# Management Style Under the Spotlight: Evidence from Studio Recordings

*Appendix for online publication*

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# Contents

# A   Vignette scripts

## A.1   Respondent management vignettes

### Vignette 1: An absent employee

NARRATOR:  *In this video, an accounting clerk who has been absent for three days without advance notice to her immediate boss is shown. (S)he shows up for work on the fourth day, explaining that (s)he was unwell. Do watch the video carefully.*

THE CLERK:  I realize that I did not come to work for the last three days. I could not also give you any advance notice as this was something beyond my control. I was not feeling well. I had a bad flu that made me see a doctor. The doctor recommended that I should take it easy and perhaps take a few days of rest at home. I thought that, with my conditions, coming to the office and working on our accounts would be difficult [actor coughs slightly]. Also, I did not want others to catch my flu as well, so I stayed away.

Boss, you remember Almaz, my colleague, who had a bad flu three weeks ago. Instead of staying at home, she chose to come to work while being very sick. The next day, almost half of the staff in our department had a terrible headache and were coughing. They caught whatever she had. I certainly did not want that to happen [actor shakes head in the negative].

### Vignette 2: Negotiating with a supplier

NARRATOR:  *Here we have a supplier, who explains to you 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. Note that quality is the most important feature of the firm's product and that the firm is known in the market for producing and selling the highest quality products in the industry. Do watch the video carefully.*

THE SUPPLIER:  As you know, the main roads that we use to transport our shipments from Djibouti have been blockaded in the past several weeks. It has been three weeks since we got our last shipment of the materials that we promised to supply to you. During the course of the past three weeks, our inventory of these materials has been depleted. I am thus sorry to inform you that we cannot supply you with the materials as specified in the original supply agreement.

However, the good news is that we have a pretty good stock of alternative materials that we could supply you at a cheaper rate. We cannot, however, guarantee that these materials currently in stock meet the quality and specification requirements that were stipulated in the original supply agreement. Nevertheless, I think what we have for you is a good deal that is offered with the cheapest possible price. Of course, once our sourcing problem is resolved, we will continue to supply you with materials that comply with the specifications that you set.

## Vignette 3: An employee seeks a pay rise

NARRATOR: *In this video, we will show you a production worker, coming to you and asking for a pay rise. Your company does not have a plan to increase any of your workers' salary this year. Do watch the video carefully.*

THE PRODUCTION WORKER: Boss, you know how dedicated I am to my work. In the past three months, our department has done very well and we have met the quarterly targets set by the management. I'm very happy about that. As you know, I have been the most productive worker in the department. I am one of the few people in the department that exceeded the personal productivity targets that you set for us at the beginning of the year. Of course, I also did not have even a single day of absence recorded in the completed quarter. If you don't believe me, you can check the attendance repository and the productivity (or KPI) sheet. As you know, I also worked for the company for the past ten years, not so many people can say that! I am not sure whether you know my mother, Feleku Kuma; she is widely known around here, she also worked here for a very long time.

I think these speak volumes to my dedication and loyalty to this company. But honestly, I don't think my current pay reflects the effort that I exert and the loyalty that I and my family have for the company. In fact, I spoke to people who work with our competitors at the same type of occupation as I am; surprisingly, their pay is much larger than mine. I am sure you agree with me that I deserve a pay rise. Can you let me know as to when and how much I should expect to get as a pay rise?

## Vignette 4: Negotiating an adjustment with the bank

NARRATOR: *This video shows a bank manager, who calls to remind you about an unpaid loan instalment. But you will not have sufficient funds to pay the bank for another two weeks. Take a watch.*

THE BANK MANAGER: Thanks a lot for taking my call. As you know, you are one of our clients who missed the latest installment on your outstanding loan from our bank. Our bank treats its customers with utmost respect and encourages timely payment to avoid breaches to loan terms and conditions. But also, we have quite a lot of pressure from the board of directors to ensure that scheduled loan payments are made on time. Failure to pay loan installments not only increases the interest payment you owe us; it also reduces you credit rating with us. Next time you ask for loan, you may be denied access altogether – or may be eligible to only a fraction of the amount that you have applied for. I thus cannot stress enough the importance of settling your outstanding installment as soon as you can. That said, I am wondering whether you will be able to pay the unpaid loan instalment very soon. I will follow-up this call with a written reminder to alert you to the periodic payment that we expect to be paid from your company.

**Vignette 5: Negotiating with a client**

NARRATOR: *The next video shows a client of your business, who has not paid what you have invoiced, in spite of one reminder. The client comes to place a new order.*

THE CLIENT: I really like the service I got from your company last time. I don't think I had the chance to thank you for that – so thank you. Oh, I did not forget about the payment and I confirm that I have received the invoice you issued. But you know how it is these days, business is not great, and our product is not exactly flying off the shelves. We are really short on cash at the moment. I will thus have to ask you to bear with me a little to pay for the previous order. With the risk of stretching your generosity, I'm here today to place another order. In a spirit of our long-standing relationships, I appreciate if you could deliver my new order soon without waiting for payment for the previous order. I promise we will meet our payment obligations for the previous and new orders once we sort out our cash flow problem.

## A.2 Assessment of management styles: Hypothetical workplace conflict

### Setting up the scenario

NARRATOR: You are faced with a situation where workers go on strike demanding proper latrines. A representative of the workers comes to talk to you. Take a look at the video carefully.

THE WORKER REPRESENTATIVE: In my capacity as a representative of workers in this factory, I would like to speak to you about the ongoing strike in the factory. I am sure that by now you realize what workers are striking about. But with the slow response from the line supervisors and the deafening silence from you, I am not certain that the management in the factory understood the severity of the problem. That is why I'm here.

Look, the strike is about the poor toilet facilities in the factory. As you recall, during the worker/management meeting, many workers complained about the lack of sufficient toilet facilities; there are very few toilets in the compound and workers have to walk to the other end of the compound to access them. Even when they reach the toilets, they have to wait their turn, sometime for several minutes, to use them. In recent months, the problem has gotten worse. The few toilets that are available either do not have water or the flushing system does not work and tissue papers are not available. To make things worse, sometimes the toilets are locked and workers are not told why they are locked and who is keeping the keys. Further, even when workers try to use the toilets, they face restrictions on the number of toilet breaks they are entitled to take.

The attitude of your supervisors towards toilet use is also appalling. Our female workers suffer a great deal particularly when they are experiencing their period. Studies indicate that failing to use toilets on the course of a day lead to several health problems including damage to the bladder and several types of infections that have serious implications on the workers'

wellbeing. We as workers are very much aware of the implications of poor toilet facilities. Please do not underestimate our intelligence, we know about all this and our rights. Through our discussion with fellow workers, we came to the conclusion that our voice needs to be heard. We are particularly troubled by the dominant view of the management that workers shirk using toilet breaks as an excuse. Such views are not only unfounded, we reject the thought process behind it as it deprives the dignity of workers as human beings. Unless our demand for improved toilet facilities is not met, our strike will continue.

## Six possible responses to the scenario

We then use different actors to record six separate possible managerial responses. The responses are designed to represent different styles of engagement. In this summary, we suggest several descriptors for each managerial response; these descriptors were not provided to the respondents.

NARRATOR: After listening to the complaint by the worker representative, six different managers respond in different ways. Please do watch the videos.[1]

MANAGER 1 [*apologetic; collaborative; empowering*]: We understand workers' complaints about the poor state of toilet facilities in our factory. We admit that we have been slow to act and hence invited the strikes onto ourselves. On behalf of the company, I would like to apologize for our failure to nip this problem in its bud before it reached to this level. We will take immediate actions to rectify the situation. For a start, we will constitute a committee that will include workers' and management representatives. The committee will work on identifying the key problems in the existing toilet facilities and would suggest solutions for improving access and quality of toilet facilities. In parallel, the management will meet and earmark the necessary resources required to improve the facilities. We actually want the whole process to be led by workers and their representatives. We believe that there is no substitute for better working conditions to get the best out of our workers. With this pledge, we would like you to convince the workers to go back to work.

MANAGER 2 [*acknowledging; proactive; realistic*]: Honestly, this is a fair request. We should have seen this coming. As we promised during the worker/management meeting, the management takes all workers' requests very seriously. We are now making preparations to invest in improving the toilet facilities. Some of the improvements related with maintaining the flushing system of the existing facilities can be readily made. But increasing the number of toilets and digging septic tanks could take longer time. As you know, obtaining construction permit in this part of the city takes quite a long time. So even if we want, we may not be able to overhaul the whole facility at once. We thus ask for patience on the workers end. With this in mind and with the promise to make feasible changes immediately, we request you to stop the workers'

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[1] For clarity, these are ordered based on the senior managers' ranking which was used to incentivise the respondents. Respondents' instead saw these in a random order.

strike at once.

MANAGER 3 [*appreciative; conciliatory; blame-shifting; behavioural focus*]:  Thanks for bringing this to our attention before things go out of hand. We really appreciate your effort to be a voice of workers. The way your represent the concerns of your workers has been exemplary – and, on behalf of the company, I would like to express my gratitude. Of course, even if you are the representative of workers, we always felt that you are one of us, the management team. As both a worker representative and as someone who works closely with us, you understand how it has been difficult to manage workers, particularly their use of toilet facilities. We agree that facilities should improve, and that can be done.

But this issue is not that important. What worries us the most is workers have been abusing their toilet breaks by sitting idle and chattering with fellow workers during the breaks. Some of them spend more than 50 minutes inside the toilet, locked inside with their phone, checking Facebook or playing games. We told them repeatedly that this is not an acceptable behavior and it ought to change. When they refused, we started locking some of the toilet rooms. I think you should help us to get their act together. We can work together to change their behavior use their rightful toilet breaks only for intended purposes. Explain to them that the strike should come to an end and they should stop abusing their breaks. We can then discuss about ways to improve the quality of the facilities.

MANAGER 4 [*acknowledging; deflective; postponing; subtle pressure*]:  We understand that toilet facilities are important and workers have the right to complain about problems in accessing these facilities in our compound. But everyone knows that we are struggling at the moment: business is not good and we are making losses. Asking the management to invest in improving the toilet facilities at the moment is not a good idea. This simply is not the right time to do that.

As a representative of workers, you should be aware that management does not like to be ambushed or cornered into making decisions in difficult times. I am sure you also do not want to take the blame for creating trouble in the company while conditions are already hard on us. I know you are also concerned about your career prospects. This is really a tough time for everyone, so let us weather the storm together and we can resume the discussion about improving the toilet facilities afterwards.

MANAGER 5 [*dismissive; threatening; defensive*]:  As you said, we have discussed this during the worker-management meeting. During the meeting, we were very clear. We can only meet demands that are convincing and consistent with the company's policy. We told the workers that we know what kind of toilet facilities other employers provide for their workers.

Did you have a chance to visit other company's toilet facilities? If you or your colleagues had done that, you would have realized that ours is not of sub-standard quality compared to them. If anything at all, we provide flushing toilets and fresh water, which many don't. We also know the kind of toilet facilities workers have at their place of residence, mostly pit latrines

that are unsafe and often dirty. We certainly provide better facilities than those at home. So if you don't like our toilets here, you and your comrades can go and work elsewhere. And believe me, this is what is going to happen if you don't cease striking in the next 24 hours.

MANAGER 6 [*legalistic; hostile; threatening; dismissive*]: Who do you think you are, barging into my office and putting unwarranted demands on this company? I am not going to discuss about toilets or about any related issues with you. No, not at all. Forget toilets, let us talk about the strikes. Do you know what the labor law says about strikes? I am sure you don't! Had you known, you wouldn't be striking! Let me enlighten you. You see this [actor shows a copy of a labour proclamation]: this is Labour Proclamation No. 377/2003.

