginal effects result from estimating how the probabilities of choosing each option change, conditional on the different covariates included in the model. For continuous variables, the coefficient is interpreted as the change in the likelihood of choosing each sector resulting from a change from the average of the sample. For the binary variables, it corresponds to the change from the base level.

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<sup>12</sup> In a preliminary analysis, we divided the variables into two sets and considered their effects separately. Table A3 in Appendix A presents the marginal effects from logit estimates considering, on the one hand, job characteristics and the economic preferences as regressors, and, on the other hand, the variables representing personality traits. The three demographic variables (age, male, and ability) were included in both models. We observe similar effects to those obtained with the model in Table 3, columns (1)–(4).

Table 3: Multinomial logit and probit estimates of the saturated model

	Logit				Probit			
	Public (1)	Private (2)	Non-profit (3)	Self (4)	Public (5)	Private (6)	Non-profit (7)	Self (8)
Age (std)	0.048** (0.021)	-0.054*** (0.020)	-0.001 (0.008)	0.007 (0.014)	0.037** (0.017)	-0.056*** (0.018)	0.001 (0.007)	0.000 (0.014)
Male	-0.118*** (0.040)	0.041 (0.027)	0.008 (0.010)	0.069* (0.037)	-0.105*** (0.036)	0.047 (0.033)	0.010 (0.011)	0.059* (0.032)
Ability	0.023 (0.018)	-0.027** (0.011)	0.014* (0.008)	-0.011 (0.016)	0.019 (0.015)	-0.034* (0.017)	0.013 (0.009)	-0.016 (0.015)
Prefer wage	-0.226*** (0.071)	0.227** (0.106)	-0.023 (0.020)	0.021 (0.094)	-0.175*** (0.063)	0.223** (0.099)	-0.019 (0.024)	0.053 (0.074)
Prefer conditions	-0.278*** (0.079)	0.232** (0.106)	-0.021 (0.022)	0.067 (0.096)	-0.222*** (0.069)	0.257** (0.097)	-0.015 (0.027)	0.117 (0.079)
Prefer content	-0.332*** (0.092)	0.216** (0.101)	-0.006 (0.032)	0.122 (0.089)	-0.286*** (0.084)	0.229*** (0.088)	0.003 (0.035)	0.159** (0.075)
Prefer security	-0.247*** (0.081)	0.140 (0.103)	-0.011 (0.029)	0.117 (0.104)	-0.191*** (0.074)	0.148 (0.095)	-0.004 (0.031)	0.138 (0.096)
Pro-social	-0.034 (0.034)	-0.018 (0.024)	-0.010 (0.015)	0.062** (0.026)	-0.030 (0.031)	-0.007 (0.031)	-0.011 (0.014)	0.055** (0.024)
Risk averse	-0.060 (0.045)	-0.015 (0.032)	0.014 (0.010)	0.062* (0.035)	-0.048 (0.040)	-0.012 (0.045)	0.015 (0.012)	0.056 (0.035)
Risk loving	0.023 (0.037)	-0.052 (0.035)	0.023* (0.013)	0.006 (0.040)	0.022 (0.032)	-0.066* (0.037)	0.023 (0.016)	-0.011 (0.034)
Cheat rate	0.244*** (0.085)	-0.100 (0.083)	-0.044* (0.025)	-0.101 (0.086)	0.213*** (0.076)	-0.142 (0.096)	-0.052* (0.029)	-0.083 (0.085)
PSM self-sacrifice	0.034 (0.022)	-0.019 (0.019)	-0.000 (0.007)	-0.015 (0.024)	0.032 (0.019)	-0.024 (0.025)	0.000 (0.007)	-0.019 (0.021)
PSM compassion	0.029 (0.025)	-0.007 (0.015)	0.003 (0.006)	-0.025 (0.025)	0.027 (0.023)	-0.005 (0.018)	0.005 (0.007)	-0.017 (0.024)
PSM public service	0.018 (0.020)	-0.010 (0.018)	-0.006 (0.008)	-0.002 (0.027)	0.018 (0.019)	-0.013 (0.022)	-0.004 (0.009)	-0.002 (0.025)
PSM public values	-0.035* (0.021)	0.035** (0.017)	0.011 (0.011)	-0.011 (0.020)	-0.033* (0.019)	0.027 (0.020)	0.011 (0.011)	-0.003 (0.020)
B5 extraversion	-0.006 (0.021)	0.005 (0.015)	0.000 (0.008)	0.001 (0.016)	-0.002 (0.019)	-0.009 (0.016)	-0.001 (0.009)	-0.005 (0.017)
B5 agreeableness	-0.030 (0.021)	0.017 (0.019)	-0.001 (0.006)	0.015 (0.016)	-0.031* (0.019)	0.014 (0.022)	-0.002 (0.007)	0.018 (0.015)
B5 conscientiousness	-0.008 (0.023)	-0.008 (0.016)	0.010 (0.008)	0.007 (0.017)	-0.002 (0.021)	0.001 (0.018)	0.010 (0.009)	0.003 (0.016)
B5 neuroticism	0.070*** (0.017)	-0.017 (0.014)	0.001 (0.008)	-0.054*** (0.013)	0.063*** (0.015)	-0.013 (0.018)	0.004 (0.008)	-0.048*** (0.014)
B5 openness	0.011 (0.018)	-0.016 (0.017)	-0.002 (0.006)	0.007 (0.021)	0.003 (0.016)	-0.016 (0.018)	-0.002 (0.006)	0.011 (0.018)
Locus of control	-0.026** (0.012)	-0.011 (0.011)	0.006 (0.005)	0.031* (0.017)	-0.023** (0.010)	-0.008 (0.009)	0.006 (0.005)	0.022 (0.014)
Treatment	0.004 (0.033)	0.023 (0.022)	0.006 (0.007)	-0.033 (0.030)	0.009 (0.028)	0.035 (0.027)	0.008 (0.008)	-0.020 (0.028)
Missing	-0.066 (0.056)	0.090* (0.047)	0.031 (0.020)	-0.055 (0.056)	-0.061 (0.048)	0.120* (0.062)	0.032 (0.025)	-0.064 (0.049)
Obs.	1,038	1,038	1,038	1,038	1,038	1,038	1,038	1,038

