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IZA DP No. 11521

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ABSTRACT

Using Social Connections and Financial Incentives to Solve Coordination Failure: A Quasi-Field Experiment in India's Manufacturing Sector*

Production processes are often organised in teams, yet there is limited evidence on whether and how social connections and financial incentives affect productivity in tasks that require coordination among workers. We simulate assembly line production in a lab-in-the-field experiment in which workers exert real effort in a minimum-effort game in teams whose members are either socially connected or unconnected and are paid according to the group output. We find that group output increases by 15% and wasted individual output is lower by 30% when workers are socially connected with their co-workers. Unlike the findings of existing research, increasing the power of group-based financial incentives does not reduce the positive effect of social connections. Our results are driven by men whose average productivity is significantly lower than that of women. These findings can be explained by pro-social behavior of workers in socially connected teams.

JEL Classification: C93, D20, D22, D24, J33

Keywords: caste-based networks, social incentives, financial incentives, minimum effort game, coordination, trust

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* The authors thank Ashwini Deshpande, Maitreesh Ghatak, Gabrielle Gratton, Pushkar Maitra, Dilip Mookherjee, Kaivan Munshi and Debraj Ray for valuable feedback. Nikhil Bhardwaj provided exemplary research assistance both on and off the field. The Policy and Planning Research Unit (PPRU) at the ISI, Delhi (Afridi) and the Centre for Competitive Advantage in the Global Economy (CAGE), Warwick University (Dhillon) provided financial support for this study. The usual disclaimers apply.

1 Introduction

It is well acknowledged that labor productivity in developing countries is low compared to the developed world (Bloom et al. (2013)). Recent research has looked inside the black-box of the factory to understand the determinants of worker performance, including the role of social networks.[1] In this paper, we utilize caste categorization in India as an exogenous determinant of workers' social connections with co-workers to investigate individual and group performance in a coordination task using a lab-in-the-field experiment in the garment manufacturing sector. Unlike the existing literature, our focus is on production processes characterised by complementarities between workers, as in assembly lines in manufacturing units. We not only highlight the potentially positive role of social connections in tasks requiring coordination, but also throw light on the possible multiplicative effects of financial incentives on improving the productivity of socially connected workers.

Our study attempts to bridge the disconnect between field experiments on social networks and labor productivity, which have focused on non-complementary production functions, and the large literature on laboratory experiments on coordination games (Van Huyck et al. (1990)) in several ways.[2] First, we randomly assign subjects to teams with or without pre-existing social ties based on caste in an incentivized coordination task which replicates assembly line production using garment factory workers as subjects. Unlike Bandiera et al. (2009, 2010) who study team incentives when workers are substitutes in production or Hjort (2014) who examines team incen-

[1] Social networks (Bandiera et al. (2009)); management practices (Bloom et al. (2013)); worker ethnicity (Hjort (2014)).

[2] Minimum-effort (or weak-link) coordination game with multiple Pareto-ranked equilibrium effort levels, was first introduced by (Van Huyck et al. (1990)), and has been widely used in the laboratory to understand coordination problems faced by organizations (Brandts and Cooper (2006), Weber (2006)). In addition, much of the experimental literature has also focused on how to improve coordination and efficiency by altering the payoff structure of the game (Brandts and Cooper (2007), Goeree and Holt (2003), Devetag and Ortmann (2007), Van Huyck et al. (2007)), or by introducing communication (Blume and Ortmann (2007), Brandts et al. (2007), Kriss et al. (2016)) or group identity salience (Chen and Chen (2011)).

tives in settings where production is sequential and there is both substitutability and complementarity in production, our study design is suited to contexts where workers simultaneously engage in a production task and may not be able to observe each other's effort or coordinate on output, such as a typical assembly line in the large garment factories that have become ubiquitous in developing countries with cheap labor. In our controlled experiment, therefore, we simulate the environment within an assembly line and eliminate peer effects or possible communication among team members. Social connections that arise endogenously may result in connected groups that are sorted on ability. Defining social connections based on caste, which is determined at birth, allows us to circumvent this confounding effect on group performance.

Second, we separate the experimental sessions by gender to not only account for any differences in behavioural response to external stimuli and incentives by men and women, documented in the laboratory experiments literature (Croson and Gneezy (2009), Gneezy et al. (2003)), but also address existing gender differences on observable characteristics such as experience and education in blue collar jobs. Finally, Brandts and Cooper (2006, 2007) have examined the role of financial incentives as an instrument for overcoming coordination failure. A natural question is whether social networks can substitute for financial incentives in equilibrium selection. Hence, we vary both the nature and framing of financial incentives in our experiment to study its interaction with the social connections of workers.

In the context of developing countries, where social networks are very strong, the question of how social connections affect productivity is key to the development process (Munshi (2014)). Social ties among co-workers are particularly relevant when workers are organised in groups, such as an assembly line, and when firms are concerned with group rather than individual output. In such a setting, if some workers put in low effort it can lead to the entire team being trapped in a low effort equilibrium, even when financial incentives are given at the group level. Munshi (2014) notes that members of social networks may respond to the threat of social sanctions by sacrificing individual gain (viz. higher effort cost) in favour of group objectives. On the other hand, individuals may feel altruistic towards group members or trust co-workers with whom they are socially connected (Basu (2010)), resulting in greater cooperative behavior when they are matched with workers with similar social background.[3]

In our setting of a minimum effort production function, men respond positively to being with co-workers with whom they have social connections - being in a socially connected group leads to 15% higher group output and a 30% decline in wasted individual output and dispersion in within-group individual output, relative to an unconnected group. Our findings therefore suggest that stronger social connections among co-workers can enhance coordination when incentives are group based. Since we eliminated peer effects and did not allow for any communication within group members in our experiment design, the estimates we obtain here might be a lower bound on the impact of social connections on individual and group productivity in our context.

Our results indicate that social and financial incentives complement each other, unlike previous research. We find that team-based monetary incentives interact positively with group composition, indicating that not only do workers increase coordination in response to being socially connected, but that they coordinate on a higher level of output. Further, in contrast to the findings in laboratory experiments, our results do not suggest that loss aversion (or loss framing) provides greater financial incentives than gain framing in the field, adding to the growing literature that extends financial incentive framing to the field.

[3]Laboratory experiments on team identity conclude that manipulating saliency of group membership contributes to higher level of team cooperation (Eckel and Grossman (2005), Charness et al. (2007), Goette et al. (2006), Chen and Li (2009), Chen and Chen (2011)).

Interestingly, women's output is high across both socially connected and unconnected groups relative to men's, but women show no overall response to being in a socially connected group. Results from additional experiments and data from real-world factory settings to disentangle competing explanations of the observed gender differences suggest a ceiling effect - women's productivity was high to begin with resulting in the insignificant marginal effect of being socially connected.

We show theoretically that our results can plausibly be explained by pro-social behavior and more precise information about the abilities of co-workers in socially connected teams. When peer effects and communication channels are absent we argue that the mechanism underlying our results is mutual trust whereby connected groups believe that their team members care about the group sufficiently to be willing to put in higher effort even at higher personal cost to themselves. This, together with more precise knowledge of team member's abilities helps to coordinate on the "right" level of effort.

In contrast to our findings, field experiments on social networks give mixed results on its impact on labor productivity. Bandiera et al. (2010) study a UK based soft fruit producing firm and find that having a more able, self-reported friend as a co-worker increases productivity of lower ability workers by 10% but decreases productivity of higher ability workers. Overall, in the presence of heterogenous ability types and substitutability in production, their findings indicate that social networks may not improve team productivity if peer pressures lead to conformity on a low effort norm.

Our study comes closest to Hjort (2014) who examines the ethnic homogeneity of production teams in a flower assembly plant in Kenya where the production process was sequential - suppliers prepared flowers which were then passed on to processors who put the flowers together in bunches. Suppliers and processors could have similar or different ethnic identities. He finds that inter-ethnic rivalries in Kenya lowered allocative efficiency in the plant, particularly during a period of ethnic conflict. Shifting from fixed pay to performance pay based on group output reduced allocative inefficiencies in multi-ethnic teams. Thus, Hjort (2014) shows that in this context financial incentives can substitute for identity motivations.

The findings of our paper not only extend the literature on worker incentives but also speak to the existing research on management practices and firm behavior. First, our results suggest that management practices that create avenues for co-worker interactions to foster affinity among them can further enhance productivity if individual payoffs are contingent on group output. Second, we show that financial incentives do not always substitute for social incentives but can have positive multiplier effects in contexts when teams are socially connected. The interaction between financial and social incentives, thus, depends on both the social context as well as the nature of the production function. Our findings have implications both for large assembly lines with limited scope for communication and repeat interactions and for emerging contemporary work practices such as O-Desk where work is performed in online teams and where face to face interactions and scope for communication is limited. In such settings, our results point to the increased productivity from team based social and financial incentives, used in concert with each other.

The remainder of the paper is organised as follows. Section 2 outlines the context and background of the study while section 3 discusses the theoretical framework that we take to the data. We describe the experiment design in detail in section 4. The empirical methodology and results are discussed in section 5 while section 6 concludes.

2 Context and Background

Historical and economic factors suggest that formation of social networks based on caste and homophily is salient in the Indian context. (Chandavarkar (1994)) notes that historically migration to industrial hubs occurred within the framework of caste, kinship and village connections in India.[4] Migrants to the city lived with their co-villagers, caste-fellows and relatives and sought work with their assistance (Gokhale (1957), Cholia (1941), Burnett-Hurst (1925)). While caste and kinship formed indivisible social networks in the city's working-class neighbourhoods as industrialization progressed, social networks continue to play a significant role in the functioning of labor markets (Afridi et al. (2015a)) and in ensuring migrants' economic mobility in the modern age in low income countries (Munshi (2014)). Migrants tend to find employment through referrals from their caste-based networks and hence often locate within the same residential units post migration. Given this sociological context, we focus on co-worker connections based on the caste system in India.[5]

In our study we draw on India's textile industry, specifically, garment manufacturing, which employed more than 45 million people in 2016-17.[6] Labor-intensive, assembly line production technology is common in garment manufacturing, making it the most prominent employer in manufacturing and also a major contributor to exports, not just in India but also in several developing countries such as Bangladesh, Pakistan and China (Lopez-Acevedo and Robertson (2016)). This sector thus provides a natural choice for advancing our understanding of worker performance in the Indian and other developing country context.

Garment production entails the strongest type of complementary and performance of the weakest worker determines overall firm productivity. In a typical garment

[4]30% of the Indian population has migrated from another part of the country at some point, of which almost 15% migrate for employment purposes (Census 2011).

[5]The caste system was introduced thousands of years ago, but continues to socially stratify Indians even today into four hierarchical categories (*varnas*) each of which is further sub-divided into *jatis*, having a common origin in terms of occupations, languages, and social practices. At the top of the social hierarchy are Brahmins (the priestly caste), followed by the Kshatriyas (the warrior caste), Vaishyas (the trading caste) and finally Shudras (the service caste such as farmers, and craftsmen) in the *varna* system of social categorization. The caste system is endogamous, hence one's caste is determined at birth. Inter-caste marriages are virtually non-existent even today.

[6]https://www.ibef.org/download/Textiles-and-Apparel-December-2017.pdf

factory, production is organized into vertical lines (i.e., an assembly line is like a team). Often these lines have 50-70 workers who can be classified into operators who sit one-behind the other on sewing machines and are responsible for stitching. Each worker is allotted a machine and is responsible for performing at least one operation, producing a targeted level of output per hour, usually higher than she can achieve.[7] The line composition changes across work days, and so communication and repeat interactions play a limited role in generating workplace cooperation. Workers are aware of co-workers located physically close to them in the line even though they may not know the composition of the entire line. Multiple workers in the assembly line simultaneously produce different pieces of a garment, e.g. while one worker produces collars, another stitches the cuffs of a shirt. With each operation a part of the garment is made. Pieces of the garment are then assembled to produce the entire apparel, viz. a shirt.

We formally elaborate on the challenge of co-ordinating workers' effort in a minimum effort game, exemplified by assembly line production, in our theoretical model below.

3 Theory

Let worker i produce output $y_i = e_i$ where $e_i \in \{\overline{e}, \underline{e}\}$ measures effort. Workers are characterised by their network - either L or H. There are 4 workers in total, two of group H and two of group L. Teams are of size 2, and can be either socially connected - both workers belong to the same group (L, L) or (H, H) or unconnected where workers belong to different groups (H, L) or (L, H). To avoid excess notation we will only mention the group of workers where it is not clear from the context.

[7]Our on-going research on garment factories in NCR suggests that tight work schedules do not permit workers to check on the performance of other workers in the line - indeed workers barely get a few minutes to have their lunch.

The production function is a minimum effort game: group output is equal to the minimum effort across workers in the team, $Y = min[e_i, e_j]$. Individual payoffs in the unconnected group are given by $U_i = DY - \frac{c}{a_i}e_i$, where a_i measures worker ability where $a_i \in (\underline{a}, \bar{a}]$, $c > 0$ is a constant that affects the marginal cost of effort, and $D > 0$ measures the strength of financial incentives (piece rates). We will assume that worker abilities are identical for the benchmark model. Thus, when workers are unconnected the game is the standard minimum effort game (Van Huyck et al. 1990).

Socially connected groups have social preferences towards each other. Assuming as before that there are only two effort levels, these take the form $U_i = DY - \frac{c}{a_i}e_i + G^i_{ij}e_i$. $G^i_{ij} > 0$ when i, j belong to the same group and captures pro-social motivation towards the group - the sense of wanting to do the best for the team. Below we depict the game between workers who can be socially connected or not, the indicator variable $\mathbb{1}_{[G>0]}$ takes the value 1 when the group is socially connected while it is zero if the group is unconnected.