According to Article 158 (1) of the proclamation, before any strike happens, workers must give advance notice to the company explaining in detail the reasons for the strike. As far as I know, no such notices have been submitted to my office. Further, the law says that, for the strikes to be carried out, it should be supported by the majority of workers with a formal meeting. To my knowledge, no such formal meeting has happened. These two violations by you and your comrades indicate that the current strike is clearly in the contravention of the labor law. If the strikes does not stop before the end of the day, you will hear from our lawyers. We will sue you personally for initiating and implementing the strikes in defiance of the country's law.

# B Experiment

## B.1  Structure of the assessments

To implement the assessments, we first randomly divide our full set of candidates into groups of 15, and our full set of firm managers into groups of 10.

We divide these sets of 15 candidates into five *triplets* (labeled 1 through 5) and 10 firms into five *pairs* (labeled A through E). As shown in Table A.1, each firm pair assesses different triplets of candidates in a rotating sequence across five vignettes:

- In the first vignette, pair A assesses triplet 1, pair B assesses triplet 2, pair C assesses triplet 3, and so on (see the diagonal in Table A.1).

- Keeping the same triplets and firm pairs, we rotate assignments in subsequent vignettes: for example, in the second vignette, pair B assesses triplet 1, pair C assesses triplet 2, pair D assesses triplet 3, etc.

- This pattern continues until each firm pair has assessed every candidate triplet exactly once.

We implement this procedure for 66 separate groups of 15 candidates, each assessed by a total of 66 groups of eight or ten firms. For the groups of eight firms, for each triplet of candidates one vignette is not assessed.

This rotating design enables us to measure how similarly two HR managers in the same firm pair rank the same candidates within a given vignette (i.e., *within-vignette* agreement) and how these rankings compare across vignettes (i.e., *cross-vignette* agreement). It thus provides a direct way to study consistency in managers' preferences.

Table A.1: Structure of the Assessments

| Candidate Triplet | Firm Pair | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | E |
| 1 | V1 | V2 | V3 | V4 | V5 |
| 2 | V5 | V1 | V2 | V3 | V4 |
| 3 | V4 | V5 | V1 | V2 | V3 |
| 4 | V3 | V4 | V5 | V1 | V2 |
| 5 | V2 | V3 | V4 | V5 | V1 |

*Notes:* This table illustrates how one group of 15 candidates is assessed by one group of 10 firms (grouped into five pairs). Each cell shows the vignette (V1–V5) that a particular firm pair assesses for a particular candidate triplet.

## B.2    Matching firms to candidates

We match firms to candidates using a random sequential dictator algorithm. The matching procedure is structured as follows:

(i). We divide firms into groups of 10 and, separately, candidates into groups of 15.

(ii). Each group of candidates is assigned a random preference ordering over all groups of firms.

(iii). Groups of candidates are matched sequentially based on their preference rankings:

- Each group of candidates is assigned to their most preferred group of firms that has not yet been matched.

(iv). We impose an additional constraint: firms cannot assess candidates who have previously interned at their firm, as part of the experiment conducted in (Abebe, Fafchamps, Koelle, and Quinn, 2024).

Within each group-level match, triplets of candidates are matched to pairs of firms for the first round of assessments using the same algorithm. After this, triplets of candidates rotate across pairs of firms using the mechanism described in Section B.1.

## B.3    A revealed preference exercise with human resource managers

We designed these mechanisms to achieve three objectives: (i) the mechanisms are intuitively simple for respondents to understand, and truthful reporting should be an 'obviously dominant strategy' (within the formal definition of Li (2017)); (ii) as far as possible, the two mechanisms are the same (so that any differences in reporting are attributable to differences in preferences, rather than to the mechanisms themselves), and (iii) we do not mislead the respondents in any way (therefore, any promises that we make in order to incentivise the decision are feasible for us to implement). Our mechanisms are as follows:

(i). Suitability as an employed manager: We tell the respondent:

*I'm about to ask the computer to randomly choose a number: 1 or 2. This is the number of candidates whose details I will be asked to pass to you. I need you to commit, in advance, to which candidates you would like to see in each circumstance. You have seen three candidates. Suppose that the computer tells me that you may receive the contact details of two. In that situation, of the three candidates, whose details would you then not want to see? Now, suppose that the computer tells me that you may receive the contact details of only one. Of the two candidates remaining, whose details would you then not want to see?"*

This process continues until just one candidate remains.[2]

(ii). Suitability as an entrepreneur: We explain to the respondent that we plan to run a series of business plan competitions – in which a set of candidates is judged by experienced business managers, with a winner receiving US\$1000 to start (or to support) his or her own business. To elicit a ranking over candidates' entrepreneurial abilities, we nest the previous mechanism in a simple 'random dictator' mechanism. We tell the respondent:

> *You are one of two business people who will review this set of three aspiring managers. We will randomly choose just one of the two of you to decide which of the three should be candidates at the business plan competition. Suppose that person is you. The computer will, again, randomly choose a number: 1 or 2. This time, this number will tell us how many candidates will be invited to the business plan competition. You have seen five candidates. Suppose that you are chosen to send candidates to the business plan competition, and that the computer decides that you should send two candidates. In that situation, of the three candidates, who should not be sent to the competition?*

As above, this process continues until just one candidate remains.

These mechanisms are each similar to the 'OSP-RSD' ranking mechanism described in **?**; they are simple to understand, and it is an 'obviously dominant' strategy for the respondent to rank truthfully.

## B.4   A stated preference exercise with human resource managers

After each recording, we ask the manager the following questions (each of which uses a five-point Likert scale):

(i). Suitability as an employed manager: *Think about the lowest-level managerial position in your firm. Imagine that a firm – either your firm or another firm like yours – is interested in hiring for this position. Based on the recording that you have just heard, how likely are you to recommend hiring this person for a managerial position like that?*

(ii). Suitability as an entrepreneur: *Suppose that the person you have just seen is acting in the capacity as a founder and managing director of his/her own firm. In your opinion, how likely is it that this person would be a successful entrepreneur?*

These answers record managers' stated preferences about each candidate separately.

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[2] In a follow-up survey with the candidates, twelve report having been contacted by firms, none of these were eventually hired.

# C Details: Encoding of Responses

| Dimension | Enumerator encoding | Encoding for analysis |
|---|---|---|
| Action | 1 Agrees | 1 Agrees |
| | 2 Disagrees | 2 Disagrees |
| Justification | Varies by vignette; see following table | 1 Firm's Interest |
| | | 2 Other person's interest |
| | | 3 Respondent's own interest |
| | | 4 Shared Interest |
| | | 5 No justification |
| Authority | 1 Formal Authority | 1 Formal Authority |
| | 2 Higher Principles | 2 Higher Principles |
| | 3 Personal Authority | 3 Personal Authority |
| | 4 Personal Relationship* | 4 No Source |
| | 5 No Source of Authority | |
| Tone | | 1 Aggressive |
| | | 2 Assertive |
| | | 3 Calm/Assured |
| | | 4 Timid |

Table A.2: Encoding of Responses

* This is almost never used.

| Encoding Enumerator | Encoding for analysis |
|---|---|
| **Line Management of an Employee** | |
| The action is to protect/help the respondent's company | 1. Firm's Interest |
| The action is in the interests of the other employees.] | |
| The action is to protect/help the employee | 2. Other party's interest |
| The action is in the respondent's own interest | 3. Respondent's own interest |
| The respondent did not justify his or her action | 5. No justification |
| **Negotiating with a Supplier** | |
| The action is to protect/help the respondent's company | 1. Firm's Interest |
| The action is to protect/help the supplier | 2. Other party's interest |
| The action is in the respondent's own interest | 3. Respondent's own interest |
| Reference to the relationship between the respondent's firm and the supplier | 4. Shared interest |
| The respondent did not justify his or her action | 5. No justification |
| Other* | |
| **Negotiating a Pay Rise** | |
| The action is to protect/help the respondent's company | 1. Firm's Interest |
| The action is to protect/help the employee | 2. Other party's interest |
| The action is in the respondent's own interest | 3. Respondent's own interest |
| Reference to the relation with the employee and his/her family | 4. Shared interest |
| Reference to the employee's good performance | |
| Reference to the effect it might have on other employees | 1. Firm's Interest |
| The respondent did not justify his or her action | 5. No justification |
| Other* | 5. No justification |
| **Negotiate an Adjustment with the Banks** | |
| The action is to protect/help the respondent's company | 1. Firm's Interest |
| The action is to protect/help the bank | 2. Other party's interest |
| The action is in the respondent's own interest | 3. Respondent's own interest |
| Reference to the relationship between the firm and the bank | 4. Shared interest |
| Reference to the inability of the company to repay the loan | 1. Firm's Interest |
| The respondent did not justify his or her action | 5. No Justification |
| Other* | 5. No justification |
| **Negotiate with a Client** | |
| The action is to protect/help the respondent's company | 1. Firm's Interest |
| The action is to protect/help the client | 2. Other party's interest |
| The action is in the respondent's own interest | 3. Respondent's own interest |
| Reference to the relationship between the respondent's firm and the client | 4. Shared interest |
| The respondent did not justify his or her action | 5. No justification |
| Other* | 5. No justification |

Table A.3: Encoding Justification for Various Scenarios

* We manually determined "Other" implies no justification.