Note: significance: \*\*\* 0.01, \*\* 0.05, \* 0.1. The table shows marginal effects at the means obtained from logit regressions in columns (1)–(4) and probit estimators in columns (5)–(8). Estimations include year of entry fixed-effects; standard errors clustered at the session level shown in parentheses.

Source: authors' compilation based on study data.

Overall, the results obtained with the two methods are similar, though some coefficients lose significance in the probit estimations. Considering the different groups of determinants of occupational choices, three main insights can be derived from Table 3. First, age, gender, and ability affect the choices between sectors. For instance, the results suggest that older, female respondents are more likely to choose the public sector. Furthermore, higher ability seems to be one of the few factors affecting (positively) the

probability of preferring the non-profit sector, although the coefficient is not significant in the probit estimates.

Second, differences in the importance attributed to wage and non-monetary job conditions matter mostly for choosing the public or the private sectors. Moreover, they do so in opposite directions: negatively in the case of the public sector and positively in the case of the private sector. To give an example, attributing importance to wage lowers the probability of choosing the public sector by approximately 0.2, while it increases the probability of choosing the private sector by the same amount. Similar remarks are true for the importance attributed to work conditions and content.

Third, the main results for the effects of economic preferences and personality traits are surprising, especially when considering the preference for the public sector. More specifically, a higher propensity to cheat and a greater score in neuroticism are associated with greater probability to choosing this sector (in contrast with the results in Barfort et al. 2019). Unlike previous studies showing a link between pro-sociality and preference for jobs in the public sector (see, e.g. Kolstad and Lindkvist 2013; Serra et al. 2011) or the non-profit sector (e.g. Harris 2019), we find no significant effect of this variable. Furthermore, while one would expect a higher score in public values to be linked with a preference for the public sector, we observe the opposite effect. In contrast, there is a positive correlation between a higher score in this PSM dimension (even if only in the logit model) and the likelihood of selecting a job in the private sector.

We also observe that respondents who are less prone to cheating behaviour are more likely to prefer the non-profit sector, and so are risk lovers (although this result is not robust to the change in the method used). With the exception of the latter result, unlike previous studies on the importance of risk preferences (Falco 2014), we do not find consistent effects on the likelihood of selecting different choices. This is in line with Harris (2019), who posits that results from middle-income countries, such as Ghana, and larger low-income countries may not apply to low-income and least-developed countries. As highlighted above, while we do not confirm the expected link between pro-social motivation and the likelihood of choosing the public sector, it seems to matter for the probability of pursuing self-employment.

## 4.2 Robustness checks

We run additional models to check the robustness of these results. First, we estimate the baseline model again, but including course fixed-effects. It is plausible that course fixed-effects may proxy for some of the underlying economic preferences or personality traits of the participants and thus, in the previous estimates, we controlled only for the year of entry. With the exception of the coefficients for the effect of the age of the respondent and their score in public values, the results, which are presented in Table 4, columns (1)–(4), confirm our previous conclusions. This is the case, in particular, in terms of the importance of job characteristics and dishonesty, and those regarding the effects of the personality traits neuroticism and locus of control.

Second, we make use of the data collected on the certainty of respondents in their choice of each sector as the preferred option. We repeat the multinomial probit estimations on the sample of respondents indicating a very high degree of certainty (i.e. higher than 7, on a scale from 1 to 10). There are no qualitative differences in the obtained results, which are represented in Table 4, columns (5)–(8), although some of the effects lose their significance.

