Management Style Under the Spotlight: Evidence from Studio Recordings[*]

Girum Abebe Marcel Fafchamps Michael Koelle Simon Quinn Tom Schwantje

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Abstract

We introduce a new method for measuring managerial traits of young professionals: using management vignettes in a video studio. This method – analysed through the lens of a Bayesian hierarchical model – allows us to identify four distinct managerial archetypes (which we term 'authoritative', 'affiliative', 'coercive' and 'timid'). We find that past labour market exposure (including exposure induced through a previous field experiment) correlates strongly with the propensity to act as an authoritative manager. We then use the videos to run an incentivised experiment with firm managers, to elicit preferences over young professionals. Strikingly, we find that firms consistently prefer authoritative-type managers for entry-level managerial positions. Empirically, our results highlight an underexplored mechanism for labour market exclusion among young professionals. Methodologically, we demonstrate the value of controlled vignette scenarios for assessing managerial traits. Our findings underscore the importance of managerial training in shaping labor market outcomes, and offer new avenues for studying the development of managerial talent.

1 Introduction

The past two decades have witnessed a substantial expansion in economists' interest in the role of management. This has been driven by a new empirical focus on the measurement of management practices, spearheaded by the World Management Survey (Scur, Sadun, Van Reenen, Lemos, and Bloom, 2021). This approach has studied the role of management practices in a very wide variety of organisations, including large firms (Bloom and Van Reenen, 2007), microenterprises (McKenzie and Woodruff, 2017), hospitals (Bloom, Propper, Seiler, and Van Reenen, 2015; Chandra, Finkelstein, Sacarny, and Syverson, 2016), schools (Bloom, Lemos, Sadun, and Van Reenen, 2015), government bureaucracies (Rasul and Rogger, 2018), and universities (McCormack, Propper, and Smith, 2014). A related literature has highlighted the critical role of managers themselves, using comparisons both across firms (Bertrand and Schoar, 2003; Bloom, Brynjolfsson, Foster, Jarmin, Patnaik, Saporta-Eksten, and Van Reenen, 2019) and within firms (Hoffman and Tadelis, 2021; Lazear, Shaw, and Stanton, 2015; Metcalfe, Sollaci, and Syverson, 2023).

Managerial *traits* embodied in *individual managers* have been have been the focus of a smaller literature in economics (see, in particular, Malmendier, Tate, and Yan (2011), Kaplan, Klebanov, and Sorensen (2012), Bandiera, Guiso, Prat, and Sadun (2015), Benmelech and Frydman (2015), Bandiera, Prat, Hansen, and Sadun (2020) and Lopez-Pena, Mozumder, Rabbani, and Woodruff (2025)). This literature has studied decisions taken by managers, in their managerial capacity; that is, samples of respondents who (i) have already been selected by firms for their managerial abilities, and (ii) whose managerial challenges are determined by the particular managerial contexts in which they find themselves (Weidmann, Vecci, Said, Deming, and Bhalotra, 2024).

In this paper, we design and implement a novel style of controlled experiment, designed to measure managerial traits at the individual level. We work with a large sample of young professionals, chosen for their interest in business and entrepreneurship – many of whom are not (yet) working in managerial roles. We invite these young professionals to a video studio, where we explain that they will each watch a series of actors portraying different managerial scenarios. We ask the young professionals to record their responses – as if they are in an entry-level managerial position in a hypothetical firm. With the agreement of those young professionals, we then show these videos to human resources managers in established medium and large manufacturing firms – using an incentive-compatible mechanism to elicit the firms' assessments of the suitability of the young professionals both for wage jobs as entry-level managers and for running their own firms. By designing this controlled experimental setting, we are able to pose the same set of managerial challenges to every respondent in this sample – avoiding the endogenous assignment of managerial tasks to managers that is otherwise inherent in working with observational data on managerial decisions.

Central to our approach is the notion that managerial traits can be quite impressionistic; different managerial styles are often best understood as complex bundles of behaviours, rather than being straight-

forward to observe and record (Benson and Shaw, 2025; Goleman, 2000). For this reason, we deliberately chose a diverse range of managerial problems (rather than, for example, repeating a single class of scenarios), and we encouraged open-ended answers (rather than, for example, forcing our respondents to choose from a small menu of available actions). Similarly, we then encode respondents' answers in a high-dimensional space (specifically, we measure responses through the combination of managerial action, justification, tone, and source of authority). To analyse this data, we build and estimate a bespoke Bayesian hierarchical model. This has the flavour of Latent Dirichlet Allocation ('LDA') models (Bandiera et al., 2020; Blei, Ng, and Jordan, 2003; Griffiths, 2004) and – like LDA models – allows us to characterise heterogeneity in managerial styles across a high-dimensional response space.

We have three key results. First, our method – that is, the combination of a studio exercise with a Bayesian hierarchical model – succeeds in identifying meaningful and substantial differences in managerial traits across young professionals. Specifically, we describe four 'pure types' of managerial style – which, following Goleman's (2000) classic work in managerial studies, we label as '*authoritative*', '*affiliative*', '*coercive*' and '*timid*'. These types differ quite radically in their conceptualisation of the role of a junior manager. For example, coercive managers seem to view their role in terms of implementing their personal objectives, and do so relying upon their personal authority. Affiliative managers seek shared ground – often yielding to the other side in their responses, and emphasising shared interests as they do so. Authoritative-type managers see themselves as implementing rules set by more senior managers: they are much more likely than other types to rely upon formal policy, and they emphasise the firm's interests in doing so.

Second, young professionals' managerial behaviour is strongly related to their past exposure to the labour market. In particular, we find that authoritative-type respondents are more likely than the other types to have been self-employed, to earn higher wages (conditional on wage employment), and to report higher reservation wages and reservation profits. Strikingly, they are also significantly more likely to have been in the treatment group in a previous field experiment that randomly increased some respondents' exposure to medium and large firms (see our related work, Abebe, Fafchamps, Koelle, and Quinn (2024)); this implies that the relationship between labour market exposure and managerial style is causal. We find that this experimental effect is driven entirely by individuals whose parents did not finish primary school; this suggests that the impact of early-career labour market exposure is particularly valuable for those who are traditionally likely to be excluded from labour market opportunities.

Third, we find a clear preference across firms for authoritative-type managers over managers of the other three types. We designed our experiment with a view that some firms may (for example) have a clear preference for authoritative-type managers, whereas (for example) others may prefer more affiliative types (see, in particular, Bandiera et al. (2020)). It is striking that we do not find this kind of heterogeneity: while we do detect some heterogeneity in strength and ranking of different styles, firms seem largely united in their view that the authoritative style of management is best – both for entry-level managerial roles and for

self-employment.

Together, these results contribute to three bodies of literature. First, our findings add to our understanding of managerial traits. On the one hand, our result that managerial traits are related to past labour market exposure is broadly consistent with earlier results showing the relevance of past experiences in shaping managerial style (Benmelech and Frydman, 2015; Malmendier et al., 2011). In contrast, our result on the relative homogeneity of firm preferences provides a counterpoint to the seminal earlier work of Bandiera et al. (2020) – who find heterogeneous firm-manager match quality among different kinds of employed senior managers. This presents a novel insight on firm preferences over management: while different firms may have different preferences over the managerial styles of their *senior* leaders, firms seem reasonably homogeneous in their preferences for *entry-level* managers among a broad pool of young professionals.

Second, our results complement the recent literature studying labour market exclusion among young professionals. Our results show that individuals with greater labour market exposure are more likely to exhibit the authoritative style of management – and, conversely, that the authoritative style of management is in higher demand among prospective employers. Together, these two results imply that embodied managerial traits may act as a key mechanism by which some young professionals enjoy sustained labour market success while others face exclusion. This supports a key insight from our earlier work (Abebe et al., 2024) – and, indeed, our results here help to interpret the mechanisms identified in that earlier paper. More generally, our results highlight the importance of non-cognitive skills for employment in urban low-income settings (Bassi and Nansamba, 2022); indeed, our result on the relevance of parental education suggests that embodied managerial traits may act as a form of 'cultural capital' (Bourdieu, 1986), by which existing labour market inequalities are reinforced (Barrios-Fernández, Neilson, and Zimmerman, 2024; Shukla, 2025; Zimmerman, 2019).

Third, methodologically, our results contribute to recent literature using innovative and open-ended data collection methods in economics. This includes – in particular – recent literature on the relevance of tone in economic communications (Gorodnichenko, Pham, and Talavera, 2023; Handlan and Sheng, 2023), the use of photographs to proxy labour market potential (Guenzel, Kogan, Niessner, and Shue, 2025), and on the use of machine learning techniques to understand CEO performance (Borgschulte, Guenzel, Liu, and Malmendier, 2021). More generally, our approach complements recent advances in the use of open-ended survey questions in economics (Haaland, Roth, Stantcheva, and Wohlfart, 2024; Stantcheva, 2021). Separately, our paper illustrates and validates the use of studio vignettes as a credible method for eliciting managerial traits in field settings. This builds on a small literature in economics that has used a different kind of team-based 'management simulations', to test the impacts of managerial training in the field (Macchiavello, Menzel, Rabbani, and Woodruff, 2020) and to assess managerial potential in the lab (Weidmann and Deming, 2021; Weidmann et al., 2024). More generally, we note that the use of video responses to pre-recorded questions is increasingly common as part of 'assessment centres' for

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job recruitment exercises and university entrance processes – but has received relatively little empirical attention in economics.

