SOCIAL IDENTITY, LEADERSHIP AND GROUP BEHAVIOR:
THEORY AND EXPERIMENTS

by

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A Dissertation
Submitted to the
Graduate Faculty
of
George Mason University
in Partial Fulfillment of
The Requirements for the Degree
of
Doctor of Philosophy
Economics

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Date: _____ Summer Semester 2021
George Mason University
Fairfax, VA

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A Dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at George Mason University

by

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## DEDICATION

This is dedicated to Maa, Santa Roy, for whom I am and for who this is.

## ACKNOWLEDGEMENTS

I would like to first thank my family, friends and well-wishers who have been the pillars of my life and have supported me in every way possible. I owe a deep gratitude to my advisor, Dr. Daniel Houser. This dissertation would not have been possible without his invaluable mentorship and encouragement. I would also like to thank my other committee members Dr. Cesar Martinelli, Dr. Johanna Mollerstrom and Dr. Thomas Stratmann for their valuable advice and help. Lastly, I am grateful to each member of the ICES family who have not only helped me but have also inspired and encouraged me throughout my dissertation journey.

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## ABSTRACT

SOCIAL IDENTITY, LEADERSHIP AND GROUP BEHAVIOR: THEORY AND EXPERIMENTS

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George Mason University, 2021

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Social identity has the potential of influencing economic decision-making and has become a defining feature of contemporary society. This dissertation focuses on the behavioral impact of social identity on group behavior and discusses how it can affect diversity, equity and inclusion in organizations and the society at large.

In chapter 1, I report data from a novel laboratory experiment designed to examine whether clientelism can be sustained as a political strategy, and whether social identity impacts the nature or efficacy of clientelism. Electoral clientelism or vote buying has been regarded as undermining democratic institutions and weakening the accountability of the state towards its citizens, especially the poor. Social identity as a form of political mobilization may contribute to this, enabling support to be won with clientelist transfers. Specifically, I design a voting and leadership game in order to examine whether individuals vote for clientelist allocations by a leader even at the

expense of more efficient and egalitarian allocations. The main finding is that group identity does not significantly impact the prevalence of clientelist plans. Leaders are more likely, however, to choose allocations that provide fewer benefits (lower rents) to themselves when they are part of the majority ingroup than when they are in the minority.

In chapter 2, I use a novel laboratory experimental design to study how group identity - both the leader's and the group's impact a leader's effectiveness. I report data from leader-follower games where the leader may or may not share a social identity with the rest of the group. The main findings are that outgroup leaders find it challenging to be as effective as ingroup leaders in encouraging cooperation because they are less likely to be followed and are also less motivated themselves. My results have important policy implications regarding equity concerns, cooperation within teams and breaking the shackles of discrimination and prejudice with more representation of minority groups in leadership positions.

In chapter 3, I present a multidisciplinary literature review on diversity, equity, and inclusion, especially in leadership. The many and various benefits of diversity, equity, and inclusion help us to understand that it is not only an ethical concern, but it is also advantageous and profitable to pursue a more diverse and inclusive culture in teams, workplaces, organizations, and societies. But attention to diversity, should not be simply about underrepresentation; it should not be limited to cataloging the presence or absence of leaders from diverse groups. It involves rephrasing the conversation about diversity and inclusion, and addressing biases, both conscious and unconscious that may hinder integration.

# CHAPTER 1: CLIENTELISM AND IDENTITY

## 1.1 Introduction

Electoral clientelism (vote buying) has been regarded as undermining democratic institutions and weakening the accountability of the state towards its citizens, especially the poor. Social identity as a form of political mobilization may contribute to this, enabling support to be won with clientelist transfers. This paper reports data from a novel laboratory experiment designed to examine whether clientelism can be sustained as a political strategy, and whether identity impacts the nature or efficacy of clientelism. Specifically, we design a voting and leadership game in order to examine whether individuals vote for clientelist allocations by a leader even at the expense of more efficient and egalitarian allocations. We find group identity does not significantly impact the prevalence of clientelist plans. Leaders are more likely, however, to choose allocations that provide fewer benefits (lower rents) to themselves when they are part of the majority in-group than when they are in the minority.

Electoral clientelism is the practice of providing personal favors in exchange for electoral support. In the recent years, the advances in the clientelist literature have significantly advanced our understanding of electoral practices both in countries that have experienced recent democratic transitions and in established democracies. Clientelist

exchanges have been documented in countries including Argentina, Bulgaria, Mexico, Guatemala, Brazil, the Philippines, Paraguay, Romania, Benin, and India (Diaz-Cayeros, Estévez, and Magaloni, 2016; Finan and Schechter, 2012; Stokes et al., 2013; Wantchekon, 2003).

One strand of literature examines clientelism as a form of inefficient redistribution which arises from the lack of credibility of political promises, with a direct tradeoff in using public resources for the broad public good or for targeted transfers to political supporters (Robinson and Verdier, 2013; Robinson and Torvik, 2005; Keefer and Vlaicu, 2008). Development initiatives are popular among both politicians and voters, yet many developing countries are littered with half-finished projects. Existing theories of politically motivated misallocation of public expenditure associated with distributive politics and clientelism explain the dilemma of unfinished projects as over- or under-spending on infrastructure in relation to private transfers (Keefer, 2007; Robinson and Verdier, 2013) or a dynamically inconsistent outcome of a collective choice process in contexts of limited resources, in which multiple political agents bargain over the distribution of a limited number of discrete, targeted projects (Williams, 2017).

Another strand of literature focuses on vote buying strategies at election times. These can be employed by challengers in addition to incumbents and need not be (exclusively) financed by public spending. This literature studies whether vote buying allows politicians to gain or remain in office while under-serving the poor, capturing private rents, and/or promoting elite interests (Stokes, 2007; Baland and Robinson, 2008; Hicken, 2011). Various studies have documented that a wide range of incentives can be

used in particularistic exchanges between politicians and voters, including one-off offers of money or goods (Brusco, Nazareno, and Stokes, 2004), administrative favors (Murillo and Calvo, 2014), jobs (Robinson and Verdier, 2013), land (Baland and Robinson, 2008; Larreguy, 2012), forbearance from prosecution for infractions (Aliaga-Linares, 2020). Nichter (2008) and Gans-Morse, Mazzuca, and Nichter (2014) propose a typology based on the behavior that is incentivized, including turning out, abstaining, or changing one's vote. Khemani (2013) has found robust empirical evidence consistent with such a theory that greater vote buying during elections is associated with weak performance of the governments which win those elections in delivering broad, pro-poor public services. The presence of rents from office, and social, economic, and political networks that make vote buying effective, may together encourage the persistence of an inefficient political equilibrium. Contenders entering the political market may invest in building support on the basis of vote buying, so that once in power they can get away with extracting high rents from public office. This argument has not been formally made in the clientelism or vote buying literature but is linked to other work on how outside options and benefits from holding office influence the pool of candidates and the effort exerted upon winning office (Caselli and Morelli, 2004; Messner and Polborn, 2004; Ferraz and Finan, 2008). Local political operatives in clientelist systems might be cultivated on the basis of their ability to target vote-buying offers to citizens that are more likely to reciprocate (as in the mechanism examined by Finan and Schechter, 2012).

Identity may play an important role in cultivating ties of political reciprocity to effectively implement clientelist strategies. Consistent with social identity theories (e.g.,

Tajfel and Turner, 1986), leaders may derive psychological benefits from favoring in-group members. There is broad evidence from several parts of the world that ethnic identity is used for political mobilization (Eifert, Miguel, and Posner, 2010; Chandra, 2007; Wilkinson, 2006). Many studies have pointed out that ethnically based parties or politicians tend to deliver goods to their own ethnic groups. For example, co-ethnics of the incumbent politicians are more likely to have pork barrel benefits (Fearon, 1999), preferential access to primary schooling (Kramon and Posner, 2013), superior infrastructure in their districts (Burgess et al. 2015), better health outcomes (Franck and Rainer 2012) or preferential access to foreign aid (Briggs 2014; Jablonski 2014). This would suggest a link between identity and clientelism, but such a link is not explicit in this literature.[1] Does identity play a distributive role alone, shaping which groups benefit disproportionately from public resources; or does it enable clientelism, with other associated costs of weak accountability or rent seeking by politicians, beyond unequal allocations across groups? This view suggests a novel explanation for the empirical observation that ethnic heterogeneity is associated with lower levels of broad public goods – that the association may be mediated by clientelism.

[1] Horowitz (2000) and Banerjee and Pande (2007) make a different argument for why identity-based political mobilization can be associated with weak governance and accountability—that voters systematically place greater weight on the identity of politicians than on specific aspects of performance in public office. See also survey experimental work of Dunning and Harrison (2010) and Long and Gibson (2012) for more nuanced evidence on voter evaluations and identity.

The observed empirical association between ethnic diversity and investments in broad public services, such as education and local infrastructure, has been typically attributed to lower willingness to contribute to public services in diverse societies (Habyarimana et al., 2007; Miguel and Gugerty, 2005; Alesina, Baqir, and Easterly, 1999). Parties try to attract votes along ethnic lines, while voters expect to obtain benefits targeting their ethnic groups (Bates, 1974; Chandra, 2007; Posner, 2005). A recent paper (Ejdemyr, Kramon, and Robinson, 2018) confirms that leaders seek to favor their co-ethnics with local public goods but also demonstrate that this only holds under certain conditions, namely, when ethnic groups are sufficiently segregated. When ethnic differences are paired up with wealth and income inequality between groups, clientelism tends to ensue. Countries where ethno-cultural differentiation is primarily vertical are characterized by a 'premise of inequality', suggesting that access to benefits is stratified by ethnic groups distinguished by wealth, power, and social standing (Gay, 2006; Lei and Vesely, 2010). In poor economies, where the bulk of financing for public services is not derived from broad-based taxes but is instead derived from more concentrated ownership of productive resources, or from international aid, a first-order problem driving poor public services has been characterized as weak accountability and rent seeking by leaders (Acemoglu, Robinson, and Torvik, 2013). In the context of between-group economic inequality, redistributive policies are not viewed as credible to voters of poor ethnic groups, and clientelist benefits become a particularly effective strategy to attract votes (Wang and Kolev, 2019). Does identity then enable political leaders to win support through clientelist targeting, at the expense of broader public services?

This paper designs a laboratory experiment to examine whether individuals would vote for clientelist allocations by a leader even at the expense of a more efficient and egalitarian public goods allocation and informs whether social identity may play a role in the answer to this question. In our experiment participants play a voting game in groups of five. One of the group members is assigned the role of leader, who implements one of three possible divisions of resources (money) among the group members. One of these is an equal split, and the other two are clientelist allocations, providing resources to the leader and only two other group members. In one the leader receives relatively more than the voters, while the reverse is true in the other. After the allocation is announced the four voters cast one ballot each either supporting or opposing the leader. If a leader is supported the leader earns additional money and remains leader, while if they do not find sufficient support they are removed from their position and a new leader is randomly chosen from the four voters.

Our experiment also includes an identity treatment, where prior to playing the voting game participants play a puzzle game meant to promote social identity (Eckel and Grossman, 2005). The purpose of these treatments is to determine, in relation to the baseline no-identity treatments, whether social identity considerations affect (i) the propensity of leaders to choose clientelist allocations and (ii) the propensity of voters to support leaders who embrace socially inefficient clientelism. We find that group identity does not significantly impact the prevalence of clientelist plans. Leaders are more likely, however, to choose allocations that provide fewer benefits (lower rents) to themselves when they are part of the majority in-group than when they are in the minority.

The following section describes the experimental design. Then, we propose hypotheses and provide the results in the next two sections. The last section concludes with thoughts on using this experiment to examine the role of identity in clientelism in relevant developing country contexts.

## 1.2 Experimental Design

We design an experiment to address two key research questions:

1. Do political leaders try to win support through clientelist targeting, at the expense of broader public services?

2. Does identity facilitate clientelism, with its associated costs of weak accountability and rent seeking by politicians?

Our design is as follows, and the experiment's instructions are provided in the Appendix.

First, a voting game was played in groups of five, and groups remained unchanged during an experimental session. Among the five group members, one is designated a 'leader' with the decision-making power over the choice between three competing resource allocation plans. The remaining four members of the group are designated 'voters', tasked with indicating whether they would vote for ('yes') or against ('no') the 'leader', after observing her selected plan and knowing their own earnings that result from that plan. A majority vote constitutes at least two votes from among the four voters.

It is worthwhile to make two comments regarding our experiment design. First, the framing in terms of leaders and voters is deliberate, as we are specifically interested

in drawing inferences in political contexts. Second, voting is retrospective in the sense that the leader's selected plan is implemented, and payoffs distributed accordingly, regardless of whether the leader receives a majority vote. Note that retrospective voting enables a strong clientelist manipulation, in that it allows us to discover whether voters are more likely to cast their vote for a candidate from whom they have already received definite benefits.

The three possible plans among which a designated group leader can choose are the following:

A. The efficient and egalitarian plan: 15 tokens to all five group members.

B. A clientelist plan with high rents to the leader: 30 tokens to the leader, and 10 each to two voters who are selected by the leader, with 0 to the remaining two voters.

C. A clientelist plan with low rents to the leader: 18 tokens to the leader, and 16 each to two voters who are selected by the leader, with 0 to the remaining two voters.

These plans were developed by the research team on the basis of an endowment of 50 tokens per group, which could be invested in a public good with a marginal benefit of 1.5 and a marginal per capita return of 0.3. Underpinning Plan A, the efficient and egalitarian plan, the background calculation is that the entire endowment would be invested in the public good, yielding 75 tokens to be distributed equally among the five group members. Plans B and C are two ways of distributing the 50 tokens as private transfers among a minimum winning coalition of three, with high and low rents to the leader, respectively, and nothing to the public good. Note that in Plan B all voters earn less than Plan A, but the favored voters do better than those who receive nothing. This

plan captures the idea that voters may believe that leaders will always maximize their own rents, and the only good alternative is to choose a leader who favors them through clientelism. Plan C reflects a clientelist allocation in which the leader commands fewer rents, and the favored voters earn more than under the egalitarian allocation. The ordering of these plans was randomized in each round of the game, so that designated leaders observed multiple ordering of the choices (and not typically in the particular ordering used above to describe the allocations).

In addition to the payoffs per the selected plan, if a leader wins a majority of votes (again, defined here as at least two votes out of the possible four), she receives an additional 10 tokens.

Each group plays the game for 20 rounds, with each round involving the leader selecting a plan, and voters voting 'yes' or 'no' for the leader. In the first 9 rounds, the leader has incumbent power and cannot be voted out, regardless of number of votes received. However, the leader's payoffs (an additional 10 tokens) still depend on receiving a majority of votes.[2] In the 10th round, if the leader does not win a majority of votes, she cannot be the leader in the 11th round; a new leader is selected randomly from among the four other members to serve as the leader in the 11th round, and so on until the last and 20th round. That is, from the 10th to the 19th round, majority votes matter for

[2] This is important to give consequence to voting decisions and understand voting behaviors in a group.

whether the leader can continue to exercise decision-making power over the allocation in the next round.