Table 4: Multinomial probit estimates of the saturated model including course fixed-effects and restricting the sample to participants with very high levels of certainty

	Course fixed-effects				Very high certainty (>7)			
	Public (1)	Private (2)	Non-profit (3)	Self (4)	Public (5)	Private (6)	Non-profit (7)	Self (8)
Age (std)	0.017 (0.016)	-0.041** (0.017)	-0.002 (0.007)	0.017 (0.014)	0.041** (0.021)	-0.057*** (0.021)	-0.003 (0.005)	0.002 (0.015)
Male	-0.109*** (0.035)	0.044 (0.031)	0.018 (0.012)	0.052* (0.032)	-0.108*** (0.038)	0.039 (0.035)	0.003 (0.010)	0.083** (0.032)
Ability	0.017 (0.016)	-0.034** (0.016)	0.011 (0.009)	-0.010 (0.015)	0.035*** (0.012)	-0.034*** (0.011)	0.014 (0.009)	-0.010 (0.010)
Prefer wage	-0.176*** (0.064)	0.202** (0.094)	-0.019 (0.024)	0.070 (0.074)	-0.126** (0.058)	0.263** (0.110)	-0.035 (0.025)	0.057 (0.074)
Prefer conditions	-0.237*** (0.068)	0.245*** (0.092)	-0.018 (0.025)	0.134* (0.077)	-0.148** (0.074)	0.269** (0.107)	-0.041 (0.027)	0.102 (0.084)
Prefer content	-0.313*** (0.082)	0.229*** (0.088)	-0.002 (0.035)	0.191** (0.076)	-0.236*** (0.084)	0.206* (0.107)	-0.017 (0.035)	0.187** (0.080)
Prefer security	-0.189*** (0.069)	0.154* (0.092)	-0.006 (0.030)	0.144 (0.088)	-0.110* (0.066)	0.158 (0.102)	-0.034 (0.029)	0.106 (0.093)
Pro-social	-0.022 (0.029)	-0.007 (0.029)	-0.007 (0.013)	0.053** (0.024)	-0.014 (0.031)	-0.015 (0.022)	-0.014 (0.013)	0.051** (0.024)
Risk averse	-0.060 (0.038)	-0.006 (0.040)	0.015 (0.012)	0.060* (0.034)	-0.078** (0.036)	0.005 (0.034)	0.015 (0.013)	0.063** (0.029)
Risk loving	0.017 (0.033)	-0.062* (0.036)	0.022 (0.015)	-0.004 (0.035)	-0.002 (0.037)	-0.062 (0.044)	0.027** (0.014)	-0.016 (0.041)
Cheat rate	0.169** (0.074)	-0.129 (0.090)	-0.055* (0.029)	-0.056 (0.092)	0.144* (0.079)	-0.093 (0.112)	-0.043 (0.028)	-0.011 (0.077)
PSM self-sacrifice	0.032* (0.019)	-0.024 (0.022)	0.001 (0.007)	-0.020 (0.021)	0.031 (0.023)	-0.029 (0.024)	-0.006 (0.006)	-0.009 (0.024)
PSM compassion	0.027 (0.021)	-0.006 (0.017)	0.005 (0.008)	-0.016 (0.024)	0.025 (0.020)	0.009 (0.020)	0.001 (0.008)	-0.032 (0.021)
PSM public service	0.022 (0.020)	-0.006 (0.021)	-0.006 (0.009)	-0.003 (0.025)	0.016 (0.018)	-0.002 (0.021)	-0.001 (0.009)	-0.017 (0.025)
PSM public values	-0.036** (0.017)	0.019 (0.017)	0.010 (0.010)	0.002 (0.018)	-0.028 (0.021)	0.038* (0.022)	0.008 (0.011)	-0.003 (0.023)
B5 extraversion	-0.004 (0.017)	-0.008 (0.015)	-0.001 (0.008)	-0.002 (0.016)	-0.009 (0.019)	-0.004 (0.020)	0.012 (0.008)	0.002 (0.016)
B5 agreeableness	-0.038** (0.017)	0.017 (0.020)	-0.001 (0.007)	0.022 (0.015)	-0.037 (0.022)	0.008 (0.025)	0.002 (0.007)	0.029* (0.016)
B5 conscientiousness	-0.015 (0.020)	0.010 (0.017)	0.006 (0.009)	0.016 (0.016)	-0.000 (0.021)	-0.011 (0.018)	0.009 (0.010)	0.005 (0.020)
B5 neuroticism	0.063*** (0.014)	-0.014 (0.018)	0.004 (0.009)	-0.048*** (0.013)	0.086*** (0.016)	-0.035*** (0.013)	-0.002 (0.010)	-0.065*** (0.015)
B5 openness	0.002 (0.014)	-0.014 (0.016)	-0.003 (0.006)	0.013 (0.016)	-0.000 (0.018)	-0.011 (0.020)	-0.005 (0.005)	0.019 (0.019)
Locus of control	-0.025** (0.011)	-0.008 (0.009)	0.006 (0.005)	0.022 (0.014)	-0.032*** (0.011)	-0.007 (0.012)	0.007 (0.005)	0.039** (0.017)
Treatment	0.008 (0.028)	0.039 (0.025)	0.010 (0.008)	-0.020 (0.027)	-0.007 (0.029)	0.023 (0.023)	0.003 (0.008)	0.006 (0.032)
Missing	-0.045 (0.046)	0.125** (0.056)	0.032 (0.024)	-0.067 (0.050)	-0.056 (0.052)	0.175*** (0.060)	0.030 (0.024)	-0.046 (0.048)
Course fixed-effects	Yes	Yes	Yes	Yes				
Restricted sample					Yes	Yes	Yes	Yes
Obs.	1,038	1,038	1,038	1,038	882	882	882	882

Note: significance: \*\*\* 0.01, \*\* 0.05, \* 0.1. The table shows marginal effects at the means obtained from probit regressions of different occupational choices. Estimates include year of entry fixed-effects. Columns (1)–(4) include also course fixed-effects. Columns (5)–(8) restrict the sample to respondents with a degree of certainty higher than 7 (see text for more details). Standard errors clustered at the session level shown in parentheses.