	$\overline{e}$	$\underline{e}$
$\overline{e}$	$D\overline{e} - (\frac{c}{a} - \mathbb{1}_{[G>0]}G)\overline{e}, D\overline{e} - (\frac{c}{a} - \mathbb{1}_{[G>0]}G)\overline{e}$	$D\underline{e} - (\frac{c}{a} - \mathbb{1}_{[G>0]}G)\overline{e}, D\underline{e} - (\frac{c}{a} - \mathbb{1}_{[G>0]}G)\underline{e}$
$\underline{e}$	$D\underline{e} - (\frac{c}{a} - \mathbb{1}_{[G>0]}G)\underline{e}, D\underline{e} - (\frac{c}{a} - \mathbb{1}_{[G>0]}G)\overline{e}$	$D\underline{e} - (\frac{c}{a} - \mathbb{1}_{[G>0]}G)\underline{e}, D\underline{e} - (\frac{c}{a} - \mathbb{1}_{[G>0]}G)\underline{e}$

In the standard minimum effort game, where $G = 0$, it is well known that when $D - \frac{c}{a} > 0$, there are two pure strategy Nash equilibria: one where both players coordinate on the higher effort and one where they coordinate on the lower effort. Both equilibria are stable. Which equilibrium is more likely to occur depends on the basin of attraction. Let p_j denote the probability on high effort by player j and $EU_i(e)$ denote the expected utility of player i when her effort level is e. Let $\underline{p} = \{\min p_j | EU_i(\bar{e}) > EU_i(\underline{e})\}$. Note that by symmetry of the game $\underline{p}$ is the same for both players. $\underline{p}$ denotes the minimum expected probability (belief) of the opponent playing high effort, which would lead to each player playing high effort. The lower is $\underline{p}$ the bigger the basin of attraction for the high effort equilibrium. In this sense, we say that the lower is $\underline{p}$ the more likely it is that the high effort equilibrium is selected. When $\underline{p} \geq 1$ then the high effort equilibrium does not exist while if $\underline{p} \leq 0$ then the low effort equilibrium does not exist. We interpret $\underline{p}$ as a measure of trust: when $\underline{p}$ is low it means that players believe others are more likely to do their best for the group, i.e. they have high levels of trust.[8]

We denote by $\underline{p}^U$ ($\underline{p}^C$) the minimum expected probability (belief) of the opponent playing high effort, in the unconnected (connected) game. We then have the following claim:

Claim 1 *(1) Assume that* $\frac{D}{2} > \frac{c}{a}$*, then* $\underline{p}^i < \frac{1}{2}$ *for* $i \in \{U, C\}$*, and* $\underline{p}^C < \underline{p}^U$*. Both groups have a unique high effort risk dominant equilibrium but the probability of coordinating on the high effort equilibrium is higher in the connected relative to the unconnected group. Moreover* $\underline{p}^C$ *is increasing in* G *so the probability of coordinating on the high effort equilibrium in the connected group is increasing relative to the unconnected group as* G *increases. When* $G > \frac{c}{a}$ *then indeed there is perfect coordination on the unique dominant strategy high effort equilibrium. Assume that parameters satisfy* $\frac{D}{2} + G > \frac{c}{a} > \frac{D}{2}$*. Then* $\underline{p}^U > \frac{1}{2}$ *while* $\underline{p}^C < \frac{1}{2}$*, i.e. the high effort equilibrium is the unique risk dominant equilibrium in the connected group while the low effort equilibrium is the unique risk dominant equilibrium in the unconnected group.*

(2) As the financial incentives D *increase, workers in both groups are more likely to coordinate on the high effort equilibrium. Suppose initially we have* $\frac{D}{2} + G < \frac{c}{a}$ *and suppose a bonus is given for high effort, i.e. payoffs are* DY *for low effort and* $(D+B)Y$ *for high effort, which satisfies* $\frac{D+B}{2} + G > \frac{c}{a} > \frac{D+B}{2}$*, then the connected group*

[8]See e.g. Gambetta (1988) "it is necessary not only to trust others before acting cooperatively, but also to believe that one is trusted by others."

moves from a unique low effort to a unique high effort risk dominant equilibrium while the unconnected group has a unique low effort risk dominant equilibrium before and after the change. The bonus B needed to move from a low to high effort risk dominant equilibrium is higher for the unconnected group than the connected group.The higher is G the lower is the bonus needed in the connected group relative to the unconnected group.

These results can be generalised to more than 2 workers, heterogeneous workers and multiple effort levels (for proof and extensions see Appendix A). Based on the above claim our theoretical model predicts the following:

1. Socially connected groups are more likely to coordinate on a higher effort equilibrium than unconnected groups. The higher the pro-social motivation, the higher the probability of coordinating on a higher effort equilibrium. Thus group output is higher, and wasted effort lower, in the socially connected groups relative to unconnected groups.

2. The bonus required to move from a unique risk dominant low effort equilibrium to a unique risk dominant high effort equilibrium is lower in socially connected groups relative to unconnected groups. Thus financial incentives can have a larger positive effect on group output and coordination in socially connected groups.

3. When ability levels are heterogeneous and there is differential information on ability across groups with socially connected groups better informed about individual abilities in the groups, then connected groups have lower wasted effort. Second, increasing financial incentives may lead to higher group output for both connected and unconnected groups. However the responsiveness of individual output is lower in the connected group relative to the unconnected group.[9]

We find some support for the above theoretical predictions using data on worker level productivity gathered by us from two garment factories in the National Capital Region (NCR) of Delhi. Taking advantage of idiosyncratic variation in the daily caste composition of assembly lines due to worker absenteeism, we find that the more homogeneous the caste composition of the line on a work day, the higher the productivity of the assembly line on that day (see Figure 1). This suggests that pre-existing social connections amongst co-workers, mediated through caste, can indeed have a significant impact on group productivity. However, in this real world setting it is challenging to separate out the effects of social composition of production teams from other unobservables such as worker - line supervisor interactions that may influence line composition and productivity. We, therefore, design a controlled, lab-in-the field experiment which captures purely the effect of social connections and is described in detail next.

4 Experiment design

Since our research question is how team productivity is influenced by workers' social connections and financial incentives, our lab-in-the-field experiment (Harrison and List (2004)) uses a 2x3 factorial, between-subject design. Each session consisted of a work team of 4 subjects of the *same* gender. In the Socially Connected treatment, the team had the same caste based network. In the Socially Unconnected treatment, the team members belonged to different caste based networks. In addition, we used

[9] There is another plausible difference between connected and unconnected groups - the level of information on the distribution of ability within the group. For example, assume that ability is heterogenous across workers but the distribution of ability is the same across groups (as our data show). Then connected groups might be better informed about the abilities of individual workers in their group. This has the effect of improving coordination around the output of the weakest worker in socially connected groups. When financial incentives are increased we may then observe a lower responsiveness of connected group as far as individual output is concerned but an increased group output - higher ability workers do not increase their output as much as the weakest worker when they know the abilities of their group.

three different incentive schemes Piece Rate, Bonus with Gain Framing, and Bonus with Loss Framing. The experimental design is outlined in Table 1.

Subjects and recruiting The subjects of our experiment were garment factory workers, with at least primary education, in the NCR's garment factory hub. The experiment was conducted between May and July 2016. Recruiting pamphlets were distributed among the workers during our visits to their factories and residential clusters (see Figure A1 in Appendix B). The advertisement mentioned Rs.200 as participation fee which was about the daily wage of garment factory workers in our sample.[10] Workers registered over phone, and the information on their residential address, native state, caste, sub-caste or *jati*, and gender were collected at the time of registration.

We classified subjects on two dimensions to proxy for social networks. First, each subject was categorized according to her *jati* into one of the three main caste groups using the official categorization by her native state (1) **L** type consisted of the historically marginalised *jatis* that belonged to Scheduled Castes (SC) and Scheduled Tribes (ST), the lowest in the social hierarchy; (2) **M** type constituted the other backward castes (OBC) that are socially and economically disadvantaged; and (3) the **H** type were subjects whose *jatis* belonged to the high castes.[11]

The second dimension of subject categorization was current residence. A residential cluster, in our context, represented a lane or *mohalla* in a particular worker colony. For instance, lane number 7 of Kapashera slum formed a residential cluster in our study. Visits to residential clusters during the study indicated that migrant work-

[10] 1 USD = Rs. 67 (approximately) in 2016

[11] Both the L and M type typically have public sector jobs and political positions reserved for them under India's affirmative action policies (Deshpande (2013)). Factory jobs in the private sector are coveted by all castes and social groups of migrants in urban areas. Data collected by us from garment factories in the National Capital Region show that almost 50% of the workers were H type, 30% M type, and the remainder L type. In our experiments, the L type consisted primarily of SCs, with only 2 ST subjects.

ers of the same *jati* and native village resided in the same neighbourhood. Hence the probability of workers sharing the same caste ethnicity and being socially connected as friends, relatives, and/or co-workers was high if they had the same residential address. Subjects were given a specific date and time to visit the experiment site which was in a building in the garment manufacturing hub where most of these subjects worked. A subject was allowed to participate only once and was required to show his/her garment factory employment ID at the time of experiment.

Task and incentives The experimental task involved subjects independently stringing beads on beading wires of a specific length in their private workstations partitioned by opaque curtains. To capture purely the effect of pre-existing social connections, neither communication amongst subjects nor information on the productivity of subjects was made public at any time during the experiment.[12] This design also conforms to the actual factory assembly line setting where workers have low probability of coordinating effort and output level through verbal communications or repeat physical interactions, as discussed in Section 2.

In each session the 4 subjects of a team were randomly assigned ID numbers from 1 to 4 which further mapped into their private workstations and their allotted bead colors - red, blue, green or silver. Their ID numbers, workstation numbers, and bead colors were kept private to ensure anonymity of their individual performance throughout the experiment. The subjects were also informed that the identity of individual performances would not be disclosed at any point during or after the session. Note that since each session consisted of only one group we use the term "session" and "group" interchangeably.[13]

The experiment started with each subject being seated at his/her assigned work-

[12]See experiment instructions, translated from Hindi into English, in Appendix C.

[13]In each session there was one main instructor and an assistant instructor of different genders. Both instructors were graduate students whose caste categories were kept private throughout the experiment.

station with a covered bowl containing beads of a single color and equal size along with a bunch of 20 cm long wires.[14] The subjects were told that their task was to string the wire with the beads in privacy such that the wire was fully covered with beads. The beaded strings of the four colors were to be combined to make bracelets by the experimenter at the end of the experiment. In other words, each bracelet, the team product, consisted of 4 strings of 4 colors, each string made by a subject. Thus, the minimum number of strings (of a color) produced would determine the number of bracelets per team and thus the team output (see Figure A2 in Appendix B for a completed bracelet). By experimental design, therefore, group productivity was determined by the least productive worker of the team.

Once the task was explained and demonstrated using beads and a wire by the experimenter, information on the payoff functions were given. We used three financial incentive schemes - Piece Rate, Bonus with Gain Framing, and Bonus with Loss Framing. All the payoffs were based on the team output - the number of bracelets.[15] Under Piece Rate every subject received Rs.100 per completed bracelet produced by the team. For instance, if 5 red, 6 green, 4 blue, and 8 silver strings were produced in a session the team's output would be 4 bracelets and the payoff would be Rs.400 for each subject.

Under the Bonus schemes, each subject was offered a bonus of Rs.150 above and beyond the Rs.100 piece rate. The framing used was different, however. Under Bonus with Gain Framing, it was announced that if their team made 5 or more bracelets, each team member would receive a coupon of Rs.150 which could be encashed at the time of payment. In contrast, under Bonus with Loss Framing, for instilling a sense

[14] The bowl was covered so the bead color could not be seen while the experimental instructions were being delivered.

[15] Although workers receive fixed wages based on their daily attendance at work in most garment factories in NCR, in the real world factory setting the presence of the assembly line supervisor implicitly creates team based productivity incentives.

of loss, each subject was given a coupon equivalent to Rs.150. But if their team made less than 5 bracelets the Rs.150 coupon would be taken away so they would lose this extra money and only get paid Rs.100 for each bracelet.[16] The description of the financial incentives and payoffs is given in Table 2.

Every subject in his/her workstation was given a payoff table corresponding to the assigned incentive scheme. The experimenter gave specific examples that elucidated the calculation of individual payoffs. Before proceeding with the experiment, each subject was provided with a sheet and a pen to answer several questions to ensure their understanding of the payoff calculation.

Social connections To study how team productivity is influenced by workers' social connections at work, we manipulated the caste and residence composition of the 4-person team in the sessions. Subjects were randomly assigned into the Socially Connected and the Socially Unconnected treatments of the same gender sessions. In a Socially Connected session, all 4 subjects belonged to the same caste category and currently resided in the same residential cluster to ensure that they shared similar social backgrounds. Specifically, they belonged either to the same or similar *jati* in the low caste category (**L** type), the middle caste category (**M** type), or the high caste (or **H** type). In contrast, a Socially Unconnected session consisted of subjects belonging to different caste categories and different residential clusters. We used the following criteria in selecting four subjects for the Socially Unconnected sessions - one L, one M, and one H type. The fourth subject could belong to any of the three types.[17]

[16] In our pilot experiment using Piece Rate payments, the median performance of a team was 4 bracelets. We, therefore, used 5 bracelets as the threshold for the high power Bonus schemes.

[17] For instance, a socially connected session of M type may have consisted of 4 Yadav *jati* or 3 Yadav and 1 Kurmi *jati* subjects, all of who are 'other backward castes' in Uttar Pradesh. The within session variation in the *jati* of the 4 subjects in the socially connected sessions was 0.31 as opposed to 1.21 in the socially unconnected sessions, different at 1% significance level.