The paper proceeds as follows. In section 2, we describe the experimental context and implementation. In section 3, we use a Bayesian hierarchical model to characterise heterogeneity in management traits; we go on, in section 4, to describe the characteristics of those types, including their previous experimental treatment. In section 5, we turn to the firm side – to characterise firm preferences over different managerial approaches. In section 6, we exploit an alternative source of exogenous variation – namely, random variation in the gender of the actors viewed – as a robustness exercise. Section 7 concludes.

2   The experiment

2.1   Vignettes in the studio

Our experiment is designed to measure management traits among young professionals across a series of realistic management scenarios. To do this, we used a studio setting, in which respondents participated in a role-play scenario. Specifically, we ran a series of separate vignettes; in each vignette, the respondent watched a video of a paid actor, who played the role of a counter-party in a managerial problem. For each vignette, we played the video (explaining that it showed an actor), and then asked the respondent to provide a short response – as if she or he were in a managerial role, responding to the character in the video. We explained to the respondents that their video recordings would be played to human resource managers in successful Ethiopian firms.

Specifically, we set each respondent five different scenarios:[1]

(i). *Line management of an employee:* The actor is an accounting clerk who has been absent for three days without warning. (S)he shows up for work on the fourth day, explaining that (s)he was unwell.

(ii). *Negotiating with a supplier:* The actor plays a supplier, who explains that (s)he cannot fulfil an order according to specifications, because of problems sourcing input materials. (S)he offers to supply a replacement of inferior quality instead. Respondents are told specifically that the firm they represent is known for producing and selling the highest quality products in the industry.

(iii). *Negotiating a pay rise:* The actor is a production worker, who comes to ask for a pay rise. The worker argues that (i) within her unit, (s)he has been the most productive worker during the last three months, and one of the few people who exceeded the personal productivity targets; and (ii) (s)he has been with the company for ten years, and even her mother used to be an employee of the

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[1] The full scenario scripts are provided in Appendix A.

company. Respondents are told that the firm they represent has no plan to increase any salaries this year.

(iv). *Negotiating an adjustment with the bank:* The actor is a bank manager, who calls to remind the firm about an unpaid loan installment (explaining that failure to pay increases interest payments and reduces the firm's credit rating). Respondents are told that the firm they represent will not have sufficient funds to pay the bank for another two weeks.

(v). *Negotiating with a client:* The actor is a client, who has not paid what you have invoiced, in spite of one reminder. The client comes to place a new order.

2.2   Incentivised elicitation of firm preferences

In the second part of our experiment, we played the studio recordings to human resources managers from successful Ethiopian firms.[2] For each vignette, the human resources manager watched three responses, and was asked to rank these separately based on (i) the manager's assessment of the respondents' suitability as entry-level managers at their firm, and (ii) the manager's assessment of the respondents' suitability to run their own small business.

Specifically, each human resources manager was assigned to assess video recordings from three different respondents, for each of the five vignette scenarios. Each triplet of young professionals was assessed by at least two different managers for each vignette. To elicit revealed preferences comparing different candidates, we implemented two complementary direct elicitation mechanisms: one to elicit the perceived suitability of candidates for a managerial position in the firm; the other to elicit candidates' perceived suitability to run their own business. We incentivised the assessment of suitability for managerial positions through the prospect of receiving respondents' contact details (with respondents' permission), and we incentivised the assessment of suitability to run a business through the prospect of the respondent being invited to a business plan competition. They were designed to be straightforward and to make truthful ranking an 'obviously dominant' strategy for respondents.[3] Separately, we asked each human resources manager directly to assess the individual respondents (again, both for their suitability as an entry level manager, and as an entrepreneur), using a series of stated-preference questions. We explain both the revealed-preference and stated-preference methods in detail in Appendix B.

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[2] We ran this assessment with the senior member of the firm who was responsible for hiring. We refer to this person here as 'the human resources manager' – though this was not always the actual title or job description.

[3] Both mechanisms closely resembled the 'OSP-RSD' ranking mechanism described by Li (2017).

2.3 Implementing our experiment

Table 1 provides descriptive statistics for the 982 young professionals in our sample. The respondents are primarily male (78%), highly educated (78%), and relatively young (with an average age of 31). Most of the young professionals are in wage employment (68%) or self-employment (17%). Of those in wage employment, 98% work in a professional position, and 18% in a managerial position. Conditional respectively on wage employment and self-employment, the median wage and profit are both 6000 ETB (although self-employment income varies substantially more across respondents). This is more than twice the average household expenditure of 2500 ETB in Addis Ababa.[4]

Table 1: Descriptive statistics of young professionals

Categorical Variables				
Gender (% Male)	78%			
University degree	78%			
Self-employed	17%			
Wage-employed	68%			
Conditional on Wage Employment				
In a professional position	98%			
In a managerial position	18%			
Continuous Variables				
	Median	Std. Dev.	5th Perc.	95th Perc.
Age (years)	31	2.8	27	36
Wage (ETB/Month)	6000	5979	2285	18000
Profit (ETB/Month)	6000	16099	0	42000
N	982			

Notes This table provides summary statistics of the respondents included in the sample. The wage and profit in Ethiopian Birr (ETB) are calculated conditional on being in wage- and self-employment, respectively. The percentages of individuals in professional and managerial positions are conditional on being in wage employment.

The sample of firms was drawn from a set of 713 established Ethiopian firms involved in a previous experiment (Abebe et al., 2024), supplemented by additional firms to account for attrition. These are medium-sized to large firms operating across a range of industries, in Addis Ababa and in the neighbouring towns of Bishoftu and Adama.

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[4] See the Ethiopian Socioeconomic Survey (Ethiopian Statistical Service and World Bank, 2023).

We conduct interviews with a sample of 576 firms. These firms have a median of 58 employees (mean 323) and employ a median of five managers (mean 12). The interviewed managers work primarily in human resources (40%) and administration (34%). They have been in their current position for, on average, eight years. 80% have a university degree and 72% have formal management training.

2.4 Experimental variation in labour market exposure

For our experiment, we invited all individuals who participated in a previous experiment (conducted in 2016 and 2017) that placed young professionals in medium and large firms for a one-month placement shadowing middle managers in their daily work (Abebe et al., 2024). During that placement – the treatment in that earlier experiment – they shadowed managers in their daily work, gaining direct exposure to managerial practices in a real-world business environment. This experiment allows us to study the causal effect of exposure to firm management on management styles.

About 60% of that original sample attended the studio. To compare the sample attending the studio with the original sample in the experiment we run a number of descriptive logit estimations. In Appendix Table A.19, we first examine whether some individuals were more or less likely to attend the studio. First, in column 1, we show that – compared to the baseline sample – female participants are significantly less likely to attend, and that individuals with a BA degree are less likely to attend (although this is marginally significant). When we study attendance at the studio conditional on being in the four-year follow-up of the placement experiment (column 2), we similarly find that female participants are less likely to participate, and that individuals with an above-median reservation wage (conditional on employment) are less likely to attend. Importantly, we find no evidence for the hypothesis that treated individuals are more likely to attend the studio. In column (3), we study whether any individual characteristics are predictive of treatment status conditional on attending the studio. We find suggestive evidence that female participants who are treated appear to be less likely to decline the studio invitation; the sample appears to be well-balanced on all other characteristics.[5] (In Appendix Table A.20, we use an Inverse Probability Weighting to show the robustness of our main Bayesian estimates to concerns about selection on these covariates.)

3 Management styles in the studio

Our first experimental objective is to characterise the main management styles among young Ethiopian professionals. To do this, we build a bespoke Bayesian Hierarchical Model; this allows us to identify distinct clusters of managerial behaviour. To do this, we first employed two enumerators to watch all of

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[5] Importantly for our subsequent analysis, we find good balance on treatment status and whether either parent finished primary school.

the videos, and to encode each response along the following four dimensions:[6]

(i). *Action*: Did the respondent agree or disagree with the actor's request? (For example, in the third scenario, did the respondent agree to the employee's request for a pay rise?)

(ii). *Authority*: What source of authority did the respondent rely upon? Specifically, did the respondent rely upon (a) their formal authority as a manager, (b) their seniority or personal authority, (c) higher principles, such as an appeal to the appropriateness of the action, or (d) did the respondent not rely upon any source of authority.

(iii). *Justification*: How did the respondent justify her or his action? Specifically, did the respondent (a) provide no justification, (b) emphasise the interests of the firm they represent, (c) emphasise the interest of the other party, or (d) emphasise the shared interest of the firm and the other party?

(iv). *Tone*: What tone did the respondent use? Specifically, was it (a) calm/assured, (b) assertive, or (c) aggressive?

3.1 Management traits among Ethiopian young professionals

We begin, in Figure 1, by describing the average behaviour across our five vignettes. Specifically, Figure 1 shows one row for each vignette; across that row, we characterise the average behaviour across each dimension of management (as discussed, these are action, authority, justification and tone). We disaggregate the data by the two enumerators. We draw two conclusions from the figure. First, we find substantial heterogeneity *across* different vignettes – and this is reflected across the bundle of different managerial dimensions. For example, when dealing with an employee seeking a pay rise (vignette 3), most respondents refuse the request; to do so, they rely heavily on formal authority and on personal authority, and their tone can be relatively assertive. In contrast, when dealing with their bank (vignette 4), respondents are much more likely to accede to the request, to place almost no reliance upon formal policy, and generally to use a less assertive tone. Similarly, when dealing with an employee seeking a pay rise (vignette 3), respondents frequently invoke their shared interest, but this rarely happens when dealing with a supplier failing to deliver a high-quality good (vignette 2).