Individual voter decisions are anonymous – that is, no player can associate a 'yes' or 'no' vote with specific player identification numbers (other than their own). This makes it more difficult for a leader to forge a successful clientelist coalition: in the event that a clientelist allocation wins only one vote, the leader does not have information on which voter did not reciprocate (assuming that at least one voter did reciprocate, and that no excluded voter would have supported the plan). Individual voter anonymity was chosen to be more realistic about the technological constraints to vote buying and simulate an environment in which clientelism and vote buying is maintained through tacit agreements of reciprocity.

In our experiment an egotist leader can select the high-rent plan and get away with an additional rent in each round in the first ten of the game, even if she never wins a majority of votes: the minimum of 30 tokens in each round even without majority votes, versus the maximum possible 25 tokens with the efficient and fair allocation and majority votes. At the same time, if identity is salient and conducive to creating minimum winning coalitions, our design allows us to discover whether either of the clientelist plans is selected and rewarded by the targeted voters (the clients). We test for possible effects of identity in a laboratory setting with the following treatment.

### *1.2.1 The Identity Treatment*

Each session of the experiment involved gathering 10 participants. In six baseline sessions, the participants were anonymously divided into two groups for the voting game

described above. In seven identity treatment sessions, the ten participants began with an activity that aimed to build their identification to particular team members. They were first assigned to two identity-creating groups that would be engaged in solving a puzzle together. The puzzle solving task of Eckel and Grossman (2005) was used for this purpose of facilitating team identification. Participants were randomly assigned to be part of the Green or the Orange team – each composed of five team members – and separated by being placed in different rooms. Each Green (Orange) team member was given an envelope containing puzzle pieces from five equally sized Green (Orange) squares and was instructed to work together to construct five squares. Since each team member is unable to form a perfect square using only the pieces in her own envelope, she was required to interact with other team members to find the right pieces. Each team was given ten minutes to form five identical squares, and participants were told the team that did so first would earn an additional US$2 per team member. The winners (and losers) were not informed until the end of the experiment.

After this identity-creating task, the participants of the Green and Orange teams were pooled together and re-assigned to two different groups to continue with playing the voting game, as in the baseline. In the subsequent voting game under the seven identity-treatment sessions, three members would have one color-coded identity, while the remaining two would have the other color-coded identity. The color identity was made salient in the voting game by labeling each group member according to her color throughout the allocation game: Green team members were displayed in green boxes and

fonts while Orange team members were displayed in orange boxes and fonts. Gray boxes and black fonts were used in the baseline treatments.

The voting game was always played anonymously, on computer screens which showed identification numbers for all the players (and the color-code in the identity treatment), but no other information.

### *1.2.2 Voter Belief Elicitation Task*

Prior to the voting game, and after the identity-creating task in the treatment sessions, all participants were engaged in a voter belief elicitation task. This task is designed to allow individual voter beliefs to be examined separate from the group voting behavior that can be discovered in the voting game.

Each participant is asked how they believe the majority in the group would vote ('yes' or 'no') under each of five possible scenarios a voter could face in the voting game, depending on the leader's decisions:

1. If provided 15 tokens and all others are also provided 15 tokens
2. If provided 16 tokens, along with one other voter, while the remaining two voters receive 0, and the leader receives 18.
3. If provided 0 tokens, along with one other voter, while the remaining two voters receive 16 each, and the leader receives 18.
4. If provided 10 tokens, along with one other voter, while the remaining two voters receive 0, and the leader receives 30.
5. If provided 0 tokens, along with one other voter, while the remaining two voters receive 10 each, and the leader receives 30.

The questions were saliently rewarded in a way that encourages answers that reveal 'community' standards (Houser and Xiao, 2011). In particular, participants earned money in this portion of the task only if their answers are identical to that selected by the majority of participants. For example, here is how Plans 4 and 5, which represent possible outcomes if the leader chooses a Plan B allocation, were presented to each participant in the voter belief elicitation task, in both baseline and identity treatment sessions, before anybody in the group had been designated a leader:

***In this case, imagine you are Voter #1 or Voter #2 and you have been chosen by the leader to receive 10 tokens.***

| **ROUND EARNINGS PER MEMBER** | |
|---|---|
| **Leader** | **30** |
| **Voter#1** | **10** |
| **Voter#2** | **10** |
| **Voter#3** | **0** |
| **Voter#4** | **0** |

**Your vote:**

| **YES** | **NO** |
|---|---|

**Figure 1.1 (a)**. Plan 4 belief elicitation task screenshot.

***In this case, imagine you are Voter #3 or Voter #4 and you have been chosen by the leader to receive 0 tokens.***

| **ROUND EARNINGS PER MEMBER** | |
|---|---|
| **Leader** | **30** |
| **Voter#1** | **10** |
| **Voter#2** | **10** |
| **Voter#3** | **0** |
| **Voter#4** | **0** |

**Your vote:**

| **YES** | **NO** |
|---|---|

**Figure 1.1 (b).** Plan 5 belief elicitation task screenshot.

### *1.2.3 Leader Selection Task*

After the voter belief elicitation task, each voting group undertakes two tasks, and are told that the outcome of one of these tasks would be used to select the leader for the first ten rounds: (i) passing messages to each other and then voting for who would be leader (by anonymous player identification number), and (ii) answering a set of trivia questions. The trivia task included 12 questions drawn from Trivial Pursuit (Masters

Edition). Participants were given six minutes to answer as many of the trivia questions as they were able, and the winner would be designated the leader. Participants were not told how many questions were answered correctly, or how many the eventual winner answered correctly. With respect to the written messages, participants were restricted from revealing any identifying information, from mentioning how the leader should behave and from how they would behave as the leader. Otherwise, participants were allowed to write anything they wished.[3] After the two tasks were completed, one of them was picked by the research team as the criteria to designate the leader; the selected task and the associated roles in the group, which player (identification number) was designated the leader and which were the voters was then communicated to the groups, and the voting game would begin.

### *1.2.4 Experiment Procedures*

Experiments were conducted at the laboratory of the Interdisciplinary Centre for Economic Science at George Mason University. We conducted 13 sessions (seven identity sessions and six baseline). Each session included ten participants (so 130 total participants) and had duration of less than two hours. Participants were randomly

[3] For one of the identity sessions, we allowed subjects to write two messages – a public message viewed by everyone in their group and a private message viewed by only their in-group members (i.e., team members from the same color team in the puzzle task). The private messages seemed to strengthen the color identification with subjects. For example, a subject who was part of an orange team wrote, 'Orange Team > Green Team'.

assigned an experiment ID number as they sat down at the computer terminals. We first explained the overview of the experiment[4] and then provided the subjects with a detailed description of the allocation game. After reading the instructions, we summarized the experiment verbally.

Each subject was required to complete a quiz successfully to verify his/her comprehension of the allocation game. After all, ten participants completed the quiz they moved to the next task. Instructions for each task were given at the beginning of each task. Prior to playing the allocation game, participants received instructions regarding how to play the game on the computer. Identity priming, elicitation, trivia, and message tasks were hand-run, and the allocation game was conducted on the computer using z-Tree (Fischbacher, 2007). Subjects in identity treatments underwent identity priming before being seated at a computer terminal. After the subjects completed the allocation game, we handed out a post-experiment survey.

The show-up fee in this experiment was US$5, and average earnings were about US$27. We randomly selected an elicitation question (from the voter belief elicitation task, which was called a 'survey' in the instructions provided to subjects) at the end of the experiment and paid subjects an additional US$2 if their answer matched the most common answer of their fellow participants. Participants received another US$2 for

[4] In this explanation, the subjects were told that there were three stages in the experiment. We revealed the names of each task in a flow chart but told subjects that details about each task would be provided at the beginning of each task.

completing the post-experiment survey. In the identity treatments, members of the team that finished first each earned an extra US$2. The experiment did not involve deception.

## 1.3 Hypotheses

In this section we offer several hypotheses, each of which is informed in the next section.

*Hypothesis 1: Fair allocations (15 to each person) will be implemented more often than the clientelist allocations.*

Hypothesis 1 follows from the observation that leaders who offer fair allocations and receive majority favorable votes can expect to earn a total return of 500 over 20 rounds: 25 per period, a guarantee of 250 over the first 10 periods and then another 250 if they remain in office for the subsequent 10 periods. The high-rent clientelist allocation, if it does not receive majority support, earns the leader 30 per period, for a total of 300 over 10 rounds, at which time they would likely lose the opportunity to lead. The lower-rent clientelist allocation earns less over 10 rounds and carries a greater risk of losing the opportunity to lead as people grow frustrated with a leader's rent-seeking behavior. Consequently, a leader has an incentive to offer fair and efficient allocations.

*Hypothesis 2: Clientelist allocations will become more frequent in later rounds of the game.*

This follows from the observation that much of the incentive to provide fair allocations is due to the long-run benefits of remaining the leader. As the game

progresses the opportunity cost of losing one's leadership position diminishes, and the incentive to maximize contemporaneous returns correspondingly increases.

*Hypothesis 3: Leaders care about voter approval more in the early than latter parts of the game.*

This hypothesis follows directly from the discussion of the first two hypotheses.

*Hypothesis 4: Clientelist allocations will be more common with than without identity.*

Identity serves as a coordination device for clientelist allocations, and also may leave leaders caring more about approval from voters who share their identity than voters who do not. Both factors should tend to increase the frequency of clientelism.

*Hypothesis 5: Leaders from the group's majority identity will be more likely to implement clientelist allocations.*

In the identity treatment, there was always a majority and a minority identity in each group of five players (either three Green and two Orange players or two Green and three Orange players). Whenever the leader was part of the majority, they were facing a set of voters that included two in-group members. A minority leader, on the other hand, would have only one in-group voter. We hypothesize that a majority leader would find it more appealing to attempt a clientelist strategy because they would expect relatively higher support from in-group members, and they may find it appealing to pursue an allocation strategy that favors their in-group.

## 1.4 Results

We obtained seven key results from our experiment, all of which inform various aspects of the two key research questions noted above. Our results are as follows.

*Result 1: Consistent with Hypothesis 1, fair allocations (15 to each person) are implemented more often than the clientelist allocations.*

The data show that the efficient and fair allocation was the modal selection, and significantly likely to be supported by a majority of voters. Among the 501 rounds of the game that were played on which we have data[5], across all 13 sessions, including both baseline and identity treatments, the efficient and fair allocation was selected by the leaders in 375 rounds, that is, in almost 75% of the rounds played. The high-rent clientelist allocation was selected in 80 rounds (almost 16% of the times), and the low-rent clientelist allocation in 46 rounds (about 9% of the times).

Moreover, when the fair plan was selected, the leader received a majority of votes 90.40% of the times. In contrast, when the high-rent or low-rent clientelist plans were selected, the leader received a majority of votes, 20% and 43.48% of the times, respectively.

[5] The total number of rounds played was 20 times 26 (the number of groups), which is 520. However, in one of the first sessions, a data entry computer glitch resulted in data not being captured for some of the second stage rounds, resulting in data available for 501 rounds.

*Result 2: Consistent with Hypothesis 2, we find clientelist allocations are more frequent in later rounds of the game.*

We found leaders were willing to attempt clientelist allocations in a strategic manner, which we discuss further below, in the early rounds of the game when they enjoyed incumbent power. Furthermore, leaders in the later rounds, when they could be removed from office by voter decisions, nevertheless used their position to extract rents, especially towards the end of the game.

Figures 1.2 (a) and 1.2 (b) track leaders' choices over time: Figure 1.2 (a) includes only those that were leaders in round one (and therefore for at least ten rounds), and Figure 1.2 (b) all other leaders. Although it continues to be evident that the fair plan was predominantly chosen across most of the periods, viewed period-by-period it is also clear that leaders had incentives to select the rent-extracting clientelist plans. The proportion of high-rent vs low-rent clientelist choices did not display any obvious pattern. The only exception is the final period, when most leaders chose a high-rent clientelist plan (which guarantees the highest payoff for themselves).

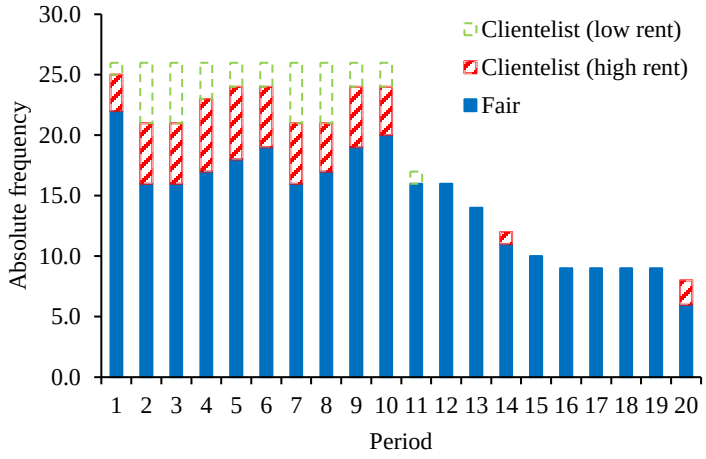



**Figure 1.2 (a).** Selected plans, all sessions (initial leaders).

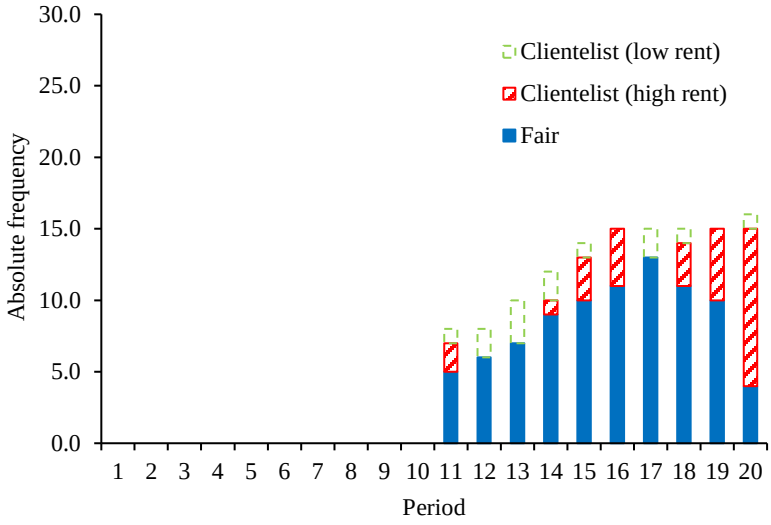



**Figure 1.2 (b).** Selected plans, all sessions (non-initial leaders).

*Result 3: Consistent with Hypothesis 3, leaders appear to care more about approval in earlier than later stages of the game.*

Most leaders appeared to care about voter approval and did not extract higher rents even when they were able to do so without the risk of losing office. Among the 26 groups, in only four cases did the designated leader play the high-rent allocation in most of the first ten rounds, regardless of whether this strategy received majority voter support. As indicated earlier, one of the questions this work proposes to address is whether there are significantly higher instances of rent extraction by leaders with incumbent power in contexts where rent seeking, and vote buying may be pervasive.

*Result 4: In contrast with Hypothesis 4, we do not observe the frequency of clientelist allocations to increase in the identity treatment.*

The data do not show a statistically significant difference in the overall prevalence of clientelist allocations under the identity treatment. If anything, the direction of any difference is that the identity treatment makes fairness more likely.

Figures 1.3 (a), 1.3 (b), 1.4 (a) and 1.4 (b) split the sample along treatment conditions. While fair plans are frequent in both treatments, Figure 1.4 suggests that clientelist choices are fairly frequent in the baseline treatment groups, as opposed to the identity treatment groups in Figures 1.3 (a) and 1.3 (b). While both show a spike in high-rent clientelism in the final round, Figures 1.4 (a) and 1.4 (b) exhibits a higher share of clientelism in almost every period, including both initial leaders and non-initial leaders.