# D   Estimated type characteristics for different numbers of types

Figures A.1, A.2, A.3 and A.4 show the characteristics of the estimated types for respectively the two, three, four and five-type model.
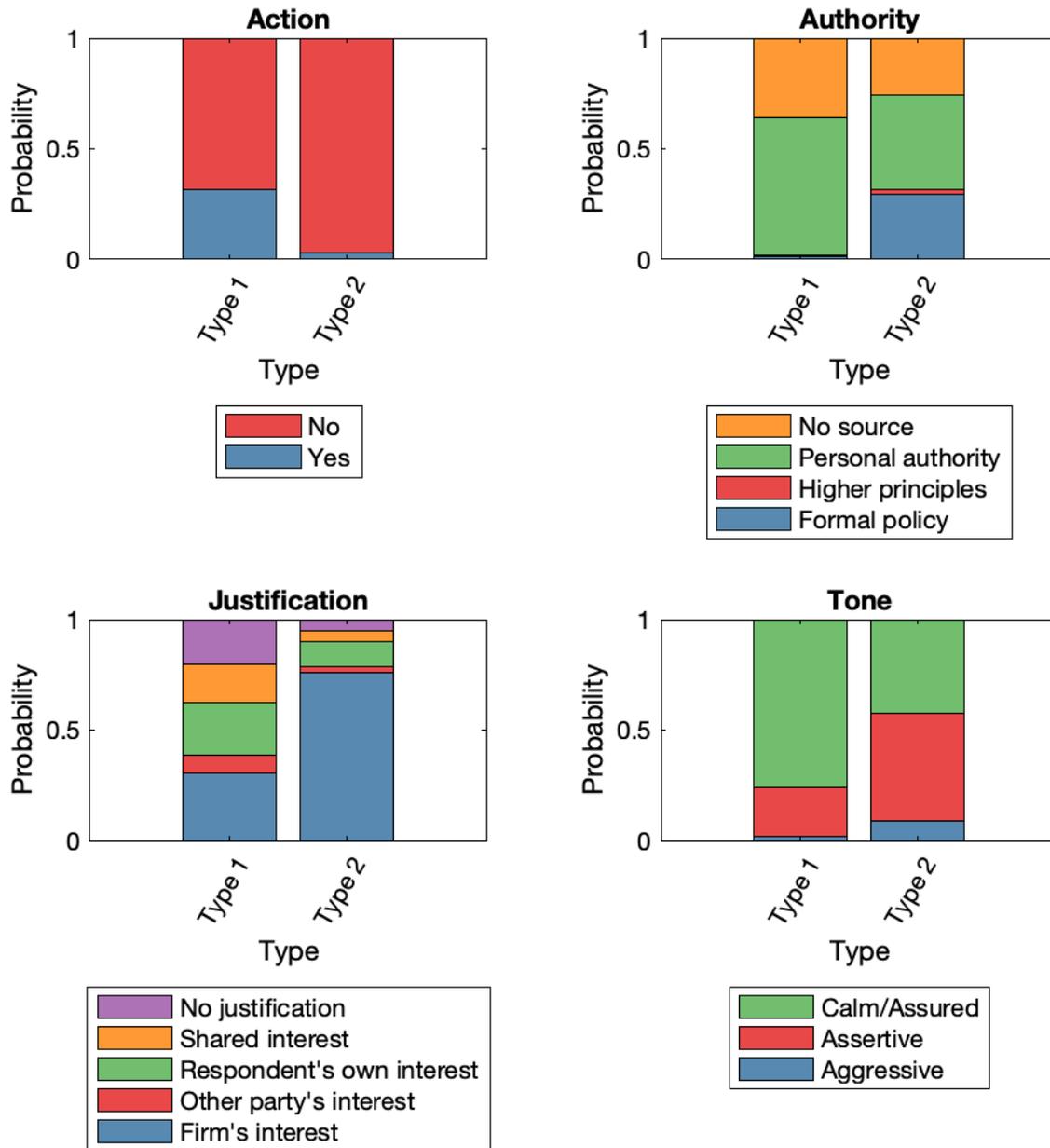
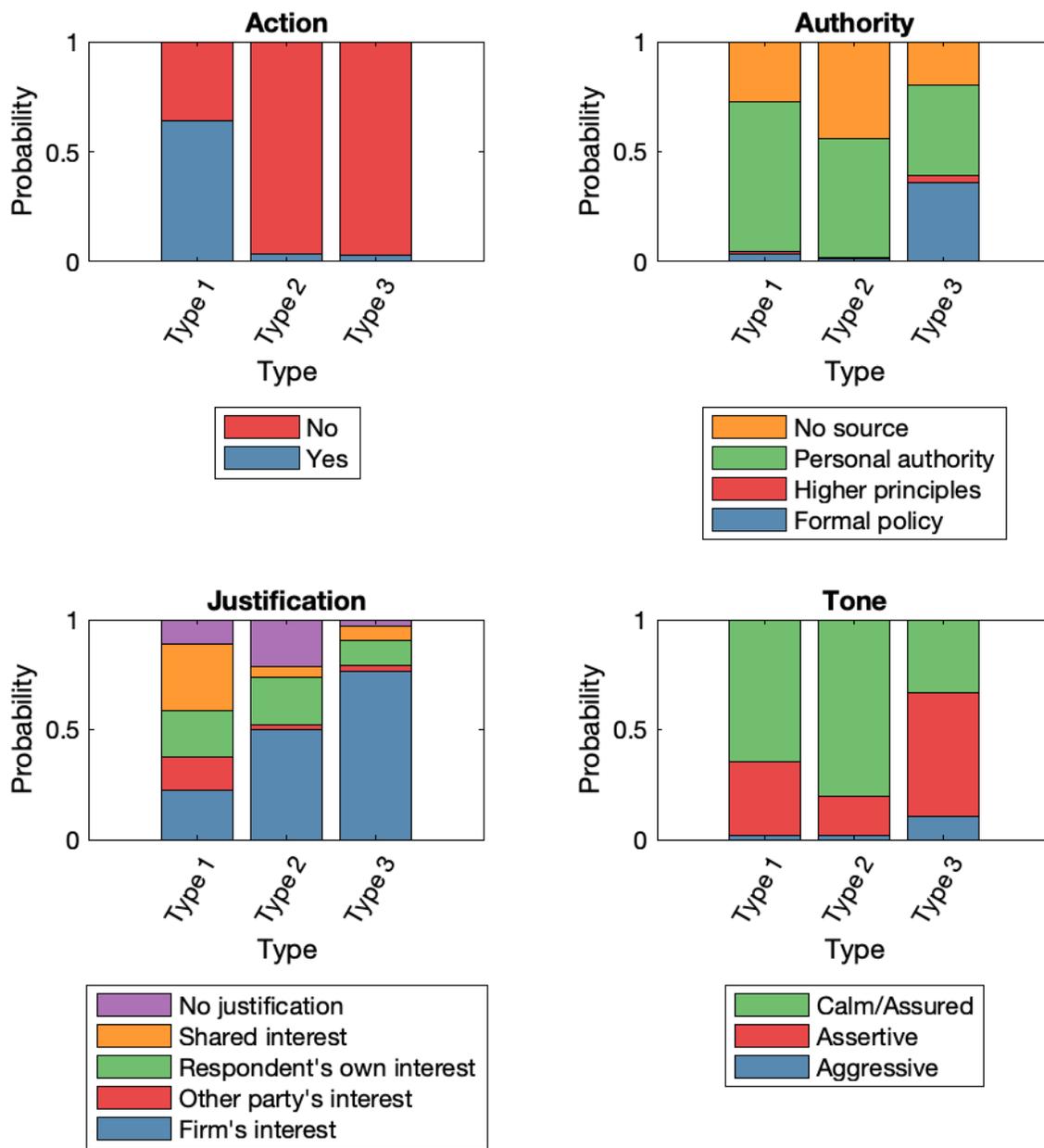Figure A.1: Type estimates in the two-type model
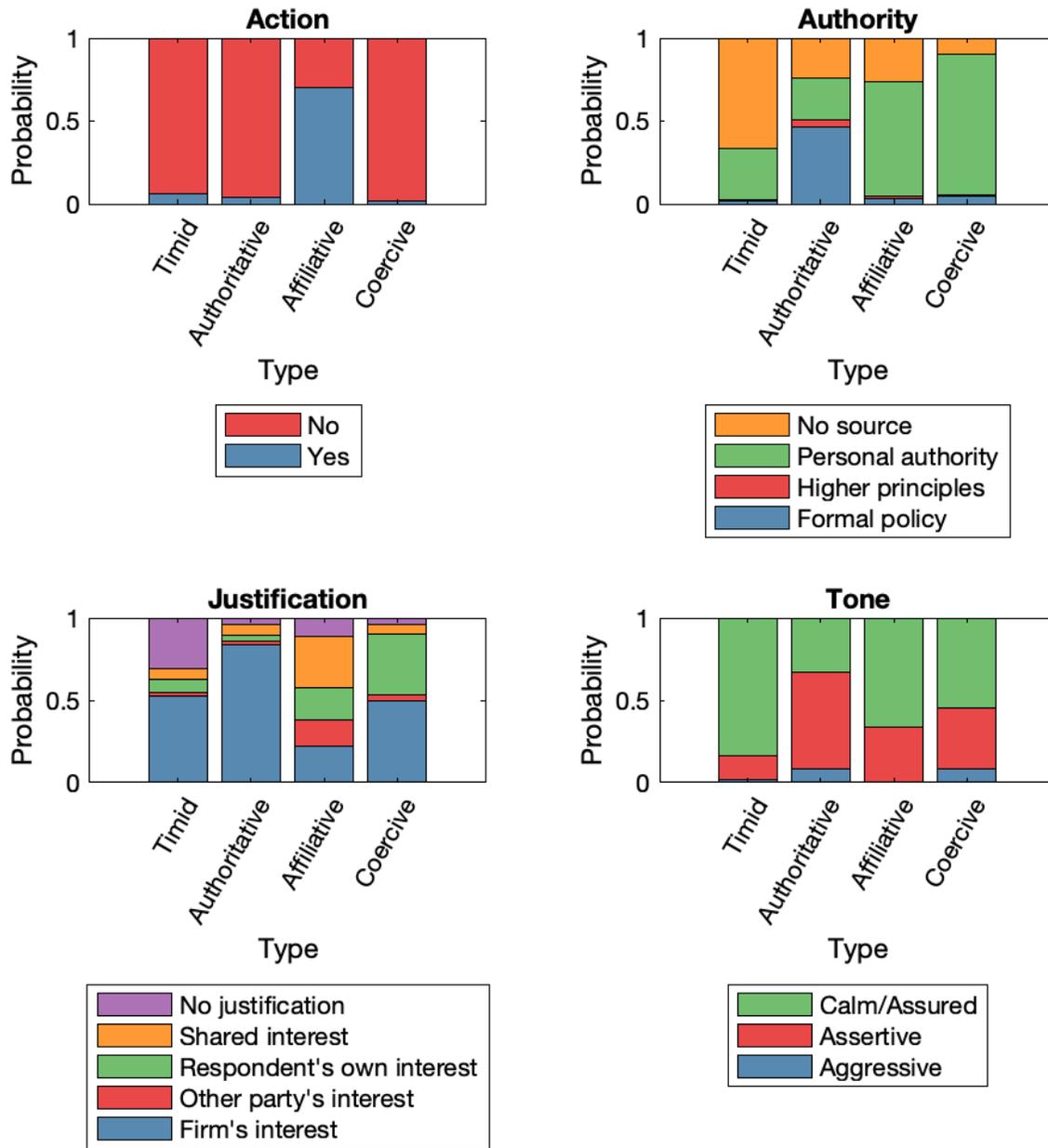
Figure A.2: Type estimates in the three-type model

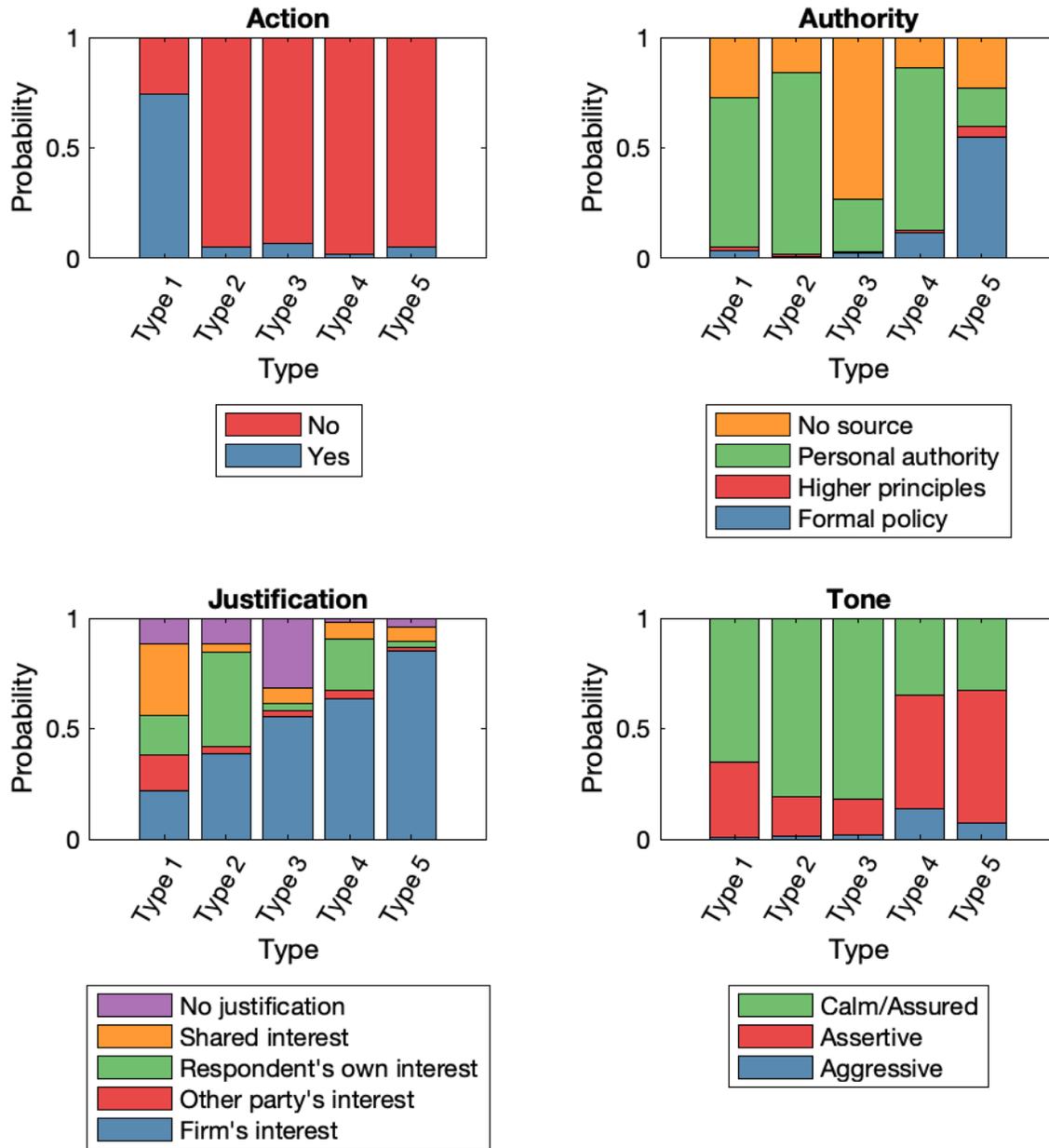Figure A.3: Type estimates in the four-type model