One crucial part of our design was to make the subjects aware of the caste composition and thereby the strength of social connections of their work team. Since, in India the last name of a person reflects the *jati* (i.e., sub-caste) of an individual, this was done through public announcements of each subject's name and residential address. After ensuring that the task and payoffs had been clearly understood by the subjects, the experimenter announced in public the first and last name as well as the residential address of each subject with the workstation curtains drawn apart so that the subjects could see each other. Each subject raised his/her hand when the name was called. In India's patriarchal society, however, women are typically referred to using a generic last name of *Devi* or *Kumari* (i.e. lady or girl) which would not signify their *jati* to other group members. Since caste is determined by birth and inter-caste marriages are virtually non-existent even today, in all female sessions after we announced a woman's first and generic last name we also mentioned the first and last name of the man whose wife or daughter she was, followed by her residential address.[18]

Note the caste composition and the degree of social connections of the team was made public in both the Socially Connected and the Socially Unconnected treatments.[19]

Procedure Once the task was explained and the experimenter announced the subjects' names and addresses, curtains were drawn and subjects remained in separate, adjacent work stations during the rest of the experiment. Subjects were asked to remove the cover on the bowls containing their allotted color of beads

[18]In all sessions the main experimenter followed a prepared script and said the following: "Now I will announce your name and your residential address. As I call out your names please raise your hand. If there is any error in the announcement, please tell us." In all the male (female) sessions the main experimenter announced the following: "NAME (wife/daughter of FIRST NAME, LAST NAME) and resident of..."

[19]Unlike some previous studies that use subjects' names as identity prime (Hoff and Pandey (2006), Afridi et al. (2015b)) this study uses public announcement of names and residential addresses to ensure common knowledge of the caste composition and related social connections among the team members.

and practiced the beads stringing task. Once the experimenter ensured that every subject understood the task, 10 minutes were given for them to string beads in as many wires as they desired. After 10 minutes, beaded wires were collected one by one by the experimenter in an opaque envelope and kept in front of the workstations on a desk.

Thereafter subjects were requested to complete a post-experiment survey on additional information such as age, caste, religion, employment status, and relationship (if any) with their team members.[20] Once all four subjects completed their questionnaires, the partition curtains were drawn apart. The envelopes with the beaded strings were opened one by one, and the number of complete strings of each color was counted without revealing each subject's performance. The number of bracelets produced by the team was determined. Subjects received their payment in cash and were dismissed.

As shown in Table 1, we conducted 131 independent sessions including 63 Socially Connected sessions (33 for men and 30 for women) and 68 Socially Unconnected sessions (34 for men and 34 for women). Among these sessions, 30 used Piece Rate, 51 Bonus with Gain framing, and 50 Bonus with loss framing. Between-subject design was used, hence no subject participated in more than one session. The experiment lasted about one hour.The average individual output was 4.8 beaded wires, and the average group output was 3.62 bracelets. The average payment was Rs.587.5 (including the Rs.200 participation fee) which was more than twice the average daily wage of the subjects.

[20]Post-experiment questionnaires, translated from Hindi into English, are attached in Appendix D.

5 Data, methodology, and results

5.1 Data

The summary statistics from the post-experiment survey (Tables A1 and A2 in Appendix B) show that our subjects were 29.13 years old with almost 49% women and 93.5% Hindu.[21] Nearly 20% of them had completed high school or more education. Almost the entire sample consisted of migrants from outside Delhi of which 2/3rd had migrated from the north-eastern state of Bihar. We were successful in recruiting subjects who were currently working (94.5%), 98% of whom were currently employed in garment factories. There was no significant difference in subjects' perception of task difficulty. Subjects knew almost 2 (1.9 out of possible 3) co-workers by name in the Socially Connected treatment, significantly more than in the Socially Unconnected treatment (by design). 89% (41%) of the known subjects had the same state of origin, 44% (0%) came from the same state-district and 90% (0%) shared their *jati* in the Socially Connected (Unconnected) treatment.[22]

In Table A2 we compare the average characteristics of subjects by the financial incentive. Except for the proportion of Hindus and migrants from Bihar, as highlighted in Table A2, all observable characteristics are comparable across incentives. Tables A1 and A2, therefore, indicate that most of the average subject characteristics are comparable across the treatments, which suggests successful randomization of subjects into treatments. In our analyses we, nevertheless, control for the observable characteristics of the subjects that either are different across treatments or may

[21]In this study, 6.5% of our subjects were Muslim. Of these, 60% were M type while the remaining were H type. Although the caste system is a feature of Hinduism, social identities are strong even amongst religious minorities who are often SCs and STs who converted to Islam or Christianity. In the Socially Connected treatment sessions we held religion constant. Hence, M (H) Muslim subjects were matched with M (H) Muslims. Nevertheless, throughout our analysis we control for religion. Our results are also robust to restricting the sample to Hindus (available on request).

[22]The co-subjects known by name in the socially connected treatment were most often described as neighbor (94%), followed by friend (80%), co-worker (37%), and relative (27%) in the post-experiment survey which allowed for multiple relationships between subjects (see Appendix D).

influence the outcomes in our study.

We are interested in two categories of outcomes - output and coordination. They are summarized in Figure 2, by gender, for the Socially Connected and Socially Unconnected treatments, respectively. Output is measured at the individual level by the number of completed wires (Figure 2(a)) and at the group level by the minimum individual performance in each group (Figure 2(b)). Coordination is measured at the individual level by excess individual output (which is individual output minus the group output, Figure 2(c)) and at the group level by within-group output dispersion (which is the standard deviation in the number of completed wires by each subject within the group, Figure 2(d)). Since an individual's output above and beyond the minimum output of his/her group is not counted toward the group output any excess individual output would be wasted. Therefore, lower level of excess individual output (or wasted output) or within-group output dispersion signifies better coordination.

Figure 2(a) shows that men's individual output is lower than women's. Men, however, respond positively when they are in a socially connected group by raising individual (p<0.10) and group output (p<0.05) while no significant effect of social connectedness is found on women's output level (p>0.10), in Figures 2(a)-(b). Figures 2(c)-(d) show that men coordinate better when they are socially connected with their co-workers (p<0.01 for excess individual output and within-group output dispersion) but coordination among women is either adversely affected (p<0.10 for excess individual output) or unaffected by social connectedness (p>0.10 for dispersion).

5.2 Empirical methodology and results

We use the following OLS specification to study the impact of social and financial incentives on the above mentioned outcomes. The analysis is conducted separately for men and women:

$$
\begin{aligned}
Y_{is} &= \alpha_0 + \alpha_1 \textit{Socially Connected}_s + \alpha_2 \textit{Bonus-GainFraming}_s \\
&+ \alpha_3 \textit{Bonus-LossFraming}_s + \alpha_4 \mathbf{Z}_{is} + \epsilon_{is} \qquad (1)
\end{aligned}
$$

The dependent variable is Y_{is} i.e., individual *i's* output or excess output in session s for the individual-level analysis. 'Socially Connected' is a dummy variable for the Socially Connected treatment (with the Socially Unconnected treatment in the omitted category). 'Bonus-Gain Framing' and 'Bonus-Loss Framing' are the treatment dummy variables for the corresponding financial incentives (with Piece Rate in the omitted category). **Z** is a vector of individual characteristics such as separate dummy variables for the H and M caste categories (with L in the omitted category), age, religion, native state, employment status, and education. The coefficient α_1 gives an estimate for the average effect of being in a socially connected group on the individual or group outcomes relative to the socially unconnected group, unconditional on the financial incentives. Similarly, the coefficients α_2 and α_3 provide the estimates of the average effects of the Bonus-Gain Framing and Bonus-Loss Framing, respectively, relative to Piece Rate, unconditional on the social incentives. The standard errors are clustered at the session (i.e. the group) level for individual-level outcomes.

Equation 1 can be further augmented by incorporating the interaction terms between the social and financial incentives:

$$
\begin{aligned}
Y_{is} &= \beta_0 + \beta_1 \textit{Socially Connected}_s + \beta_2 \textit{Bonus-GainFraming}_s \\
&+ \beta_3 \textit{Bonus-LossFraming}_s + \beta_4 \textit{Socially Connected}_s * \textit{Bonus-GainFraming}_s \\
&+ \beta_5 \textit{Socially Connected}_s * \textit{Bonus-LossFraming}_s + \beta_6 \mathbf{Z}_{is} + \epsilon_{is} \qquad (2)
\end{aligned}
$$

Note that subscript i drops out for the group-level analysis (i.e., group s's output or within-group output dispersion) in both equation 1 and 2.

Table 3 reports the results of equation 1 on individual and group output for men (columns 1-2) and women (columns 3-4). We find that the Socially Connected treatment has a positive but insignificant effect on men's individual output ($\alpha_1 = 0.108$, $p > 0.10$ in column 1), but it has a positive and statistically significant effect on men's group output ($\alpha_1 = 0.552$, $p < 0.05$ in column 2). Since these estimates are unconditional on the financial incentives, it shows that being in a socially connected group increases the group output by 0.552 bracelets or by 15% for men on average for the three financial incentives that we consider.[23] Women, on the other hand, do not respond to social connectedness either in terms of individual or group effort as shown by the insignificant coefficients of 'Socially Connected' in columns 3-4 of Table 3.

Table 4 focuses on coordination - excess individual output and within-group dispersion. We find that for men, the coefficient estimate of 'Socially Connected' is -0.461 for excess individual output ($p < 0.01$ in column 1) and -0.317 for within-group output dispersion ($p < 0.05$ in column 2). That is, on average across the three financial incentives, the wasted output by men and their within-group dispersion is more than 30% lower in the Socially Connected treatment, relative to their counterparts in the Socially Unconnected treatment. For women, however, neither of the estimates are statistically significant for 'Socially Connected' in columns 3 and 4 of Table 4. These findings indicate that men coordinate significantly better when they are with co-workers with whom they feel more socially connected while there is no significant treatment effect for women.

The findings in Tables 3 and 4, therefore, validate the theoretical prediction 1,

[23] The percentage increase in the group output is calculated using the mean group output 3.2 bracelets for men in the Socially Unconnected treatment.

but conditional on gender. They lead to Results 1 and 2.[24]

Result 1: Being in a socially connected group leads to an increase in the group output of men, but it has no impact on the output of women.

Result 2: Being in a socially connected group improves within-group coordination of men, but it has no impact on the coordination of women.

Next we analyse the effect of social connectedness conditional on the financial incentives using equation 2.[25] These results are reported in Table 5 on output and Table 6 on coordination. The bottom panels of the tables report the results of F tests for the impact of bonus framing, relative to Piece Rate, conditional on the socially connected groups, as well as the impact of social connectedness conditional on the bonus framing. The coefficient of 'Socially Connected' β_1 indicates that under Piece Rate, being in a socially connected group leads to an increase in individual output by 0.553 bracelets ($p > 0.10$, column 1) and an increase in group output by 1.123 bracelets for men ($p < 0.05$, column 2), relative to being in a socially disconnected group. Conditional on the high powered bonus incentives, however, the impact of social connectedness is either statistically insignificant or marginally insignificant for individual output in column 1 ($\beta_1 + \beta_3 = 0.218$, $p = 0.298$ conditional on Bonus with Gain Framing; $\beta_1 + \beta_5 = -0.269$, $p = 0.150$ conditional on Bonus with Loss Framing) and for group output in column 2 ($\beta_1 + \beta_3 = 0.665$, $p = 0.101$ conditional on Gain

[24]Our results are unaltered when we include additional control variables in the analysis, e.g. dummy variables for "having done similar kind of task earlier" and the months when the experiment was conducted. These robustness checks with the estimates of all the explanatory variables are reported in Tables A3 and A4, Appendix B.

[25]The coefficients of 'Bonus-Gain Framing' and 'Bonus-Loss Framing' are statistically insignificant throughout in Tables 3 and 4, suggesting that higher financial incentives neither increase (individual or group) output nor improve coordination within the group, irrespective of social connectedness of the group. This may not be surprising given the results of (Brandts and Cooper (2006)) who show that financial incentives work only to improve coordination if they are large enough or if agents are allowed to learn over time. Our real-effort minimum-effort game is one shot, which may explain the lack of immediate impact of stronger financial incentives on output and coordination of the group.

Framing; $\beta_1 + \beta_5 = 0.132, p = 0.738$ conditional on Loss Framing).

Therefore, the positive impact of social connectedness on men's group output summarized in Result 1 is mainly driven by its impact under Piece Rate (column 2 of Table 5), but it also holds qualitatively, albeit statistically insignificantly (perhaps due to the lack of power), under Bonus with Gain and Loss Framing. In addition, we find that social connectedness has differential impact on individual output but not on group output across the different financial incentives. Specifically, the impact of social connectedness on individual output under Bonus with Loss Framing is significantly lower than under Piece Rate (β_5 = -0.822, $p<$ 0.05) and marginally lower than under Bonus with Gain Framing (β_5 - β_3 = -0.487, p<0.10) as shown in column 1 of Table 5. It suggests that the impact of social connectedness is weaker under Bonus with Loss Framing, compared to Piece Rate or Bonus with Gain Framing. Moreover, similar to Table 3 on the unconditional analysis, we find no significant impact of social connectedness or financial incentives on the individual or group output for women in columns 3 and 4.

In Table 6 we estimate equation 2 for the coordination outcomes. Column 1 of Table 6 shows that the excess individual output is lower and hence individual coordination is better for men in the Socially Connected treatment than in the Socially Unconnected treatment under Piece Rate (β_1= -0.269 in column 1, p>0.10), Bonus with Gain Framing (β_1+ β_3 = -0.529, p = 0.039), and Bonus with Loss Framing (β_1+ β_5 = -0.501, p = 0.011). These observations confirm that Result 2 of the positive impact of social connectedness on coordination for men manifests itself under the three financial incentives. This impact, however, is statistically significant for the high powered incentives - the Bonus-Gain and -Loss framing - but holds only qualitatively under a relatively low powered incentive - Piece Rate. It suggests that social connectedness effectively reduces male workers' wasted output and promotes their coordination under high powered financial incentives, implying that strong financial incentives may strengthen the role of social incentives in improving coordination. Column 2 of Table 6 further shows that the impact of social connectedness is along the same lines for the within-group output dispersion among men (β_1 = -0.339, p>0.10 for Piece Rate; β_1+ β_3 = -0.311, p = 0.115 for Bonus with Gain Framing; β_1+ β_5 = -0.314, p = 0.110 for Bonus with Loss Framing), but these effects are insignificant or marginally insignificant perhaps due to low power. Similar to our findings in Table 4, neither of the coordination outcomes are significantly affected by the social connectedness under any financial incentive for women (p>0.10). Therefore, the observations in Table 6 can be summarized in the next result.