We test whether there is a statistically significant difference in these distributions under the two treatment conditions.

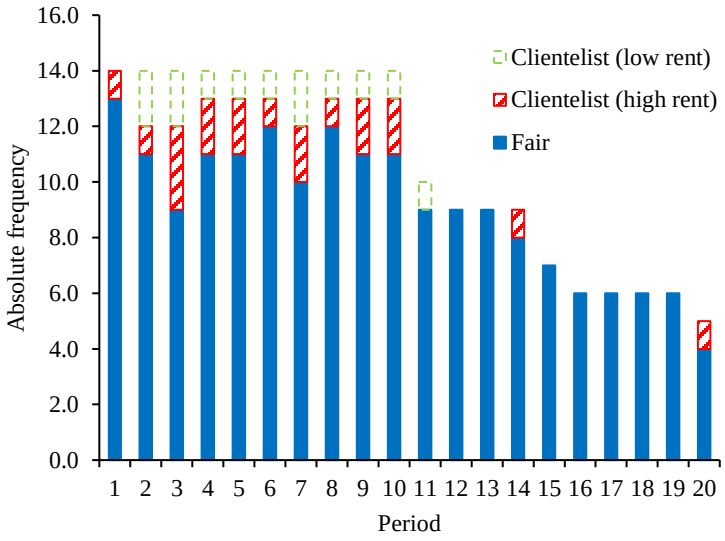



**Figure 1.3 (a).** Selected plans, ID treatment only (initial leaders).

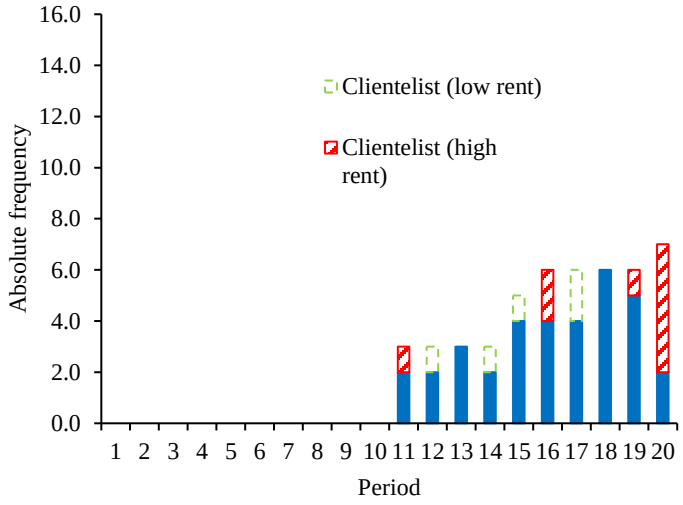



**Figure 1.3 (b).** Selected plans, ID treatment only (non-initial leaders).

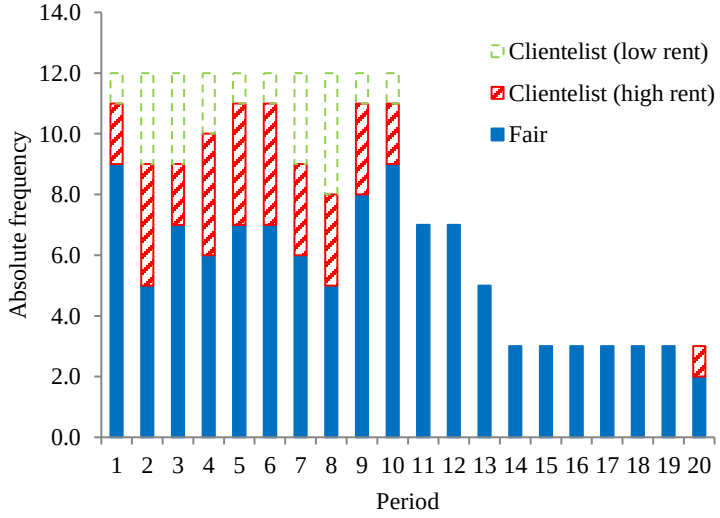



**Figure 1.4 (a).** Selected plans, Baseline treatment only (initial leaders).

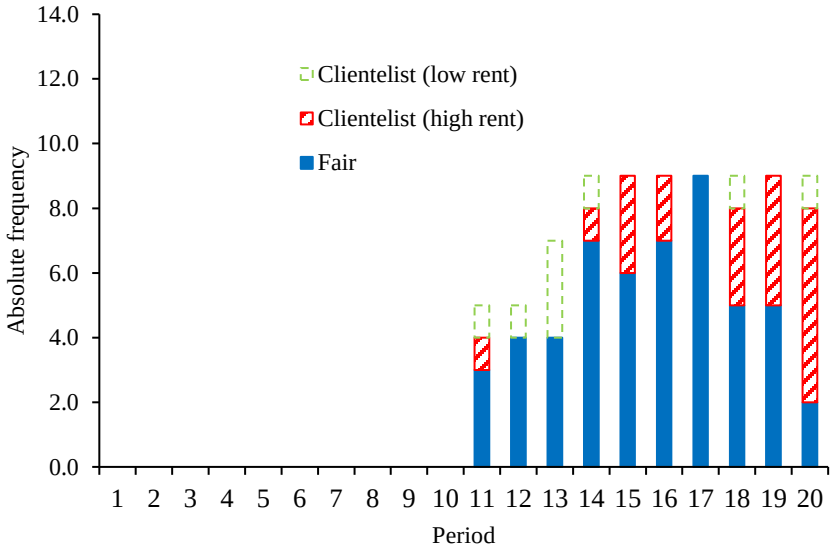



**Figure 1.4 (b).** Selected plans, Baseline treatment only (non-initial leaders).

Table 1.1 reports the p-values of pairwise Mann-Whitney tests. It is based on the share of rounds in which a plan was chosen in a particular group. That is, each group of five players yields a single observation, with data on the relative frequency of each of the three plans across 20 periods in that group. Based on a comparison of these shares (26 observations in total), Panel A of Table 1.1 shows that we cannot conclude that there is a significant difference between the treatments. Taking all clientelist choices together, a Mann-Whitney test for an equal distribution under the two treatments yields a p-value of 0.1130. Comparing the shares of high-rent or low-rent clientelist plans in isolation results in even higher p-values.

In sum, we are unable to detect a statistical difference between the two treatments in the prevalence of clientelist allocations despite the visual difference between Figure 1.3 and Figure 1.4.

**Table 1.1.** Pairwise Mann-Whitney U tests.

| | | Observations | Clientelist (low-rent) | Clientelist (high-rent) | Clientelist (all) |
|---|---|---|---|---|---|
| A. By treatment condition | ID vs Baseline | 26 (14 ID groups, 12 Baseline groups) | 0.3353 | 0.1801 | 0.1130 |
| | | | | | |
| B. By number of in-group voters | 1 vs 2 in-group voters | 30 (individual leaders in ID treatment) | 0.0977 | 0.5787 | 0.3059 |
| | 0 vs 1 in-group voter | 53 (38 baseline leaders, 15 ID leaders) | 0.2737 | 0.4466 | 0.0662 |
| | 0 vs 2 in-group voters | 53 (38 baseline leaders, 15 ID leaders) | 0.3351 | 0.2044 | 0.5705 |
| | | | | | |
| C. Belief elicitation answer | Plan 4 (yes vs no) | 26 (initial individual leaders in ID treatment) | 0.4051 | 0.5010 | 0.7765 |
| | | | | | |

Note: Reported values are p-values of pairwise Mann-Whitney tests.

*Result 5: In contrast to Hypothesis 5, we find little evidence that leaders from a majority identity behave differently from leaders from a minority identity.*

Figures 1.5 (a) and 1.5 (b) split all decisions made in the identity treatment groups by the number of in-group voters. Figure 1.5 (a) includes all decisions made by minority leaders, and Figure 1.5 (b) all majority leader decisions.[6] At first glance, it appears that, first, the share of fair choices was very similar across all periods. Second, when they did deviate from fair choices, majority leaders tended to choose low-rent clientelist plans, whereas minority leaders selected high-rent clientelist plans.

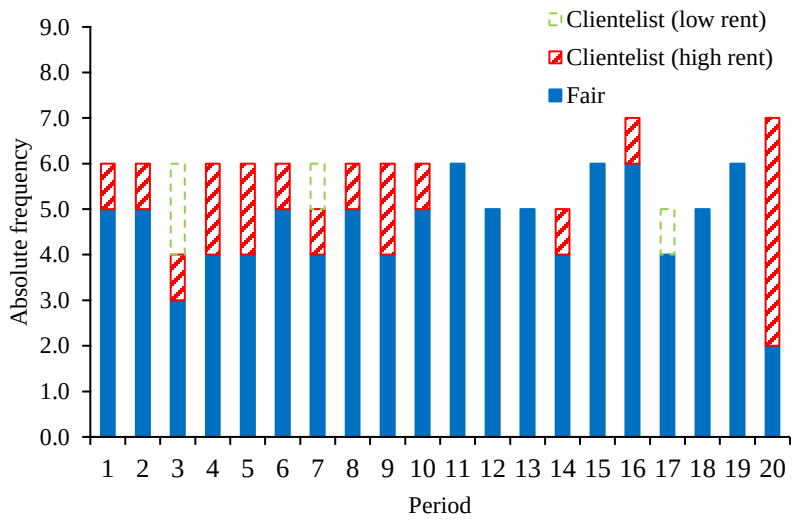



**Figure 1.5 (a)**. Selected plans, ID treatment (one in-group member among voters).

[6] Figures 1.3(a) and 1.3(b) show the same data as Figure 1.12(a) and 1.2(b); for each period, the bars across Figure 1.3(a) and 1.3(b) sums to the same number as the sum of 1.2(a) and 1.2(b).

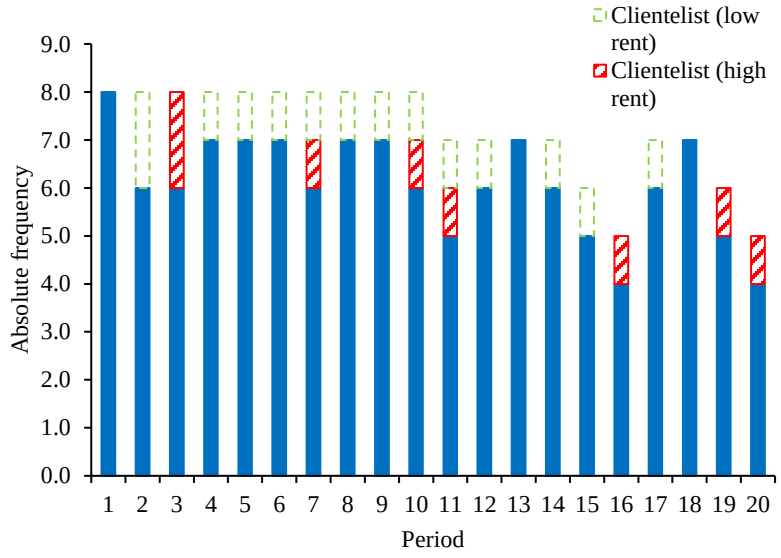



**Figure 1.5 (b)**. Selected plans, ID treatment (two in-group members among voters).

To test for differences between majority and minority leaders, we calculate the relative frequency an individual leader chose a particular plan. For example, if an individual player was the leader in two periods and chose the fair plan once and the low-rent clientelist plan once, we treat this player as one observation, and their share of low-rent clientelist choices would be 0.5, and that of high-rent clientelist choices would be 0. In that manner, we identify 30 individual leaders within the identity treatment groups. Table 2 summarizes these data points. Panel B of Table 1.1 reports the results of pairwise Mann-Whitney tests (p-values are reported). Comparing majority (two in-group voters) and minority (one in-group voter) leaders, there is no evidence that majority leaders were more or less likely to choose high-rent clientelist plans (p=0.5787), or to make more

clientelist choices overall (p=0.3059). There is some evidence, on the other hand, that majority leaders were more likely to choose low-rent clientelist plans (p=0.0977).

**Table 1.2** Mean frequency of plan choices by individual leader.

| | Clientelist (low-rent) | Clientelist (high-rent) | Clientelist (all) |
|---|---|---|---|
| Baseline leaders | 0.119 | 0.358 | 0.477 |
| ID leaders (1 in-group voter) | 0.040 | 0.177 | 0.217 |
| ID leaders (2 in-group voters) | 0.195 | 0.212 | 0.407 |

Note: Reported values are relative frequencies of selecting a specific plan, averaged over all individual leaders.

*Result 6: We find no evidence that voting behavior differs across treatments.*

Figure 1.6 reports the frequency of supporting votes across treatments and across plans. The upper two panels show that support for fair plans was very similar across treatments: in approximately 1/3 of cases, a fair choice resulted in four supporting votes. In another 1/3 of cases, it resulted in two supporting votes. The frequency of three supporting votes was slightly lower, and less than two votes were very rare. In the low-rent clientelist case, again both treatments look essentially the same: approximately half the time, the leader received two supporting votes, and with similar probability they received one vote in support. Zero votes in support were fairly rare, between 5% to 10% of cases.

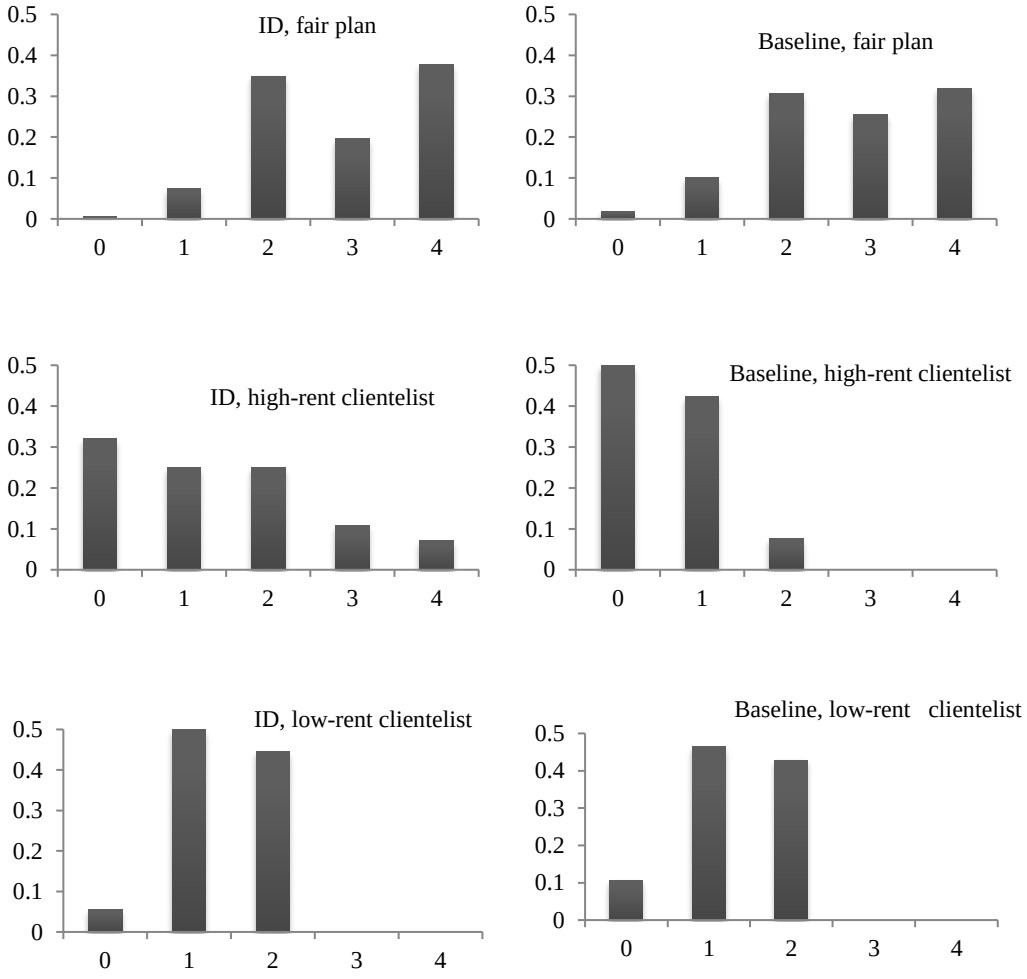



**Figure 1.6** Voters' behavior.

Note: Number of supporting votes (horizontal axis), relative frequencies across sessions.