Figure A.4: Type estimates in the five-type model

## D.1 Further details on reported intentions

# E Bayesian modelling in STAN

## E.1 Dirichlet model

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 a set of 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.[3] $y_{ive}^a \in \{1, \ldots, J(a)\}$ is the response recorded by enumerator $e$ for vignette $v$ for individual $i$ for attribute $a$.

For attribute $a$, consider a 'pure type' $k \in \{1, \ldots, K\}$, having a vector $\phi_{ka}$ of dimension $J(a)$, such that $\phi_{ka} \in (0,1)^{J(a)}$. Denote by $\tilde{\phi}_{ka}$ the inverse Multinomial Logit transformation of $\phi_{ka}$.[4] For simplicity and tractability, we assume that, conditional on $\phi_{ka}$, the attributes are realised independently as:

$$y_{ive}^a \,|\, \phi_{ka}, \psi_{av}, \chi_{ev} \sim_{iid} \texttt{Multinomial Logit} \left( \tilde{\phi}_{ka} + \psi_{av} + \chi_{ae} \right), \tag{1}$$

where $\psi_{av}$ and $\chi_{ae}$ here represent $J(a)$-element vectors.[56]

This is essentially a Latent Dirichlet Allocation model, with a few adjustments for our setting:

  (i). $\psi_{av}$ and $\chi_{ae}$ provide a measurement scheme; this is similar in spirit to Item Response Theory. (That is, this captures the notion that different enumerators will have different underlying tendencies to assess different attributes on different vignettes.) Note that, in the special case that $\psi_{av} = \mathbf{0}$ and $\chi_{ae} = \mathbf{0}$, this collapses to a more standard Latent Dirichlet Allocation.

 (ii). By having independent 'attributes', we reduce the state space.

(iii). Each attribute has a different "dictionary"

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[3] 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.

[4] That is, for the $s$th element of $\phi_{ka}$ – which we denote $\phi_{ka}^{(s)}$ – we have:

$$\phi_{ka}^{(s)} = \frac{\exp\left(\tilde{\phi}_{ka}^{(s)}\right)}{1 + \sum_{m=1}^{J(a)} \exp\left(\tilde{\phi}_{ka}^{(t)}\right)} \iff \tilde{\phi}_{ka}^{(s)} = \ln\left(\frac{\phi_{ka}^{(s)}}{1 - \sum_{m=1}^{J(a)} \phi_{ka}^{(t)}}\right).$$

[5] Where the first element of these vectors are normalised to zero, and the whole vector is normalised to zero for the first respectively vignette and enumerator.

[6] $\psi_{av}$ and $\chi_{ae}$ provide a measurement scheme; this is similar in spirit to Item Response Theory. That is, this captures the notion that different enumerators will have different underlying tendencies to assess different attributes, and similarly that for different vignettes respondents have different underlying tendencies to display traits. Note that, in the special case that $\psi_{av} = \mathbf{0}$ and $\chi_{ae} = \mathbf{0}$, this collapses to a more standard Latent Dirichlet Allocation.

| Vignette | Type | Expresses distrust counterparty | Maintain relationship | Follow procedure | Set an example |
|---|---|---|---|---|---|
| Line Management | Authoritive | .58 | 0 | .51 | .38 |
| | Affiliative | .41 | 0 | .39 | .32 |
| | Coercive | .49 | 0 | .36 | .28 |
| | Timid | .42 | 0 | .44 | .28 |
| Supplier | Authoritative | .03 | 0 | .30 | .53 |
| | Affiliative | .03 | .02 | .21 | .44 |
| | Coercive | .03 | 0 | .21 | .46 |
| | Timid | .04 | 0 | .16 | .46 |
| Pay rise | Authoritative | 0 | .12 | .61 | .34 |
| | Affiliative | 0 | .21 | .28 | .24 |
| | Coercive | 0 | .08 | .50 | .18 |
| | Timid | 0 | .06 | .47 | .20 |
| Bank | Authoritative | 0 | .71 | 0 | 0 |
| | Affiliative | 0 | .75 | 0 | 0 |
| | Coercive | 0 | .65 | 0 | 0 |
| | Timid | 0 | .59 | 0 | 0 |
| Client | Authoritative | .61 | .20 | .45 | .07 |
| | Affiliative | .23 | .50 | .18 | .02 |
| | Coercive | .60 | .21 | .35 | .02 |
| | Timid | .55 | .19 | .29 | .02 |

*Notes* This table describes the intentions of respondents' for each vignette, which are enumerated before the respondent actually responds to the vignette. 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.

(iv). For each vector $\boldsymbol{\psi}_{ka}$ and $\boldsymbol{\chi}_{ea}$ the first element is normalised to zero.

We can then posit the following generative model:

(i). Draw $\boldsymbol{\phi}_{ka}$ independently for $k \in \{1, \ldots, K\}$ and for $a \in \{1, \ldots, A\}$ from `Dirichlet`$(\zeta)$;

(ii). Draw $\boldsymbol{\theta}_i$ independently for $i \in \{1, \ldots, N\}$ from `Dirichlet`$(\eta)$, where $\boldsymbol{\theta}_i$ is a $K$-dimensional vector;

(iii). Draw $\boldsymbol{\psi}_{av}$ and $\boldsymbol{\chi}_{ev}$ from some suitable prior (respectively $\mathcal{N}(0, \sigma_\psi^2)$ and $\mathcal{N}(0, \sigma_\chi^2)$);

(iv). For each vignette, draw a type $z_{iv}$ from $\boldsymbol{\theta}_i$ and draw an attribute from $y_{aive} \mid \boldsymbol{\phi}_{z_{iv},a}, \boldsymbol{\psi}_{av}, \boldsymbol{\chi}_{ae}$ (using the Multinomial Logit formula above).

This model can described graphically as follows:
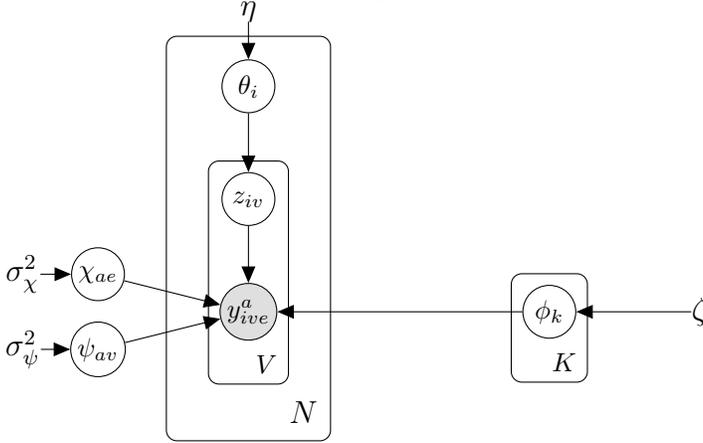


The total probability of the model is as follows, denoting by $W^q$ the qth attribute within a vignette and by $\beta^q$ the set of parameters for that attribute.[7]

$$P(W, Z, \boldsymbol{\theta}, \boldsymbol{\phi}, \eta, \zeta) = \prod_{j=1}^{K} P(\boldsymbol{\phi_j}; \zeta) \prod_{i=1}^{N} P(\boldsymbol{\theta_i}; \eta)$$

$$\prod_{v=1}^{V} \sum_{k=1}^{K} \left( P(z_{iv} = k | \boldsymbol{\theta_i}) \prod_{e=1}^{2} \prod_{a=1}^{A} P(y_{ive}^a | \boldsymbol{\phi}_{ka}, \boldsymbol{\psi}_{av}, \boldsymbol{\chi}_{ae}) \right)$$

Where $P(\boldsymbol{\phi_j}; \zeta)$ and $P(\boldsymbol{\theta_i}; \eta)$ follow a latent Dirichlet distribution, $P(z_{iv} | \theta_i)$ follows a categorical distribution and $P(y_{ive}^q | \boldsymbol{\phi}_{z_{iv}}, \boldsymbol{\psi}_{av}, \boldsymbol{\chi}_{ae})$ follow multinomial logit distributions.

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[7] For clarify of exposition we omit the normal prior for $\psi$ and $\chi$ from this equation. These enter the log-likelihood linearly.

To fully specify the model, we need to impose an additional set of priors, specifically:

$$\alpha = 0.3$$
$$\beta = 1$$
$$\boldsymbol{\chi}_{ae} \sim \mathcal{N}(0, 3)$$
$$\boldsymbol{\psi}_{av} \sim \mathcal{N}(0, 3)$$

In practice, the model is highly insensitive to the choice of the prior $\beta$, as the data is highly informative for the parameter $\phi_k$. However, the model is more sensitive to the choice of the parameter $\alpha$ since the parameter $\theta_i$ is estimated based only on data from a single candidate. The primary effect of the choice of $\alpha$ is the distance to the edge of the simplex of resulting parameter estimates.

## E.2    Placket Luce model

To analyse the ranking data from the HR managers we develop the following Placket-Luce model. The model employs a Bayesian hierarchical structure where preferences for types and attributes can vary across firms. We include an individual fixed effect for each individual to improve the precision of the resulting estimates.

$$U_{fiv} = \boldsymbol{\beta}_f \boldsymbol{\theta}_i + \boldsymbol{\alpha}_f x_i + \gamma_i + \epsilon_{fiv} \tag{2}$$

Where we have the following independent variables:

$$\boldsymbol{\theta}_i \implies \qquad \text{an estimated parameter from the first-stage model; } \tilde{\boldsymbol{\theta}}_i$$
$$x_i \implies \qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad \text{“Known”}$$

Specify the error term as follows:

$$\epsilon_{fiv} \sim EV1$$

Then we employ a Bayesian hierarchical structure for each set of parameters. For the individual mean $\gamma_i$,

where we specify the error structure for the variance on a bounded uniform distribution, we specify:[8]

$$\gamma_i \sim \text{N}(0, \sigma_\gamma)$$
$$\sigma \sim \text{U}(0, 10)$$

For identification, we set $\gamma_i = 0$ for the first member of every triplet.