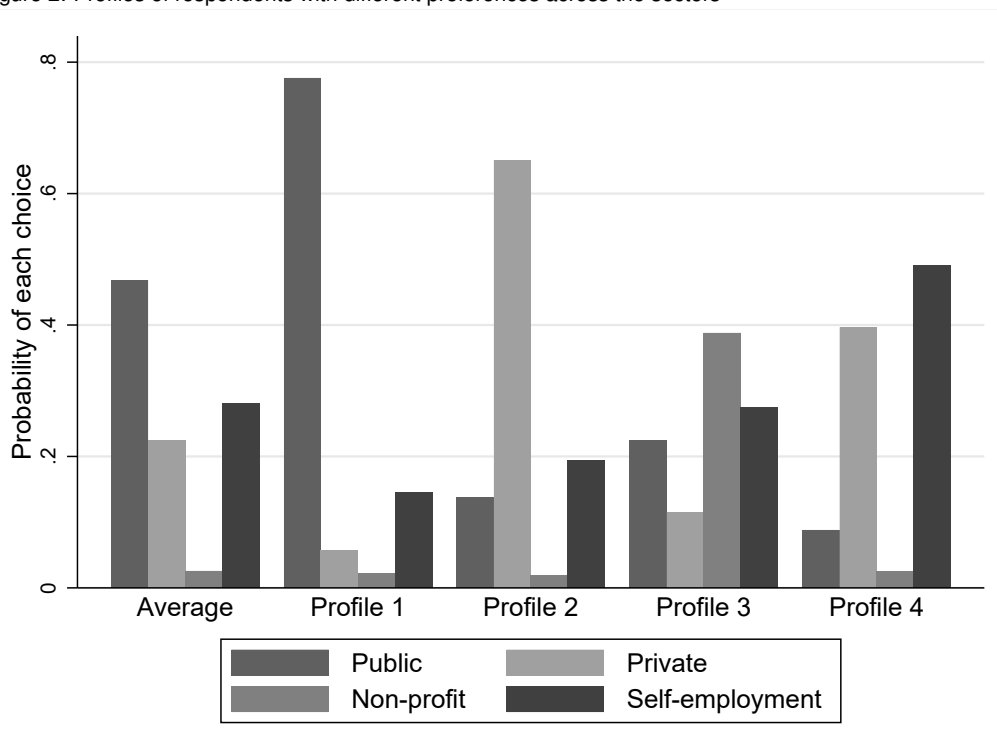
Source: authors' compilation based on study data.

### 4.3 Alternative-specific models

Given that the data collected gives information not only on the ranking of the different variables, but also on the certainty of this ranking, we employ two estimators allowing for alternative-specific variables. The results are presented in Table 5. Columns (1)–(4) report marginal effects at the means of the independent variables obtained with an alternative-specific multinomial probit estimator; and columns (5)–(8) report marginal effects at the medians obtained with an alternative-specific rank-order probit estimator. In the first case, the set of dependent variables are just dummies for the preferred choice—that is, in column (1) the dependent variable assumes the value of 1 if the respondent selected the public sector as the preferred option. The second model considers the full ranking of the four options. In this case, the marginal effects in columns (5)–(8) correspond to model estimates when the indicated sector is preferred (ranked first) and all other sectors are ranked second-equal.

Overall, we notice that there are few changes in the overall conclusions when we look at the first group of results, obtained with the alternative-specific multinomial probit. We use them to derive a profile of the respondents preferring each of the four occupational choices. Figure 2 shows the preferences of four different profiles of respondents in comparison to the average respondent (obtained from calculating the marginal effects at the means of each variable for all respondents in the sample). While a few of the effects disappear when we restrict some of the assumptions in the alternative-specific rank-ordered probit estimations (especially when referring to the non-profit sector), these profiles are also roughly in line with these estimates.

Figure 2: Profiles of respondents with different preferences across the sectors



Source: authors' elaboration based on study data.

Profile 1 represents a female student, with a high propensity to cheat and a high score for neuroticism. This student does not consider the work conditions and content as important, scores low in terms of commitment to public values and scores lower in terms of locus of control (external control). The analysis suggests that this student would be more likely to prefer working for the public sector in comparison to the other sectors.