Result 3: In line with theoretical predictions 2 and 3, social connectedness among men significantly improves their coordination and qualitatively raises their group output under the high powered bonus incentives regardless of framing, while the effects on individual output are ambiguous.

One interesting question is whether workers would respond to different framing of the bonus incentive. Tables 3 and 4 show that the coefficient estimates of Bonus with Gain Framing (α_2) and Loss Framing (α_3), unconditional on workers' social connectedness, do not significantly differ from each other (F test, p> 0.10). In Tables 5 and 6, the comparisons between the coefficient estimates of Bonus with Gain Framing (β_2) and Loss Framing (β_4) show no significant impact of incentive framing on the individual or group output and coordination, conditional on the Socially Unconnected treatment (p> 0.10 for all cases in Tables 5 and 6). The same patterns apply to the comparisons between the estimates of Bonus with Gain Framing (β_2 + β_3) and Loss Framing (β_4 + β_5), conditional on the Socially Connected treatment (p>0.10 for all cases in Tables 5 and 6).This finding leads to our final result.

Result 4: The group-performance-based bonus incentive does not increase men's and women's output or coordination when it is framed as a loss, compared to when it is framed as a gain.

In contrast to previous field experiments that find positive impacts of the loss frame on worker productivity in China (Hossain and List (2012)), our result indicates that workers in our experiment do not respond to the framing of the bonus (e.g. List and Samak (2004)) on students' choice of healthy food). This may occur because the bonus incentive in our experiment is offered based on the group performance, rather than individual performance as in the previous field experiments. This finding thus calls for future research on the conditions under which a loss frame may or may not outperform a gain frame.

5.3 Discussion of results

As elucidated by the theoretical model, trust along with better knowledge of co-worker ability in socially connected teams can potentially explain our results. When workers have trust in their co-workers, they believe that others are going to do their best for the team. As a result, their own incentive to put in high effort increases. Our survey data from a census of 1,916 workers in two garment factories in the catchment area of our experiment suggests greater trust between socially connected workers - 32% (24%) of workers who have a co-worker with whom they are socially connected (neighbour/relative/same village) as opposed to 16% (18%) of those with a co-worker friend who they met on the job recently, report lending Rs. 500 or more to that friend (asked for help in medical emergency). When ability levels are heterogeneous, working harder is not optimal for all workers due to the nature of the production function. Because connected groups have better information about abilities of co -workers they are able to coordinate better and thus have lower wasted effort.

There are, however, alternative explanations. If our experimental design merely sorts on ability, i.e. if L, M, and H types have differential abilities the socially connected groups would produce both higher group output and show better coordination just by experiment design. But we do not find any differences in productivity (or ability) by caste groups either in our experiment sample (Socially Unconnected treatment) or in the real world factory data. Moreover, in our robustness check we control for ability by including a dummy variable for whether the subject has previous experience of performing the assigned task. While we discount sorting, an alternative mechanism that could plausibly explain our results is the potential threat of sanctions for low effort in socially connected groups. Although we kept information on individual performance private in our experiment, if socially connected subjects have a better idea of the distribution of abilities in their group, and this is common knowledge, then the low ability subjects may put in higher effort in the socially connected treatment due to fear of punishment by the team, raising both group output and improving coordination.

Why does social connectedness have no significant impact on women in our experiment?[26] The first possible explanation is that women's gender identity may be their dominant identity in a society with high levels of gender discrimination such as in India. Being with the same gender group then could override being in a caste-based socially connected group resulting in the observed insignificant impact on women in our analyses. A second explanation is that despite the same caste and residential location, women may have weak social ties in a patriarchal society where women's social connections after marriage are often formed through their husbands and the

[26]Croson et al. (2008) use a threshold public goods game with multiple Nash equilibria to study how women and men are affected differently by their gender identity. They find a higher level of coordination and efficiency by women when interacting with members of a sorority (i.e., a group with stronger identity) relative to other all-women groups. The effects, however, are the opposite for men when interacting with members of a fraternity.

husband's families (as also evidenced by the manner that we made social connections salient in the female sessions described in Section 3). The third possible explanation is the ceiling effect. That is, since women's output is in general higher than men's (see Figure 2), their individual and group output may have already reached the ceiling under Piece Rate, thus limiting the marginal impact of any social and/or financial incentives.

To investigate the first mechanism of gender identity, we conducted an additional experiment of 30 *mixed-gender sessions* (15 sessions for Socially Connected and 15 for Socially Unconnected) under *piece rate* in March 2017 with different subjects from the same population. Each mixed-gender session consisted of 2 men and 2 women. We pool the observations of women in this additional experiment with the data from the 14 *all-women* sessions with Piece Rate in the main experiment and conduct OLS analyses using the following specification:

$$\begin{aligned} Y_{is} &= \gamma_0 + \gamma_1 Socially\ Connected_s + \gamma_2 Mixed_s \\ &+ \gamma_3 Mixed_s * Socially\ Connected_s + \gamma_4 \mathbf{Z}_{is} + \epsilon_{is} \end{aligned} \tag{3}$$

If the gender identity indeed is a strong influencing factor for women we would expect a higher level of individual output or a lower level of excess output by women in the all-women sessions than in the mixed-gender sessions, conditional on the group members's social connectedness. Results are reported in Table A5. We find that women perform equally well in the all-women or mixed-gender groups of the Socially Unconnected treatment (γ_2, $p> 0.10$), and the same observation applies for the Socially Connected treatment ($\gamma_2 + \gamma_3$, $p> 0.10$). These findings suggest that irrespective of group members' social connectedness, the gender identity does not affect women's performance and hence is unlikely to be the primary factor that veils the impact of caste-based social connection in our main experiment.[27]

In the additional experiment with mixed-gender and piece rate, we also elicited the strength of participants' social ties in the post experiment questionnaire. As shown in the last row of the top panel of Table 7 (which reports the same set of characteristics as in Table A7), no gender difference was found in the average response on whether they knew at least one team member by name ($p > 0.10$), indicating that women were as closely connected to their co-workers as men. Moreover, workers in the additional experiment were also asked further questions on their relationship with each co-worker he/she knew. As shown in the lower panel of Table 7, we found no gender differences in the number of months the co-worker was known, whether co-worker was known before migrating to NCR, whether the worker knew the co-worker through the spouse, or whether the worker discussed personal matters with the known co-worker ($p > 0.10$). Further, the last row of Table A7 shows that in the Piece Rate sessions in our main experiment women are 26 percentage points more likely to know at least one team member by name, relative to men ($p < 0.05$). These observations further support the lack of gender differences in social connectedness, although they do not rule out gender differences in interactions with own networks (Munshi and Rosenzweig (2006)).

Since we can rule out weak social ties and gender identity as possible explanations, the insignificant impact of the Socially Connected treatment on women's performance that we observe in the main experiment can be primarily attributed to the ceiling effect. This conclusion underlines the significance of social connectedness in the work-

[27] A similar analysis is conducted for men and reported in Columns 1 and 2 of Table A5. We find that in the Socially Unconnected treatment, men's individual output is marginally higher in the mixed-gender groups than in the all-men groups ($\gamma_2 = 0.560$, $p < 0.10$). This difference in men's performance between the mixed-gender and the all-men groups, however, disappears in the Socially Connected treatment ($\gamma_2 + \gamma_3 = -0.214$, $p > 0.10$). We also report Wilcoxon rank-sum tests for the group-level outcomes between the pure and mixed-gender sessions for men and women separately in Table A6. These results are consistent with the individual-level results discussed above. They suggest that common knowledge of higher ability of women in this task may interact with gender perceptions of status in the Socially Connected treatment.

place when the average labor productivity is low.

6 Conclusion

We conduct laboratory experiments in the field to study the impact of caste based social connections on output and coordination amongst workers engaged in a minimum effort game. Our results suggest that being socially connected to co-workers significantly improves group coordination and output though not individual productivity. However, individual or group level behaviour of women, who are significantly more productive than men, is unaffected when they are in a socially connected group relative to an unconnected group. Further, we find that high powered incentives such as a bonus lead to higher group coordination and productivity when workers are socially connected with their co-workers relative to when they are not. Our results are driven by those socially connected groups in which all subjects belonged to the same *jati* (results available on request).

These findings can be explained by altruism and trust between socially connected workers. However, in the survey of 1,916 garment factory workers we find that 16% of workers report having no friends in the workplace, while the average worker reports less than 2 co-workers as friends. These data and our findings underline the need for managements to create avenues for greater social interactions among co-workers at the work place to enhance productivity.

Our research not only connects the laboratory literature on group coordination with the field experiments on labor productivity, it adds to the growing body of work on the relevance of personnel economics within firms to economic growth. Our results provide strong evidence of the role of co-worker relationships in resolving coordination issues inside the workplace, particularly in contexts where average worker productivity is poor, as is true in most low income countries.

References

Afridi, F., A. Dhillon, and S. Sharma (2015a): "Social Networks and Labour Productivity: A Survey of Recent Theory and Evidence," *Indian Economic Review*, L.

Afridi, F., S. X. Li, and R. Yufei (2015b): "Social Identity and Inequality: The Impact of China's Hukou System," *Journal of Public Economics*, 123, 17–29.

Bandiera, O., I. Barankay, and I. Rasul (2009): "Social Connections and Incentives in the Workplace: Evidence from Personnel Data," *Econometrica*, 77, 1047–1094.

——— (2010): "Social Incentives in the Workplace," *Review of Economic Studies*, 77, 417–458.

Basu, K. (2010): "The Moral Basis of Prosperity and Oppression: Altruism, Other-Regarding Behavior and Identity," *Economics and Philosophy*, 189–216.

Bloom, N., B. Eifert, A. Mahajan, D. McKenzie, and J. Roberts (2013): "Does Management Matter? Evidence from India," *Quarterly Journal of Economics*, 128, 1–51.

Blume, A. and A. Ortmann (2007): "The Effects of Costless Pre-play Communication: Experimental Evidence from Games with Pareto-ranked Equilibria," *Quarterly Journal of Economics*, 132, 274–290.

Brandts, J. and D. Cooper (2006): "A Change Would Do You Good... An Experimental Study on How to Overcome Coordination Failure in Organizations," *American Economic Review*, 96, 669–693.

——— (2007): "It's What You Say Not What You Pay: An Experimental Study of Manager-Employee Relationships in Overcoming Coordination Failure," *Journal of the European Economic Association*, 5, 1223–1268.

Brandts, J., D. J. Cooper, and E. Fatas (2007): "Leadership and Overcoming Coordination Failure with Asymmetric Costs," *Experimental Economics*, 10, 269–284.

Burnett-Hurst, A. (1925): *Labour and Housing in Bombay: A Study in the Economic Conditions of the Wage-Earning Classes of Bombay*, P.S. King Son, London.

Chandavarkar, R. (1994): *The Origins of Industrial Capitalism in India: Business Strategies and the Working Classes in Bombay 1900-1940*, Cambridge University Press.

Charness, G., L. Rigotti, and A. Rustichini (2007): "Individual Behavior and Group Membership," *American Economic Review*, 97, 1340–1352.

Chen, Y. and R. Chen (2011): "The Potential of Social Identity for Equilibrium Selection," *American Economic Review*, 101, 2562–2589.

Chen, Y. and S. X. Li (2009): "Group Identity and Social Preferences," *American Economic Review*, 99, 431–457.

Cholia, R. (1941): *Dock Labourers in Bombay*, Green and Co. Ltd, Bombay.

Croson, R. and U. Gneezy (2009): "Gender Differences in Preferences," *Journal of Economic Literature*, 47, 448–474.

Croson, R., M. Marks, and J. Snyder (2008): "Groups Work for Women: Gender and Group Identity in Social Dilemmas," *Negotiation Journal*, 24, 411–427.

Deshpande, A. (2013): *Affirmative Action in India*, Oxford University Press.

Devetag, G. and A. Ortmann (2007): "When and Why? A Critical Survey of Coordination Failure in the Laboratory," *Experimental Economics*, 10, 331–344.

Eckel, C. and P. Grossman (2005): "Managing Diversity by Creating Team Identity," *Journal of Economic Behavior and Organization*, 58, 371–392.

Gneezy, U., M. Niederle, and A. Rustichini (2003): "Performance in Competitive Environments: Gender Differences," *Quarterly Journal of Economics*, 118, 1049–1074.

Goeree, J. K. and C. A. Holt (2003): "An Experimental Study of Costly Coordination," *Games and Economic Behavior*, 51, 349–364.

Goette, L., D. Huffman, and S. Meier (2006): "The Impact of Group Membership on Cooperation and Norm Enforcement: Evidence Using Random Assignment to Real Social Groups," *American Economic Review*, 96, 212–216.

Gokhale, R. (1957): *The Bombay Cotton Mill Worker*, Millowners' Association, Bombay.

Harrison, G. and J. List (2004): "Field Experiments," *Journal of Economic Literature*, 42, 1009–1055.

Hjort, J. (2014): "Ethnic Divisions and Production in Firms," *Quarterly Journal of Economics*, 129, 1899–1946.

Hoff, K. and P. Pandey (2006): "Discrimination, Social Identity, and Durable Inequalities," *American Economic Review*, 96, 206–211.

Hossain, T. and J. A. List (2012): "The Behavioralist Visits the Factory: Increasing Productivity Using Simple Framing Manipulations," *Management Science*, 58, 2151–2167.

Kriss, P. H., A. Blume, and R. A. Weber (2016): "Coordination with Decentralized Costly Communication," *Journal of Economic Behavior Organization*, 130, 225–241.

List, J. and A. C. Samak (2004): "The Behavioralist as Nutritionist: Leveraging Behavioral Economics to Improve Child Food Choice and Consumption," *Journal of Health Economics*, 39, 135–146.

Lopez-Acevedo, G. and R. Robertson (2016): "Stitches to Riches? Apparel Employment, Trade, and Economic Development in South Asia," *World Bank Report*.