Second, there is substantial heterogeneity *within* different vignettes, across respondents. This is evident from the disaggregation across the separate enumerators. Despite assessing the videos independently, the enumerators describe the responses in broadly similar terms – implying that the observed differences in action, authority, justification and tone are driven by heterogeneous approaches by different young professionals, rather than by differences in enumerators' perceptions.

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[6] Appendix C provides a detailed description.

Figure 1: **The distribution of behaviours by vignette**
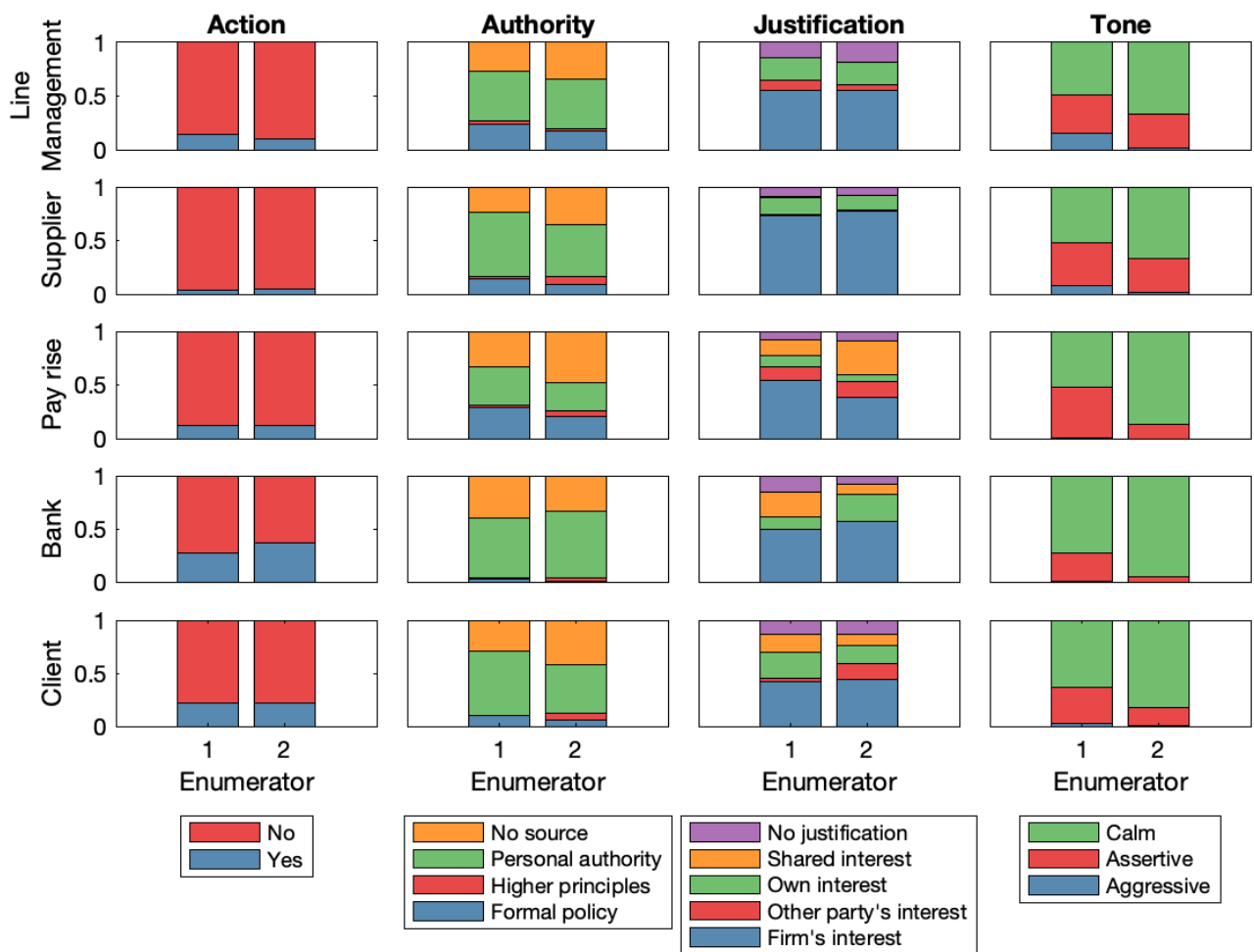
Notes This figure reports the distribution of the encoded behaviours by vignette and by enumerator. The bars show the probability that an enumerator encodes a specific behaviour for each dimension by vignette.

3.2 A Bayesian model of management styles

To extend this analysis, we now build a bespoke Bayesian Hierarchical Model. This model serves two related purposes. First, it allows us to cluster the different dimensions of managerial responses into different managerial styles. Second, the resulting classification will be a key input for understanding firm preferences in the following section.[7]

To do this, we specify a generative model in which each young professional – when responding to a given vignette – chooses a combination of action, authority, justification and tone. The model characterises 'pure types' that represent archetypal managerial styles; each young professional is then represented as a convex combination of those archetypes. A Bayesian Hierarchical framework is well suited for this task due to its ability to handle high-dimensional categorical data and to uncover latent themes. Very broadly, this is similar to several recent papers on heterogeneity in management styles (e.g. Bandiera et al., 2020).[8]

Specifically, we observe individuals $i \in \{1, \ldots, N\}$ performing on vignettes $v \in \{1, \ldots, 5\}$. For each individual assessment of a vignette, we have two enumerators, $e \in \{1, 2\}$. Each enumerator records a set of 'attributes' of the response (action, authority, justification and tone): $a \in \{1, \ldots, 4\}$. Each attribute a has $J(a)$ possible categorical responses, $y_{ive}^a \in \{1, \ldots, J(a)\}$.[9] For each vignette, each respondent draws their behaviour from one of K pure types, z_{iv}. The total probability of the model is as follows:

$$P(W, Z, \boldsymbol{\theta}, \phi, \zeta, \eta) = \underbrace{\prod_{j=1}^{K} P(\phi_j; \zeta)}_{\text{Dirichlet parameters}} \cdot \underbrace{\prod_{i=1}^{N} P(\boldsymbol{\theta}_i; \eta)}_{\text{Types}} \cdot \prod_{v=1}^{5} \sum_{k=1}^{K} \left(\underbrace{P(z_{iv} = k | \boldsymbol{\theta}_i)}_{\text{Type assignment}} \cdot \underbrace{\prod_{e=1}^{2} \prod_{a=1}^{4} P(y_{ive}^a | \phi_{ka}, \psi_{av}, \chi_{ae})}_{\text{Studio behaviour}} \right), \quad (1)$$

where $P(\phi_j; \zeta)$ and $P(\boldsymbol{\theta}_i; \eta)$ follow a Dirichlet distribution, $P(z_{iv}|\theta_i)$ follows a categorical distribution and $P(y_{ive}^a | \phi_{ka}, \psi_{av}, \chi_{ae})$ follows a Multinomial Logit distributions.

In this model, ϕ_{ka} characterises the behaviour of the pure types and $\boldsymbol{\theta}_i$ characterises an individual as a convex combination of those archetypes. z_{iv} is an individual's type for a specific vignette. ψ_{av} is a vignette fixed effect that allows average behaviour to vary across vignettes, and χ_{ae} is an enumerator fixed effect that allows average behaviour to vary across enumerators. We estimate this model using a Hamiltonian Monte Carlo algorithm in the Stan language (Stan Development Team, 2024); we discuss the parameterisation and estimation of this model in more detail in Appendix E.

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[7] For this section, we only uses the data from the enumerator encoding of the vignettes to estimate our model.

[8] Our model has some analogy to the class of Latent Dirichlet Allocation ('LDA') models. In the language of LDA models, we could think of each respondent-vignette pair as comprising a 'document', each document comprising four 'words', and each word being drawn from one of four different dictionaries (namely, a dictionary for action, a dictionary for tone, a dictionary for source of authority and a dictionary for justification. Our inclusion of enumerator and vignette effects is a further variation on the typical LDA setup.

[9] Specifically, $J(1) = 2$ for the action; $J(2) = 4$ for source of authority, $J(3) = 5$ for justification and $J(4) = 3$ for tone.

3.3 Results

We estimate our model allowing for four 'pure' management styles.[10] To interpret these styles, we draw upon the classic work of Goleman (2000) – who described a set of archetypal leadership traits for large organisations. This has been a highly influential description of leadership for many corporate thinkers.[11] In his famous work, Goleman described six styles of *senior leadership*. We use this as a basis for describing four styles of *entry-level management* – the setting appropriate for our sample.[12]

Figure 2 shows the four estimated 'pure type' management styles and their behaviour in our five vignettes:

(i). Type 1: The *authoritative manager* implements the rules set by the firm. Specifically, they refuse the requests almost all of the time; in doing so, they are much more likely than the other types to rely upon formal policy – and much more likely to emphasise the firm's interests in doing so. They are more likely than the other three types to use an assertive tone; indeed, at times, they can even be aggressive.