Table 5: Alternative-specific multinomial and rank-ordered probit estimates of the saturated model

	Alternative-specific multinomial probit				Alternative-specific rank-ordered probit			
	Public (1)	Private (2)	Non-profit (3)	Self (4)	Public (5)	Private (6)	Non-profit (7)	Self (8)
Age (std)	0.039* (0.021)	-0.048** (0.021)	0.002 (0.006)	0.007 (0.017)	0.010 (0.021)	-0.021 (0.013)	0.004 (0.005)	0.006 (0.012)
Male	-0.083* (0.043)	0.043* (0.025)	0.009 (0.008)	0.031 (0.037)	-0.070* (0.040)	0.050* (0.026)	0.013* (0.008)	0.007 (0.031)
Ability	0.020 (0.021)	-0.036*** (0.012)	0.011* (0.006)	0.005 (0.019)	0.007 (0.014)	-0.017* (0.010)	0.009* (0.005)	0.001 (0.014)
Prefer wage	-0.179** (0.079)	0.216** (0.101)	-0.016 (0.017)	-0.022 (0.087)	-0.070 (0.067)	0.068 (0.049)	-0.037** (0.016)	0.040 (0.050)
Prefer conditions	-0.253*** (0.086)	0.218** (0.101)	-0.012 (0.020)	0.046 (0.093)	-0.119* (0.070)	0.048 (0.046)	-0.024 (0.015)	0.095* (0.056)
Prefer content	-0.244** (0.097)	0.184* (0.097)	-0.011 (0.028)	0.071 (0.084)	-0.187** (0.090)	0.043 (0.063)	-0.004 (0.021)	0.148*** (0.055)
Prefer security	-0.212** (0.089)	0.122 (0.099)	0.002 (0.025)	0.088 (0.101)	-0.105 (0.079)	-0.010 (0.047)	-0.039** (0.019)	0.154** (0.064)
Pro-social	-0.040 (0.036)	-0.007 (0.026)	-0.006 (0.011)	0.052 (0.032)	-0.035 (0.030)	-0.020 (0.020)	0.005 (0.010)	0.050*** (0.014)
Risk averse	-0.037 (0.047)	-0.040 (0.033)	0.007 (0.008)	0.070* (0.038)	-0.021 (0.036)	-0.012 (0.027)	0.006 (0.009)	0.027 (0.032)
Risk loving	0.046 (0.040)	-0.066* (0.037)	0.016 (0.013)	0.004 (0.041)	0.019 (0.034)	-0.016 (0.025)	0.021 (0.013)	-0.025 (0.030)
Cheat rate	0.228*** (0.081)	-0.034 (0.083)	-0.031 (0.020)	-0.163* (0.092)	0.199*** (0.070)	0.002 (0.050)	-0.019 (0.018)	-0.181*** (0.063)
PSM self-sacrifice	0.035 (0.023)	-0.016 (0.020)	0.001 (0.006)	-0.019 (0.022)	0.025 (0.019)	-0.003 (0.012)	-0.003 (0.004)	-0.019 (0.016)
PSM compassion	0.024 (0.024)	-0.003 (0.016)	0.004 (0.005)	-0.024 (0.025)	0.012 (0.019)	0.001 (0.014)	0.001 (0.005)	-0.014 (0.016)
PSM public service	0.020 (0.022)	-0.018 (0.018)	-0.007 (0.008)	0.004 (0.028)	0.025 (0.023)	-0.032** (0.013)	-0.002 (0.005)	0.009 (0.020)
PSM public values	-0.032 (0.021)	0.049** (0.020)	0.009 (0.008)	-0.025 (0.022)	-0.042** (0.020)	0.036** (0.015)	0.011** (0.005)	-0.005 (0.017)
B5 extraversion	-0.009 (0.022)	0.008 (0.017)	-0.003 (0.007)	0.004 (0.016)	-0.002 (0.016)	0.006 (0.013)	0.003 (0.006)	-0.006 (0.012)
B5 agreeableness	-0.010 (0.020)	0.012 (0.020)	-0.002 (0.006)	-0.000 (0.016)	-0.013 (0.017)	0.004 (0.016)	0.000 (0.005)	0.009 (0.015)
B5 conscientiousness	-0.012 (0.024)	-0.012 (0.018)	0.006 (0.007)	0.018 (0.016)	0.003 (0.019)	-0.011 (0.014)	0.001 (0.007)	0.008 (0.011)
B5 neuroticism	0.070*** (0.018)	-0.018 (0.017)	0.004 (0.006)	-0.055*** (0.013)	0.036** (0.016)	0.004 (0.013)	-0.005 (0.005)	-0.035*** (0.010)
B5 openness	0.012 (0.019)	-0.015 (0.018)	-0.000 (0.005)	0.003 (0.022)	0.024 (0.017)	-0.015 (0.015)	0.008 (0.005)	-0.017 (0.015)
Locus of control	-0.018 (0.011)	-0.007 (0.012)	0.006 (0.004)	0.019 (0.017)	-0.025** (0.010)	0.004 (0.012)	-0.000 (0.003)	0.021* (0.011)
Treatment	0.009 (0.033)	0.014 (0.026)	0.009 (0.006)	-0.032 (0.032)	0.025 (0.027)	0.006 (0.024)	0.001 (0.007)	-0.032 (0.028)
Missing	-0.087 (0.060)	0.077* (0.047)	0.033* (0.018)	-0.023 (0.057)	0.003 (0.051)	0.008 (0.033)	0.010 (0.017)	-0.021 (0.045)

Note: significance: \*\*\* 0.01, \*\* 0.05, \* 0.1. The table shows the marginal effects at the means of all covariates on the occupational choices obtained using an alternative-specific multinomial probit estimator in columns (1)–(4) and an alternative-specific rank-ordered probit estimator in columns (5)–(8). Estimations include year of entry fixed-effects; standard errors clustered at the session level shown in parentheses.