Munshi, K. (2014): "Community Networks and the Process of Development," *Journal of Economic Perspectives*, 28, 49–76.

Munshi, K. and M. Rosenzweig (2006): "Traditional Institutions Meet the Modern World: Caste, Gender, and Scholing Choice in a Globalizing Economy," *American Economic Review*, 96, 1225–1252.

Van Huyck, J. B., C. Battalio, R., and W. Rankin, F. (2007): "Evidence on Learning in Coordination Games," *Experimental Economics*, 10, 205–220.

Van Huyck, J. B., R. C. Battalio, and R. O. Beil (1990): "Tacit Coordination Games, Strategic Uncertainty, and Coordination Failure," *American Economic Review*, 80, 234–248.

Weber, R. A. (2006): "Managing Growth to Achieve Efficient Coordination in Large Groups," *American Economic Review*, 96, 114–126.

Table 1: Experiment design and sample

	Number of sessions					Number of Subjects
Financial Incentive	**Socially Connected (Men)**	**Socially Unconnected (Men)**	**Socially Connected (Women)**	**Socially Unconnected (Women)**	**All**	
Piece Rate	7	9	6	8	30	120
Bonus with Gain Framing	13	12	12	14	51	204
Bonus with Loss Framing	13	13	12	12	50	200
	33	34	30	34	131	524

Table 2: Financial incentives and payoffs

Number of bracelets produced by group	Individual payoff
2A: Piece Rate	
1	100
2	200
3	300
4	400
5	**500**
6	600
7	700
….	…
2B: Bonus with Gain Framing	
Number of bracelets produced by group	**Individual payoff**
1	100
2	200
3	300
4	400
5	**500 + 150 =650**
6	600 + 150 =750
7	700 + 150 =850
….	…
2C: Bonus with Loss Framing	
Number of bracelets produced by group	**Individual payoff**
…	…
7	700 + 150 =850
6	600 + 150 =750
5	**500 + 150 =650**
4	400
3	300
2	200
1	100

Note: Each subject was given Rs.200 as participation fees in all sessions. As depicted above, the payment scheme was the same in Bonus with Gain Framing and Bonus with Loss Framing. The only difference was that the payment schedule was presented to subjects in the reverse order, i.e. starting with 7 or more bracelets and moving down to 1 bracelet to produce a sense of 'loss' if they did not meet the threshold of 5 bracelets.

Table 3: Impact of group composition on output (unconditional estimates)

	Men		Women	
	Individual Output	Group Output	Individual Output	Group Output
	(1)	(2)	(3)	(4)
Socially Connected (α_1)	0.108	0.552**	0.087	-0.011
	(0.130)	(0.266)	(0.161)	(0.353)
Bonus (Gain Framing) (α_2)	-0.126	-0.477	-0.0204	-0.153
	(0.214)	(0.346)	(0.199)	(0.431)
Bonus (Loss Framing) (α_3)	0.001	-0.200	-0.217	-0.441
	(0.208)	(0.355)	(0.185)	(0.438)
Constant	5.605***	5.939***	6.766***	7.805***
	(0.596)	(1.981)	(0.440)	(1.782)
N	268	67	256	64
R^2	0.106	0.210	0.120	0.263

Note: In columns 1 and 3, the dependent variable is *individual* output defined as the number of completed wires by subject. In columns 2 and 4, the dependent variable is *group* output defined as the number of bracelets (i.e., the minimum number of completed wires) made by a group.The control variables include age, Hindu, dummy for H type, dummy for M type, and dummies for primary schooling complete, native state Bihar and currently employed. The estimates of these control variables are omitted for brevity but are similar to those in the analysis of robustness checks reported in Tables A3 and A4.Standard errors clustered at the session level are reported in parentheses (except in columns 2 and 4 where the unit of analysis is the group). Significant at *10%, **5%, and ***1%.

Table 4: Impact of group composition on coordination (unconditional estimates)

	Men		Women	
	Excess Individual Output	Within-Group Output Dispersion	Excess Individual Output	Within-Group Output Dispersion
	(1)	(2)	(3)	(4)
Socially Connected (α_1)	-0.461***	-0.317**	0.281	-0.029
	(0.154)	(0.127)	(0.237)	(0.179)
Bonus (Gain Framing) (α_2)	0.155	0.014	0.220	-0.047
	(0.198)	(0.165)	(0.292)	(0.218)
Bonus (Loss Framing) (α_3)	0.063	-0.072	0.224	0.006
	(0.192)	(0.169)	(0.330)	(0.222)
Constant	1.464***	0.798	-0.231	0.361
	(0.530)	(0.946)	(0.545)	(0.903)
N	268	67	256	64
R^2	0.091	0.138	0.107	0.148

Note: In columns 1 and 3, the dependent variable is the excess *individual* output defined as individual output minus group output. In columns 2 and 4, the dependent variable is within-*group* output dispersion defined as the standard deviation of individual output within a group.The control variables include age, Hindu, dummy for H type, dummy for M type, and dummies for primary schooling complete, native state Bihar and currently employed. The estimates of these control variables are omitted for brevity but are similar to those in the analysis of robustness checks reported in Tables A3 and A4.Standard errors clustered at the session level are reported in parentheses (except in columns 2 and 4 where the unit of analysis is the group). Significant at *10%, **5%, and ***1%.

Table 5: Impact of group composition on output by incentive (conditional estimates)

	Men		Women	
	Individual Output	Group Output	Individual Output	Group Output
	(1)	(2)	(3)	(4)
Socially Connected (β_1)	0.553	1.123**	0.175	0.012
	(0.333)	(0.555)	(0.297)	(0.718)
Bonus (Gain Framing) (β_2)	-0.004	-0.361	0.043	-0.127
	(0.322)	(0.421)	(0.288)	(0.578)
Bonus (Gain Framing) x Socially Connected (β_3)	-0.335	-0.458	-0.163	0.182
	(0.409)	(0.675)	(0.384)	(0.872)
Bonus (Loss Framing) (β_4)	0.360	0.154	-0.182	-0.412
	(0.318)	(0.421)	(0.285)	(0.614)
Bonus (Loss Framing) x Socially Connected (β_5)	-0.822**	-0.991	-0.0946	0.040
	(0.404)	(0.681)	(0.350)	(0.878)
Constant	5.522***	6.357***	6.846***	7.776***
	(0.592)	(1.902)	(0.460)	(1.896)
P-values of F tests				
Impact of Bonus framing relative to Piece Rate :				
Impact of gain framing conditional on Soc. Con. ($\beta_2 + \beta_3$)	0.160	0.141	0.639	0.935
Impact of loss framing conditional on Soc. Con. ($\beta_4 + \beta_5$)	0.037	0.151	0.197	0.569
Impact of Social Connectedness *conditional on framing*:				
Conditional on gain framing ($\beta_1 + \beta_3$)	0.298	0.101	0.967	0.735
Conditional on loss framing ($\beta_1 + \beta_5$)	0.150	0.738	0.704	0.922
N	268	67	256	64
R^2	0.127	0.242	0.119	0.223

Note: as elucidated in Table 3 above.

Table 6: Impact of group composition on coordination by incentive (conditional estimates)

	Men		Women	
	Excess Individual Output	Within-Group Output Dispersion	Excess Individual Output	Within-Group Output Dispersion
	(1)	(2)	(3)	(4)
Socially Connected (β_1)	-0.269	-0.339	0.380	0.099
	(0.320)	(0.270)	(0.586)	(0.357)
Bonus (Gain Framing) (β_2)	0.270	0.002	0.256	0.015
	(0.294)	(0.205)	(0.267)	(0.287)
Bonus (Gain Framing) x Socially Connected (β_3)	-0.260	0.028	-0.145	-0.213
	(0.387)	(0.329)	(0.659)	(0.433)
Bonus (Loss Framing) (β_4)	0.154	-0.080	0.300	0.084
	(0.273)	(0.205)	(0.337)	(0.305)
Bonus (Loss Framing) x Socially Connected (β_5)	-0.232	0.025	-0.225	-0.197
	(0.356)	(0.332)	(0.712)	(0.436)
Constant	1.366**	0.821	0.126	0.277
	(0.522)	(0.927)	(0.549)	(0.942)
P-values of F-tests				
Impact of Bonus framing relative to Piece Rate:				
Impact of gain framing conditional on Soc. Con. ($\beta_2+\beta_3$)	0.968	0.912	0.855	0.553
Impact of loss framing conditional on Soc. Con. ($\beta_4+\beta_5$)	0.749	0.845	0.905	0.728
Impact of Social Connectedness *conditional on framing*:				
Conditional on gain framing ($\beta_1+\beta_3$)	0.039	0.115	0.472	0.689
Conditional on loss framing ($\beta_1+\beta_5$)	0.011	0.110	0.696	0.707
N	268	67	256	64
R^2	0.091	0.138	0.084	0.136

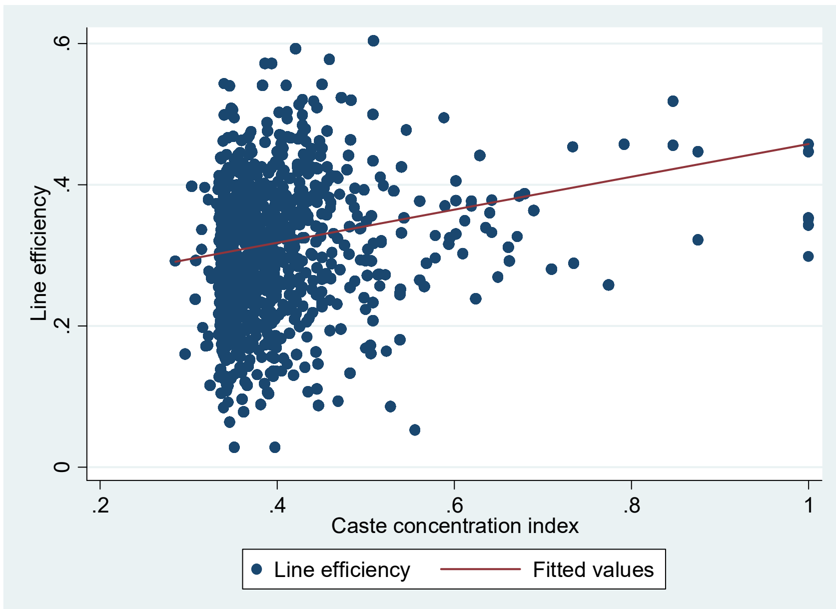
Note: as elucidated in Table 4 above.

Table 7: Strength of social ties by gender in the mixed-gender piece-rate sessions

Characteristics	Men	Women	Difference
	[N=60]	[N=60]	
	(1)	(2)	(1) – (2)
Age (years)	31.22	32.45	-1.23
			(1.208)
Hindu	0.83	0.83	0.00
			(0.069)
Married	0.73	0.93	-0.20***
			(0.066)
Completed high school or more	0.18	0.10	0.08
			(0.064)
Migrant from Bihar	0.67	0.80	-0.13
			(0.080)
Currently employed	0.98	0.95	0.03
			(0.033)
Found task easy	0.70	0.77	-0.07
			(0.081)
Knew at least one team member by name	0.40	0.45	-0.05
			(0.091)
Years married (if married)	12.41	16.57	-4.16***
	[N=44]	[N=56]	(1.245)
No. of children (if ever married)	2.18	2.46	-0.27
	[N=44]	[N=57]	(0.236)
Number of other subjects known by name	0.62	0.73	-0.12
			(0.176)
Number of months knew subject	30.35	31.77	-1.42
			(13.127)
Knew subject before migrating	0.34	0.36	0.35
			(0.043)
Migrated together with known subject	0.00	0.03	-0.03
			(0.026)
Known subject is a friend of family	0.17	0.25	0.21
			(0.306)
Knows subject through spouse	0.26	0.33	-0.07
			(0.081)
Discuss personal issues with known subject	0.13	0.24	-0.17
			(0.069)*

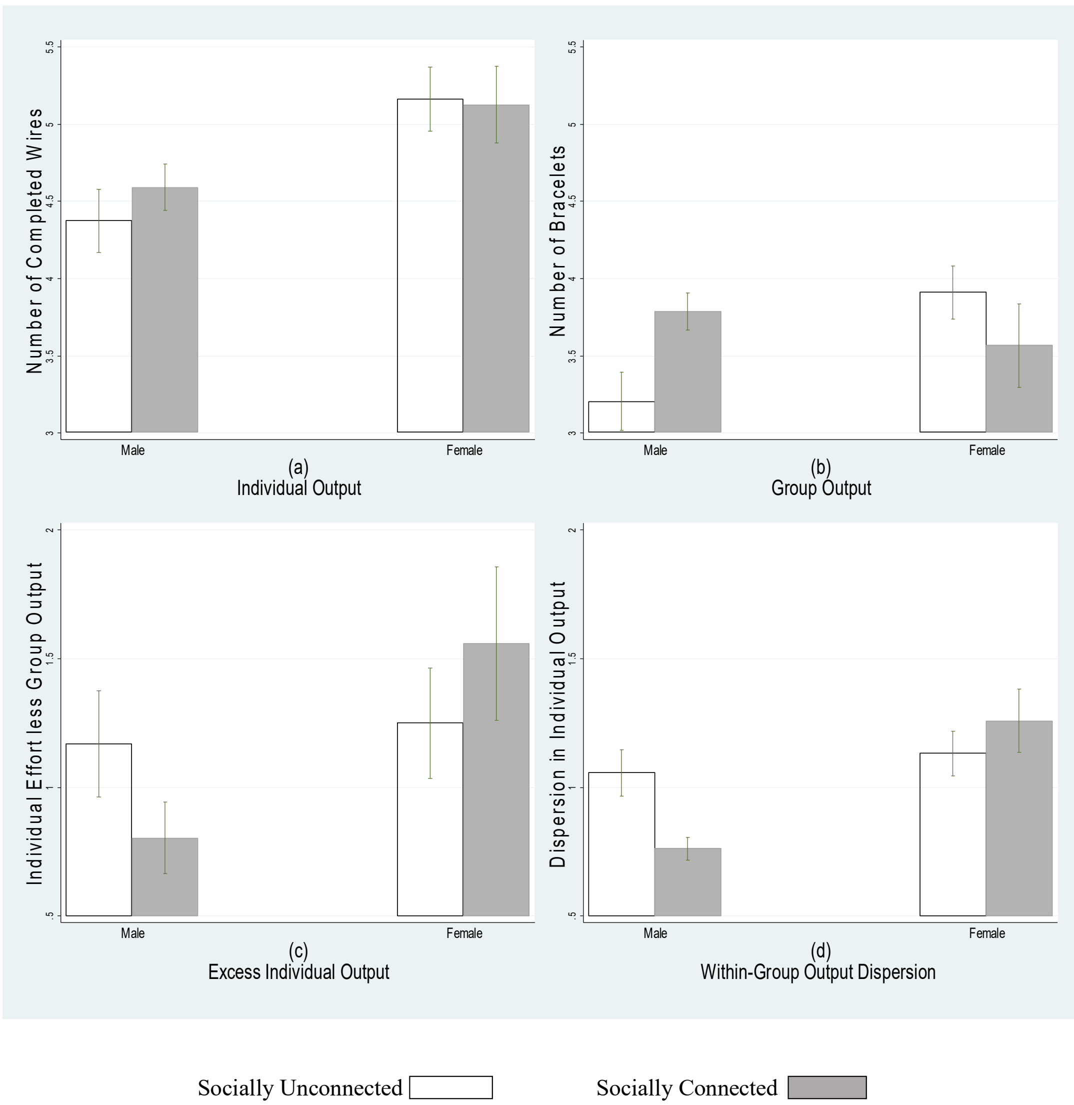
Note: The sample consists of subjects in the mixed-gender piece-rate sessions in the additional experiment. Standard errors are reported in parentheses. Significant at *10%, **5%, and ***1%.