Finally, there seems to be a difference in the distribution of votes for high-rent clientelist plans across treatments. In baseline groups, leaders received zero votes in half the cases, and one vote in most other cases. Only in less than 10% of cases did they receive two supporting votes. In the identity treatment sessions, on the other hand, high-rent clientelist plans attracted majority support in almost half the cases: two supporting votes occurred in approximately 25% of cases, and more than two votes in almost 20%. Nevertheless, perhaps due to small sample size, a Mann-Whitney test (18 observations, as 8 out of 26 groups did not experience high-rent plan choices) does not indicate significant differences between treatments ($p = 0.7546$).

*Result 7: Voting behavior is at odds with beliefs elicited before the game is played.*

In the belief elicitation task, 95% of participants in the baseline that subsequently played the voting game indicated that a majority of voters would vote for the low-rent clientelist allocation if they were targeted the benefits, and 50% indicated this for the high-rent allocation (Table 1.3). Yet, when the voting game was played, the odds of gaining majority support with clientelist plan were substantially lower than suggested by the elicitation task.

**Table 1.3** Elicitation answers.

| | Mean support (ID) | Mean support (baseline) | Mann-Whitney U (*p*-value) |
|---|---|---|---|
| Plan 1 (fair plan) | 97% | 98% | 0.6535 |
| Plan 2 (low-rent clientelist plan, high voter payoff) | 83% | 95% | 0.0314 |
| Plan 3 (low-rent clientelist plan, zero voter payoff) | 6% | 0% | 0.0610 |
| Plan 4 (high-rent clientelist plan, low voter payoff) | 43% | 50% | 0.4172 |
| Plan 5 (high-rent clientelist plan, zero voter payoff) | 1% | 3% | 0.4726 |

Note: Mann-Whitney tests for equality across treatment conditions, for each of the five plans.

Furthermore, the identity treatment is significantly associated with a lower likelihood of voters indicating majority support in the elicitation task for the low-rent clientelist plan. This combined with the finding that leaders with a majority of in-group voters were more likely to choose the low-rent clientelist plan, suggests that identity plays a complex role in this voting game. Identity could be generating different responses among different types of individuals – enabling the more egotist personalities to build coalitions among themselves and extract rents, while strengthening the inclination of the altruistic types towards fair allocations. This is suggested by Habyarimana et al.,'s (2007)

experiment in the field around identity, with the finding that identity influences allocations to in-group members only among egotist subjects.

*Result 8: Identity does not affect behavior consistently across our identity-treated groups.*

We observe a seemingly inconsistent role played by identity.[7] Among the 14 groups that were identity-treated, eight had sufficient (two) in-group members among the voters for the selected in-group leaders to target in the first ten rounds. Of these eight groups, with a clear ability for leaders to use their own identity to forge a clientelist coalition, half of the leaders (four groups) in fact chose the fair allocation in all rounds of the game. These were four out of the six groups, overall, that played fair in every round.

Yet, in one group (session 7, group 2), an Orange leader was able to establish a stable coalition by the 7th round, using the low-rent clientelist allocation, with two fellow Orange members in the clientelist coalition, winning elections with in-group support in the 10th and 11th rounds. However, this leader switched to the fair allocation in the 12th round and despite playing fair was voted out in the 14th round.

[7] This is perhaps unsurprising. Decades of social psychology research into identity effects concludes that the impact of identity on groups is subtle and inconsistent. See, for example, section A of the detailed literature review in Chen and Li (2009), and the many cites therein.

Furthermore, there are two identity-treated groups in which the leader tried to switch between the low-rent and high-rent clientelist allocations with in-group members, but in the process lost voter support (when switching to high-rent).

Another stable clientelist coalition emerged in a non-treated group (session 9, group 2), in which the designated leader won the support of the same two voters, using the low-rent clientelist plan, in rounds 1 through 10. In the 10th round, the leader was voted out despite continuing to play the low-rent clientelist plan and targeting the same two voters.[8]

## 1.5 Conclusion

This paper reports data from a new laboratory experiment to examine political behavior of individuals regarding rent-extraction by leaders through clientelist allocations to voters. In a sample of US university students, we find that overall, there are few instances of clientelist allocations, and that leaders care about voter approval even when they could use incumbent power to extract non-trivial rents. When leaders do attempt to

[8] Coincidentally, one of the voters in the coalition was picked to be a leader (through random selection) in the 11th round and tried to re-gain the coalition support through the low-rent clientelist plan but failed to get re-elected. The old leader returned (again, co-incidentally) in the 12th round and tried to re-establish the coalition, failing once again. From the 13th round onwards, the second leader from among the coalition played fair through all the remaining rounds.

extract rents, there are few instances in which they are able to do so by forging a minimum willing coalition of voters that supports their clientelist allocation.

Group identity does not play a clear role in enabling or inhibiting clientelism, with examples provided by the data of both types of instances. Although the difference in overall prevalence of clientelist plans under the identity treatment is statistically insignificant, the implied direction of difference is that identity may promote fairness. Within identity treatment groups, however, leaders are somewhat more likely to choose low-rent clientelist plans when they encounter a majority of in-group voters than when they are in the minority.

Prior to playing the game, but after explaining it to them, we elicited voters' beliefs about the level of support clientelist allocations would receive. Surprisingly, although they believed that clientelism would be popular, during actual play of the game this turned out not to be the case. One reason for the gap between beliefs and decisions might be that voters had not previously experienced this type of environment, leaving it difficult to form accurate beliefs. A related possibility is that actively choosing to support unfair clientelist allocations is much more difficult than expected.

Our research was motivated by the observation that in poor economies the bulk of financing for public services is not derived from broad-based taxes but is instead derived from more concentrated ownership of productive resources or from international aid. In this context, a crucial problem driving poor public services has been characterized as weak accountability and rent seeking by leaders (Acemoglu, Robinson, and Torvik,

2013). Our novel design is a first step towards trying to shed rigorous light on the role that clientelism might play in this environment. Our findings suggest that impact of identity on clientelism might be more nuanced than much of the literature suggests, with its effects being both inconsistent and context specific. This highlights the need for more research on this topic, and we believe our novel experiment design provides a valuable tool for this purpose.

# CHAPTER TWO: IDENTITY, LEADERSHIP, AND COOPERATION: AN EXPERIMENTAL ANALYSIS

## 2.1 Introduction

Leadership plays a fundamental role in helping resolve collective action problems. Leaders shape the growth of nations (Jones and Olken, 2005) through policy making (Chattopadhyay and Duflo, 2004) and providing public goods (Gachter and Renner, 2018; Rivas and Sutter, 2011; Potters, Sefton, and Vesterlund, 2007). An effective leader encourages cooperation by guiding a group to socially optimal choices. The economics literature has primarily measured leadership effectiveness by focusing on:(i) transactional leadership styles tied to providing incentives, rewards, or punishments (Brandts, Cooper, and Weber, 2015; Fehr and Gachter, 2002; Guth et al, 2007); or (ii) transformational leadership styles associated with leading-by-example (Potter et al., 2007; Komai, Stegeman, and Hermalin, 2007; Hermalin, 1998).

The relationship between leaders and followers is an important determinant of leadership effectiveness (Judge et al., 2002; Van Knippenberg, 2011; Zehnder, Herz, and Bonardi, 2017; Bass, 1985; Steffens et al., 2018; Lazar et al., 2015; d' Adda et al., 2017; Brandts, Cooper, and Fatas, 2007). Leaders are more effective at motivating and influencing followers who perceive them as prototypical of the group (Tajfel and Turner,1986; Van Knippenberg and Hogg, 2003). Followers are more inclined to trust prototypical leaders, as they perceive them to embody the group values or group identity. As a result, followers believe they will pursue the group's best interest, and are thus more

open to their advice. While such perceptions have their benefits, they are also the leading cause of ingroup bias. Moreover, they can cause prejudice against leadership from outsiders.

Previous literature on group identity has shown that sharing a common identity has a positive impact on cooperation (Goette et al, 2006; Eckel and Grossman, 2005), and team building among group members (Pan and Houser, 2013; Charness, Cobo-Reyes, and Jimenez, 2014). It also leads to ingroup favoritism (Chen and Li, 2009). Additionally, groups discriminate by trusting members from other groups less than they trust people from their own group (Fershtman and Gneezy, 2001; Hargreaves, Shaun, and Zizzo, 2009; Falk, Meier, and Zehnder, 2013). In the context of leadership, we suspect that a shared group identity between leaders and followers could increase trust in an ingroup leader's abilities to foster cooperation. For instance, an argument for hiring insider CEOs over outsider CEOs is that insider CEOs already have an established network with their subordinates. This is in contrast to outsider CEOs, who often face initial resistance within the firm. (Chung et al., 1987). Despite the evident importance of shared group identity, little is known about its role in promoting effective leadership.

The purpose of this paper is to fill this gap. We use a laboratory experiment to investigate whether group members' beliefs and decisions vary according to whether the leader shares their group identity. By randomly assigning leaders, we can study how group identity affects leadership while avoiding the selection and endogeneity problems that often arise in the field.

Our experiment used a public goods game. First, we used a two-fold identification strategy to induce group identity. We assigned labels to groups, then further enhanced group identity through a collective puzzle - solving task. Following this, a public goods game was played in three treatments. In the baseline treatment, groups with induced identities play the public goods game without a leader. In the next two treatments, we introduced leaders. In one treatment, leaders had the same group identity as followers; in the other treatment, leaders and followers had different identities. In all cases, the role of the leader was to send a non-binding contribution suggestion to all the group members, after which the leader and the followers simultaneously decided on how much to contribute. Given that the treatments differed only in whether a leader shared the same identity as the followers, we were able to isolate the effect of shared identity on effective leadership.

Our results show statistically significant evidence of ingroup bias. We find that ingroup leaders induce substantially higher average contributions from ingroups than outgroup leaders. Additionally, we find that outgroup leaders suggest lower contributions than ingroup leaders. We also find that group members follow contribution suggestions of ingroup leaders more closely than suggestions from outgroup leaders. Moreover, contributions by groups with outgroup leaders deviate more from the leader's suggested contribution amount. Finally, we find that beliefs about the contributions made by outgroup leaders are consistently lower than their actual contributions.

Our contribution is three-fold. To the best of our knowledge, our study is the first to combine ideas from the fields of experimental economics, leadership studies, social

psychology, and management to provide evidence of ingroup bias within artificially induced groups in a leader-follower framework in the laboratory.

Secondly, our results complement the literature on the role of leaders fostering cooperation (Kosfeld and Rustagi, 2015; Komai, Stegeman, and Hermalin, 2007; Potters, Sefton, and Vesterlund, 2007; Guth et al., 2007) with communication (Chaudhuri, 2011; Sahin, Eckel, and Komai, 2015) as well as the finding that even the minimal conditions can create ingroup bias within groups (Chen and Li, 2009; Eckel and Grossman, 2005; Chen and Chen, 2011; Pan and Houser, 2013; Charness, Rigotti, and Rustichini, 2007; Goette et al., 2006). Our results also corroborate social identity theory that positive ingroup favoritism is directly correlated with outgroup hostility. (Tajfel and Turner, 1986). Our analysis presents a novel understanding of how ingroup bias within teams can stem from both leader discrimination and follower discrimination: namely, followers are less willing to follow the advice of an otherwise identical outgroup leader, and outgroup leaders do not sufficiently encourage their followers to cooperate. (Van Knippenberg, 2011; Hirst, Van Dick, and Van Knippenberg, 2009).

Thirdly, our belief elicitation results further trace the differences between ingroup leader and outgroup leader effectiveness. A leader's group identity strongly shapes followers' beliefs about the leader's effectiveness. When a leader does not belong to the same group, group members are less optimistic about the leader's cooperativeness. Moreover, their own contributions also decrease. A key interpretation of our belief elicitation results is that outgroup leaders are not only less effective leaders but are also

perceived to be so (Daskalova, 2018; Drouvelis and Nosenzo, 2013; Dickinson, Masclet, and Peterle, 2018; Grossman et al., 2019).

Li (2020) provides an independent survey of group identity and inter-group bias with applications to labor market discrimination. Our results add to the existing literature by providing evidence of ingroup bias in leadership. Specifically, ingroup bias against outgroup leaders can lower overall cooperation and efficiency in groups and become a challenge for effective diverse leadership. Studies have shown that increasing representation of racial minorities in leadership may help increase firm performance (Roberson and Park, 2007). Companies with executive teams in the top quartile for gender diversity are 25 percent more likely to have above-average profitability (McKinsey and Company, 2020). Diversity in leadership can lead to a rich variety of perspectives, reduce groupthink (Page, 2008), and have a trickledown effect as well. For instance, there is evidence of a positive relationship between female representation in senior management and female representation in lower levels of management (Kurtulus and Tomaskovic-Devey, 2012; Matsa and Miller, 2011). The trickle-down effect can work via two mechanisms: the presence of outgroup leaders in senior roles send positive signals to followers aspiring to senior roles and outgroup leaders in senior roles advocate for outgroup followers in lower positions. It is important to understand the ramifications of shared social identities between leaders and followers in order to prevent the negative consequences that may arise out of ingroup bias.

The rest of the paper is organized as follows. Section 2, we review the literature on social identity and leadership. Section 3 outlines the main hypotheses of this paper.

Section 4 documents the experimental design and procedures. Section 5 provides an overview of the data and an analysis of the experimental results. Section 6 concludes.

## 2.2 Literature Review

### *2.2.1 Social Identity*

Since Akerlof and Kranton (2000) introduced identity into economic analysis, increasing interest has focused on how a person's identity or sense of self impact on economic outcomes and individual behavior. Social identity models have been applied to the analyses of gender differences (Grossman et al, 2019; Gangadharan et al., 2019; Gangadharan et al., 2016), homophily (Currarini and Mendel., 2016; Currarini, Jackson and Pin, 2009), the economics of poverty and social exclusion, the household division of labor (Akerlof and Kranton, 2000), economic development (Basu, 2017), improvement of individual productivity and capability (Basu, 2013), etc.