Then for the $\boldsymbol{\alpha}$ and $\boldsymbol{\beta}$ parameters we use the following structure:

$$\boldsymbol{\alpha}_f \sim \mathcal{N}(\boldsymbol{\alpha}, \sigma_\alpha^2)$$
$$\boldsymbol{\alpha} \sim \mathcal{N}(0, 10)$$
$$\sigma_\alpha^2 \sim \text{U}(0, 10)$$

and:

$$\boldsymbol{\beta}_f \sim \mathcal{N}(\boldsymbol{\beta}, \sigma_\beta^2)$$
$$\boldsymbol{\beta} \sim \mathcal{N}(0, 10)$$
$$\sigma_\beta^2 \sim \text{U}(0, 10)$$

Noting this will be a BH model we get the following structure, denoting by $\theta$ the parameters, by $y$ the data, and by $\lambda$ the hyperparameters.

The resulting total probability, denoting $U(\boldsymbol{\beta}_f, \boldsymbol{\alpha}_f, \gamma_i, \boldsymbol{\theta_i}, \boldsymbol{x_i}) \equiv U_{fiv}$.

$$P(y|\boldsymbol{\beta}_f, \boldsymbol{\alpha}_f, \gamma_i, \boldsymbol{\theta_i}, \boldsymbol{x_i}) =$$
$$\prod_{f=1}^{F} \prod_{v=1}^{5} \frac{\exp\left(U_{fiv}^1\right)}{\sum_{r=1}^{3} \exp\left(U_{fiv}^r\right)} \cdot \frac{\exp\left(U_{fiv}^2\right)}{\sum_{r=2}^{3} \exp\left(U_{fiv}^r\right)}.$$

Then we specify the distribution of $\alpha_f$, $\gamma_i$ and $\beta_f$ as:

$$P(\boldsymbol{\beta}_f, \boldsymbol{\alpha}_f, \gamma_i | \boldsymbol{\alpha}, \boldsymbol{\beta}, \sigma_\gamma, \sigma_\alpha, \sigma_\beta) =$$
$$\prod_{i=1}^{N} (\phi(\boldsymbol{\gamma}_i | 0, \Sigma_\gamma) \prod_{f=1}^{F} \phi(\boldsymbol{\alpha}_f | \boldsymbol{\alpha}, \sigma_\alpha) \cdot \phi(\boldsymbol{\beta}_f | \boldsymbol{\beta}, \sigma_\beta)$$

And finally we define the hyperprior as:

---

[8] In setting the prior for the variance as a uniform distribution we follow Gelman (2006).

$$P(\boldsymbol{\alpha}, \boldsymbol{\beta}, \sigma_\gamma, \sigma_\alpha, \sigma_\beta) =$$
$$\phi(\boldsymbol{\alpha}|0, 10)\phi(\boldsymbol{\beta}|0, 10)$$
$$U(\sigma_\alpha, 0, 10)U(\sigma_\beta, 0, 10)U(\sigma_\gamma, 0, 10)$$

The full probability of drawing a set of parameters is the product of these three elements following Bayes' rule.
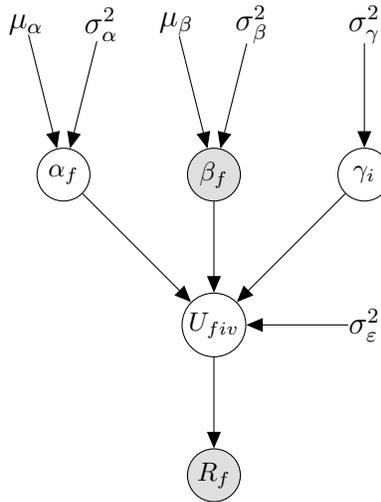


## E.3  Estimation

We use Hamiltonian Monte Carlo (HMC) implemented in the STAN language to estimate our model. (e.g., Neal, Gelman, Betancourt as references). HMC is an advanced algorithm for Markov Chain Monte Carlo (MCMC) simulations. Its key feature is the use of the gradient of the posterior distribution in determining step sizes. This allows HMC to consider how the probability of the parameters changes, taking more informed steps during the simulation. This method is particularly useful because it often converges to high-probability regions faster and more efficiently than traditional MCMC methods. This is especially true in complex models with many parameters, like the one we implement. This efficiency is due to its ability to avoid getting stuck in less probable regions, a common issue with simpler MCMC methods.

### E.3.1  The Dirichlet model

We first estimate the Dirichlet model, and use these results for Section 3. A few things are worth noting: Firstly, the commonly used Gibbs Sampler (Steyvers, Smyth, Rosen-Zvi, and Griffiths, 2004) is not applicable due to the additional parameters in our model. However, the small number of types and attributes

Table A.5: Convergence statistics for the Dirichlet model with four types

| Parameter | Average PSRF | Highest PSRF | Average effective sample size | Lowest effective sample size |
|---|---|---|---|---|
| Theta | 0.999 | 1.009 | 2000 | 247 |
| Phi Action | 1.010 | 1.011 | 738 | 661 |
| Phi Tone | 0.999 | 1.001 | 1980 | 1359 |
| Phi Justification | 1.001 | 1.004 | 1462 | 965 |
| Phi Authority | 1.002 | 1.006 | 1116 | 791 |
| Chi Action | 0.999 | 0.999 | 2000 | 2000 |
| Chi Tone | 0.998 | 0.998 | 2000 | 2000 |
| Chi Justification | 0.999 | 1.000 | 2000 | 1748 |
| Chi Authority | 1.001 | 1.001 | 2000 | 1863 |
| Psi Action | 1.008 | 1.013 | 831 | 676 |
| Psi Tone | 0.999 | 1.002 | 2000 | 2000 |
| Psi Justification | 0.999 | 1.003 | 1777 | 1043 |
| Psi Authority | 1.001 | 1.006 | 1311 | 1228 |

*Notes:* Table A.5 shows the average and highest PSRF, and the average and lowest effective sample size for each subset of the parameters in the Dirichlet model. Crucially, the highest PSRF is low, showing good convergence of the model.

makes our estimation procedure feasible. Secondly, a $K$-component mixture distribution is invariant to permutations of component labels, resulting in K! modes in the posterior distribution of the mixture parameters. This is particularly problematic when using HMCMC, as the leapfrog estimator may attempt to jump between different configurations of the component labels. In practice, the distinct modes of our posterior distribution prevent label switching in our draws. Consequently, we can re-label the types for consistent labeling across chains before performing standard convergence tests for MCMC simulations.

### E.3.2 The Placket-Luce model and joint-estimation

We estimate the Plackett-Luce model using Hamiltonian Monte Carlo (HMC) in STAN, implementing a non-centered reparameterization of the hierarchical parameters. This technique results in faster convergence and increases the precision of the model estimates. In such a nonlinear model, incorporating uncertainty in the first-stage parameters—the parameters of the Latent Dirichlet Allocation (LDA) model—presents a challenge. Properly propagating this uncertainty to the second-stage model provides a more realistic representation of the model's confidence in its predictions and estimates. To address this, we follow (Battaglia, Christensen, Hansen, and Sacher, 2024), jointly estimating the LDA and Plackett-Luce models. This joint estimation approach leverages the curvature of the log-likelihood to guide the level of uncertainty about the type parameters, implicitly weighting the observations in the second-stage model by the uncertainty about $\theta_i$.

Tables A.6 and A.7 show the potential scale reduction factor and average effective sample size of the

chains. This is based on 500 draws in four chains without thinning.

Table A.6: Convergence statistics for the joint model with four types for ranking as entry-level manager

| Parameter | Average PSRF | Highest PSRF | Average effective sample size | Lowest effective sample size |
|---|---|---|---|---|
| Theta | 1.000 | 1.014 | 2000 | 282 |
| Phi Action | 1.011 | 1.013 | 453 | 426 |
| Phi Tone | 1.001 | 1.005 | 1488 | 449 |
| Phi Justification | 1.022 | 1.042 | 192 | 105 |
| Phi Authority | 1.005 | 1.014 | 753 | 466 |
| Chi Action | 0.997 | 0.997 | 2000 | 2000 |
| Chi Tone | 1.002 | 1.003 | 1490 | 1444 |
| Chi Justification | 1.001 | 1.002 | 2000 | 2000 |
| Chi Authority | 1.001 | 1.003 | 1590 | 1563 |
| Psi Action | 1.010 | 1.012 | 503 | 401 |
| Psi Tone | 1.003 | 1.006 | 1414 | 950 |
| Psi Justification | 0.999 | 1.042 | 1479 | 123 |
| Psi Authority | 1.003 | 1.008 | 939 | 571 |
| Beta | 1.006 | 1.009 | 642 | 631 |
| Beta FS | 0.999 | 1.01 | 2000 | 341 |
| Beta Std | 1.064 | 1.099 | 84 | 70 |
| Gamma | 0.999 | 1.003 | 2000 | 420 |
| Gamma Std | 1.003 | 1.003 | 476 | 476 |

*Notes:* This table reports the average and highest PSRF, and the average and lowest effective sample size for each subset of the parameters in the jointly estimated model for the rankings as potential entry-level managers. Crucially, the highest PSRF is low, showing good convergence of the model.

Table A.7: Convergence statistics for the joint model with four types for ranking as entrepreneur

| Parameter | Average PSRF | Highest PSRF | Average effective sample size | Lowest effective sample size |
|---|---|---|---|---|
| Theta | 0.999 | 1.015 | 2000 | 270 |
| Phi Action | 1.019 | 1.027 | 377 | 292 |
| Phi Tone | 1.001 | 1.01 | 1361 | 595 |
| Phi Justification | 1.013 | 1.023 | 294 | 204 |
| Phi Authority | 1.002 | 1.012 | 890 | 284 |
| Chi Action | 0.998 | 0.998 | 2000 | 2000 |
| Chi Tone | 1.002 | 1.002 | 1378 | 1369 |
| Chi Justification | 0.998 | 1.000 | 2000 | 2000 |
| Chi Authority | 1.002 | 1.003 | 1422 | 1407 |
| Psi Action | 1.018 | 1.022 | 464 | 317 |
| Psi Tone | 1.002 | 1.007 | 1491 | 692 |
| Psi Justification | 1.003 | 1.023 | 921 | 205 |
| Psi Authority | 1.003 | 1.006 | 744 | 431 |
| Beta | 1.011 | 1.011 | 640 | 548 |
| Beta FS | 0.999 | 1.011 | 2000 | 394 |
| Beta Std | 1.045 | 1.085 | 124 | 84 |
| Gamma | 0.999 | 1.005 | 2000 | 413 |
| Gamma Std | 1.002 | 1.002 | 613 | 613 |

*Notes:* This table reports the average and highest PSRF, and the average and lowest effective sample size for each subset of the parameters in the jointly estimated model for the rankings as potential entrepreneurs. Crucially, the highest PSRF is low, showing good convergence of the model.