(ii). Type 2: The *affiliative manager* seeks shared ground. Strikingly, the affiliative type is much more likely than the other three types to concede to their counterparty in the hypothetical discussion – notwithstanding that many of the vignette prompts suggested that such concessions were not in the interests of the hypothetical firm. The affiliative type tends to rely upon personal authority (or cites no specific authority), and is much more likely than the other three types to emphasise shared interests. Their tone is generally calm, but can be assertive.

(iii). Type 3: The *coercive manager* implements their personal objectives. They refuse the requests almost all of the time; in doing so, they are overwhelmingly likely to rely on personal authority. As justification, they tend to emphasise the firm's interest – but are much more likely than the other three types to justify their actions by reference to their own personal interest. Similar to the authoritative type, they tend to be assertive, or even aggressive.

(iv). Type 4: The *timid manager* does not provide a clear explanation for their decision. They refuse the requests almost all of the time – and, in doing so, are unlikely to rely on any source of authority, and

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[10] In Appendix **??**, we consider alternative versions with two, three and five types and show that the general conclusions remain broadly similar.

[11] This seminal piece had been cited almost 6000 times at the time of writing according to Google Scholar and featured in the Harvard Business Review's classic series of groundbreaking ideas in 2017.

[12] Goleman's six styles were: (i) coercive, (ii) authoritative, (iii) affiliative, (iv) democratic, (v) pacesetting and (vi) coaching. Of these, we use the coercive, authoritative and affiliative styles; to this, we add a 'timid' style that is evident in our results. Goleman's other three styles – namely, democratic, pacesetting and coaching – are primarily about *leadership* rather than *management*. In particular, Goleman describes those styles with their emphasis on coordinating teams and developing junior staff; these roles are not directly applicable to our management vignettes, nor to our sample of young professionals. Goleman's 'authoritative' leader was defined in terms of mobilising teams towards a vision; in the context of entry-level management, we repurpose this term to refer to enthusiasm to implement shared policy.

often provide no specific justification for their decision. Of the four pure styles, timid managers are most likely to be calm in their tone.

In Figure 3, we describe the distribution of individuals over types. To do this, we draw a tetrahedron, in which each vertex represents probability one of belonging to a particular type. We learn three things from this figure about our model results. First, the model distributes individuals quite evenly across the tetrahedron, such that any given individual exhibits a combination of different 'pure type' behaviours. Second, very few individuals sit close to the affiliative vertex: this implies that affiliative behaviour, while empirically important, is something that individuals incorporate into their responses – rather than being a style that consistently describes any particular individual. Third, the stacked bar on the right of Figure 3 shows the observed vignette responses in terms of the average distribution of each pure type across individuals. We estimate that the most prevalent are the authoritative type (28.0%) and the coercive type (27.9%); this is followed by the timid type (25.2%) and then the affiliative type (19.0%).

3.4 Managerial types and vignette content

Prior to recording each video, we asked each respondent how they intended to answer, and why. Table 2 describes the average prevalence of different answers to these questions, across the four identified types.[13] Specifically, we report prevalence of (i) distrust as a stated motivation for the planned response, (ii) relationship maintenance as a stated motivation for the planned response, (iii) intention to explain the decision in terms of fixed company procedure, (iv) intention to set an example for future cases.

These reported intentions align with our earlier interpretation of the four types. The affiliative type, for example, is least likely to distrust their counterparty, and much more likely to emphasise the value of maintaining an ongoing relationship; in doing so, they are far less likely than the other types to emphasise the importance of formal procedure. In contrast, the authoritative type stands out for its relatively high distrust of the counterparty and – above all – for being much more likely than the other three types to list formal procedure and setting of an example as key motivators. The coercive and timid types are similar to each other in their stated intentions, and both place a higher emphasis on formal procedure than the affiliative type. In Appendix D.1, Table A.5 provides a breakdown of the average prevalence of these intentions by vignette.

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[13] To generate these statistics, we use the point estimates of $\hat{\boldsymbol{\theta}}_i$ as an estimate of the probability of the individual to belong to each pure type. We then assign them to a pure type T_i using: $T_i = \arg\max \hat{\boldsymbol{\theta}}_i$.
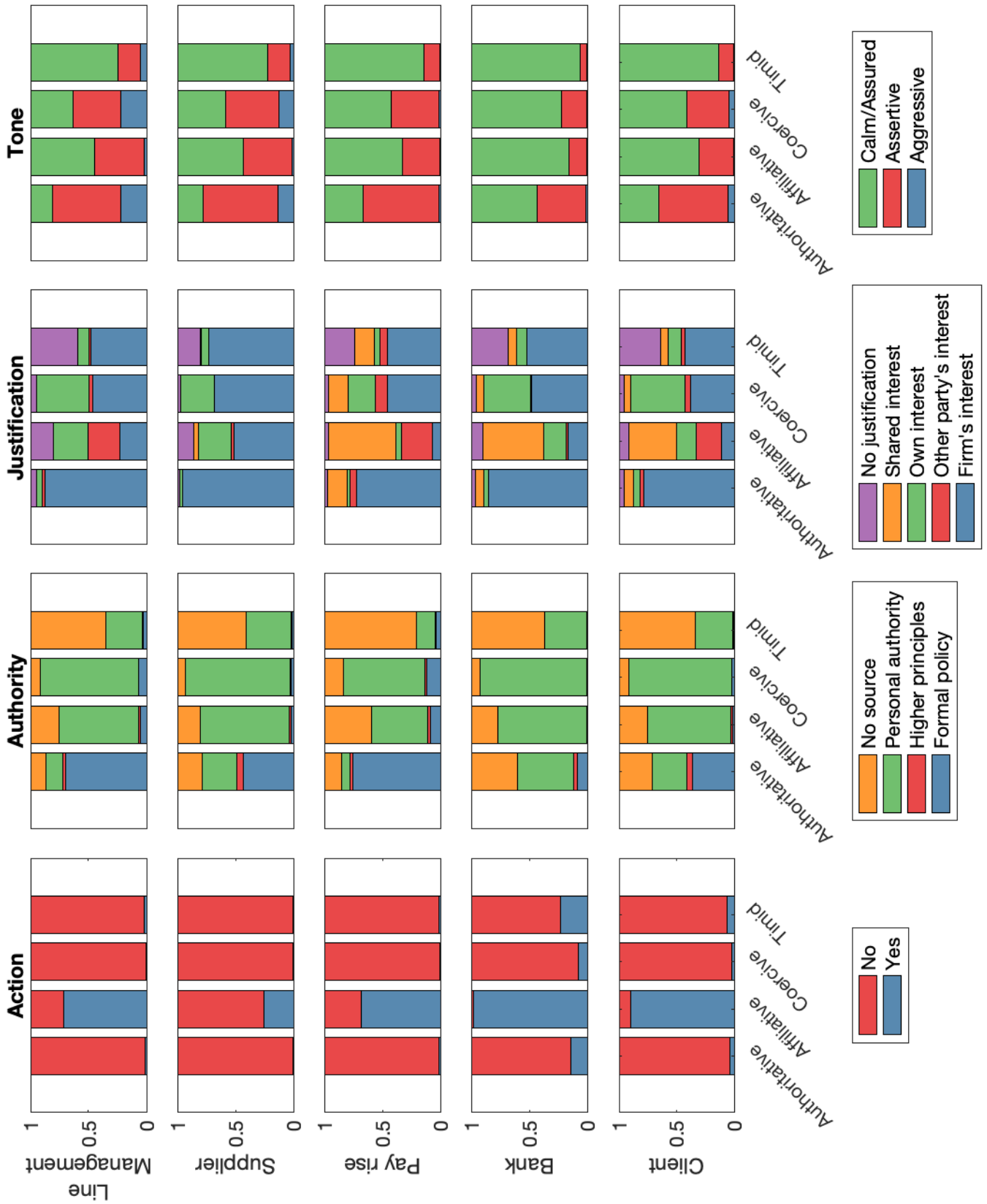
Figure 2: 'pure type' management styles amongst Ethiopian young professionals
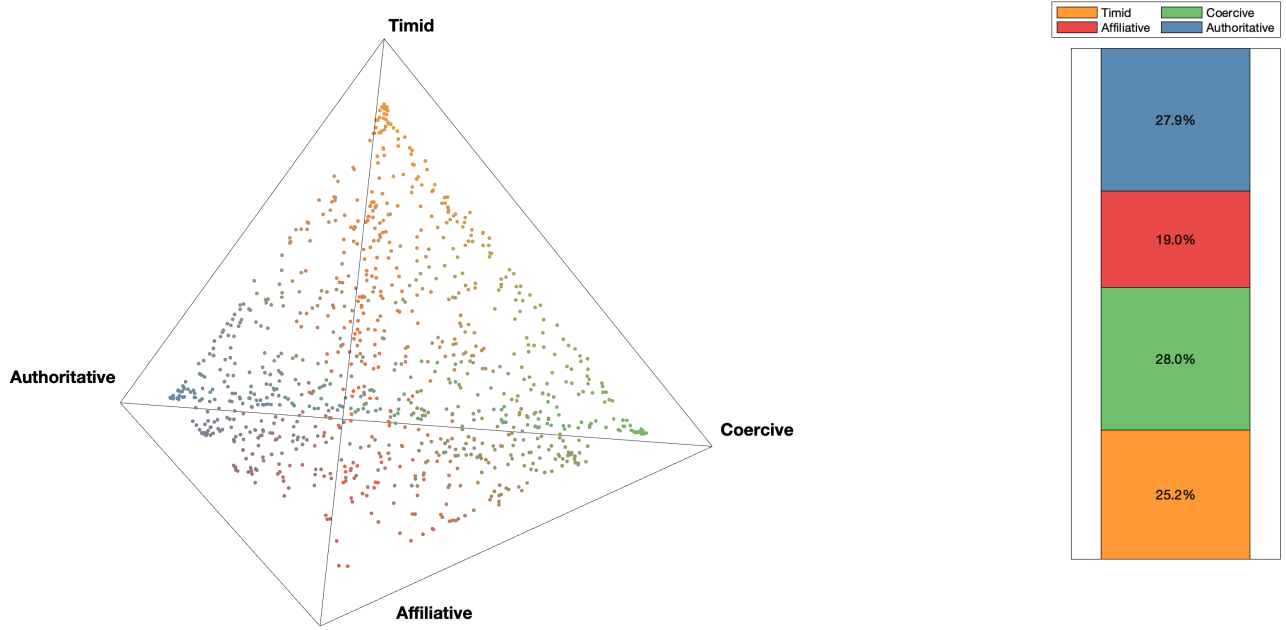
Figure 3: Distribution of types across individuals