Source: authors' compilation based on study data.

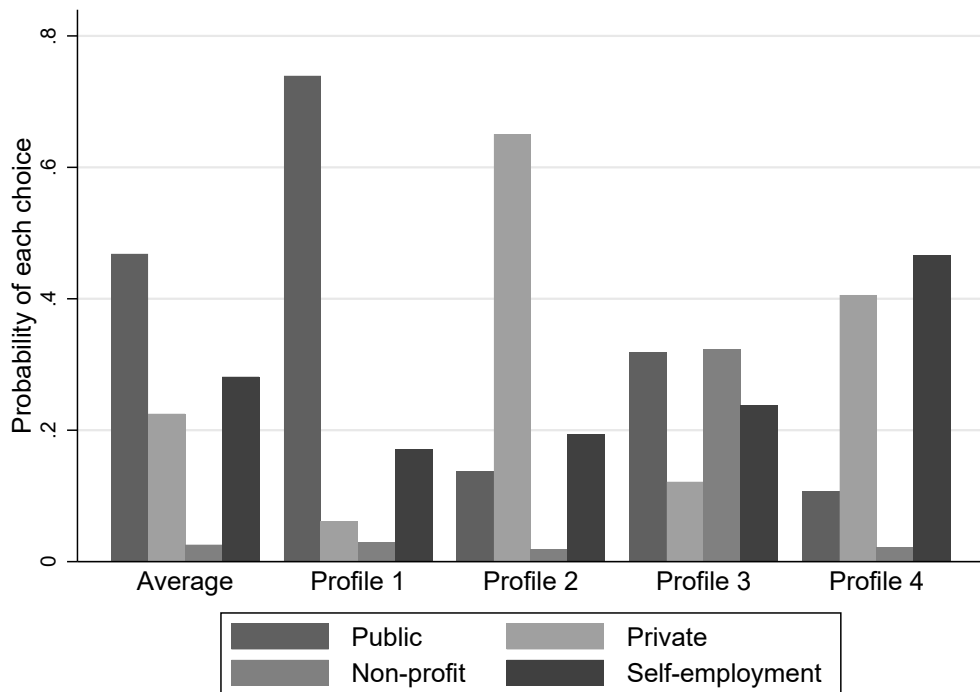
The student with Profile 2 is male and has lower ability compared to the average respondent. He places substantial importance on wage levels and work conditions, and shows a relatively high commitment to public values. According to our results, the likelihood of this student preferring the private sector is higher than for all other sectors.

Profile 3 represents a male student with high ability and very low propensity to cheat. He is risk loving and does not show pro-social behaviour. He scores high in conscientiousness and in his commitment to public values. Although the differences are more subtle for this student, the analysis suggests that he would be more likely to prefer working for the non-profit sector.

Finally, Profile 4 corresponds to a female student with high pro-sociality and a low propensity to cheat. For her, the content of the work and employment security are key. This student scores low in terms of neuroticism and believes she has substantial control over the events in her life (internal control). The analysis points to self-employment as the option with the highest likelihood of being the preferred occupation.

Given the interest of recent work in the possibility of self-selection of (dis)honest individuals into the public sector (Barfort et al. 2019; Hanna and Wang 2017), we take a closer look at the impact of changes in the propensity to cheat on these profiles. Figure 3 represents the profiles described above, but fixing the value of the cheat rate at the mean of the sample. Unsurprisingly, the profile of both the average respondent and Profile 2 remain unchanged, given they were already set at this value. Profiles 1 and 4 also remain very similar to those in Figure 2, but the preference for the non-profit sector identified for Profile 3 is slightly less clear, and closely followed by a preference for the public sector. Overall, this suggests that variation in cheat rates (conditional on other characteristics) is not a critical predictor of occupational choice.<sup>13</sup>

Figure 3: Profiles of respondents with different preferences across the sectors (value of the cheat rate fixed at the mean)



Source: authors' elaboration based on study data.

<sup>13</sup> We ran an additional check setting the cheat rate to zero in all profiles. The results are similar to those in Figure 2.



## 5 Conclusion

This paper provides a detailed analysis of different determinants of occupational sorting among university students in Mozambique. We sought to fill a gap in the existing literature by covering both a wide range of sectors (not just public/private) and a broad range of different types of influences. Also, we collected data from a low-income country, with an arguably more complex and challenging labour market compared to those found in high-income countries. We complemented the standard application of multinomial choice models with a (correlated) multinomial ordered choice model, which enables us to capture not only the differences in the ordering of preferences, but also the degree of confidence of individuals in their choices.