### E.3.3  Stability of type parameters with joint estimation

Figures A.5 and A.6 show that the estimated type probability and distribution over type is consistent in the individually estimated Dirichlet model and the jointly estimated model.
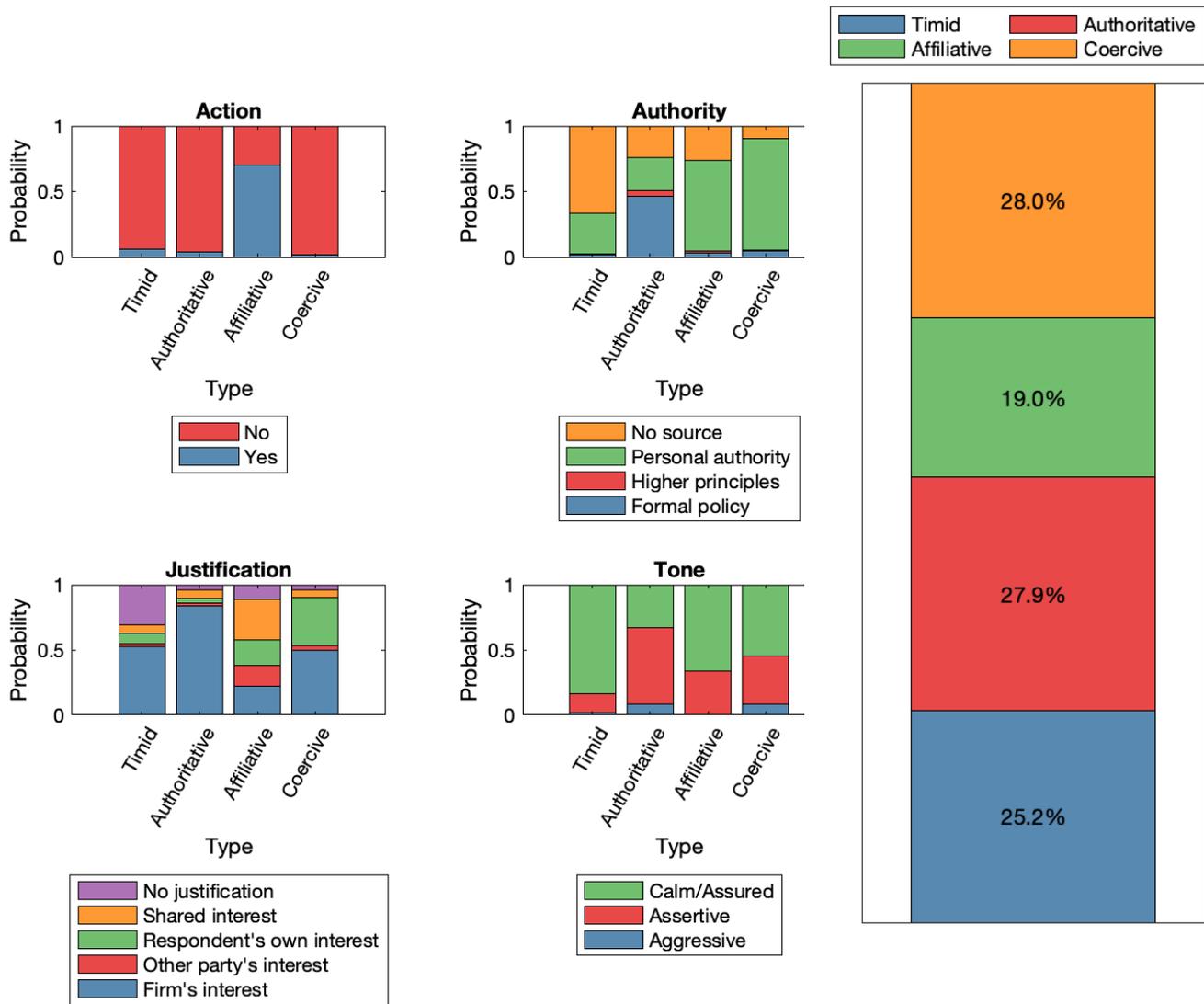
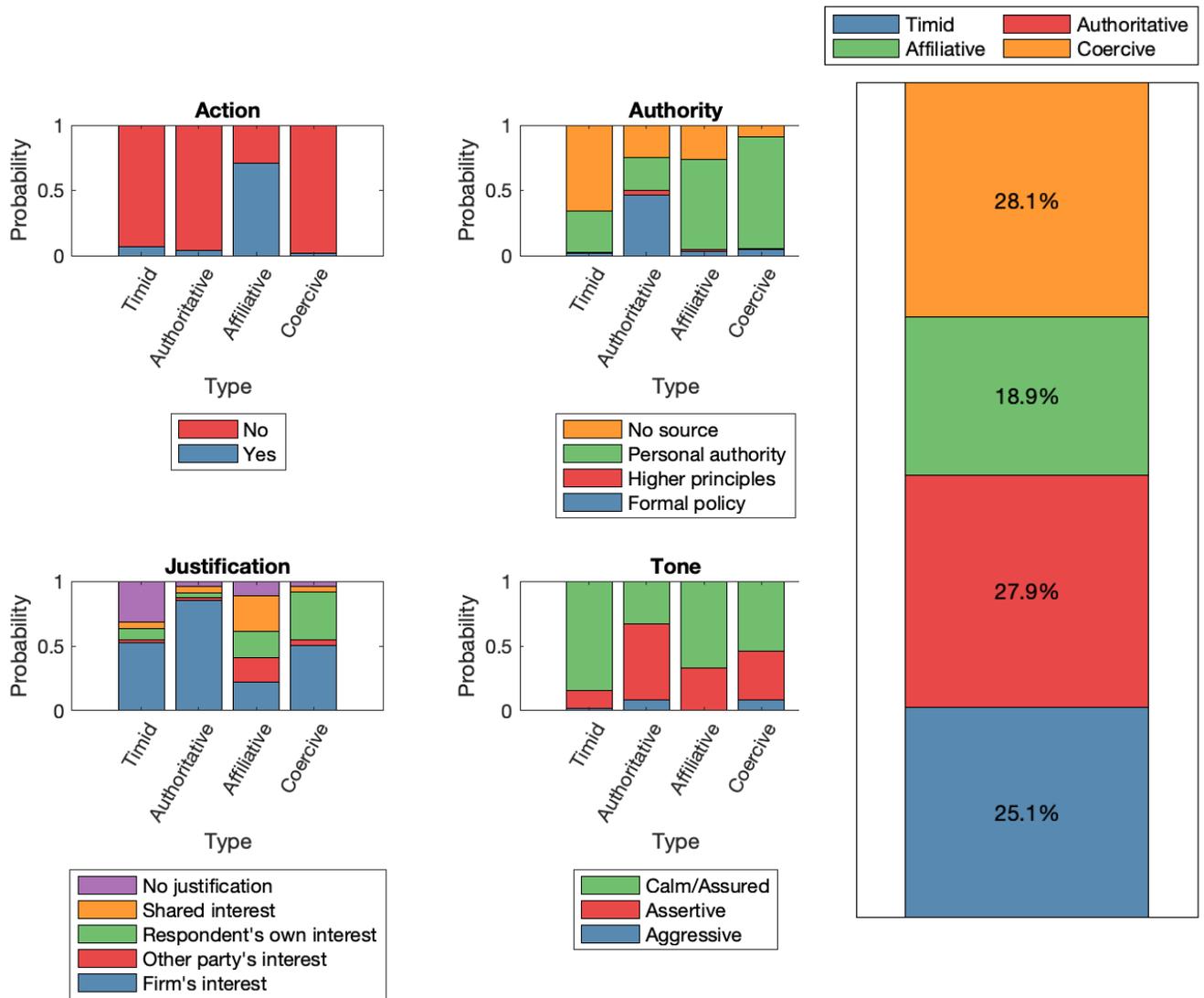Figure A.5: The type parameters and distribution over types in the Dirichlet model

Figure A.6: The type parameters and distribution over types in the joint model

# F  Sensitivity to the choice of number of types

In this section, we repeat our analysis for the cases of 2, 3, and 5 types to show the narrative of the paper is not driven by our specific choice for the number of types. We re-estimate the joint model for the supply and demand of managerial traits in the paper, and replicate the subsequent analysis of the paper.
The following key-results of the paper are replicated across specification:

- In terms of attributes of the responses, find an "affiliative"-like and "authoritative"-like type in all specifications; for $K > 2$ these are split into separate types. When $K = 3$ we have an affiliative type, a authoritative type and a coercive/timid type. When $K = 4$ the latter two types are split into an authoritative, covercive and timid type.

- The authoritative type is generally more more likely to be male, has good labour market outcomes, is able to predict what the senior manager will do

- The management experience treatment makes individuals from poor socioeconomic backgrounds in terms of parental education more authoritative. As we add additional types beyond $K = 2$, it becomes clear this is driven by a shift from a coercive to an authoritative management styles.

- The authoritative type is (strongly) preferred by firm managers.

- The effect of the first actors' gender on the realised type is comparable across specifications, but most pronounced when $K = 4$.
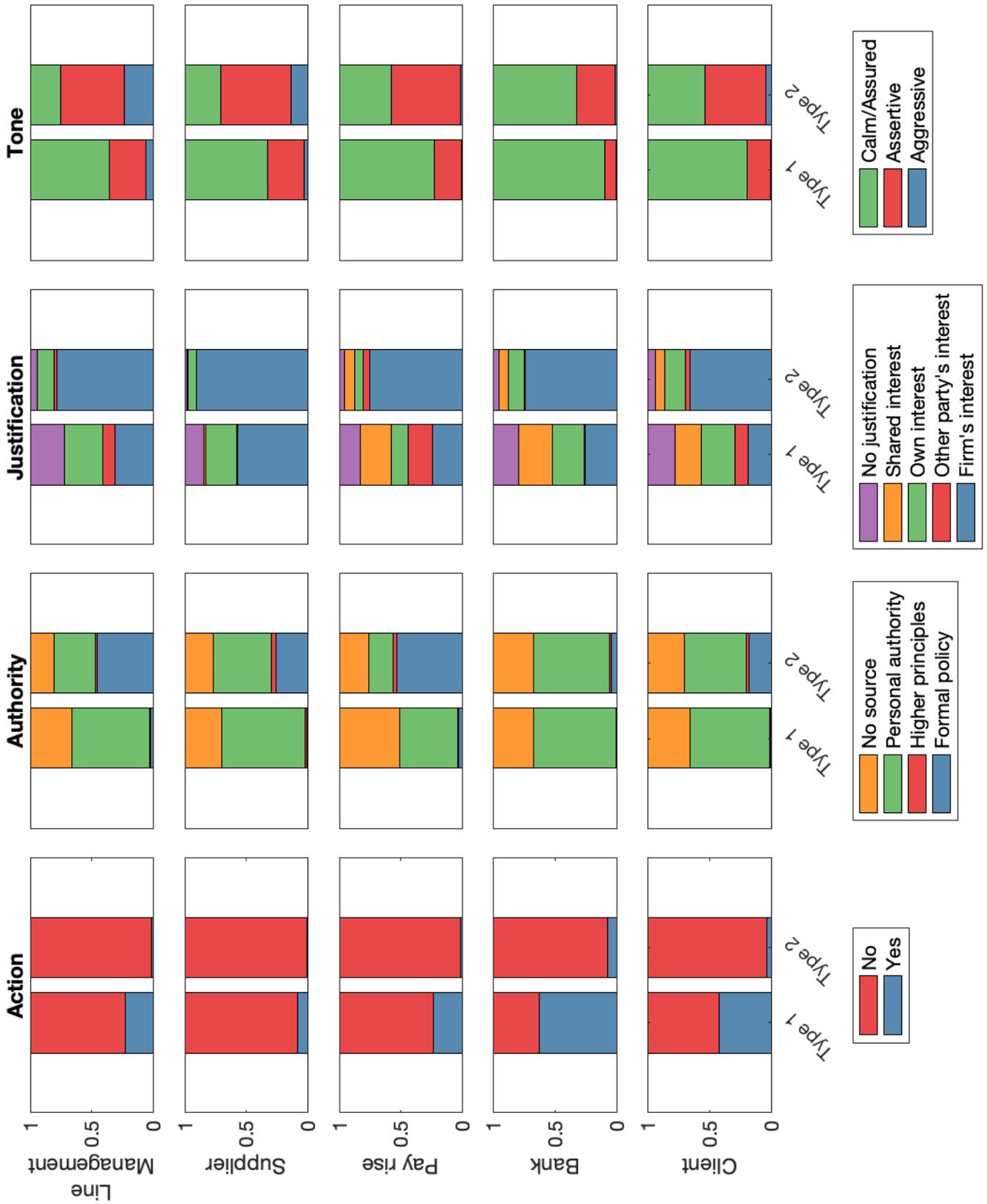
## F.1 Two-type model