Table 2: **Reported intentions by type**

Type	Expresses distrust counterparty	Maintain relationship	Follow procedure	Set an example
Authoritative	.3	.259	.453	.332
Affiliative	.2	.332	.306	.25
Coercive	.274	.233	.361	.245
Timid	.257	.218	.347	.241
p-value	<0.001	<0.001	<0.001	<0.001

Notes This table describes the intentions of respondents', which are enumerated before the respondent actually responds to the vignette. This is based both an what the respondent intends to say, and their motivations for doing so. The four characteristics are (i) whether the respondent expresses they do not trust the other part, (ii) whether the respondent wishes to maintain a good relationship, (iii) whether the respondent mentions following procedure, and (iv) whether the respondent wishes to set an example for future interactions. These numbers are calculated by assigning each individual to the pure type for which they have the highest estimated $\hat{\theta}_i$. Then, a conditional average is taken for each pure type. To test the significance of the differences between these conditional distributions, we conduct a joint test to assess whether the four-dimensional difference vector is credibly nonzero. Using an elliptical approximation, we compute the Mahalanobis distance of the posterior mean from zero, scaled by the posterior covariance, and compare it to a Chi-squared distribution with 3 degrees of freedom to calculate the p-value.

4 Characteristics of managerial types

4.1 Managerial types and labour market experience

Having estimated the distribution of individuals' across types, we now study the labour market outcomes and trajectories of these individuals conditional on their managerial traits. Table 3 describes the average characteristics of individuals, conditional on their type assignment. The authoritative type is most likely to be male and self-employed, and is more likely than the other types to have an above-median reservation wage and profit. The differences among the other three types are more subtle, but a few distinctions are worth noting: the affiliative type is the type most likely to be female, the timid type is particularly likely to have a below-median reservation wage, and the coercive type is likely to have an above-median reservation profit.

Next, we examine the relationship between labour market experience and manager types. Approximately 12 months after respondents' participation in the studio, we asked them a series of questions regarding their labour market experiences over the past six years, including their employment status at six-month intervals. Table 4 provides an overview of the average labour market experiences across different manager types based on these responses. The table indicates that authoritative-type managers had spent more years in employment, particularly in permanent positions. Further, these managers exhibited more stable employment histories, transitioning between jobs approximately 0.2 fewer times on average compared to other types.

Table 3: **Characteristics and Types: Summary Statistics**

Type	Gender [1=male]	Wage employment indicator	Self-Employment indicator	Above Median Reservation Wage	Above Median Reservation Profit	Average Duration Response
Authoritative	.845	.709	.201	.449	.426	55.4
Affiliative	.771	.676	.15	.336	.305	38.7
Coercive	.777	.681	.144	.334	.373	41.9
Timid	.797	.665	.147	.265	.298	36.1
p-value	.051	.747	.224	<0.001	<0.001	<0.001

Notes This table describes the average characteristics of individuals of each type. Specific, this includes their gender (1 indicating male, 0 female), a dummy for their wage- and self-employment status, and the probability they have an above-median reservation wage and profit based on data collected before respondents' attended the studio. We also include a dummy for whether or not the individual was treated in the management placement experiment, and the average duration of the responses of the candidate across the vignettes. Note that the median splits on reservation wage and profit do not yield a 50/50 split due to bunching in the underlying data at ETB10.000. These numbers are calculated by assigning each individual to the pure type for which they have the highest estimated $\hat{\theta}_i$. Then, a conditional average is taken for each pure type. To test the significance of the differences between these conditional distributions, we conduct a joint test to assess whether the four-dimensional difference vector is credibly nonzero. Using an elliptical approximation, we compute the Mahalanobis distance of the posterior mean from zero, scaled by the posterior covariance, and compare it to a Chi-squared distribution with 3 degrees of freedom to calculate the p-value. For non-binary outcomes, we first create a binary split at the median to split the sample.

Table 4: **Labour market experience and Types: Summary Statistics**

Type	Employment	Permanent employment	Unemployed	Management Position	Number of transitions
	Years	*Years*	*Years*	*Share*	*Count*
Authoritative	5.522	3.906	.329	.192	.659
Affiliative	5.306	3.671	.456	.124	.851
Coercive	5.231	3.626	.51	.139	.939
Timid	5.226	3.541	.577	.109	.887
p-value	.298	.094	.024	.005	.07

Notes This table describes the labour market experience over the past 6 years of individuals of each type. Specific, this includes the number of years they have been in employment including both self- and wage-employment, the number of years they have been in permanent employment, the number of years they have been unemployed, whether they were in a management position before participating in the studio experiment, and finally the number of labour market transitions they have gone through. These numbers are calculated by assigning each individual to the pure type for which they have the highest estimated $\hat{\boldsymbol{\theta}}_i$. Then, a conditional average is taken for each pure type. To test the significance of the differences between these conditional distributions, we conduct a joint test to assess whether the four-dimensional difference vector is credibly nonzero. Using an elliptical approximation, we compute the Mahalanobis distance of the posterior mean from zero, scaled by the posterior covariance, and compare it to a Chi-squared distribution with 3 degrees of freedom to calculate the p-value. For non-binary outcomes, we first create a binary split at the median to split the sample.

4.2 The causal effects of managerial experience

The results in the previous section suggest that authoritative managers have better labour market outcomes, but do not allow us to study whether labour market experience influences the development of managerial traits, or whether managerial traits, instead, determine labour market outcomes. To answer this question, we turn to evidence from respondents' participation in a management experience experiment five years prior to attending the studio.

This experiment allows us to estimate the causal effect of management experience on different management styles among young professionals. For each management style – Timid, Authoritative, Affiliative, and Coercive – we compute the treatment effect as the difference between the estimated latent trait for treated versus untreated individuals. We calculate the average treatment effect as:

$$\Delta\theta_i^{(d)} = \theta_{i,\text{treated}}^{(d)} - \theta_{i,\text{control}}^{(d)}, \tag{2}$$

where $\Delta\theta_i^{(d)}$ represents the treatment effect for style i for Hamiltonian Monte Carlo draw d. For each category, we report the mean and the 95% credible interval of the distribution of these draws. We separately conduct this exercise for three groups: the full sample, individuals whose parents did not complete primary school, and those with at least one parent who did.

We find, in Table 5, that the management experience treatment makes individuals on average more authoritative and less timid (column 2), and that this result is entirely driven by individuals whose parents' have not finished primary school (column 4). We find no evidence for any treatment effect for individuals whose parents finished primary school (column 6).

We draw two conclusions from this result. First, management experience shapes an individual's management style. Since the treatment focused on shadowing a manager rather than directly managing, this suggests that the intervention teaches individuals what effective management looks like rather than specifically how to implement it. This interpretation is further supported by the heterogeneity in treatment effects between individuals whose parents did not complete primary school and those whose parents did. We suspect that individuals from the former group have had less exposure to firms and business practices in Ethiopia, resulting in a larger treatment effect on management styles. Strikingly, the treatment significantly reduces the gap in the probability of being an authoritative manager between these two subsamples, decreasing the difference in respondents' reliance on this management style from 7.7 percentage points for untreated individuals to 2.0 percentage points for treated individuals. These findings suggest that managerial experience plays an important role in shaping managerial traits, particularly for individuals with less prior exposure to formal firms.