In the context of the interplay between social identity and leadership, the social psychology literature provides a theoretical explanation: (Tajfel, 1982; Tajfel and Turner, 1979; Hogg, 2001; Van Knippenberg and Hogg, 2003): the ingroup prototype leader is an abstract representation of "us" that maximizes inter-group differences (“us” vs “them”) and ingroup similarity.[9] Along the same lines, we predict that artificially induced

[9] Consistent with these claims, there is a large body of research in social psychology which shows that a leader's capacity to influence group members rest on their capacity to be seen as prototypical of the group e.g., Barreto and Hogg (2017), Stevens et al (2018), which show the impact of very high leader pay on followers' ability to identify with the leader. Zehnder, Herz, and Bonardi (2017) observe how organizations can cultivate identification among their members through effective leadership.

identities will make ingroup leaders more effective than outgroup leaders, as followers will exhibit ingroup bias towards a prototypical leader.

Experimental work has focused heavily on ingroup bias. Most studies either:(i) prime existing natural social identities (Bernhard, Fehr, and Fischbacher, 2006; Goette et al., 2006; Chowdhury, Jeon, and Ramalingam, 2016) such as race, age, religion, culture, gender, ethnicity, nationality; or (ii) use a “minimal paradigm" design, where individuals are assigned to groups with no regard to previous interaction, correlation of preferences or pre-formed identities. Using a minimal paradigm design, Chen and Li (2009) found that group identity positively affects cooperation in single level interactions. Eckel and Grossman (2005) analyzed whether induced identity mitigates free-riding behavior in a team production setting. They showed that team identification actions can significantly increase cooperative behavior. Pan and Houser (2013) find that a cooperative production environment which creates artificial identities is associated with lesser parochialism than an independent production process.

Here, our aim is to search for the weakest cohesion that will produce ingroup bias. Thus, we also use the minimal group paradigm to determine whether induced artificial identities can enhance leadership effectiveness.

### *2.2.2. Leadership*

Several papers exist on the power of leadership in the context of public good games with voluntary contributions and cooperation problems (Chaudhuri, 2011; Figuieres, Masclet and Willinger, 2012; Sahin, Eckel, and Komai, 2015). Some have explored the individual characteristics that make certain leaders more effective in

obtaining public goods provision (Gachter et al., 2012, Arbak and Villeval, 2013). Others have focused on a leader's ability to influence followers to increase their contributions. In addition to leadership, communication and institutions also play a significant role in resolving conflicts of interest and facilitating cooperation.

Experimental studies of leadership have typically employed sequential public goods games or coordination games with a focus on the `leading-by-example' institution (Hermalin, 1998). In some sequential move games, leaders are first movers with observable actions (Guth et al., 2007). In other cases, leaders lead by sending their followers a cheap talk signal, such as making a simple `suggestion' (Levy et al., 2011; Houser et al., 2014; Brandts, Cooper and Fatas, 2007; Sahin, Eckel, and Komai, 2015). Cheap talk has been shown to foster cooperation in various institutions (Crawford, 1998; Gneezy, 2005; Charness and Dufwenberg, 2006; Palfrey, Rosenthal, and Roy, 2017). These "suggestions" are first sent by the leader, after which strategies (such as contribution levels) are chosen both by the followers and the leader.

Our paper contributes to the literature by assessing the interaction of group identity and cheap talk on leader and follower behavior.

## 2.3 Model

To understand the effect of shared social identity between leaders and followers on a leader’s ability to raise cooperation, we introduce a model of social dilemma with social identity incorporated in it.

### *2.3.1 Social Dilemma Without Identity*

Consider the following *n*-player public goods game. There are $n \geq 2$ players. For each round *t* each player *i* has a private endowment $y > 0$. The player who is in the role of a leader sends a proposal $g_{0t}$ to the other group members. All group members then simultaneously choose how much to invest in the group account $g_{it} \leq y$ and how much to keep in their own individual account. Each unit kept in the individual account is worth one unit, and each unit invested in the group account yields $\alpha < 1$ dollar to each group member. Thus, in a group of *n* players, the payoff $\pi_{it}$ for each group member *i* in round *t* is given by:

$$\pi_{it} = y - g_{it} + \alpha \sum_{i=1}^{n} g_{it} \quad , \qquad 0 < \alpha < 1 < n\alpha \qquad (1)$$

By standard economic theory, the proposal (i.e., cheap talk) should have no effect on group members' contribution decisions. The leader knows that group members may not follow his proposal and therefore has little incentive to follow the proposal himself. The subgame-perfect equilibrium by backward induction, requires each group member to contribute zero to the group account for each round. This follows from

$$\frac{\partial \pi_{it}}{\partial g_{it}} = -1 + \alpha < 0, \qquad (2)$$

where $1 < n\alpha$

The $1 < n\alpha$ restriction ensures.

$$\partial \sum_{i=1}^{n} \frac{\pi_{it}}{\partial g_{it}} = -1 + n\alpha > 0 \qquad (3)$$

so that the aggregate group payoff $\sum_{i=1}^{t} \pi_{it}$ is now maximized if every group member contributes everything to the group account. This is where the social dilemma arises: if it is in the joint interest of the group to contribute the whole amount to the group account, but the individual group members have an incentive to contribute nothing and free ride.

In the absence of identity, there are two potential equilibria – the Nash equilibrium strategy $g_{it} = 0 \; \forall i$ and the cooperative strategy $g_{it} = g_{0t} \geq 0 \; \forall \; i$. The cooperative strategy may be sustained if the leader's proposal becomes a common signal for the group members. The common signal can indicate the value of cooperation and reciprocity, thus providing a focal point for contributions. Hence, group members might be more likely to choose higher levels of contribution, and leaders anticipating this, may contribute more as well leading to greater group contributions.

Infact, Levy et al., (2011) suggests that leaders' suggestions, even though non-binding, can help increase group contributions.

### *2.3.2 Social Dilemma with Identity*

We use a framework similar to Gangadharan et al., (2016) who in turn build on Akerlof and Kranton (2000) where group members not only care about their pecuniary payoffs but also their psychological "identity"- based payoffs.

$$u_i = \pi_i + I_i \qquad (4)$$

In this modified payoff function, $\pi_i$ represents standard pecuniary payoffs and I(.) represents identity payoffs from when social norms are maintained. This means that a group member's payoffs will be affected by what they believe are the relevant norms of

belonging to a group. Then a group member's optimization problem can be written as follows by augmenting equation (1):

$$\max_{g_{it}} u_{it} = y - g_{it} + \alpha \sum_{i=1}^{n} g_{it} + I_i(g_{0t} - g_{it}, L) \quad (5)$$

where as before y is the endowment, n is the group size and α represents the return to the amount contributed to the group account, $\alpha < 1 < n\alpha$. The decision variable for player i is $g_{it} \geq 0$ which is the amount contributed to the group account. The decision also increases a group member's identity payoffs if $g_{it}$ is less than the leader's proposal $g_{0t}$ i.e., contributing less than the leader's proposed amount may restore a sense of identity. The leader's group identity is represented by $L \in (I, O)$ where I is an ingroup leader and O is an outgroup leader.

There are still two potential equilibria, the Nash equilibrium strategy, and the cooperative strategy. The introduction of identity incentives changes the likelihood of group members playing the Nash equilibrium based on L,

1. If L = I, group members' identity match with the leader. With an ingroup leader, group members including the leader, will undergo a loss of utility by deviating from the leader's proposal so group members would choose to make positive contributions. Here, $g_{it} = g_{-it} = g_{0t}$ is likely to be sustained as an equilibrium.
2. If L = O, group members' identities do not match with the leader. Following the leader's proposal does not increase the identity payoffs of

either the followers or the leader. By setting $g_{it} = 0$ followers increase utility from $I_{it}(.)$, simultaneously leading to lower group contributions,

## 2.4 Hypotheses

Our experiment tests three sets of hypotheses, corresponding to three sets of questions on ingroup bias, as exhibited by followers and leaders. Our hypotheses on pro-social behavior are derived from the social identity literature and the leadership literature on ingroup bias.

We first consider ingroup favoritism and outgroup discrimination exhibited by followers. The economics literature suggests that leaders can potentially shape follower behavior by influencing their outcomes or their choice sets. (Hermalin, 1998; Guth et al., 2007; Levy et al., 2011; Houser et al., 2014; Gachter et al., 2012). If followers do not have favoritism-based preferences, they should view shared group identity an irrelevant factor when deciding whether to follow the leader's advice. However, from the social identity literature, we know that followers are more inclined to heed the advice of a leader when the leader belongs to the same group as them, i.e., when the leader is prototypical (Tajfel and Turner, 1986; Van Knippenberg and Hogg, 2003). We predict that followers will be more likely trust to ingroup leaders, and thus more inclined to cooperate under ingroup leadership. As a result, we would expect them to deviate less from the leader's contribution suggestions.

*Hypothesis 1: Ingroup leaders will be more effective than outgroup leaders in fostering cooperation.*

*Hypothesis 2: Followers of leaders (ingroup and outgroup) who advocate cooperation will exhibit more cooperation than group members without a leader.*

*Hypothesis 3: Contribution suggestions made by ingroup leaders will be followed more closely by group members than contribution suggestions made by outgroup leaders.*

Our second set of hypotheses examines the impact of shared group identity on leader decisions. Effective leadership depends on the leader's cooperative preferences and beliefs (Gachter et al., 2012; Gachter and Renner, 2018). In the absence of favoritism-based preferences, leaders will be equally motivated to lead a group of ingroup or outgroup followers. We conjecture that ingroup leaders will be more concerned about their own group's welfare, and thus intrinsically more invested to lead their own group to a better outcome. For instance, co-ethnics of political leaders have better health and educational outcomes (Franck and Rainer, 2012), more transport infrastructure (Burgess et al., 2015), and preferential access to primary schooling (Kramon and Posner, 2016).

Rong, Houser, and Dai (2016) find that different social identities reduce truth-telling among group members. Following them, we further predict that if shared group identity is salient, then ingroup leaders are more likely to honor their words. An ingroup leader's contribution suggestion to her followers will be a more credible signal.

*Hypothesis 4: Ingroup leaders will be more committed to fostering cooperation than outgroup leaders.*

*Hypothesis 5: Ingroup leaders will be less likely to engage in cheap talk than outgroup leaders.*

Our next hypothesis revolves around individual beliefs about leader effectiveness. In the absence of group identity, individuals have no reason to expect a difference in effectiveness of an ingroup and an otherwise identical outgroup leader. However, recent research has shown that group members hold negative prior beliefs about female leadership (Abel, 2019). Likewise, employees hold similarly negative prior beliefs against equally productive outgroup employers (Asad, Banerjee, and Bhattacharya, 2020). We predict that individuals will expect their own group leaders to be more welfare-concerned and will simultaneously harbor negative beliefs about the motives of outgroup leaders.

*Hypothesis 6: Beliefs about ingroup leaders' contributions will be closer to their actual contributions than outgroup leaders.*

## 2.5 Experimental Design and Procedures

Our goal is to test the impact of group identity on ingroup and outgroup leadership. The treatment variable is therefore 'leader type'. We consider three different treatments giving us a 1x3 factorial design.

The experiment consists of two parts. Part 1 is a "puzzle game" which is a production process largely following Pan and Houser (2013). This helps build the group identity. In part 2, we introduce our leader treatments. Each treatment consists of a 20 rounds public goods game. The three leader treatments are the "No Leader", "Ingroup Leader" and the "Outgroup Leader" treatments. Table 2.1 shows the structure of the experiment. A detailed description of our experiment design follows.

Table 2.1 Experimental design structure.

| | | | |
|---|---|---|---|
| PART 1 | Puzzle Game | | |
| PART 2 | Public Goods Game | | |
| | No Leader | Ingroup Leader | Outgroup Leader |

### *2.5.1 Puzzle Game*

Part 1 is a key element of our experiment. Its main purpose is to induce artificial group identities. Using a two-fold identification strategy to induce stronger group effects, we assigned labels to each group. We then asked the groups to participate in a cooperative production process. Additionally, to study inter-group conflict we incentivized and encouraged inter-group competition to complete the production task within a stipulated time.

Four groups (of four members each) finished the same puzzle task in an open environment that facilitated cooperation. The groups were asked to complete the task in

separate rooms. Then, two groups were randomly chosen and asked to move out of the experimental laboratory and go to the rooms assigned to them. Those two groups were not allowed to interact with the other groups after completing their tasks. This helped to ensure that there was no inter-group discussion of strategy. An experimenter in each room noted the time each group took to complete their task. The four groups were given a maximum of ten minutes to complete the task.

We named the groups: Red Square, Yellow Rectangle, Purple Rectangle, and Blue Square. Each group was assigned the task of piecing together four identical shapes of a red square, yellow rectangle, purple rectangle, and blue square, respectively.[10] All the puzzle tasks shared the same level of difficulty and thus required the same level of cooperation from each group. The group that took the least amount of time to finish the task earned an additional two dollars for each member. The winning group was not announced until the conclusion of the experiment.

A total of 160 subjects participated in the puzzle game with 32 subjects moving on to the No Leader treatment, 64 subjects moving to the Ingroup Leader treatment and 64 subjects moving to the Outgroup Leader treatment.

### *2.5.2 Public Goods Game*

Part 2 uses the methodology of a standard linear public goods game similar to Houser et al., (2014), which is widely used to study social dilemma problems. For this part of the experiment, new groups of four members were formed. Three of the four

[10] A figure showing the exact cuts of the puzzle is shown in the appendix.

members in each group(followers) were the same as in the puzzle game; the remaining member(leader) could be the same or vary.[11] Each subject received an endowment of 10 E$. At the beginning of the game, one member in each of the four new groups was randomly selected as a leader. The other three members were assigned the role of followers. These leaders sent a message (contribution suggestion) to all their group members in each round. Subjects were aware that the person writing the message would have no other special role in the remainder of the experiment. The subject who wrote the message remained anonymous to the other participants.[12] Followers were told about the leader's role and group identity and informed that the same message had been received by all the three followers. Followers could not reply to the leader or send messages to each other. The leader's suggestion is non-binding.

The purpose of the public goods game with leader treatments is to assess the extent to which a leader can use communication to improve cooperation in their group. Leaders were randomly selected and remained in the same role for the entire experiment. The reason is that we are interested in the effect of relational identity when group members and leader have repeated interactions. The randomly elected leadership mechanism helps to minimize the potential interaction between election mechanisms and

[11] In the experiment, we never mention the words 'leader and 'non-leader' or 'follower' but instead we use 'message-writer' and 'message-receiver' respectively.

[12] All subjects were given private identity numbers and seated separately in front of computer screens. Subjects' roles appeared on their computer screens to preserve anonymity.

the identity effect. This allows us to draw clean inferences with respect to the role of identity in leader effectiveness.

#### ***2.5.2.1 No Leader Treatment***

The No Leader treatment serves as a control for the Ingroup Leader and Outgroup Leader treatments. Four groups played a standard linear public goods game for exactly 20 rounds. There were no randomly selected leaders in this treatment and hence no followers. Each subject receives 10 E$ at the beginning of each round and was asked to allocate the 10 E$ between their individual and group accounts.

#### ***2.5.2.2 Ingroup Leader Treatment***

In the Ingroup Leader treatment, we deviate slightly from the standard linear public goods game. At the beginning of the game, subjects were informed whether they had been selected as a leader. The leader sends out a message before each round that reads:

"Let us contribute E$ to the group account."