Figure 1: Caste concentration and line level efficiency (garment factory data)



Note: The scatter plot was constructed based on the authors' worker survey and productivity data gathered from 2 garment factories in Delhi, India's National Capital Region, during September and October 2015 for a sample 868 assembly line days. Each observation, thus, represents an assembly line on a day. The caste concentration index is defined as $\sum c_i^2$, i.e. the sum of squared share of each caste group (L, M, or H) among the workers in an assembly line on a day. Line efficiency is the average worker productivity in an assembly line on a day.

Figure 2: Output and coordination by group composition and gender



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APPENDIX A

Proof of Claim 1

We use two lemmas to prove Claim 1

We show the equilibria in the unconnected game in the following lemma:

Lemma 1 *(1) Assume that* $D > \frac{c}{a}$. *There are two pure strategy equilibria -* $(\bar{e}, \bar{e})$ *and* $(\underline{e}, \underline{e})$. *Worker* i *strictly prefers to play* $\bar{e}$ *when the opponent has a probability* $p_j \geq \underline{p}^U = \frac{c}{Da}$ *of playing* $\bar{e}$. *If* $\frac{c}{a} < \frac{D}{2}$, *then the high effort equilibrium is risk dominant. Moreover as the piece rate, D increases, the probability of playing the high effort equilibrium increases. (2) Assume that* $D < \frac{c}{a}$, *then there is a unique low effort equilibrium in this game.*

Proof (1) The condition we need is: $D(p_j\bar{e} + (1 - p_j)\underline{e}) - \frac{c\bar{e}}{a} > (D - \frac{c}{a})\underline{e}$. This is true iff $p_j \geq \underline{p}^U = \frac{c}{Da}$. Risk dominance requires $\underline{p}^U < \frac{1}{2}$ and this is the case iff $\frac{c}{Da} < \frac{1}{2}$, or $\frac{c}{a} < \frac{D}{2}$. $\frac{\partial \underline{p}^U}{\partial D} = -\underline{p}^U \frac{1}{D^2}$, so as piece rates increase, $\underline{p}^U$ decreases. (2) Assume that the opponent is playing $\bar{e}$. If $D < \frac{c}{a}$, then playing $\bar{e}$ gives a payoff of $(D - \frac{c}{a})\bar{e} < 0$ while playing $\underline{e}$ gives a payoff of $(D - \frac{c}{a})\underline{e} > (D - \frac{c}{a})\bar{e}$. Suppose the opponent plays $\underline{e}$ then playing $\underline{e}$ gives a payoff of $(D - \frac{c}{a})\underline{e}$ while deviating to $\bar{e}$ gives a payoff of $D\underline{e} - \frac{c}{a}\bar{e} < (D - \frac{c}{a})\underline{e}$.

■

We now show the equilibria in the connected game:

Lemma 2 *(1a) Assume that* $D + G > \frac{c}{a} > G$. *There are two pure strategy equilibria -* $(\bar{e}, \bar{e})$ *and* $(\underline{e}, \underline{e})$. *Worker i strictly prefers to play* $\bar{e}$ *when the opponent has a probability at least* $\underline{p}^C = \frac{1}{D}(\frac{c}{a} - G) > 0$ *of playing* $\bar{e}$. *Moreover* $\frac{\partial \underline{p}^C}{\partial D} < 0$. *As financial incentives increase, the probability of reaching the high effort equilibrium increases. (1b) Assume that* $G > \frac{c}{a}$. *Then there is a unique high effort equilibrium. (1c) If* $\frac{D}{2} + G \geq \frac{c}{a}$, *the high effort equilibrium is risk dominant.*

(2) Assume that $D + G < \frac{c}{a}$, *then there is a unique low effort equilibrium in this game.*

Proof (1a) It is easy to check that there are two pure strategy Nash equilibria. For the high effort equilibrium to be played by i, beliefs on high effort, p_j must satisfy: $D(p_j\bar{e} + (1 - p_j)\underline{e}) - (\frac{c}{a} - G)\bar{e} > (D + G - \frac{c}{a})\underline{e}$. This is true iff $p_j \geq \underline{p}^C = \frac{c}{Da} - \frac{G}{D}$. Moreover, $\frac{\partial \underline{p}^C}{\partial D} = -\underline{p}^C \frac{1}{D^2} < 0$.

(1b) is obvious.

The high effort equilibrium is risk dominant iff $\underline{p}^C \leq \frac{1}{2}$, i.e. iff $\frac{D}{2} + G \geq \frac{c}{a}$,

(2) We show first that there is no high effort equilibrium. Assume that the opponent plays $\bar{e}$ then the payoff from $\bar{e}$ is $(D + G - \frac{c}{a})\bar{e}$, while the payoff from $\underline{e}$ is higher

at $(D+G-\frac{c}{a})\underline{e}$. The low effort equilibrium exists if $D\underline{e}+(G-\frac{c}{a})\underline{e} > D\underline{e}+(G-\frac{c}{a})\bar{e}$, i.e. $\frac{c}{a} > G$, which is satisfied whenever $\frac{c}{a} > D+G$.

■

The proof of Claim 1 follows from the two lemmas.

■

Extensions

Extending the result to many players and a continuum of effort levels is more complicated. However it is well known that the risk dominant equilibrium in a 2X2 game coincides with the one that maximizes the "potential" of the game (Young (1993)). Andersen, Goeree and Holt (2001) generalised the concept of risk dominance for games with more than 2 players and more than two effort (but finite) levels. They use the idea of potential games adapted to the minimum effort game (Monderer and Shapley (1996)), but add some noise in players' behaviour. They show that the resulting refinement of Nash equilibrium- the "logit equilibrium" for the minimum effort game is unique and symmetric and maximizes the stochastic potential of a game. Chen and Chen (2011) further adapt the concept of a stochastic potential game to study a minimum effort game where players can be "in group", "neutral" or "outgroup". The adapted minimum effort game with a continuum of effort levels and $n > 1$ players is a potential game according to the Monderer and Shapley (1996) definition and has the potential function shown in equation (5) of Chen and Chen (2011) and reproduced below. Let $e_j \geq 0$ denote worker j's effort in the group:

$$P(e_1, e_2, ..., e_n) = D\min(e_1, e_2, ..., e_n) - \frac{c}{a}\sum_{1}^{n}(1-G)e_i \tag{4}$$

where $G > 0$ denotes the level of altruism in the group according to Chen and Chen (2011). They assume that the in-group has a higher G than the neutral group which has a higher G than the outgroup. $D > 0$ represents any incentive payments as before. We can use the unique potential maximizing equilibrium as our prediction for the case of many effort levels, our predictions would be the same as Chen and Chen (2011). However we interpret G as being higher when people are socially connected , rather than having the same identity- denoting G^C as the parameter for a connected group and G^U for an unconnected group we assume that $G^C > G^U$. We would get qualitatively the same results with an alternative utility function used in Chen and Chen (2011) -players utility is a convex combination of own and other's payoffs with weights, $\alpha > 0$ on the other player's payoff. Thus $U_i = DY - \frac{c}{a}(\alpha e_j + (1-\alpha)e_i)$. The higher is α the greater the degree of altruism or pro-social motivation towards the other player in the connected group. Our Claim (1) then follows from Chen and Chen (2011).

APPENDIX B

Table A1: Summary statistics by group composition

Characteristics	**All**	**Socially Connected**	**Socially Unconnected**	**Difference**
	[N=524]	[N=252]	[N=272]	
	(1)	(2)	(3)	(3) – (2)
Age (years)	29.128	29.020	29.228	0.208
	(0.291)	(0.426)	(0.398)	(0.583)
Woman	0.489	0.476	0.500	0.024
	(0.022)	(0.032)	(0.030)	(0.044)
Hindu	0.935	0.921	0.949	0.028
	(0.011)	(0.017)	(0.013)	(0.022)
Married	0.815	0.810	0.820	0.010
	(0.017)	(0.025)	(0.023)	(0.034)
Completed high school	0.197	0.218	0.176	-0.042
or more	(0.017)	(0.026)	(0.023)	(0.035)
Migrant from Bihar	0.685	0.651	0.716	0.066
	(0.020)	(0.030)	(0.027)	(0.041)
Currently employed	0.945	0.952	0.938	-0.015
	(0.010)	(0.013)	(0.015)	(0.020)
No. of beaded wires	4.805	4.845	4.768	-0.077
	(0.053)	(0.073)	(0.078)	(0.107)
Found task easy	0.737	0.738	0.735	-0.006
	(0.019)	(0.027)	(0.026)	(0.038)
Knew at least one team	0.515	0.861	0.195	-0.666***
member by name	(0.022)	(0.022)	(0.024)	(0.033)
Number of co-workers	1.067	1.889	0.305	-1.583***
known by name	(0.053)	(0.069)	(0.044)	(0.080)
Caste dispersion in a	0.634	0.000	1.222	-1.222***
session	(0.028)	(0.000)	(0.018)	(0.018)

Note: Standard errors are reported in parentheses. t tests of differences reported in last column. Significant at *10%, **5%, and ***1%.

Table A2: Summary statistics by financial incentive

Characteristics	Piece Rate	Bonus with Gain Framing	Bonus with Loss Framing
	[N=120]	[N=204]	[N=200]
	(1)	(2)	(3)
Age (years)	28.58	29.67	28.9
	(0.582)	(0.463)	(0.485)
Woman	0.47	0.51	0.48
	(0.046)	(0.035)	(0.035)
Hindu[a]	**0.88**	**0.92**	**0.98**
	(0.029)	**(0.019)**	**(0.010)**
Married	0.79	0.84	0.80
	(0.037)	(0.026)	(0.028)
Competed high school or more	0.18	0.19	0.22
	(0.035)	(0.027)	(0.029)
Migrant from Bihar[b]	**0.59**	**0.73**	**0.70**
	(0.045)	**(0.031)**	**(0.032)**
Currently employed	0.96	0.96	0.92
	(0.018)	(0.014)	(0.019)
No. of beaded wires	4.883	4.819	4.745
	(0.122)	(0.086)	(0.812)
Found task easy	0.73	0.78	0.70
	(0.041)	(0.029)	(0.033)
Knew at least one team member	0.54	0.51	0.51
by name	(0.046)	(0.035)	(0.035)
Number of co-workers known	1.092	1.103	1.015
by name	(0.110)	(0.087)	(0.084)
Caste dispersion in a session	0.70	0.57	0.66
	(0.060)	(0.043)	(0.047)

Note: Standard errors are reported in parentheses. t tests of differences reported in last column. Statistically significant differences between incentives are highlighted in bold.For example, the fraction of Hindu subjects and the fraction of migrants from Bihar are both significantly lower in Piece Rate than in Loss Framing ($p < 0.01$ for Hindu and $p < 0.05$ for migrants from Bihar).

Table A3: Effect of group composition on output with additional controls

	Men		Women	
	Individual Output	Group Output	Individual Output	Group Output
	(1)	(2)	(3)	(4)
Socially Connected	0.115	0.562**	0.090	0.036
	(0.130)	(0.246)	(0.181)	(0.370)
Bonus as gain framing	-0.103	0.000	-0.162	-0.545
	(0.214)	(0.000)	(0.229)	(0.993)
Bonus as loss framing	0.009	0.254	-0.370*	-0.829
	(0.204)	(0.288)	(0.196)	(0.962)
Age	-0.039***	-0.044	-0.053***	0.046
	(0.012)	(0.040)	(0.015)	(0.055)
Married	0.106	0.127	0.247	-1.972**
	(0.172)	(0.669)	(0.243)	(0.983)
Hindu	-0.466	-1.296**	-0.360	-2.523***
	(0.298)	(0.604)	(0.262)	(0.779)
Currently employed	0.054	-0.042	0.353	0.270
	(0.487)	(0.999)	(0.275)	(0.743)
Primary education	0.282	-0.558	-0.427**	-0.552
	(0.169)	(0.589)	(0.178)	(0.588)
Migrant from Bihar	0.290**	0.554	0.019	-0.328
	(0.135)	(0.381)	(0.163)	(0.574)
Done similar task	-0.409	-0.889	-0.222	-0.892
	(0.263)	(1.058)	(0.211)	(0.612)
June	0.000	0.437	-0.346	-0.934
	(0.000)	(0.398)	(0.356)	(1.180)
July	-0.120	-0.192	-0.125	-0.154
	(0.148)	(0.289)	(0.205)	(0.453)
H type	-0.377	-1.063**	0.323	0.827
	(0.237)	(0.452)	(0.237)	(0.739)
M type	0.114	-0.142	0.119	-0.745
	(0.191)	(0.444)	(0.187)	(0.596)
Constant	5.758***	5.684***	6.916***	8.152***
	(0.614)	(1.441)	(0.520)	(1.585)
N	268	67	256	64
R^2	0.124	0.245	0.128	0.315

Note: Standard errors clustered at the session level are reported in parentheses (except in columns 2 and 4 where the unit of analysis is the group). Significant at *10%, **5%, and ***1%.