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Table 5: The causal effect of managerial experience on management style by parents education

	Full sample		Low parental education		High parental education	
	(1)	(2)	(3)	(4)	(5)	(6)
Authoritative (%)	26.5	2.4	22.5	5.4	30.2	-0.3
		[0.2, 4.5]		[2.4, 8.7]		[-3.4, 2.6]
Affiliative (%)	18.4	1.2	19.1	1.0	17.7	1.4
		[-0.5, 2.9]		[-1.6, 3.6]		[-1.1, 4.0]
Coercive (%)	28.0	-0.1	29.0	-1.2	27.1	0.9
		[-2.3, 2.3]		[-5.0, 2.1]		[-2.5, 4.2]
Timid (%)	27.1	-3.6	29.4	-5.3	24.9	-2.0
		[-5.8, -1.5]		[-8.3, -1.8]		[-5.3, 1.1]
N	479	500	229	239	250	261

Notes This table reports the treatment effect of the management experience experiment on the managerial traits of individuals. The treatment effect is calculated based on the distribution of the difference in the average value of θ for treated and untreated individuals. Columns (1), (3) and (5) report the average estimated value of θ_i for individuals that were not treated in the management experience experiment for respectively all individuals, individuals whose parents did not finish primary school and for individuals for whom at least one parent did. Columns (2), (4) and (6) report the treatment effect of the management experience experiment on their managerial traits for these three groups respectively. In columns (2), (4) and (6) both the average treatment effect and the 95% credible interval, in square brackets, are reported.

4.3 Aspiring managers' perceptions

A recurring theme in organisational economics is that poorly managed firms may not even realise that they are poorly managed (see, for example, Bloom, Lemos, Sadun, Scur, and Reenen (2014); Gibbons and Henderson (2012); Rivkin (2000)). Previous empirical measures on this issue (for example, in the World Management Survey) have tended to ask firms' subjective assessments of how well they are managed relative to others. Our design makes further progress on this issue by measuring aspiring managers' perceptions of others' performance.

To measure this, we developed one additional role-play scenario — in which workers were on strike demanding proper latrines, and a representative of the workers came to talk to the respondent as their manager. We recorded an actor portraying the worker representative. We then used different actors to record six separate possible managerial responses. We scripted these responses to represent six of the possible extreme points in the 'action/justification/authority/tone space' that we had described earlier; in a sense, these responses represented Weberian 'ideal types' capturing different bundles of management traits (Weber, 1904). For example, one actor (i) refused any change in company practice, (ii) justified her action purely through the company's interests, (iii) appealed to her authority, and (iv) spoke aggressively

in doing so. Another actor (i) agreed a change in company practice, (ii) justified her action by appealing to the shared interests of company and workers in having a harmonious workplace, (iii) appealed to formal company policy, and (iv) spoke in a calm/assured manner in doing so. We provided the full script for each of these six scenarios in Appendix Section A.2.

We showed these responses to a senior human resources consultant at an Ethiopian firm (explaining that the participants were actors), and we asked him to agree to a ranking.[14] We showed each of the six recordings to each respondent. In each case, we asked the respondent to predict how the senior managers had ranked the same responses; we incentivised this response by promising a transfer of phone airtime in return for a correct answer. We also asked (unincentivised) that each respondent rank the six recordings in the order of how closely the recordings reflected their own management style. Appendix Table A.1 summarises each of the responses. Around 60% of the respondents correctly predicted that the senior manager ranked manager 1 the highest, and respectively 30% and 45% of respondents thought the senior manager had ranked responses 5 and 6 as the worst possible response.

We calculate the probability of agreement across three comparisons: (i) between respondents' expectations of a senior manager's rankings and the senior manager's actual ranking; (ii) between respondents' preferred rankings and the senior manager's actual ranking; and (iii) between respondents' preferred rankings and their expectations of the senior manager's rankings. This probability corresponds to the proportion of pairwise comparisons in which the two rankings agree, relative to the total number of comparisons. Table 6 presents these comparisons for the full sample, as well as for subgroups defined by the pure type associated with each respondent's highest estimated $\hat{\theta}_i$.

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[14] The senior manager was asked to create a single ranking of the twelve videos including those with both the male and female actors. He always ranked the male and female actor acting out the same script equivalently compared to actors ranking other scripts. The senior manager explained to us that, in deciding his rankings, he focused primarily on the message, next the managers' gestures and sympathy, and finally their tone.

Table 6: Agreement in rankings between the respondents' and the HR consultant's rankings.

	Prediction Senior manager and senior manager	Own action and Senior Manager	Internal Agreement
Overall	.755	.707	.896
Authoritative	.783	.735	.899
Affiliative	.749	.708	.891
Coercive	.738	.688	.889
Timid	.746	.698	.904

Notes Table 6 displays the probability of agreement between the respondents' rankings and the senior manager's rankings, and the internal agreement of the respondent's own two rankings. The column "Prediction of Senior Manager versus Actual Senior Manager" compares the respondents' predictions of the senior manager's actions with the actual senior manager's actions. The column "Own Action versus the Senior Manager" compares the senior manager's actions with what the respondent would do themselves. The column "Internal Agreement" displays the probability the respondent beliefs their own action is the same as what they expect a senior manager would do. The probability of agreement is calculated as $\frac{\sum \text{agreements}}{\sum \text{pairwise comparisons}}$.

In the first comparison, we examine the alignment between respondents' predictions of the senior manager's ranking and the manager's actual ranking. The two rankings agree in 75% of pairwise comparisons. The authoritative type exhibits the highest level of agreement (78.3%), suggesting a stronger shared understanding with senior managers. In contrast, the remaining three types show lower agreement with the senior manager, ranging from 73.8% to 74.9%.

In the second comparison, we examine the alignment between respondents' preferred rankings and the senior manager's actual ranking. Agreement rates are consistently lower in this comparison. The overall probability of agreement is 70.7%, 4.8 percentage points lower than in comparison (1). This suggests that, while respondents have some understanding of the senior manager's decisions, their own preferences tend to differ more. Once again, the authoritative type exhibits the highest agreement rate, with 73.5% of pairwise comparisons reflecting the same preference, while the coercive type shows the lowest agreement rate (68.8%), reflecting the largest difference between their preferences and the senior manager's decisions.

Finally, in the third comparison, we focus on the internal consistency of the rankings: how respondents' own rankings align with their expectations of the senior manager's rankings. Agreement is high across all types. The overall probability of agreement is 89.6%, with limited heterogeneity across types—ranging from 88.9% for the coercive type to 90.4% for the timid type. This suggests that respondents generally believe their preferred management style is closely aligned with what they expect from a senior manager.

5 Firm preferences for management styles

Do these differences reflect alternative approaches to management that may be valued differently by different kinds of firms (as in Bandiera et al. (2020)), or is one type clearly preferred by firms? In this section, we turn to the results from our incentivised elicitation of firm preferences over the vignette responses of our respondents. We begin, descriptively, by noting that there is substantial idiosyncratic variation in firms' assessments of the same vignettes: in Appendix Table A.23, we show that the probability that any two managers agree in their assessment of the same pair of candidates is about 60% (and that this figure is quite stable across vignettes, in both the wage employment and self-employment domains). In Appendix Table A.24, we show that this probability is also largely invariant to similarities between the assessing firms.

Our Augmented Latent Dirichlet Allocation describes K types of studio responses. We now want to estimate firms' preferences over these styles. We elicited firms' preferences in the form of rankings over sets of three responses; we therefore estimate using a Plackett-Luce model (Luce, 1959; Plackett, 1975). This model (sometimes known as the 'rank-ordered logit') is specified as follows. For firm f, the latent utility of choosing each candidate i in vignette v is:

$$U_{fiv} = \boldsymbol{\beta}_f \boldsymbol{\theta}_i + \gamma_i + \varepsilon_{fiv}, \tag{3}$$

where θ_i is the vector of type probabilities from the Latent Dirichlet model,[15] and γ_i acts as a candidate-level random effect.[16] We provide more detail on this model in Appendix E.

Table 7 provides the parameter estimates for the Plackett-Luce model.[17] Using the timid type as the baseline, we see that in particular the authoritative type is strongly preferred by managers, and that the coercive type is significantly (but less strongly) preferred over the timid type. Hiring managers appear to have similarly strong preference for the timid and affiliative types on average. Turning to the version including covariates in the second and fourth columns, we first note that there is only a small change to the parameter estimates for β, indicating that the results are not driven by, for example, men being both more authoritative and on average preferred by managers. In terms of the other covariates, columns two and four show that untreated men appear to do worse on average, with the treatment in the management experience experiment equalising the performance of male and female candidates. There is no significant difference in these regressions in the ranking for a management position compared to the ranking for self-employment.

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[15] We jointly estimate the Latent Dirichlet model and the Plackett-Luce model to correct for the bias that would result from treating model-generated variables as data and conduct valid inference following Battaglia, Christensen, Hansen, and Sacher (2024) – effectively incorporating uncertainty about the estimates for θ from the Dirichlet model. See Appendix E for details.

[16] We then modify this model to allow for observable candidate characteristics, $\boldsymbol{x}_i$: $U_{fiv} = \boldsymbol{\alpha}_f \boldsymbol{x}_i + \boldsymbol{\beta}_f \boldsymbol{\theta}_i + \gamma_i + \varepsilon_{fiv}$.

[17] Appendix E shows that as expected the estimated types are the same in the joint model are nearly identical to those estimates in the Dirichlet model.