Along with the message, the subjects were also told that the leader belonged to the same puzzle game group as them. In other words, all four players had interacted previously in the puzzle game, making the leader an ingroup leader.

After the followers observed the leader's non-binding contribution suggestion, the leader and the followers simultaneously made their contribution decisions in private. No one, including the leader, was bound to follow the leader's suggestion.

#### ***2.5.2.3 Outgroup Leader Treatment***

The only difference in this treatment is that the leader was an outgroup member. As in the other treatments, the leader was randomly selected; however, they did not belong to the same puzzle game group as their followers. As a result, even though the three followers had interacted with each other in the puzzle game, none of them had previously interacted with the leader. Similar to the Ingroup Leader treatment, once the followers have observed the leader's contribution suggestion, the leader and the followers simultaneously made their contribution decisions in private.

### *2.5.3 Belief Elicitation Task*

As part of the public goods game, a single question about beliefs appeared on the computer screen before subjects were assigned their respective roles. Specifically, in the Ingroup Leader treatment, we asked subjects to estimate the amount that an outgroup leader would contribute to the group account on average.[13] Similarly, in the Outgroup Leader treatment, we asked subjects to estimate the amount that an ingroup leader will contribute to the group account on average.

### *2.5.4 Procedures*

There were 10 sessions which included 16 subjects each. The experiments were conducted in The Interdisciplinary Center of Economic Science laboratory at George

[13] In the experiment, we never use the words "outgroup leader" and "ingroup leader". We define an outgroup leader as a message-writer who did not belong to the same group as the subject in Part 1 of the experiment and an ingroup leader as a message-writer who belonged to the same group as the subject in Part 1 of the experiment.

Mason University. All the subjects were undergraduate students from this university. Subjects earned a $5 bonus for arriving on time and they earned payment in E$ during the experiment. At the end of the experiment, E$ were exchanged for dollars at the rate of 2E$ = $1. On average, the subjects were in the laboratory for 90 minutes and earned $12 in addition to the show up bonus.

In each session, 16 subjects were randomly assigned to four groups prior to the puzzle game. Two separate sets of paper instructions were provided in each part.[14] The instructions for Part 2 were provided only after all had completed Part 1 of the experiment. Subjects were given a short quiz to answer in each part. Answers to questions were monitored and the experiment did not begin until all subjects demonstrated their comprehension of the experiment instructions.

In part 1, each subject was given one envelope. Each envelope would contain four puzzle pieces. The task for each group would be to complete the puzzle by making four identical shapes from the 16 pieces given to the group. For example, Red Square group members had to complete four red squares from all the 16 puzzle pieces given in total to the Red Square group.

Part 2 of the experiment was computerized. It was conducted using the software platform oTree. The information about the randomly chosen leader appeared on the computer screens of the subjects. Afterwards, the leaders sent their messages to the followers and the group members saw this message on their computer screens. At the end

[14] The experiment instructions are provided in the Appendix.

of each round, the subjects would find details about their own contribution and the group's contribution on the screen.

## 2.6 Results

### *2.6.1 Contribution to the Public Good*

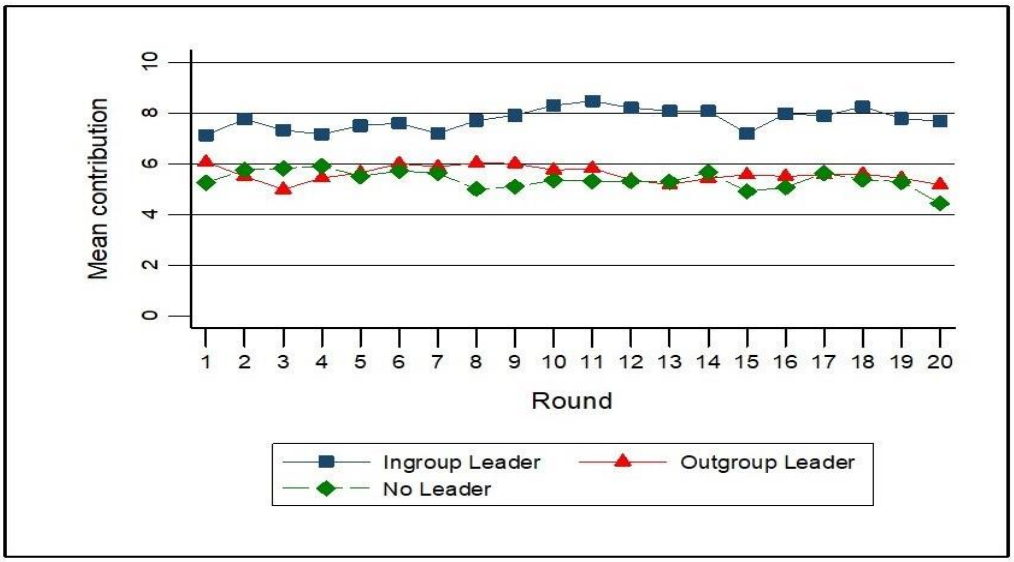



Figure 2.1 Mean contribution to the group account (including leaders).

Figure 2.1 displays the mean contributions to the group account for each treatment condition.[15] Mean contributions of Outgroup Leader treatment and No Leader

[15] The figures displaying the mean contributions of leaders (only) and followers (only) are given in the appendix.

treatment start at the same level. In the Ingroup Leader treatment, mean contributions were always higher than the Outgroup Leader and No Leader treatments. In the first round, mean contributions reached $7.13 in the Ingroup Leader treatment, $5.25 in the No Leader treatment and $6.06 in the Outgroup Leader treatment. Mean contributions in the final round were $7.67, $4.44, $5.17 in the Ingroup Leader, No Leader and Outgroup Leader treatments, respectively.

We compare the average group contributions across treatments over 20 rounds by calculating the average total contribution for each group. The sample size is 16 in the Ingroup Leader treatment, 16 in the Outgroup Leader treatment and 8 in the No Leader treatment. We find that the mean contribution is significantly higher in the Ingroup Leader treatment than in the Outgroup Leader treatment (7.75 vs 5.59, $p = 0.0000$, Mann-Whitney two-sided test). Similarly, the difference in the mean contribution of Ingroup Leader treatment and No Leader treatment is significant (7.75 vs 5.36, $p = 0.0000$, Mann-Whitney two-sided test). However, the difference in the mean contribution of No Leader and Outgroup Leader treatments is not significant (5.36 vs 5.59, $p = 0.1647$, Mann-whitney two-sided test). We next report regression analysis results to compare the dynamics of the contributions among treatments.

Table 2.2 reports the results of two random group effect, censored regressions of group account contributions by each group on an intercept and trend effects by treatment. Standard errors are clustered at the group level to control for the potential dependency of decisions within groups. The first regression includes leaders and followers, while the second includes followers only. Testing the null hypothesis that intercept and round

coefficient are pairwise jointly identical between treatment conditions yields similar results for both regressions: we reject equality of Ingroup Leader and Outgroup Leader treatments (chi-square tests, $p< 0.05$), of Ingroup Leader and No Leader treatment (chi-square tests, $p< 0.05$) and also of No Leader and Outgroup Leader treatments at conventional significance levels (chi-square tests, $p< 0.05$).

Table 2.2 Censored regression analysis of group-level contribution of all rounds.

| Independent variables | Dependent variable: Mean contribution of each group in each round | Dependent variable: Mean contribution of each group in each round |
|---|---|---|
| Ingroup leader (= 1 if in Ingroup Leader treatment; = 0 otherwise) | 7.4012***(0.7692) | 6.5292***(0.3197) |
| No leader (= 1 if in No Leader treatment; = 0 otherwise) | -1.6953(0.9779) | |
| Outgroup leader ( = 1 if in Outgroup Leader treatment; = ) otherwise) | -1.6322*(0.7461) | 0.8392***(0.1821) |
| Round x Ingroup leader | 0.0338(0.0190) | 0.0362(0.0578) |
| Round x No leader | -0.0327(0.0269) | |
| Round x Outgroup leader | -0.0168(0.0246) | -0.0316(0.0434) |

*Note: Dependent variables are calculated as the average of group members' contribution (including or excluding the leader) in each round. Numbers in parentheses are standard errors.*
** p<0.05; ** p<0.01; ***p<0.001*

*Result 1: Mean contributions made to the public good are significantly higher in the Ingroup Leader treatment than in the Outgroup Leader treatment.*

*Result 2: Under ingroup leadership, mean contributions made to the public good are significantly higher than in the absence of a leader. However, there is no significant difference in mean contributions under outgroup leadership and in the absence of a leader.*

### *2.6.2 Message Following Behavior*

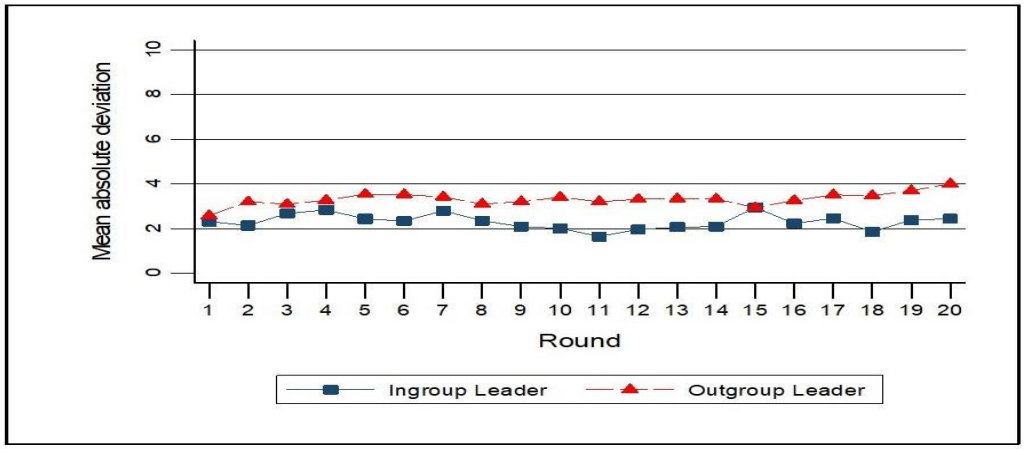
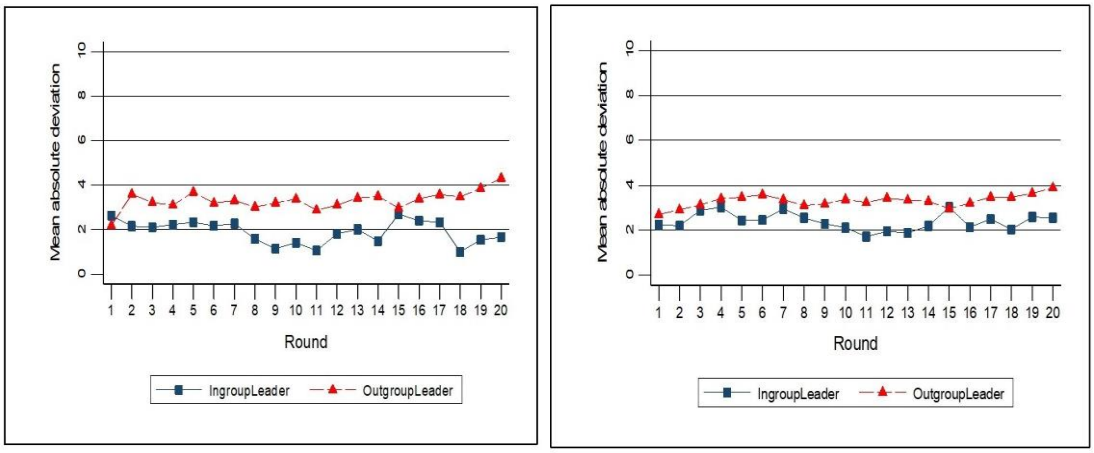



Figure 2.2 Mean absolute deviations from contribution suggestions (including leaders).

Figure 2.2 visualizes mean absolute deviations from leaders' suggested contributions over 20 rounds when including both followers and leaders. We find that followers and leaders followed leaders' suggestions more closely in the Ingroup Leader

treatment than in the Outgroup Leader treatment. Means are not monotonically increasing in either of the treatments. There is no clear trend. Mean deviations range fluctuate in the range of 2.58-4.01 E$ and 1.65- 2.95 E$ for Outgroup Leader and Ingroup Leader treatments, respectively. Mean absolute deviations in the Ingroup Leader treatment are universally lower than in the Outgroup Leader treatment, except at round 15.




(a) Leaders only (b) Followers only

Figure 2.3 Mean absolute deviations from contribution suggestions.

Breaking up the sample into leaders (Figure 2.3a) and followers (Figure 2.3b), we find that the patterns are similar. In both sub-samples, mean deviations in the Ingroup Leader treatment always reach their maximum in round 15 and in the last round for the Outgroup Leader treatment. Among the followers in Ingroup Leader and Outgroup Leader treatment, means increase between most rounds, similar to the pattern in Figure

2.2. In the case of leaders, leaders in the Outgroup Leader treatment deviated substantially more from their own suggestions in most rounds.

Table 2.3 Censored regression of the mean absolute deviation from the leaders' suggested contribution.

| Independent variables | Dependent variable: mean absolute deviation from suggestion coefficient |
|---|---|
| Ingroup leader<br>(= 1 if in Ingroup Leader treatment;<br>= 0 otherwise) | 1.3226***(0.1733) |
| Outgroup leader<br>(= 1 if in outgroup leader treatment;<br>= 0 otherwise) | 0.6380*(0.2697) |
| Round x Ingroup leader | 0.008(0.0130) |
| Round x Outgroup leader | 0.0189(0.0162) |

*Note: The dependent variable is calculated by taking the average of absolute difference between the group leader's suggested contribution and each member's actual contributions (including the leader) in each group in each round. Numbers in parentheses are standard errors.*
** p<0.05; ** p<0.01; *** p<0.001.*

To provide statistical analysis of the differences across treatments, we report in Table 2.3 the results of a random group effect, censored regression of the mean absolute deviation of each group's mean contribution from the suggested contribution on an intercept and the round. Testing for pair-wise joint equality of coefficients across treatments, we can reject joint equality of coefficient estimates for the Ingroup Leader and Outgroup Leader treatment (chi-square test, $p < 0.05$).

*Result 3: The mean absolute deviations from outgroup leaders' suggestions are significantly higher than those of ingroup leaders.*

### *2.6.3 Leaders' Contribution Suggestions*

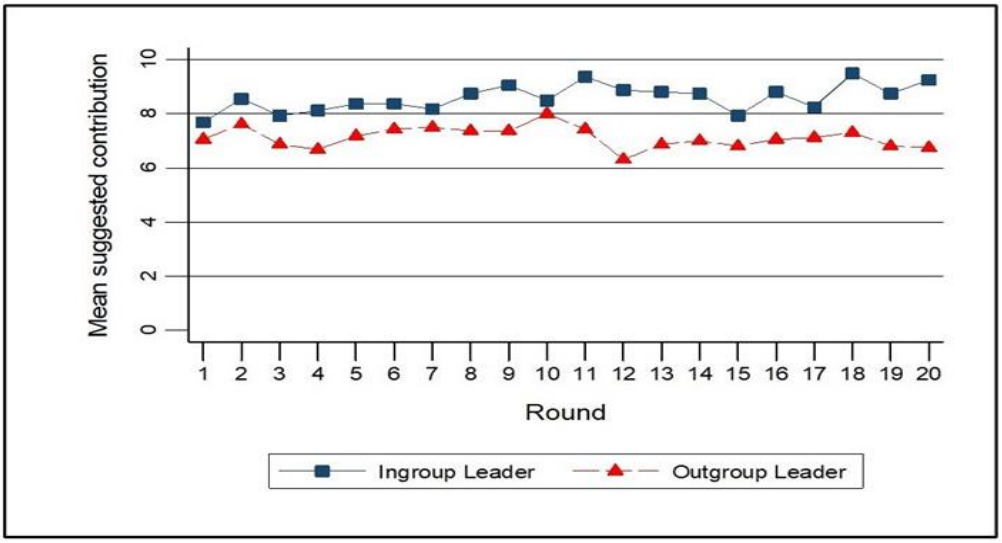



Figure 2.4 Mean suggested contribution (message).