Table A4: Effect of group composition on coordination with additional controls

	Men		Women	
	Excess Individual Output	Within-Group Output Dispersion	Excess Individual Output	Within-Group Output Dispersion
	(1)	(2)	(3)	(4)
Socially Connected	-0.460***	-0.322**	0.286	-0.026
	(0.156)	(0.130)	(0.259)	(0.201)
Bonus as gain framing	0.099	0.000	0.298	0.143
	(0.221)	(0.000)	(0.676)	(0.499)
Bonus as loss framing	0.009	-0.074	0.272	0.173
	(0.218)	(0.128)	(0.684)	(0.484)
Age	-0.030***	0.006	-0.054***	-0.024
	(0.010)	(0.019)	(0.016)	(0.027)
Married	0.142	-0.135	0.984***	0.749
	(0.167)	(0.264)	(0.337)	(0.522)
Hindu	0.163	0.307	1.580***	0.671*
	(0.273)	(0.235)	(0.341)	(0.382)
Currently employed	0.0234	-0.085	0.295	0.158
	(0.473)	(0.523)	(0.281)	(0.396)
Primary education	0.459**	0.184	-0.220	0.153
	(0.192)	(0.299)	(0.212)	(0.296)
Migrant from Bihar	0.080	-0.118	0.111	-0.067
	(0.162)	(0.148)	(0.191)	(0.315)
Done similar task	-0.081	0.574	0.0945	0.275
	(0.236)	(0.545)	(0.181)	(0.310)
June	0.000	-0.028	-0.012	0.262
	(0.000)	(0.188)	(0.793)	(0.612)
July	0.094	0.056	-0.224	-0.106
	(0.159)	(0.128)	(0.279)	(0.244)
H type	-0.021	0.190	0.064	-0.549
	(0.199)	(0.269)	(0.272)	(0.401)
M type	0.138	0.116	0.544**	0.186
	(0.170)	(0.215)	(0.248)	(0.287)
Constant	1.521***	0.651	-0.287	0.255
	(0.526)	(0.730)	(0.876)	(0.778)
N	268	67	256	64
R^2	0.093	0.203	0.113	0.189

Note: Standard errors clustered at the session level are reported in parentheses (except in columns 2 and 4 where the unit of analysis is the group). Significant at *10%, **5%, and ***1%.

Table A5: Individual output and coordination in mixed- and pure-gender sessions (Piece rate incentive)

	Men		Women	
	Individual Output	Excess Individual Output	Individual Output	Excess Individual Output
	(1)	(2)	(3)	(4)
Socially Connected (γ_1)	0.676*	-0.162	0.174	0.598
	(0.379)	(0.322)	(0.313)	(0.528)
Mixed gender (γ_2)	0.560*	-0.396	0.169	0.164
	(0.317)	(0.299)	(0.345)	(0.311)
Mixed gender x Soc. Con. (γ_3)	-0.774*	0.358	-0.187	-0.341
	(0.422)	(0.371)	(0.415)	(0.613)
Constant	5.929***	2.497***	6.117***	1.605***
	(0.838)	(0.868)	0.639	0.736
N	124	124	116	116
R^2	0.148	0.107	0.080	0.085

Note: The sample of analysis consists of the piece rate sessions including 30 mixed-gender and 30 pure-gender sessions. Other control variables include dummies for H and M, age, Hindu, employment status, primary education, and migrant from Bihar. Standard errors clustered at the session level are reported in parentheses.Significant at *10%, **5%, and ***1%.

Table A6: Group output and coordination in mixed and pure gender sessions (Piece rate incentive)

Group output	Men			Women		
	Pure	Mixed	P-value	Pure	Mixed	P-value
	(1)	(2)	(1)-(2)	(3)	(4)	(3)-(4)
Socially Connected	4.00 [N=7]	3.93 [N=15]	0.845	3.833 [N=6]	3.933 [N=15]	1.000
Socially Unconnected	3.22 [N=9]	4.20 [N=15]	0.062	4.25 [N=8]	4.2 [N=15]	0.777

Within-group output dispersion	Men			Women		
	Pure	Mixed	P-value	Pure	Mixed	P-value
	(1)	(2)	(1)-(2)	(3)	(4)	(3)-(4)
Socially Connected	0.837 [N=7]	0.965 [N=15]	0.392	1.354 [N=6]	0.965 [N=15]	0.255
Socially Unconnected	1.102 [N=9]	1.054 [N=15]	0.275	1.074 [N=8]	1.054 [N=15]	0.105

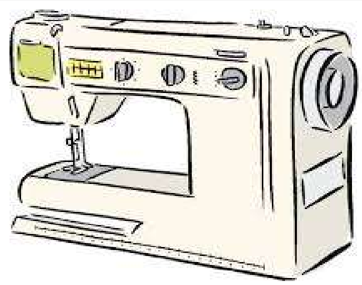
Note: Group means are reported with *p*-values from the two sample Wilcoxon rank-sum test. The numbers of sessions are in square brackets.

Table A7: Summary statistics by gender in pure-gender and piece-rate sessions

Characteristics	Men	Women	Difference
	[N=64]	[N=56]	
	(1)	(2)	(1) – (2)
Age (years)	28.44	28.75	-0.31
			(1.171)
Hindu	0.78	1.00	-0.22***
			(0.056)
Married	0.69	0.91	-0.22***
			(0.072)
Completed high school or more	0.20	0.16	0.04
			(0.034)
Migrant from Bihar	0.66	0.52	0.14
			(0.090)
Currently employed	0.97	0.95	0.02
			(0.037)
Found task easy	0.72	0.73	-0.01
			(0.082)
Knew at least one team member by name	0.42	0.68	-0.26**
			(0.089)

Note: Standard errors are reported in parentheses. t tests of differences reported in last column. Significant at *10%, **5%, and ***1%.

Figure A1: Recruitment advertisement



ATTENTION!!!

OPERATORS/ TAILORS/HELPERS/PRESSMEN!!!

Garment factory operators, helpers and pressmen volunteers are required for a training-cum-research project. Participants will receive Rs.200 as show-up payment and can earn between Rs. 500-1000 in 30 to 45 minutes on the spot. Please register yourself by calling on following numbers:

9205369718

8800254317

Figure A2: A finished bracelet

APPENDIX C

EXPERIMENT INSTRUCTION MANUAL

I. **Setting of the "lab"**

The lab consists of 4 work stations, numbered 1-4 from the extreme left of the room. In each work station there is a covered bowl of beads of a single color (white, red, green or blue) and a bundle of wires. Each bundle consists of 10 wires, each 20 cms. in length and with one end twisted. All wires are of the same color (or distribution of colors) across work stations. Works stations are separated by curtains.

4 workers of the same sex in each session.

Before the 4 workers enter the 'lab' they are randomly handed an ID number between 1 to 4 (in a folded piece of paper) by the experimenter at the door. The worker takes this into the lab, opens the paper and shows it to the experimenter inside the lab. The experimenter seats the worker in the assigned work station. (Note: There is a fixed mapping of IDs to bead colors: 1=red, 2=green, 3=blue, 4=white).

II. Experimental Instructions:

(Notes for experimenters: Once the workers are seated by their ID numbers, ask the workers to keep the ID numbers to themselves, and not to show it to others. Go over the instructions and answer questions when everyone can see everyone else (DO NOT DRAW CURTAINS UNTIL EXPERIMENT BEGINS).

General Information:

Welcome! Today you are going to be a part of an experiment which will take approximately 30 minutes of your time. From now on and till the end of the experiment you are not allowed to communicate with each other. You are requested to switch off your mobile phones. You may raise your hand whenever you have a doubt.

When you entered this room you were given a number. This is your experiment ID. Do not share this ID number with your team mates.

You will be receiving Rs. 200 for coming here as a participation fees. You can earn more by performing a simple task in the experiment. You will individually receive the entire amount at the end of the experiment.

Description of the Task

Your team will be making strings for a bracelet that will look like this (show a sample bracelet). For making strings for this bracelet a box of beads and a bundle of wires have been placed in front of you. Please pay attention to what I am about to explain. As you can see this bracelet comprises of 4 colored breaded strings: red, green, blue and white. You have been given 20cm long wires which are twisted at the end. You are supposed to bead the wires fully from the non-twisted end. Wires will be counted for payment only if they are completely filled like this (show one sample). After filling up the wire, twist the upper part like this so that beads don't fall. (Demonstrate using one of the wires). You can make as many strings as you want by using the beads and wires that have been provided to you.

Each individual has been allotted beads of a different colour. You are required to be seated at the place alloted you for the entire experiment and work with your own box of beads and wires. We will separate you all by drawing the curtains lying at your sides so that you can't see each others' beads color and output.

You will get ten minutes to do the task. In the end you will be informed about the number of strings of each colour but not about which one of you made which color strings. After leaving the experiment room you may discuss each other's output if you wish.

Payoffs

(**PIECE RATE**)

We will collect the filled wires by coming to you after your ten minutes are over while you remain seated. **Please keep in mind that you are required only to fill the wires to prepare strings and not assemble them to make a bracelet.** As you can see, for assembling wires into a braclet we need completely filled four wires, one of each colour. Every team member will recieve Rs. 100 for each bracelet. Everyone will be paid according to the team output.

(**GIVE TABLE BELOW TO EACH SUBJECT**)

No. of bracelets by team	Individual payoff (plus Rs 200 for participation)
1	Rs. 100
2	Rs. 200
3	Rs. 300
4	Rs. 400
5	Rs. 500
6	Rs. 600
7	Rs. 700
…	…

Now, I am going to give you few examples to help you understand your team output and individual earnings: (EXPERIMENTER PLEASE PROVIDE EACH WORKER WITH A SHEET OF PAPER AND A PENCIL).

1. Suppose a team beaded 7 red, 7 green, 8 blue and 6 white coloured strings fully.Using these beaded wires we can prepare only 6 bracelets. Therefore, this team will get 100*6=Rs. 600.

2. Now suppose, in the same example, one of the green string is incomplete. Even now we can prepare 6 bracelets and therefore everyone will get 100*6=Rs. 600 rupees.

3. Continuing with the first example, now suppose, one of the white string is incomplete. In this case, only 5 bracelets can be made using strings produced by the team. Therefore, eveyone will recieve 100*5=Rs. 500

Based on these examples, I will now ask you two questions. Please write your answers on the sheet provided to you. If you haven't understood or don't understand anything then please raise your hand.

Payoff Quiz

(Experimenter, ask the participants to write down their answers to these questions, and then check on their answers. Explain the payoff rule again if there is confusion/misunderstanding.)

1. Suppose a team beaded 8 red, 9 green, 7 blue and 7 white strings fully. What is the team output in terms of number of bracelets and hence the individual earnings? (excluding the Rs. 200)

(Answer: 100*7=Rs. 700)

2. In the same example consider the situation wherein two blue strings are incomplete. In this case how, what is the team output in terms of number of bracelets and individual payoff? (excluding the Rs. 200)

(Answer: 100*5=Rs.500)

[THE FOLLOWING INSTRUCTIONS REPLACED ABOVE FOR…]

(**BONUS WITH GAIN FRAMING**)

Every team member will recieve Rs.100 for each bracelet. Everyone will be paid according to the team output.For example, if team output can prepare 1 bracelet then eveyone will recieve Rs.100 each, or, if team output is for 5(or more) braclets then everyone will receive Rs.150 as bonus which will be over and above Rs.500. In such case individual earnings will be Rs.500 for 5 bracelets plus Rs.150 as bonus i.e. everyone in the team will earn Rs.650....(discuss payoff table)

(**GIVE TABLE BELOW TO EACH SUBJECT**)

No. of bracelets by team	Individual payoff(plus Rs. 200 for participation)
1	Rs. 100
2	Rs. 200
3	Rs. 300
4	Rs. 400
5	Rs. 500+Rs. 150=Rs. 650
6	Rs. 600+Rs. 150 =Rs. 750
7	Rs. 700 +Rs.150 =Rs. 850
……	…..

[(AFTER discussing payoffs) Experimenter shows four tokens of Rs.150 each which the subjects will be given if they meet the threshold to collect the bonus. Don't put the tokens on their desk.]

Now, I am going to give you few examples to help you understand your team output and individual earnings: (EXPERIMENTER PLEASE PROVIDE EACH WORKER WITH A SHEET OF PAPER AND A PENCIL).

1. Suppose a team beaded 7 red, 7 green, 8 blue and 6 white strings fully. Using these we can prepare only 6 bracelets and therfore, everyone in the team will receive 100*6 rupees plus 150 rupees as bonus. So, in total every individual in the team will receive Rs. 750.

2. Now suppose, in the same example, one of the green string is incomplete. In this case also, team output can prepare 6 bracelets and therefore, everyone in the team will recieve 100*6=Rs. 600 plus Rs. 150 bonus. So, in total every team member receives Rs. 750.

3. Continuing with the first example, now suppose, one of the white string is incomplete. In this case, only 5 bracelets can be made using strings produced by the team. Therefore, eveyone will recieve 100*5=Rs. 500 plus Rs. 150 as bonus. So, in total every team member receives Rs. 650.

4. Continuing with the above example, now, consider a situation in which only 4 white strings are complete. Now only 4 bracelets can be prepared and thus everyone will get Rs. 400. In this case, no one will receive the bonus.