Table 7: Demand for management styles

|	Manager		Self-employment	
	Baseline	With controls	Baseline	With controls
$\beta_{\text{Authoritative}}$	1.17	1.23	1.27	1.30
	[0.92, 1.43]	[0.97, 1.49]	[0.98, 1.56]	[1.01, 1.58]
$\beta_{\text{Affiliative}}$	-0.08	-0.06	0.05	0.05
	[-0.44, 0.27]	[-0.43, 0.33]	[-0.37, 0.44]	[-0.36, 0.45]
β_{Coercive}	0.31	0.34	0.39	0.38
	[0.03, 0.59]	[0.04, 0.63]	[0.07, 0.69]	[0.08, 0.70]
$\alpha_{\text{treatment}}$	.	-0.16	.	-0.09
	.	[-0.38, 0.08]	.	[-0.33, 0.15]
α_{gender}	.	-0.24	.	-0.25
	.	[-0.43, -0.06]	.	[-0.44, -0.05]
$\alpha_{\text{interaction}}$	.	0.26	.	0.25
	.	[0.01, 0.51]	.	[-0.01, 0.51]

Notes This table reports the parameter estimates for the Plackett-Luce model. The reported estimates are the mean of the converged HMC chains, with the 5th and 95th percentile of these chains reported in square brackets as 90th percent credible interval.

To interpret these results, we consider what would happen if we shift the value of $\boldsymbol{\theta}$ to represent a 'pure' type manager for one member of each triplet. Specifically, for the simulation of the parameter $\beta_{\text{authoritative}}$, we adjust one individual in each triplet to have $\theta_{\text{authoritative},i} = 0.85$, setting the other elements of the vector $\boldsymbol{\theta}_i = [\theta_{\text{affiliative},i}, \theta_{\text{coercive},i}, \theta_{\text{timid},i}]$ to 0.05.[18] We then simulate the utilities of the HR managers using this updated $\boldsymbol{\theta}$ and calculate the new winning probability for this simulated individual. Initially, the winning probability of each individual in the pairwise comparisons is 50%. This probability increases to 62% for the authoritative type, decreases to 45% for the affiliative and timid types, and slightly decreases to just under 50% for the coercive type.

A benefit of the hierarchical model we estimate is that we estimate individual-level values for $\hat{\boldsymbol{\beta}}_{fs}$. We plot these firm-level estimates in Figure 4. This shows that in particular the strong preference for the authoritative type is uniform across firms, with virtually all firms preferring this type over the affiliative and timid type. This suggests that a specific management style is preferred by the majority of Ethiopian firms – authoritative management.

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[18] This represents approximately the 95th percentile in the estimated distribution of $\hat{\boldsymbol{\theta}}$.

Figure 4: The distribution of the preferences for entry-level managers
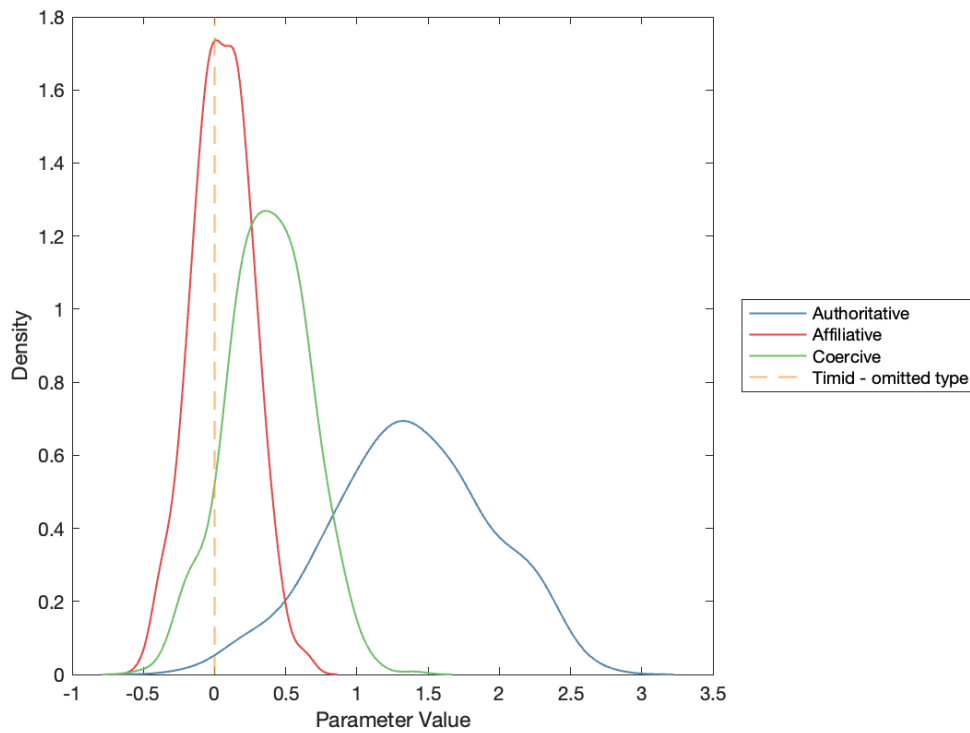
Notes This figure shows the distribution of the estimates for $\hat{\boldsymbol{\beta}}_{fs}$ across all firms in terms of demand for entry-level managers. In this figure, the timid type is omitted and the estimates for $\beta_{\hat{\text{Authoritative}}}$, $\beta_{\hat{\text{Affiliative}}}$ and $\beta_{\hat{\text{Coervice}}}$ are plotted.

Figure 5: The distribution of β_f conditional on covariates
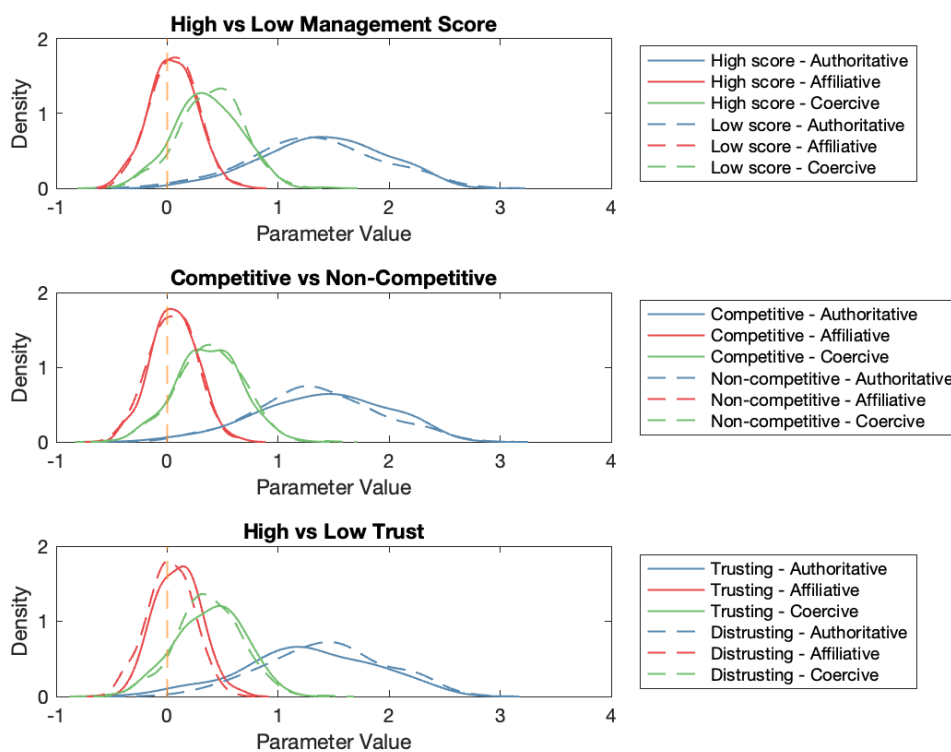
Notes This figure shows the distribution of the estimates for $\hat{\boldsymbol{\beta}}_{fs}$ for a number of subsamples of the data. The top pane splits the sample by firms' management scores based on MOPS questions, the second pane splits the sample by the median number of competitors, and the third pane splits the sample by whether or not HR managers' identify themselves as being generally trusting.

In Figure 5, we examine the distribution of the parameter estimates for β_f for subsets of the firms. We split the sample by management scores, the number of competitors a firm identifies, and whether or not the manager is trusting. As perhaps expected based on Table A.24, there is no clear relationship between management scores and the distribution of β_f. Similarly, the link between competitiveness and preferences for traits is limited. The clearest, albeit still weak, link arises for the split by how trusting the manager is, with less trusting managers having a stronger preference not to choose the affiliative type.

Next, we decompose the variance of the parameter estimates of the model specified in Equation 3. We then calculate the variance of (a) the total non-random component of the utility function, (b) of just the variance of the $\boldsymbol{\beta}_f \boldsymbol{\theta}_i$ term and (c) the variance of γ_i.

For the rankings as a manager, we find that:

$$\widehat{\text{var}(\boldsymbol{\beta}_f\boldsymbol{\theta}_i + \gamma_i)} = 0.63;$$
$$\widehat{\text{var}(\boldsymbol{\beta}_f\boldsymbol{\theta}_i)} = 0.34;$$
$$\widehat{\text{var}(\gamma_i)} = 0.29.$$

This shows that there is substantial idiosyncratic noise – but that over half of the non-idiosyncratic varia-
tion in preferences can be explained by the preferences over these types.