Figure A.7: 'pure type' management styles amongst Ethiopian young professionals

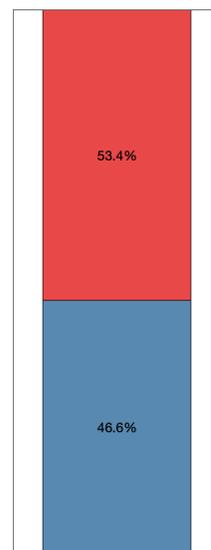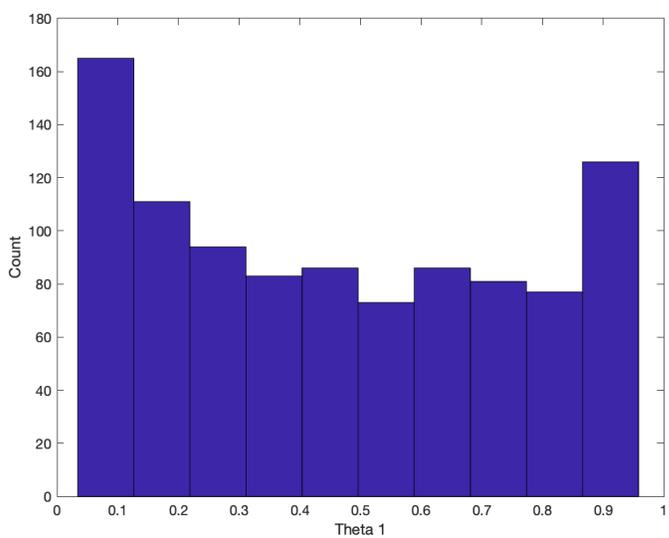Figure A.8: Distribution of types across individuals

Table A.8: 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 | .511 | .415 | .793 |
| Type 1 | .464 | .382 | .814 |
| Type 2 | .551 | .443 | .775 |

*Notes* This table displays Kendall's Tau values comparing the respondents' rankings and the expert's 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 Kendall's Tau for the respondents' perception of their own actions versus what they expect a senior manager would do. Kendall's Tau is calculated as $\tau = \frac{\sum \text{agreements} - \sum \text{disagreements}}{\sum \text{pairwise comparisons}}$.

Table A.9: 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 |
|---|---|---|---|---|---|---|
| Type 1 | .781 | .668 | .149 | .287 | .300 | 36.0 |
| Type 2 | .818 | .699 | .174 | .404 | .408 | 50.5 |
| *p*-value | .038 | .086 | .29 | <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 A.10: Labour market experience and Types: Summary Statistics

| Type | Employment | Permanent employment | Unemployed | Management Position | Number of transitions |
|------|-----------|----------------------|------------|---------------------|-----------------------|
| | *Years* | *Years* | *Years* | *Share* | *Count* |
| Type 1 | 5.217 | 3.564 | .525 | .117 | .942 |
| Type 2 | 5.417 | 3.801 | .417 | .168 | .735 |
| *p*-value | .058 | .009 | .022 | .002 | .006 |

*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 $\hat{\theta}_i$. 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 A.11: 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) |
| Type 1 (%) | 47.9 | -2.2 | 52.3 | -4.5 | 43.9 | 0.0 |
| | | [ -4.7, 1.0] | | [ -8.3, -0.7] | | [ -3.5, 3.4] |
| Type 2 (%) | 52.1 | 2.2 | 47.7 | 4.5 | 56.1 | -0.0 |
| | | [ -1.0, 4.7] | | [ 0.7, 8.3] | | [ -3.4, 3.5] |
| 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 $\theta$ for treated and untreated individuals. Columns (1), (3) and (5) report the average estimated value of $\theta_i$ 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.

Figure A.9: The distribution of the preferences for entry-level managers
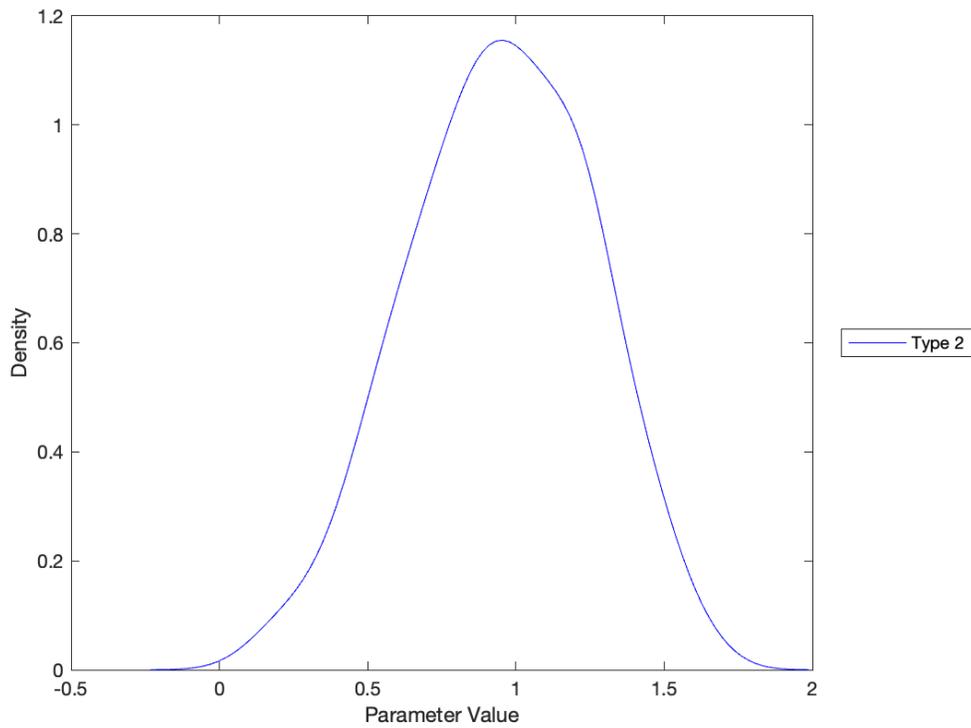


*Notes* This figure shows the distribution of the estimates for $\hat{\boldsymbol{\beta}}_{fs}$ across all firms in terms of demand for entry-level managers. In this figure, the Type 1 is omitted and the estimates for $\hat{\beta_{\text{Type 2}}}$, $\hat{\beta_{\text{Type 3}}}$ are plotted

## Table A.12: Actors' gender and management styles

| | Panel A: Effect on attributes | | | |
|---|---|---|---|---|
| | Agree | Rely on firm policy | Rely on formal authority | Tone |
| First actor female | -0.025** | 0.036* | 0.022 | 0.016 |
| | (0.012) | (0.019) | (0.015) | (0.026) |
| Constant | 0.163*** | 0.554*** | 0.156*** | 2.508*** |
| | (0.009) | (0.013) | (0.010) | (0.018) |
| Enumerator FE | Yes | Yes | Yes | Yes |
| Vignette FE | Yes | Yes | Yes | Yes |
| Mean dep. var | 0.163 | 0.800 | 0.800 | 0.800 |
| N | 6887 | 6887 | 6887 | 6887 |

| | Panel B: Effect on estimated types | | | |
|---|---|---|---|---|
| | Theta 1 | Theta 2 | | |
| First actor female | -0.022 | 0.022 | | |
| Constant | 0.478*** | 0.522*** | | |
| Bayesian Credible Interval | [-.046 .004] | [-.004 .046] | | |
| N | 982 | 982 | | |

| | Panel C: Effect on managers' assessments | | | |
|---|---|---|---|---|
| | Likert score manager normalized | | | |
| | OLS | Acharya (theta) | Acharya (attributes) | |
| First actor female | 0.085** | | | |
| | (0.033) | | | |
| Direct effect | | 0.074** | 0.072** | |
| | | (0.033) | (0.035) | |
| Total effect | | 0.084** | 0.084** | |
| | | (0.036) | (0.036) | |
| Constant | -0.041* | | | |
| | (0.023) | | | |
| Vignette FE | Yes | Yes | | |
| N | 6874 | 6887 | 6887 | |

*Notes:* This figures displays the causal link between the first actor a respondent sees and their subsequent responses (for the second to fifth vignette). Panel A shows that respondents act more like an authoritative type - they agree less, rely on formal policy and authority - after starting with a female actor. The second panel shows that this indeed manifests as a reliance on a more authoritative management style, reporting 95% Bayesian Credible Intervals in square brackets. The third panel shows the effect of (a) the first actor being female and (2-3) the results from an Acharya-style mediation analysis for using first the estimates for the type parameter from Panel B) and then the attributes of the responses from Panel A. Statistical significance is denoted by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.
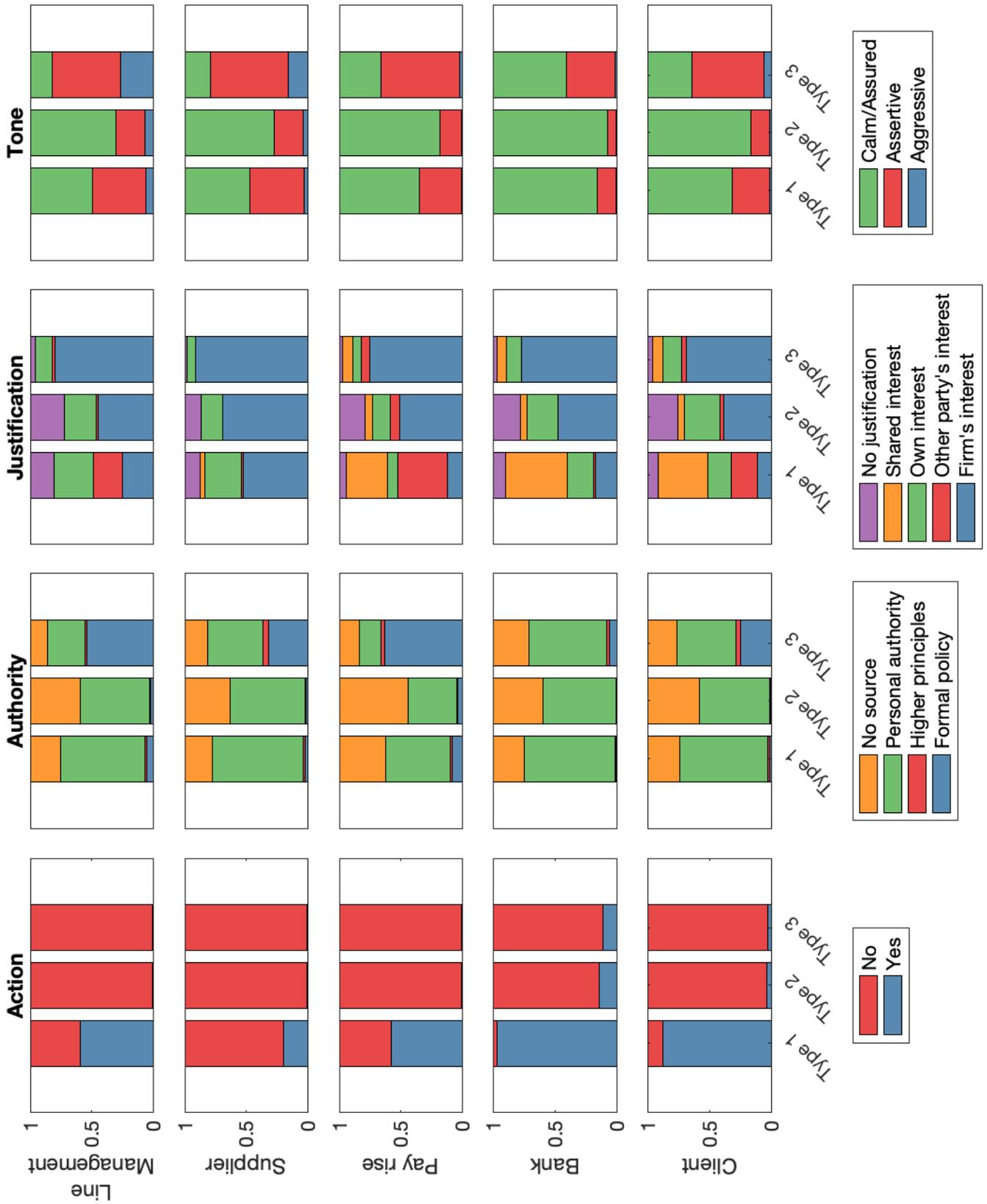
## F.2  Three-type model