Our main results confirm previous work on the importance of age and gender for occupational choices, although generally only when selecting the public and private sectors. We observe a higher preference for older female respondents for the public sector, while younger male respondents have a higher probability of choosing the private sector.

The lack of significance and the small magnitude of the effects of the PSM variables, the Big Five traits, and locus of control run counter to previous studies that established the importance of these personality characteristics in determining job preferences. In contrast, we show much more substantial effects for the importance of wage, work conditions and content, and job security. Overall, individuals who value these characteristics have a higher likelihood of preferring the private sector and a lower chance of selecting the public sector.

Considering the extensive literature on the determinants of preference for the public sector, the results in this paper are particularly surprising. We show no evidence of an effect of risk preferences or pro-sociality, while a direct measure of cheating behaviour is relatively strongly associated with a higher likelihood of preferring this sector (with a marginal effect of around 0.2). Furthermore, our analysis of different profiles suggests that respondents who prefer to work for the public sector are also female, with a higher score for neuroticism but lower score in terms of commitment to public values, and who do not consider work conditions or content as especially important.

We draw several implications from this analysis. First, the results suggest that the preferences for different sectors seem to be less influenced by the inherent individual characteristics versus factors related to the characteristics of the jobs in different sectors. This provides support to the argument that individuals may feel constrained in job choice and alter their behaviour in contexts where the set of occupational options is determined by economic and social factors (see discussion in Harris 2019). The variables measuring the importance of different job characteristics may be capturing some of these effects.

Second, the analysis can be used to inform the design of appropriate selection and incentive systems, especially when considering the public sector. While we do not speak directly to the literature on incentives, the results in this paper suggest that, for example, if teachers have a relatively high propensity to cheat, exposing them to performance-related pay may further encourage this behaviour and/or lead different types of individuals to select into this profession (those with a pecuniary motivation).

Finally, by considering the non-profit sector among potential choices, we contribute to a small but expanding strand of work on the effects of foreign aid-funded agencies for national staff (Koch and Schulpen 2018). While our results are not conclusive, we offer some insights into different factors—such as high ability and low propensity to cheat—that may potentially affect the selection of these individuals into the non-profit (or development) sector. We suggest these effects and their potential interaction merit further examination.

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## Appendix A

### A1 Data

Table A1: Description of the variables used in the analysis

Variable	Description	Scaling
Age	Age of respondent	Standardized
Male	Respondent identifies as male	Dummy
Ability	Mean entrance score to the university course	Standardized
Pro-social	Amount donated in the dictator game higher than 17	Dummy
Risk averse	Chose the least risky option in the lottery	Dummy
Risk loving	Chose the most risky option in the lottery	Dummy
Cheat rate	Estimate based on the self-reported number of correct guesses in the dice game	Estimate
Prof. wage	Chose wage as the most important job characteristic	Dummy
Prof. conditions	Chose work conditions as the most important job characteristic	Dummy
Prof. content	Chose content of work as the most important job characteristic	Dummy
Prof. security	Chose job security as the most important job characteristic	Dummy
PSM self-sacrifice	Score for the PSM dimension	Standardized
PSM compassion	Score for the PSM dimension	Standardized
PSM public service	Score for the PSM dimension	Standardized
PSM public values	Score for the PSM dimension	Standardized
B5 extraversion	Score for the Big Five dimension	Standardized
B5 agreeableness	Score for the Big Five dimension	Standardized
B5 conscientiousness	Score for the Big Five dimension	Standardized
B5 neuroticism	Score for the Big Five dimension	Standardized
B5 openness	Score for the Big Five dimension	Standardized
Locus of control	Answer to the question 'Some believe they have full control over how life evolves, while others think that their own actions do not influence how things happen. Where would you position yourself?', measured on a Likert scale from '1—No influence' to '5—A lot of influence'	Raw
Treatment	Received information treatment consisting of information of the results of the dice game in a previous experiment	Dummy
Missing	Missing values in the control variables imputed	Dummy

Note: see Table A2 for more details on PSM and Big Five variables.

Source: authors' compilation.

Table A2: Dimensions of the PSM scale and the Big Five taxonomy

Variable	Survey questions included
PSM self-sacrifice	'1. I believe that one has to contribute more to the society than what one receives' '2. I am willing to risk personal loss to help society' '3. I am prepared to make sacrifices for the good of society' '4. I would agree to a good plan to make life better for the poor even if it cost me money'
PSM compassion	'1. I empathize with other people who face difficulties' '2. Considering the welfare of others is very important to me' '3. I get very upset when I see other people being treated unfairly' '4. I feel sympathy for less privileged people with problems'
PSM public service	'1. I admire people who initiate or are involved in activities to aid my community' '2. It is important to me that public services benefit society as a whole' '3. It is important for me to contribute to the common good' '4. It is my civic duty to do something that serves the best for society'
PSM public values	'1. I think equal opportunities for citizens are very important' '2. It is important that citizens can rely on the continuous provision of public services' '3. It is fundamental that the interests of future generations are taken into account when developing public policies' '4. To act ethically is essential to public servants'
B5 extraversion	I see myself as someone who is... '1. ...cautious and reserved' (with reversed score) '2. ...an extrovert'
B5 agreeableness	'1. I assume that people have the best intentions' '2. I see myself as someone who tends to find fault in others' (with reversed score)
B5 conscientiousness	I see myself as someone who... '1. ...chooses the easiest way out' (with reversed score) '2. ...does a thorough job'
B5 neuroticism	I see myself as someone who... '1. ...is relaxed, handles stress well' (with reversed score) '2. ...gets nervous easily'
B5 openness	I see myself as someone who... '1. ...has few artistic interests' (with reversed score) '2. ...has an active imagination'