We then estimate two extensions of the model, each offering greater flexibility than the main speci-
fication. First, in Appendix Table A.22, we allow managers' preferences over types to vary at the vignette
level (that is, we estimate β_{fv} rather than β_f). We find broadly similar preferences across all vignettes –
in particular, a strong preference for the authoritative type in each of the vignettes – with some interesting
heterogeneity in preferences for the coercive type (firms are more receptive to the coercive type in the
scenarios where the firm clearly holds a dominant role in the relationship – namely, in vignettes featuring
employee absence, a request for a pay rise, and the request from a client). Second, in Appendix Table
A.21, we allow managers' preferences over types to vary based on the gender of the young professional.
We find no significant difference in preferences by candidate gender (the credible sets on the interaction
include zero in all cases); loooking solely at point estimates, we note that, if anything, the authoritative
management style is particularly valued among female candidates.

6   Robustness: Random variation in actors' gender

We previously described the five vignettes that were played to young professionals. As part of this exper-
imental design, we additionally randomized both (i) the order in which young professionals viewed the
five vignettes and (ii) the gender of the actor shown in each vignette (having recorded each vignette twice:
once with a male actor and once with a female actor). In this final part of the analysis, we exploit this
additional exogenous variation to generate a robustness check on our main results. Specifically, we exploit
the random variation in whether the first actor viewed by a respondent is female.[19]

To analyse this variation, we run three kinds of analysis – all reported in Table 8. First, we test
the effect upon managerial types of having seen a female actor in the first vignette. To do this, we use
the Hamiltonian Monte Carlo chains, and compare the posterior distributions between those respondents
who initially saw a male actor and those who initially saw a female actor; we then use these distributions

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[19] We can conduct a similar analysis using the gender of each separate actor – but this analysis must then proceed at the level
of the respondent-vignette pair. Given our particular focus on managerial types – that is, a property that we estimate at the
level of the respondent – it makes more sense to use this simpler respondent-level variation.

to construct point estimates of the causal effect, and 95% Bayesian credible intervals. Panel A shows that exposure to a female actor in the first vignette leads respondents to rely more on the authoritative management style and less on the coercive style (with a 95% credible interval that excludes zero for both effects).

In Panel B, we report a series of OLS regressions to test the average treatment effect on measured attributes of professionals' responses; we estimate:

$$Y_{ive} = \alpha + \beta \cdot \texttt{First\_Actor\_Female}_i + \gamma_v + \lambda_e + \varepsilon_{ive,} \tag{4}$$

where we include vignette (γ_v) and enumerator (λ_e) fixed effects, and cluster errors at the individual (i) level. We examine a set of four outcome variables: a binary indicator for agreement; an indicator for whether the justification is based on the firm's interest; an indicator for whether the respondent relies on formal authority; and a continuous measure of tone (with higher values indicating a more aggressive tone). We restrict the sample to data from the second through fifth vignettes a respondent sees. We find that, where the first actor is a woman, respondents are significantly less likely in future to agree with their counterparty, and more likely to rely on the firm's interest to justify their actions. This confirms the result in Panel A: that, on average, respondents exhibit more authoritative behaviour after being exposed to a female actor in the first vignette.

Finally, we test the impact upon firms' responses – stressing that the HR managers' were never told whether the young professionals had seen a male or female actor. To assess this, we estimate a Plackett-Luce model with a single covariate; we define the latent utility of firm f's assessment of candidate i in vignette v as:

$$y^*_{fiv} = \beta \cdot \texttt{First\_Actor\_Female}_i + \varepsilon_{fiv} \tag{5}$$

Panel C of Table 8 reports the results from this exercise. Specifically, we calculate the implied probability that an HR manager ranks a candidate who first saw a female actor more highly than one who first saw a male actor. We estimate that seeing a female actor first increases by about 5.2 percentage points the probability that an HR manager would prefer the candidate as a prospective entry-level manager, and by about 6 percentage points the probability that an HR manager would prefer the candidate as a prospective entrepreneur; the credible sets for each of these estimates excludes zero.

In sum, the randomisation of actors' gender generates additional excludable variation in respondents' measured managerial traits – and we show that, consistently with our main results, firms prefer managers exhibiting the 'authoritative' type.

Table 8: Actors' gender and management styles

	Panel A: Effect on estimated types			
	Authoritative	Affiliative	Coercive	Timid
First actor female	0.030***	-0.004	-0.030***	0.003
Constant	0.262	0.191	0.296	0.251
Bayesian Credible Interval	[.012 .049]	[-.021 .013]	[-.051 -.006]	[-.021 .031]
N	982	982	982	982

	Panel B: Effect on attributes			
	Agree	Rely on formal policy	Rely on formal authority	Assertive tone
First actor female	-0.014	0.032*	0.021	-0.002
	(0.012)	(0.019)	(0.015)	(0.020)
Constant	0.158***	0.554***	0.154***	0.378***
	(0.009)	(0.013)	(0.010)	(0.014)
Enumerator FE	Yes	Yes	Yes	Yes
Vignette FE	Yes	Yes	Yes	Yes
Mean dep. var	0.366	0.800	0.800	0.800
N	6887	6887	6887	6887

	Panel C: Effect on managers' assessments			
	Ranking Data		Normalised likert score	
	Manager	Entrepreneur	Manager	Entrepreneur
First actor female	0.052**	0.060***	0.083**	0.093***
	[0.010 0.093]	[0.017 0.102]	(0.033)	(0.033)
Constant	0.474***	0.470***	-0.045*	-0.050**
	[0.453 0.493]	[0.449 0.492]	(0.025)	(0.025)
Vignette FE			Yes	Yes
N			6874	6869

Notes: This figure displays the causal relationship between the first actor a respondent sees and their subsequent responses (for the second to fifth vignette). Panel A shows a causal effect on adopting a more authoritative management style (with 95% Bayesian credible intervals in square brackets). Panel B shows that respondents act more like an authoritative type – they agree less, and are more likely to justify their decision by relying on the firm's interest (standard errors in parentheses). The third panel shows the effect of the first actor being female on the HR managers' rankings. The constant is the probability of winning each pairwise comparison after seeing a male actor in the first vignette, with the 95% credible set reported. The parameter "First actor female" is the coefficient β in probability space, i.e. the mean marginal effect, again with the 95% credible set in square brackets. The latter two columns use the non-incentivised, normalised Likert score that the HR managers give each candidate. We implement a simple OLS regression with vignette fixed effects with standard errors clustered at the HR manager level. Statistical significance (in the classical sense for regressions, and testing whether the 90, 95 or 99% credible set contain zero for Bayesian analysis), is denoted where appropriate by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

7 Discussion

This study has developed a novel experimental approach to assessing managerial traits, using a controlled studio setting to observe and analyse how young Ethiopian professionals respond to realistic workplace challenges. By combining experimental data with Bayesian hierarchical modeling, we identified four distinct managerial types: authoritative, affiliative, coercive, and timid. These archetypes reflect meaningful variation in how young professionals approach decision-making and conflict resolution in managerial roles.

Our findings highlight several important insights. First, we show that managerial traits are not uniformly distributed but exhibit clear heterogeneity. The authoritative type, for instance, emerges as the most dominant managerial style, particularly valued by firms for entry-level managerial roles. This type tends to emphasize formal procedures, personal authority, and firm-centered interests, contrasting sharply with the affiliative type, which seeks shared ground and often concedes to counterparties even at the expense of the firm's interests. These managerial types capture not only differences in style but also broader distinctions in labor market experience and outcomes.

Notably, labor market exposure appears to play a role in shaping managerial traits. Young professionals with more substantial exposure to the labor market were more likely to exhibit authoritative traits. Our evidence based on random assignment to a previous management placement experiment suggests this is at least partially a causal link. This finding suggests that managerial styles are not purely innate, but can be shaped and developed through professional experience. These results align with previous studies showing the importance of early exposure to managerial environments in shaping long-term behavioural traits (Bertrand and Schoar, 2003; Malmendier et al., 2011).

Further, our analysis reveals that firms in Ethiopia, across a range of industries, tend to prefer authoritative-type managers for entry-level positions. This homogeneous preference for authoritative traits, as opposed to more affiliative or coercive traits, challenges the notion that firms have highly diverse preferences for managerial styles at the entry level. While some previous studies (Bandiera et al., 2020) have emphasized the heterogeneity in firm preferences for senior managers, our results suggest that firms may place greater value on uniformity in managerial traits at the lower levels of management. This homogeneity could reflect the need for clear, consistent, and rule-based decision-making among less-experienced managers, particularly in firms seeking to establish stable internal processes.

Methodologically, this study makes an important contribution to the literature by demonstrating the feasibility and utility of using studio-based vignettes to assess managerial traits. Unlike traditional observational studies, our controlled setting allows us to systematically compare managerial responses across a fixed set of scenarios, removing the endogeneity inherent in real-world managerial decision-making. This approach opens up new avenues for studying managerial behavior, particularly in contexts where direct observation of managerial actions may be impractical or biased by the organizational setting.

In addition to its methodological contributions, our study complements the growing literature on labor market exclusion faced by young professionals. The finding that authoritative-type managers are both in higher demand by firms and more likely to have greater labor market exposure suggests that managerial traits may serve as a key mechanism by which some young professionals achieve sustained labor market success, while others face exclusion. This reinforces earlier findings on the importance of management training and professional exposure in shaping labor market outcomes (Abebe et al., 2024). Future research could expand on this work by exploring how these preferences evolve as managers move into higher-level roles and by investigating the role of cultural and institutional factors in shaping managerial behavior. Additionally, the scalability of our experimental method presents opportunities for further research across different contexts and labor markets, providing a valuable tool for understanding the development of managerial talent globally.

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