Figure 2.4 visualizes the average contribution amounts that were suggested by group leaders in the Ingroup Leader and Outgroup Leader treatments. Ingroup leaders' average suggestion per round varied between 9.50 E$ and 7.69 E$, and that of outgroup leaders varied between 8.00 E$ and 6.31 E$.

Table 2.4 reports random group effect regression results of the suggested contribution amounts by each group leader on an intercept and the round. Standard errors are clustered at the group level to control for the potential dependency of decisions within groups. We

reject the null hypothesis that coefficients are jointly identical between ingroup leaders and outgroup leaders (chi-square test, $p< 0.01$). The estimates reported in Table 2.4 imply that contribution recommendations significantly increase over rounds in the Ingroup Leader treatment. However, in the Outgroup Leader treatment, there is a decline of recommendation amounts over rounds.

Table 2.4 Censored regression analysis of leaders' contribution suggestion(message) of all rounds.

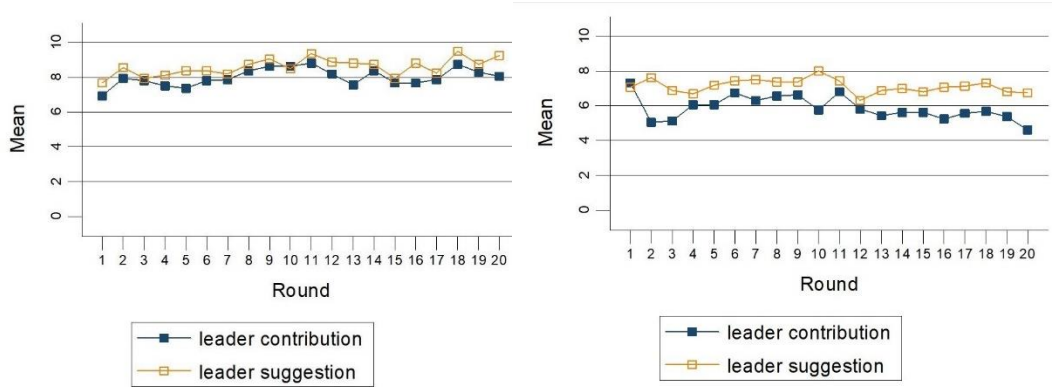
| Independent variables | Dependent variable: contribution level suggested by each leader in each round co-efficient |
|---|---|
| Ingroup leader<br>(= 1 if in Ingroup Leader treatment;<br>= 0 otherwise) | 8.425***(0.4997) |
| Outgroup leader<br>(= 1 if in outgroup leader treatment;<br>= 0 otherwise) | -0.9813(0.5068) |
| Round x Ingroup leader | 0.0675**(0.0249) |
| Round x Outgroup leader | -0.125(0.0920) |

*Note: The dependent variable is the contribution level suggested by each leader in each round. Numbers in parentheses are standard errors.*
** p<0.05; ** p<0.01; *** p<0.001.*

*Result 4: Ingroup leaders make significantly higher contribution suggestions to their groups than outgroup leaders*.

### *2.6.4 Cheap Talk by Leaders*

Figures 2.5a and 2.5b display the mean contributions and the mean suggested contributions made by the ingroup (outgroup) leaders. As the figures show, the mean suggested contribution was always higher than the mean contribution made by the leaders, except in Round 10 of the Ingroup Leader treatment and Round 1 of the Outgroup Leader treatment.




(a) ingroup leaders (b) outgroup leaders

Figure 2.5 Comparison of mean contributions and mean suggested contributions.

In the Ingroup Leader treatment, the difference between contribution suggestions and actual contributions made by ingroup leaders ranges from 0.75E$ to 1.19E$. By contrast, in the Outgroup Leader treatment, the difference between contribution suggestions and actual contributions made by outgroup leaders ranges from 0.25 E$ and 2.13 E$ in the first and last rounds, respectively. We find that the mean suggested

contribution is significantly higher than the mean contribution made by leaders in the Ingroup Leader treatment (8.59 vs 8.00, p = 0.0254, Mann-Whitney two-sided test). The difference between the mean suggested contribution and the mean contribution by leaders in the Outgroup Leader treatment is also significant (7.13 vs 5.87, p = 0:0000, Mann-Whitney two-sided test).

*Result 5: Both ingroup and outgroup leaders engage in cheap talk and are inclined to send a non-credible signal at 5 % level of significance. Outgroup leaders are more likely to engage in cheap talk than ingroup leaders at 1 % level of significance*.

### *2.6.5 Link between Beliefs and contributions*

Figures 2.6 and 2.7 show beliefs of the subjects in the Ingroup (Outgroup) Leader treatment about the possible contributions that can be made by outgroup (ingroup) leaders and the actual contributions made by the outgroup(ingroup) leaders. The figures provide strong evidence of difference in beliefs about ingroup and outgroup leaders.

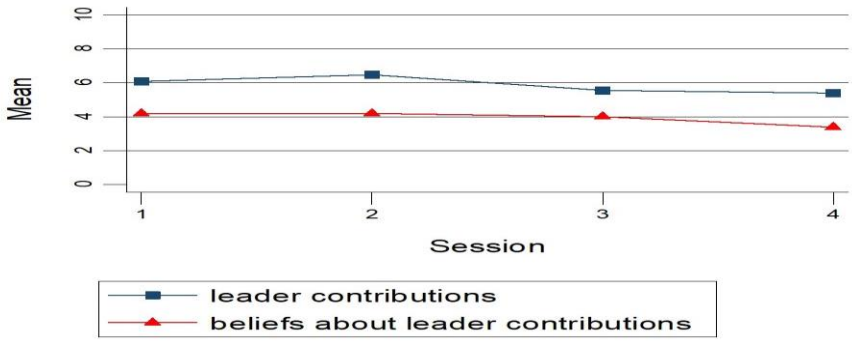



Figure 2.6 Comparison of beliefs about outgroup leader contributions and actual leader contributions.

In Figure 2.6 the beliefs about contributions that can be made by outgroup leaders are consistently lower than the actual contributions made by outgroup leaders. The beliefs were elicited in the Ingroup Leader treatment and data on the actual contributions has been collected from the Outgroup Leader treatment. We find that the mean outgroup leader contributions are significantly higher than the beliefs made by ingroup subjects about the former' contributions (5.87 vs 3.94, p = 0.0202, Mann-Whitney two-sided test). On the contrary, the difference in the mean ingroup leader contributions and the beliefs made by outgroup subjects about the former' contributions is not significant at 5 % level of significance. (8.00 vs 6.15, p = 0.0833, Mann-Whitney two-sided test.)


Figure 2.7 Comparison of beliefs about ingroup leader contributions and actual ingroup leader contributions.

*Result 6: There is no significant difference in beliefs about ingroup leader contributions and actual ingroup leader contributions. However, beliefs about outgroup leader contributions are significantly lower than actual outgroup leader contribution.*

## 2.7 Concluding Discussion

Effective leaders play an important role in mitigating cooperation failures. However, as noted in the literature, outsiders in positions of leadership can face resistance. Our goal is to understand how shared group identity between leaders and followers helps shape a group's pro-social behavior and beliefs about a leader's effectiveness. Our controlled laboratory experiment allows us to cleanly observe followers exhibiting favoritism-based preferences towards ingroup leaders and discriminatory tendencies towards outgroup leaders who do not share an artificial laboratory-induced group identity.

Our key finding is that there is substantial and statistically significant evidence to indicate ingroup bias. Namely, our experiment shows that ingroup leaders can induce substantially higher average contributions from ingroups than outgroup leaders. By contrast, outgroup leadership can result in significantly lower average contributions to the public good. One explanation might be that a persistent ingroup bias makes outgroup leaders less effective in fostering cooperation. We found no statistically significant difference in average contributions between outgroup leadership and no leadership. A potential explanation is that ingroup bias may make outgroup leaders ineffective to such an extent as to negate any advantage from having a leader in the group.

Additionally, we find that mean absolute deviations from outgroup leaders' suggestions are significantly greater than those of ingroup leaders. Such deviations can help measure leader effectiveness. Groups, followers, and outgroup leaders too

significantly deviate more from their own contribution suggestions than ingroup leaders. Our findings extend the evidence by Gangadharan et al., (2019) which found that female leaders deviated negatively from their proposals more frequently than male leaders in a lab-in-the-field experiment. In the long run, such behavior from leaders could reduce trust and cooperation within groups and render the leader less effective. Additionally, our findings suggest that even though both ingroup and outgroup leaders engage in cheap talk, ingroup leaders are more likely to honor their words.

We further find that outgroup leaders recommend lower contribution amounts than ingroup leaders. Our experimental results confirm that shared group identity not only shapes the pro-social behavior of followers, but also of leaders. A possible interpretation of our results is that a leader with a strong sense of group identity gives more weight to the overall welfare of the group and less weight to their own individual material well-being. As outgroups leaders are not prototypical of ingroups, they could possibly lack the intrinsic motivation to encourage the ingroup to a better social outcome.

Finally, we find that beliefs about the contributions made by outgroup leaders are consistently lower than their actual contributions. Our analysis suggests that outgroups leaders are ineffective leaders and that others perceive them as such. Group identification helps develop a negative prior belief among followers that outgroup leaders will not be equally invested in encouraging a better social outcome for the group. Our results are consistent with Grossman et al., (2019) which found gender differences in followers' perception of leader effectiveness. Our paper shows that these perceptions arise even in contrived lab-induced group identities.

Overall, our results shed light on the detrimental effects of ingroup bias in diverse leadership. The lack of diversity in leadership is a missed opportunity for organizations to create an inclusive environment. Outsider leaders are better equipped to make objective, innovative changes to the organizations.[16] Representation from diverse leaders is essential in correcting any prior negative perceptions about outsider leaders. Increasing gender, ethnic and racial diversity in leadership can help make leaders more adaptable and thus help organizations retain diverse team members. Ingroup bias has economic implications related to equity concerns (Della Valle and Proner, 2017), trust and cooperation within teams (Hargreaves, Shaun, and Zizzo, 2009; Ioannou, Qi, and Rustichini, 2015). As a result, it needs to be properly addressed by organizations and policy makers.

A policy implication of our paper is to have more inclusion: by broadening the definition of an ingroup leader and including diverse leaders, we can reduce the number of leaders who can be labelled as 'outgroup' leaders. Pan and Houser (2013) suggests that groups formed around cooperative production tasks showed less ingroup favoritism and less outgroup discrimination. Eckel and Grossman (2005) shows that an individual who perceives herself as part of a team will be more willing to cooperate and work together as a team. Our results suggest that this evidence should be probably extended to leadership

[16] https://chiefexecutive.net/the-outsider-advantage

https://www.bcg.com/en-us/publications/2018/how-diverse-leadership-teams-boost-innovation

as well and outgroup leaders should be made part of the ingroup to increase their effectiveness and cooperation in groups.

Further research could build upon our study by, e.g.: (i) investigating the difference in outgroup discrimination faced by majority and minority leaders; (ii) conducting controlled experiments on differences in pro-social behavior using a combination of natural social identities existing outside the lab (e.g., gender, race, and religion and artificially induced identities). Further, it would be beneficial to investigate whether transactional leadership styles, involving rewards and punishments, can help reduce the leader effectiveness gap between ingroup and outgroup leaders.

For leadership to be a more effective tool, we need to first understand the ill effects of shared social identities. This paper is a step to begin such an understanding.

# CHAPTER 3: A LITERATURE REVIEW OF DIVERSITY, EQUITY, AND INCLUSION

## 3.1 Introduction

Research on diversity, equity and inclusion have enjoyed a prominent position in the management, leadership, and business literature (DiTomaso and Hooijberg,1996; Obenauer and Langer, 2019; Ng and Sears, 2020). As expected, diversity, equity and inclusion have been defined in various ways in different literatures. In the management literature, diversity has been commonly described as "the varied perspectives and approaches to work, members of different identity groups bring" (Thomas and Ely, 1996). The early definitions of inclusion describe it as the extent to which an individual is accepted, allowed to participate, treated as an insider, and enabled to contribute fully. (Miller, 1998; Hope, Ledford, and Mohrman, 1999; Lirio et al., 2008). These definitions focus on the individual need of belongingness. Adams (1963) provided the primary proposition on equity theory that individuals review the inputs and outcomes of themselves and others, and in situations of inequity, experience greater cognitive dissonance than individuals in equitable situations.

Economists have also recently focused on this line of research. In conceptualizing diversity and inclusion, many economists draw on social categorization theory[17] (Ashforth and Mael, 1989) and social identity theory (Tajfel, 1982; Tajfel and Turner,

[17] Fryer and Jackson (2008) shows a model of optimal categorization.

1986) from the social psychology literature. According to the first theory, people tend to classify themselves into social categories, for example, as young versus elderly, man versus woman, or Indian versus Chinese, contingent upon the immediate contexts (Macrae and Bodenhausen, 2000). According to the second theory (Tajfel, 1982; Tajfel and Turner, 1986) one's self concept is derived from being members of specific social groups, especially those groups which have higher perceived social identities. In-groups are groups with which we identify, and out-groups are ones with which we do not identify.

Tajfel et al., (1979) developed social identity theory to understand the psychological basis for intergroup discrimination. It is the preference for the in-group over the out-group that has been posing a threat to desired outcomes of organizational diversity (Singh and Goh, 2006; Singh et al., 2018; Van Knippenberg and Schippers, 2007). Underlying the notion of inclusion is an individual's need to belong to a larger social group, which in turn is related to the individual's psychological well-being (Davidson and Ferdman, 2002). Drawing on the knowledge from psychologists, economists have used experiments to understand the motivations behind discrimination and how it acts as an impediment to diversity and inclusion.

Diversity has particularly been neglected in leadership roles. Although women and members of non-White racial and ethnic groups have been gaining access to leadership roles in the last couple of decades, they still remain underrepresented. The glass ceiling is still a barrier to jobs in middle and upper management for women and members of racial and ethnic minority groups. In terms of parliamentary representation,

globally women have secured just 25% of available positions (Crotti, Geiger, and Zahidi, 2020). And just 8% of managers and 3.8% of CEOs are Black (U.S. Bureau of Labor Statistics, 2019).

The role of leaders is becoming more and more important in advancing diversity management in organizations and societies. Ng and Sears (2020) find that CEO commitment to diversity translates into the implementation of diversity management practices. When CEOs signal their positive beliefs and priorities about diversity, managers interpret these signals to implement diversity management practices in organizations. Companies in the top-quartile for gender diversity on their executive teams were 21% more likely to have above-average profitability than companies in the fourth quartile. For ethnic/cultural diversity, top-quartile companies were 33% more likely to outperform on profitability. (Hunt et al., 2018).