Note: BF, Big Five. All answers were given on a Likert scale from '1—Completely disagree' to '5—Completely agree'.  
Source: authors' compilation.

## A2 Additional table

Table A3: Multinomial logit estimates using separate sets of factors

	Job characs. and econ. preferences				Personality traits			
	Public (1)	Private (2)	Non-profit (3)	Self (4)	Public (5)	Private (6)	Non-profit (7)	Self (8)
Age (std)	0.047** (0.021)	-0.055*** (0.020)	0.000 (0.010)	0.008 (0.015)	0.053** (0.021)	-0.059*** (0.020)	-0.001 (0.008)	0.007 (0.015)
Male	-0.114*** (0.042)	0.043* (0.024)	0.007 (0.010)	0.065* (0.036)	-0.111*** (0.040)	0.033 (0.028)	0.012 (0.010)	0.066* (0.037)
Ability	0.015 (0.017)	-0.024** (0.010)	0.014* (0.008)	-0.005 (0.015)	0.028 (0.018)	-0.026** (0.011)	0.013* (0.008)	-0.015 (0.016)
Prefer wage	-0.255*** (0.075)	0.234** (0.103)	-0.024 (0.022)	0.045 (0.092)				
Prefer conditions	-0.300*** (0.080)	0.237** (0.104)	-0.022 (0.023)	0.085 (0.092)				
Prefer content	-0.358*** (0.098)	0.221** (0.103)	-0.006 (0.030)	0.143 (0.088)				
Prefer security	-0.280*** (0.085)	0.155 (0.102)	-0.012 (0.028)	0.138 (0.102)				
Pro-social	-0.028 (0.032)	-0.016 (0.024)	-0.011 (0.016)	0.055** (0.026)				
Risk averse	-0.062 (0.045)	-0.011 (0.030)	0.015 (0.011)	0.059* (0.035)				
Risk loving	0.033 (0.036)	-0.054* (0.032)	0.024* (0.014)	-0.003 (0.039)				
Cheat rate	0.256*** (0.082)	-0.115 (0.080)	-0.043* (0.024)	-0.099 (0.079)				
PSM self-sacrifice					0.041* (0.024)	-0.023 (0.019)	-0.000 (0.007)	-0.017 (0.024)
PSM compassion					0.028 (0.025)	-0.008 (0.015)	0.004 (0.007)	-0.025 (0.025)
PSM public service					0.018 (0.020)	-0.009 (0.017)	-0.007 (0.009)	-0.003 (0.026)
PSM public values					-0.042** (0.019)	0.033** (0.016)	0.013 (0.011)	-0.004 (0.018)
B5 extraversion					-0.005 (0.020)	0.006 (0.015)	0.001 (0.007)	-0.002 (0.015)
B5 agreeableness					-0.027 (0.020)	0.013 (0.020)	-0.000 (0.006)	0.015 (0.015)
B5 conscientiousness					-0.004 (0.023)	-0.006 (0.016)	0.009 (0.008)	0.001 (0.018)
B5 neuroticism					0.068*** (0.017)	-0.017 (0.014)	0.001 (0.008)	-0.052*** (0.013)
B5 openness					0.015 (0.018)	-0.017 (0.017)	-0.002 (0.006)	0.005 (0.020)
Locus of control					-0.029** (0.011)	-0.007 (0.011)	0.006 (0.005)	0.031* (0.017)
Treatment	0.003 (0.032)	0.024 (0.021)	0.006 (0.008)	-0.033 (0.030)	-0.002 (0.033)	0.023 (0.022)	0.005 (0.007)	-0.026 (0.030)
Missing	-0.045 (0.058)	0.076* (0.045)	0.032 (0.020)	-0.063 (0.056)	-0.055 (0.053)	0.083* (0.044)	0.032 (0.020)	-0.060 (0.054)
Obs.	1,038	1,038	1,038	1,038	1,038	1,038	1,038	1,038

Note: significance: \*\*\* 0.01, \*\* 0.05, \* 0.1. The table shows the marginal effects obtained with logit regressions of the occupational choices on demographic characteristics and: job characteristics and economic preferences in columns (1)–(4); personality traits in columns (5)–(8). Estimations include year of entry fixed-effects; standard errors clustered at the session level shown in parentheses.

Source: authors' compilation based on study data.