Figure A.10: 'pure type' management styles amongst Ethiopian young professionals

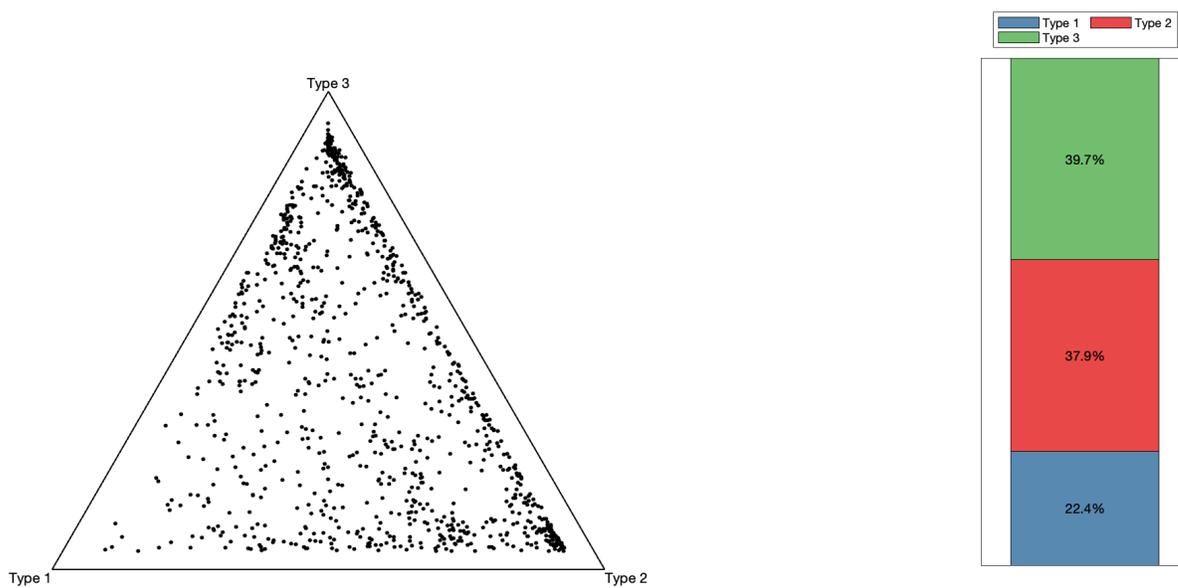Figure A.11: Distribution of types across individuals

Table A.13: 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 | .511 | .415 | .793 |
| Type 1 | .502 | .414 | .811 |
| Type 2 | .457 | .376 | .812 |
| Type 3 | .565 | .451 | .768 |

*Notes* This table displays Kendall's Tau values comparing the respondents' rankings and the expert's 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 Kendall's Tau for the respondents' perception of their own actions versus what they expect a senior manager would do. Kendall's Tau is calculated as $\tau = \frac{\sum \text{agreements} - \sum \text{disagreements}}{\sum \text{pairwise comparisons}}$.

Table A.14: 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 |
|---|---|---|---|---|---|---|
| Type 1 | .772 | .676 | .154 | .34 | .31 | 38.4 |
| Type 2 | .784 | .671 | .143 | .266 | .312 | 36.7 |
| Type 3 | .83 | .701 | .185 | .436 | .425 | 53.1 |
| *p*-value | .042 | .476 | .152 | <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 A.15: Labour market experience and Types: Summary Statistics

| Type | Employment | Permanent employment | Unemployed | Management Position | Number of transitions |
|---|---|---|---|---|---|
| | *Years* | *Years* | *Years* | *Share* | *Count* |
| Type 1 | 5.292 | 3.629 | .466 | .121 | .879 |
| Type 2 | 5.178 | 3.545 | .573 | .114 | .955 |
| Type 3 | 5.484 | 3.864 | .363 | .185 | .688 |
| *p*-value | .053 | .015 | .002 | .002 | .021 |

*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 $\hat{\theta}_i$. 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 A.16: 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) |
| Type 1 (%) | 21.9 | 1.4 | 22.9 | 1.1 | 21.1 | 1.6 |
| | | [ -0.7, 3.6] | | [ -2.0, 4.0] | | [ -1.2, 4.4] |
| Type 2 (%) | 40.4 | -4.6 | 43.7 | -7.0 | 37.3 | -2.4 |
| | | [ -6.8, -1.9] | | [ -10.7, -3.4] | | [ -5.8, 0.8] |
| Type 3 (%) | 37.7 | 3.2 | 33.4 | 5.8 | 41.6 | 0.8 |
| | | [ 0.6, 5.9] | | [ 2.1, 9.4] | | [ -2.4, 4.0] |
| 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 $\theta$ for treated and untreated individuals. Columns (1), (3) and (5) report the average estimated value of $\theta_i$ 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.

Figure A.12: The distribution of the preferences for entry-level managers
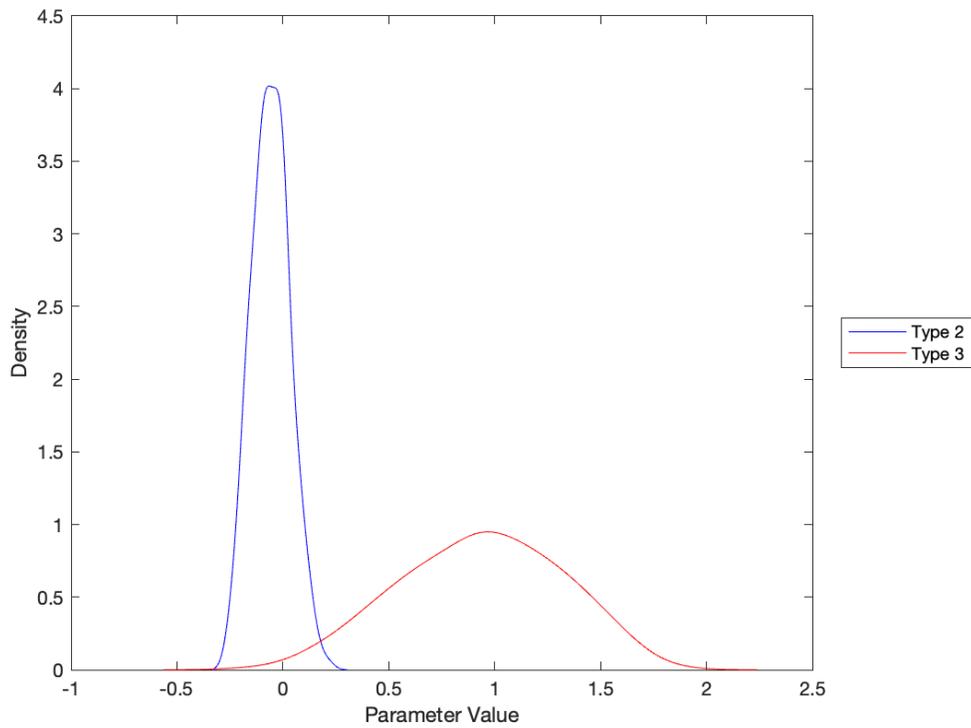


*Notes* This figure shows the distribution of the estimates for $\hat{\boldsymbol{\beta}}_{fs}$ across all firms in terms of demand for entry-level managers. In this figure, the Type 1 is omitted and the estimates for $\beta_{\widehat{\text{Type 2}}}$, $\beta_{\widehat{\text{Type 3}}}$ are plotted

## Table A.17: Actors' gender and management styles

| | Panel A: Effect on attributes | | | |
|---|---|---|---|---|
| | Agree | Rely on firm policy | Rely on formal authority | Tone |
| First actor female | -0.025** | 0.036* | 0.022 | 0.016 |
| | (0.012) | (0.019) | (0.015) | (0.026) |
| Constant | 0.163*** | 0.554*** | 0.156*** | 2.508*** |
| | (0.009) | (0.013) | (0.010) | (0.018) |
| Enumerator FE | Yes | Yes | Yes | Yes |
| Vignette FE | Yes | Yes | Yes | Yes |
| Mean dep. var | 0.163 | 0.800 | 0.800 | 0.800 |
| N | 6887 | 6887 | 6887 | 6887 |

| | Panel B: Effect on estimated types | | |
|---|---|---|---|
| | Theta 1 | Theta 2 | Theta 3 |
| First actor female | -0.012 | -0.009 | 0.020 |
| Constant | 0.232*** | 0.385*** | 0.384*** |
| Bayesian Credible Interval | [-.028 .017] | [-.042 .007] | [0.000 .046] |
| N | 982 | 982 | 982 |

| | Panel C: Effect on managers' assessments | | |
|---|---|---|---|
| | Likert score manager normalized | | |
| | OLS | Acharya (theta) | Acharya (attributes) |
| First actor female | 0.085** | | |
| | (0.033) | | |
| Direct effect | | 0.074** | 0.072** |
| | | (0.033) | (0.035) |
| Total effect | | 0.084** | 0.084** |
| | | (0.036) | (0.036) |
| Constant | -0.041* | | |
| | (0.023) | | |
| Vignette FE | Yes | Yes | Yes |
| N | 6874 | 6887 | 6887 |

*Notes:* This figures displays the causal link between the first actor a respondent sees and their subsequent responses (for the second to fifth vignette). Panel A shows that respondents act more like an authoritative type - they agree less, rely on formal policy and authority - after starting with a female actor. The second panel shows that this indeed manifests as a reliance on a more authoritative management style, reporting 95% Bayesian Credible Intervals in square brackets. The third panel shows the effect of (a) the first actor being female and (2-3) the results from an Acharya-style mediation analysis for using first the estimates for the type parameter from Panel B) and then the attributes of the responses from Panel A. Statistical significance is denoted by $^*$ $p < 0.10$, $^{**}$ $p < 0.05$, and $^{***}$ $p < 0.01$.

## F.3 Sankey graphs on transition between the types

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