Based on these examples, I will now ask you two questions. Please write your answers on the sheet provided to you. If you haven't understood or don't understand anything then please raise your hands.

Payoff Quiz

(Experimenter, ask the participants to write down their answers to these questions, and then check on their answers. Explain the payoff rule again if there is confusion/misunderstanding.)

1. Suppose a team beaded 8 red, 9 green, 7 blue and 7 white strings fully. What is the team output in terms of number of bracelets and hence the individual earnings? (excluding participation payoff of Rs. 200)

(Ans: 100*7=Rs. 700 + Rs. 150 as bonus = Rs. 850)

2. In the same example consider the situation wherein two blue strings are incomplete. In this case how, what is the team output in terms of number of bracelets and individual payoff? (excluding participation payoff of Rs. 200)

(Ans: 100*4=Rs. 400. No bonus)

[THE FOLLOWING INSTRUCTIONS REPLACED ABOVE FOR…]

(BONUS WITH LOSS FRAMING)

Every team member will recieve Rs. 100 for each bracelet.Everyone will be paid according to the team output and you can earn extra Rs. 150. For instance, if a team output can produce 5 complete bracelets then everyone will receive Rs. 500 plus Rs. 150 as the extra payment. But if team output is for less than 5 bracelets then the extra amount of Rs. 150 will be taken away from every individual. For instance, if team output is sufficient for making only 4 bracelets then every team member will receive Rs. 400 and the extra amount of Rs. 150 will be taken back. Or, let's say if team output is enough for only 3 bracelets then each team member will receive Rs. 300 and the extra amount of Rs. 150 will be taken back......(discuss payoff table)

(**GIVE TABLE BELOW TO EACH SUBJECT**)

No. of bracelets by team	Individual payoff(plus Rs. 200 for participation)
7	Rs. 700+ Rs. 150 = Rs. 850
6	Rs. 600+ Rs. 150 = Rs. 750
5	Rs. 500+ Rs. 150 = Rs. 650
4	Rs. 400
3	Rs. 300
2	Rs. 200
1	Rs. 100

[(AFTER discussing payoffs) Experimenter puts four coupons with Rs. 150 in each work station which the subjects are asked to use for getting the extra Rs. 150.]

Now I will give you few examples to explain the calculation of the team output and individual earnings: (EXPERIMENTER PLEASE PROVIDE EACH WORKER WITH A SHEET OF PAPER AND A PENCIL).

1. Suppose a team beaded 7 red, 7 green, 8 blue and 6 white fully. Using these we can produce 6 complete bracelets. Therefore, everyone in the team will receive 100*6= Rs. 600 along with extra amount of Rs.150. So, in total every team member receives Rs. 750.

2. Now suppose, in the same example, one of the green string is incomplete. In this case also, team output can prepare 6 bracelets and therefore, everyone in the team will recieve 100*6=Rs. 600 along with extra amount of Rs.150. So, in total every team member receives Rs. 750.

3. Continuing with the first example, now suppose, one of the white string is incomplete. In this case, only 5 bracelets can be made using strings produced by the team. Therefore, eveyone will recieve 100*5=Rs. 500 along with extra amount of Rs. 150. So, in total every team member receives Rs. 650.

4 Continuing with the above example, now, consider a situation in which only 4 white strings are complete. Now only 4 bracelets can be prepared and thus everyone will get Rs. 400 and extra amount of Rs. 150 will be taken back.

Based on these examples, I will now ask you two questions. Please write your answers on the sheet provided to you. If you haven't understood or don't understand anything then please raise your hands.

Payoff Quiz

(Experimenter, ask the participants to write down their answers to these questions, and then check on their answers. Explain the payoff rule again if there is confusion/misunderstanding.)

1. Suppose a team beaded 8 red, 9 green, 7 blue and 7 white strings fully. What is the team output in terms of number of bracelets and hence the individual earnings? (excluding participation payoff of Rs.200)

(Ans: 100*7=Rs. 700 + Rs. 150 extra = Rs. 850)

2. In the same example consider the situation wherein two blue strings are incomplete. In this case how, what is the team output in terms of number of bracelets and individual payoff? (excluding participation payoff of Rs. 200)

(Ans: 100*4=Rs. 400. In this case, extra amount of Rs. 150 will be taken back)

Now, I am going to announce your name and residence. Please raise your hand as your name is announced. If there is any error in the information then please get it corrected. You are not allowed to talk to each other.

(Notes for experimenters: Verify the information with each participant, and then continue onto the following instructions.)

All of you will get two minutes as practice time. Please fill only one wire for practice purpose. This string will not be counted in the final output. In case you experience any difficulty then please raise your hand without talking to each other.

We will be drawing the curtains now. You may open the boxes after you have been separated by the curtains and start practicing. (Experimenter, take away the practiced strings in an opaque manila envelope, and start the experiment by announcing the following reminder.)

You will now be given 10 minutes to string as many wires as you can to determine the final output.

You are again reminded that you will receive Rs. 200 for participation plus Rs. 100 for each complete bracelet. Your individual earnings depend upon the minimum number of one coloured strings produced by your team member.

[GAIN FRAMING: Please remember- you will receive Rs 200 for participation plus Rs. 100 for each complete bracelet. Your individual earnings depend upon the minimum number of one coloured strings produced by your team member. If the team output is sufficient for preparing 5 or more than 5 bracelets then everyone will receive a bonus of Rs. 150 as well.]

[LOSS FRAMING: Please remember- you will receive Rs. 200 for participation plus Rs. 100 for each complete bracelet. Your individual earnings depend upon the minimum number of one coloured strings produced by your team member. If the team output is sufficient for preparing 5 or more than 5 bracelets then everyone will receive an extra amount of Rs. 150 as well, otherwise extra amount of Rs. 150 will be taken away]

START STOPWATCH (Visible to all subjects)

(When time is up, experimenter collects the strings in a big, opaque, manila envelope. Experimenter closes bead bowls and removes wires and bowls from each work station. KEEP THE MANILA ENVELOPE IN THE ROOM ON THE TABLE VISIBLE TO ALL SUBJECTS.)

ANNOUNCE THIS PROCESS TO SUBJECTS IN THE SESSION TO ENSURE THAT THEY KNOW THEIR PERFORMANCE IS BEING KEPT PRIVATE AND IN THE ROOM.

"Please remain seated as I come to your place one by one to collect the beaded wires in this opaque envelope. It will be kept on this table."

III. Post-experiment questionnaire

Before counting the team output we request you to answer this questionnaire. Please tick the appropriate answers. In case you need any help in filling out the questionnaire then please raise your hand.

Experimenter goes over each question and checks all questions have been answered. Collects all filled up questionnaires

EXPERIMENTER REMOVES CURTAINS

THEN the envelope is opened in front of the 4 workers and the experimenter combines them into bracelets in front of the four workers. The workers are told about the productivity of each color (so they know the minimum number of strings being made in the group and hence the payoff). However, they are NOT told who made how many.

Experimenter announces payment of Rs. X+ Rs. 200 for each worker.

[GAINS FRAMING: Workers are asked to collect their coupons for bonus payment, if applicable.]

[LOSS FRAMING: Workers are asked to return coupons or take their coupons for bonus payment, whichever is applicable.]

Payments are made to workers in an envelope. They sign receipt sheet as they go out.

APPENDIX D
POST-EXPERIMENT SURVEY (PURE GENDER SESSIONS)

Date:__ __/ ____ /__ __ Session type: T1/T2/T3/T4 Session no. ☐☐

Your experiment ID ☐1 ☐2 ☐3 ☐4

1. **First name** ____________________________ **Title**________________________

2. Age(in yrs) ☐☐ 3. Gender ☐^{0}Female ☐^{1}Male

4. Marital Status ☐^{1} Married ☐^{2} Unmarried ☐^{3} Divorced ☐^{4} Widow/er ☐^{9} Other(specify)_____

5. Religion ☐^{1}Hinduism ☐^{2} Islam ☐^{3} Christianity ☐^{4}Sikhism ☐^{9}Other(specify)__________

6. Are you currently employed? ☐^{0} No ☐^{1} Yes

7. If yes, then, in which among the following?

   ☐^{1}Garment factory employee ☐^{2}Other factory employee(specify) _________
   ☐^{3}self employed ☐^{9}Other (specify)_______________

8. Current factory address: a. Factory name ________________________
   b. Plot number ________________________________
   c. Colony ________________________________

9. Literacy status: ☐^{0}Illiterate ☐^{1}5th std or less ☐^{2}6th to 10th std ☐^{3}11th to 12th std
   ☐^{4}B.A./B.Sc./B.Com. ☐^{5}M.A./M.Sc./M.Com ☐^{6} Vocational Training

10. Native address: a. Village____________________ b. District_________________________
    c. State______________________________

11. Current address: a. House No.______ b. Street No.________________
    c. Colony____________________ d. City________________________

12. Have you done beading beads into wire kind of task ever before?
    ☐^{0} No ☐^{1} Yes

13. Please rate today's task in terms of difficulty:
    ☐^{1} Very easy ☐^{2} Easy ☐^{3}Neither easy nor difficult ☐^{4} Difficult ☐^{5}Very difficult

14. Do you know any members from your team by name?
    ☐^{0} No ☐^{1} Yes

15. If yes, then please write their names and answer the following questions:

S.no.	a. Name	b. How do you know this person? (Tick as many as applicable)	c. In your opinion, in 10 mins, how many strings would have been completed by this person?	d. In your opinion, has this person ever done beading work?
1		☐[1] Neighbour ☐[2]Co-worker ☐[3]Relative ☐[4]Friend ☐[5] Other_____________		☐[0] No ☐[1] Yes ☐[9]Don't know
2		☐[1]Neighbour ☐[2]Co-worker ☐[3]Relative ☐[4]Friend ☐[5] Other _____________		☐[0] No ☐[1] Yes ☐[9]Don't know
3		☐[1] Neighbour ☐[2]Co-worker ☐[3]Relative ☐[4]Friend ☐[5] Other ______________		☐[0] No ☐[1] Yes ☐[9]Don't know

---

16. FOR EXPERIMENT INSTRUCTOR:

1. Is worker from our original sample? ☐[0] No ☐[1] Yes

2. If yes, note worker card no.

POST-EXPERIMENT SURVEY (MIXED GENDER SESSIONS)

Date:__ __/ ____ /__ __ Session type: T1/T2/T3/T4 Session no. ☐☐

Your experiment ID ☐1 ☐2 ☐3 ☐4

1. **First name** __________________________ **Title**______________________

2. Age(in yrs) ☐☐ 3. Gender ☐0Female ☐1Male

4. Marital Status ☐1 Married ☐2 Unmarried ☐3 Divorced ☐4 Widow/er ☐9Other(specify)_____
   4.a. If married, then for how many years?_______________
   4.b. How many children do you have?______________________

5. Religion: ☐1Hinduism ☐2 Islam ☐3 Christianity ☐4Sikhism ☐9Other(specify)__________

6. Are you currently employed? ☐0 No ☐1 Yes

7. If yes, then, in which among the following?
   ☐1Garment factory employee ☐2Other factory employee(specify) _________
   ☐3self employed ☐9Other (specify)_______________

8. Current factory address: a. Factory name ________________________
   b. Plot number ________________________________
   c. Colony _______________________________

9. Literacy status: ☐0Illiterate ☐1 5th std or less ☐2 6th to 10th std ☐3 11th to 12th std
   ☐4B.A./B.Sc./B.Com. ☐5M.A./M.Sc./M.Com ☐6 Vocational Training

10. Native address: a.Village____________________ b.District________________________
    c. State______________________________

11. Current address: a. House No.______ b. Street No.________________
    c. Colony___________________ d. City_________________________

12. Have you done beading beads into wire kind of task ever before?
    ☐0 No ☐1 Yes

13. Please rate today's task in terms of difficulty:
    ☐1 Very easy ☐2 Easy ☐3Neither easy nor difficult ☐4 Difficult ☐5Very difficult

14. Do you know any members from your team by name?
    ☐0 No ☐1 Yes

15. If yes, then please write their names and answer the following questions:

S.no.	a. Name	b. How do you know this person? (Tick as many as applicable)	c. Since how many long have you know this person	d. Did you get to know this person before/after migrating to Delhi?	e. If knew, before migration, then, did you migrated to Delhi with them?	f. Do your families know each other?	g. Did you get to know this person through your spouse?	h. Do you ever discuss personal matter with this person?	i. In your opinion, in 10 minutes, how many strings would have been completed by this person?	j. In your opinion, has this person ever done beading work?
1		☐[1] Neighbour ☐[2]Co-worker ☐[3]Relative ☐[4]Friend ☐[5]Other_________	___ (months) ____ (Years)	(0) Before migration (1)After migration	☐[0] No ☐[1] Yes	☐[0] No ☐[1] Yes	☐[0] Yes, through spouse ☐[1] No	☐[0] No ☐[1] Yes		☐[0] No ☐[1] Yes ☐[9]Don't know
2		☐[1] Neighbour ☐[2]Co-worker ☐[3]Relative ☐[4]Friend ☐[5] Other _________	___(months) ____ (Years)	(0) Before migration (1)After migration	☐[0] No ☐[1] Yes	☐[0] No ☐[1] Yes	☐[0] Yes, through spouse ☐[1] No	☐[0] No ☐[1] Yes		☐[0] No ☐[1] Yes ☐[9]Don't know
3		☐[1] Neighbour ☐[2]Co-worker ☐[3]Relative ☐[4]Friend ☐[5] Other _________	___(months) ____ (Years)	(0) Before migration (1)After migration	☐[0] No ☐[1] Yes	☐[0] No ☐[1] Yes	☐[0] Yes, through spouse ☐[1] No	☐[0] No ☐[1] Yes		☐[0] No ☐[1] Yes ☐[9]Don't know

16. FOR EXPERIMENT INSTRUCTOR:
    1. Is worker from our original sample? ☐[0] No ☐[1] Yes
    2. If yes, note worker card no