My main goal for this review is to present an understanding of diversity and inclusion especially in leadership and reflect on questions around them. Some of the key questions addressed are: 1) What exactly do diversity, equity and inclusion mean? 2) Why do we need diversity, equity, and inclusion? and 3) What are the current challenges faced to ensure diversity, equity, and inclusion especially in leadership?

The rest of the paper is organized as follows. In Section 2, I present the theoretical foundations of diversity and inclusion. Section 3 discusses the importance of diversity, equity, and inclusion and how leadership can play a role in driving diversity, equity and inclusion in organizations and societies. In section 4, I outline the challenges that are faced by minority groups in leadership positions and as such become a deterrent to

achieving the benefits of diversity, equity, and inclusion. Finally, section 5 concludes and discusses future research directions.

## 3.2 Theoretical Foundations of Diversity and Inclusion

### *3.2.1 Diversity*

Diversity and inclusion as a field of academic study is vast, spanning disciplines such as management, sociology, and psychology. Apart from theories of social identity and categorization (Tajfel, 1978; Turner, 1982), sociological theories of stigma (Goffman, 1974) and status characteristics (Berger, Cohen, and Zelditch, 1972) which help to explain the emergence of group hierarchies and intergroup conflict have contributed to the development of diversity research.

Early diversity-related research focused on the investigation of group differences in performance as well as on intergroup relations, such as stereotyping, prejudice and discrimination in relation to occupational stereotypes with respect to sex and race (Rosen and Jerdee, 1973). Since the initial focus in the 1970s on women and people of color, the meaning of diversity has expanded to include other forms of demographics such as religious practices and sexual orientation. Garg and Sangwan (2020) find that the most researched dimension of diversity is ‘women’, whereas lesbian, gay, bisexual and transgender (LGBT) remain to be the least-researched dimension. In the current context, diversity include other invisible forms of differences among people that consider factors such as educational background, functional specialties, organizational tenure, working

styles, thinking styles and even personality traits (Ferdman and Sagiv, 2012; Hays-Thomas, 2004; Nair and Vohra, 2015).

But diversity alone cannot guarantee an improved performance in teams and organizations. Diversity needs to go hand in hand with inclusion (Sabharwal, 2014; Sposato et al., 2015).

### *3.2.2 Inclusion*

The inclusion literature is still in its nascent stage and therefore there are not many theoretical models in this literature. One exception is Mor Barak (2000) which developed a theoretical model of inclusion in which she posed that diversity and organizational culture would contribute to perceptions of inclusion-exclusion, which would then lead to job satisfaction, organizational commitment, individual wellbeing, and task effectiveness. Some research, which explores varying organizational approaches to diversity management, suggests that there are practical differences in focusing on diversity and inclusion. For example, Cox (1991) and Thomas and Ely (1996) propose typologies that distinguish between organizations and their diversity management paradigms based on the degree to which diversity exists and is integrated into organizational structures, strategies, and processes.

Attempts to create inclusive environments must consider individual differences, needs and perceptions as well as focus on creating structures, systems and processes that make individuals feel valued, treated fairly and part of core decision-making. (Davidson and Ferdman, 2002; Bilimoria, Joy, and Liang, 2008; Roberson, 2006). Emphasizing on the fairness perspective, Holvino, Ferdman, and Merrill-Sands (2004) define inclusion as

‘equality, justice, and full participation at both the group and individual levels, so that members of different groups not only have equal access to opportunities, decision-making, and positions of power, but they are actively sought out because of their differences’. If members of groups are perceived as too similar, then individuals become interchangeable and the need for ‘uniqueness’ is unfulfilled (Fromkin and Snyder, 1980). Shore, Cleveland, and Sanchez (2018) conceptualize inclusive workplaces as environments which need to cater to both the individual needs of belonginess and uniqueness.

## 3.3 Why Do We Need Diversity?

### *3.3.1 Importance of Diversity and Inclusion*

In teams and organizations, diversity is an essential ingredient for several needs including competitive success, employee engagement, higher productivity, enhanced reputation, increased profit, adaptability, reduction of employee turnover and driving innovation (Norbash and Kadom, 2020). When given proper consideration, diversity becomes not only one of many initiatives but rather a fundamental and essential element in the structure of an ambitious and successful organization. The diverse organization generates increased revenue, is more adaptable, and can provide expanded marketing opportunities.

If organizations are not effectively diverse and inclusive, it adds cost through less appreciated and less engaged employees. Employees with the highest levels of engagement on average perform 20% better and demonstrate a remarkable 43% increase

in productivity when compared with their counterparts, and they are 87% less likely to leave their organization (Anand, 2013). Organizations in the top quartile in racial and ethnic diversity are 35% more likely to have financial performance above medians, and the top quartile for gender diversity is 15% more likely to have financial performance above medians (Hunt, Layton, and Prince, 2015). This may be explained by an increased sense of affiliation and a belief that the organization with the employees' best interests in mind enjoys greater employee engagement.

Lack of diversity management can also lead to unsatisfied workers, resulting in higher rates of absenteeism and attrition. (Cox and Blake, 1991; Hunt, Layton, and Prince, 2015). Organizations that are more diverse possess higher rates of employee retention and affiliation because each employee feels accepted and valued.

Successful businesses need to be adaptable to keep up with changing markets and dynamic competition. Innovation and novelty are in greater abundance in organizations possessing individuals with a broader range of diverse perspectives and experiences, compared with organizations that comprise homogenous groups (Cox and Blake, 1991). Innovation in diverse companies accounts for 19% of higher revenues (Lorenzo et al., 2018).

A more diverse organization includes employees with a greater range of collective experiences and therefore a potentially broader range of applicable solutions. Problem-solving and decision making in diverse teams lead to an ability to identify a greater variety of problem-solving approaches, perspectives, and ideas. Diverse teams often outperform experts in problem-solving (Reynolds and Lewis, 2017; Hoffman and Maier,

1961; Hunt, Layton, and Prince, 2015). As a result, top quartile diverse companies therefore specifically show increased employee engagement when compared with their competitors.

### *3.3.2 Leadership as a Driver of Diversity and Inclusion*

Diversity in organizational leadership has been linked to better decision making (Krywulak and Sisco, 2008), growth in market share (Hewlett, Marshall, and Sherbin, 2013), and increased returns on equity (Barta, Kleiner, and Neumann, 2013). Highly diverse leaders unlock innovation by creating a culture of safe and effective communication in which all team members feel welcome to contribute their opinions and voices. These organizations welcoming team members' contributions are increasingly horizontal and share decision-making authority with team members. Such organizations develop a just culture in which success is correctly credited and feedback is both actionable and implemented (Hewitt, Marshall, and Sherbin, 2013)

Cox (2001); Podsiadlowski et al., (2013) and Kuknor and Bhattacharya (2020) have emphasized on the importance of leader behavior in building and sustaining an inclusive and diverse workforce during normal and uncertain times. An inclusive leader has been characterized as one who visibly champions diversity. Inclusion at the workplace can be enhanced by a leader promoting and encouraging inclusiveness, which constitutes of open communication and dialogue about differences, creation of a learning environment for diverse individuals and groups, flexibility in policy, as well as belief and conviction about inclusiveness leading to positive work culture and when required, even altering rules for acceptable behaviors (Wasserman, Gallegos, and Ferdman, 2008;

Chorbot-Mason et al., 2013). Inclusive leadership can overcome barriers between members with different backgrounds, and improve work coordination and other team performances (Wasserman, Gallegos, and Ferdman, 2008; Shore et al., 2011; Mor Barak, 2014). The model of inclusion and exclusion (Barak, 2016) recognizes leader as a significant factor in influencing the individual experience of inclusion at the workplace. Nembhard and Edmondson (2006) found that psychological wellbeing and psychological safety of employees can be reached by leader appreciation and encouragement of employee ideas and opinions where they are free to speak up and express their views.

In the leadership literature, a few contemporary leadership models have identified certain leadership styles that may be more apt to value an inclusive work culture and climate. (Ferdman et al., 2021). Transformational leadership, which creates belongingness among followers by unifying them around goals and values is correlated with diversity of team member behavior. (Kearney and Gebert, 2009). Servant leadership has been suggested to promote inclusive ideals to thrive in diverse organizations "by helping diverse employees feel empowered and valued, fostering equitable, socially responsible, and more human workplaces, as well as being more sensitive to various societal expectations." (Gotsis and Grimani, 2016). A servant leader prioritizes the growth and success of the followers, advocates for diversity, shows care and genuine concern for followers' needs, and commits to solving issues of exclusion. (Ferdman, 2014; Gotsis and Grimani, 2016). Even authentic leadership style has been associated with perceptions of inclusion. Authentic leadership enhanced followers' self-worthiness and pro-social behaviors. (Cottrill, Lopez, and Hoffman, 2014)

Followers also can and do “play a more active role in constructing the leadership relationship, empowering the leader and influencing his or her behavior, and ultimately determining the consequences of the leadership relationship” (Howell and Shamir, 2005). Wang et al., (2020) find that followers feel motivated to take charge under inclusive leadership. Therefore, the inclusiveness and support of leaders for followers’ trial and error is the basic condition for followers to actively engage in taking charge.

## 3.4 Challenges Faced by Minority Leaders

Access to leadership roles has undoubtedly been difficult for people of the traditionally excluded social groups. (Eagly and Chin, 2010). In recent years, identity has been used more and more as a wedge to separate subgroup. Social identity is used to explain such phenomena as ethnic and racial conflicts (Sen, 2007) and discrimination.

Research shows that the potential for discrimination is present when perceivers hold stereotypes about a particular social group, that is, minorities, and when the stereotypes are incongruent with the attributes that they believe are required for success in a particular role (Eagly and Karau, 2002; Heilman, 2001). Discrimination is evident in mainstream society as well as in the workplace (Dipboye and Colella, 2005; Goldman et al., 2006; and Triana, García, and Colella, 2010). Regardless of whether a minority individual exhibits stereotypical characteristic, people’s subjective beliefs about the characteristics of minority groups may lead them to believe that any given individual group member lacks the qualities to be successful in a counter-stereotypical domain (e.g., a Black scientist; Eagly and Chin, 2010). These associations between minorities like race

and the stereotyped characteristics or qualities of the minority group are pervasive and even unconsciously influential (Dovidio, Kawakami, and Gaertner, 2000).

### *3.4.1 Gender Discrimination*

Women still face systemic barriers to leadership. According to Hill et al., 2016 men are far more likely than women to rise to the highest paying and most prestigious leadership roles in US from the corporate boardroom to Congress (23% of US House of Representatives are female), from healthcare companies to the courts (33% of US Supreme Court are female), from non-profit organizations (22% of chief executives of non-profits with annual budgets of at least $50 million are females) to universities (only 32% are full professors). Kim and Starks (2015; 2016) show that women directors contribute additional expertise which increase the board's advisory effectiveness and greater advisory effectiveness, as measured by greater director heterogeneity, is associated with higher firm value.

For academia there is evidence that women are underrepresented at all academic levels. For example, even though women earn roughly half the doctorates in science and engineering in the United States, they comprise only 21 percent of full science professors and 5 percent of full engineering professors (Shen, 2013). There is also evidence that female academics in science are less likely to be invited to join corporate scientific advisory boards (McCook, 2013). Adams and Kirchmaier (2016) show that the fraction of women on the board is lower for firms in the STEM and Finance sectors (STEMandF) than in the non-STEM sector.

In regard to political leadership, several studies show that raising the share of women in government influences policy choices, with a tendency for policy choices to reflect the interests of women more closely (Chattopadhyay and Duflo, 2004; Washington, 2008; Clots-Figueras, 2011; Clots-Figueras, 2012; Bhalotra, Clots-Figueras, and Iyer, 2013; Brollo and Troiano, 2016; Iyer et al., 2012). However, some studies find that a gender gap in political ambition, even among educated, well-credentialed professionals, depresses women's interest in running for office and ultimately emerging as candidates (Schneider et al., 2016; Maestas et al., 2006). Preece and Stoddard (2015) through a field experiment test a prominent theory about the source of the gender gap in leadership ambition: women's higher aversion to competitive environments. They find that priming participants to consider the competitive nature of politics has a significant negative effect on women's interest in political office, but not on men's interest. This differential response by men and women significantly increases the gender gap in leadership ambition. These findings suggest that among politically active individuals, women are differentially turned off by the competitive nature of politics. However, a recent paper by Pate and Fox (2018), using a laboratory experiment, demonstrate that while women are less willing to enter an election, women are not unwilling to run for election. They find that more finely tuned recruitment interventions aimed at encouraging women to run were successful in increasing the interest of potential candidates and thereby increasing the supply of women candidates.

### *3.4.2 Racial Discrimination*

Black female leaders are more likely to experience discrimination related to the intersection of their gender and race (Reed and Evans, 2008; Thomas et al., 2008), and less likely to receive support and recognition (Carter and Peters, 2016) than their White and/or male colleagues. Factors of isolation, additional expectations related to identity, lack of support, and work environment can create feelings of marginalization and loss of efficacy, and cause many women to speak up less, worried about how their advocacy or leadership might be perceived or attributed to their identity, gender, and/or race (Reed and Evans, 2008). While experiences of overt racism, discrimination, and bigotry persists in contemporary society, studies highlight how racism is more often experienced through microaggressions (Lewis et al., 2013; 2016). Research on microaggressions traditionally focused on race, but these exchanges also impact women, members of the LBTQ community, and others of minoritized identities, and in unique and intersecting ways (Nadal et al., 2015).

### *3.4.3 Ethnic Discrimination*

Burgess et al. (2011) find that politicians (cabinet members) allocate road building efforts in favor of their own ethnic group, but this ethnic favoritism dissipates upon the transition to democracy. Kramon and Posner (2013) find that co-ethnics of the President and the Minister of Education in Kenya see an increase in education but not in health. Co-ethnics of the incumbent politicians are more likely to have pork barrel benefits (Fearon, 1999), superior infrastructure in their districts (Burgess et al., 2015),

better health outcomes (Franck and Rainer, 2012) or preferential access to foreign aid (Briggs, 2014; Jablonski, 2014).

## 3.5 Concluding Remark

The many and various benefits of diversity, equity, and inclusion help us learn that it is not only an ethical concern but is also advantageous and profitable to pursue a more diverse and inclusive culture in teams, workplaces, organizations, and society at large. Diversity and inclusion are not only about providing equal opportunity to all based on gender, race, or religion but it is about changing mindsets. In this paper, I bring together an array of research studies from management, leadership, psychology, sociology, and economics to present a multidisciplinary literature review of diversity, equity, and inclusion, especially in leadership.

Recent evidence from the experimental economics literature demonstrates that in strategic interactions, where information is asymmetric, individuals may rely on costlessly observable cues such as race (Glaeser et al., 2000), gender (Scharleman et al., 2001; Croson and Buchan, 1999) and ethnicity (Fershtman and Gneezy, 2001; Burns, 2012) to distinguish between individuals and their anticipated behaviors. Moreover, costless observable visual cues are likely to be privileged over other categorizations, even when the latter might be more relevant (Chandra, 2003; Cornell and Welch, 1996).

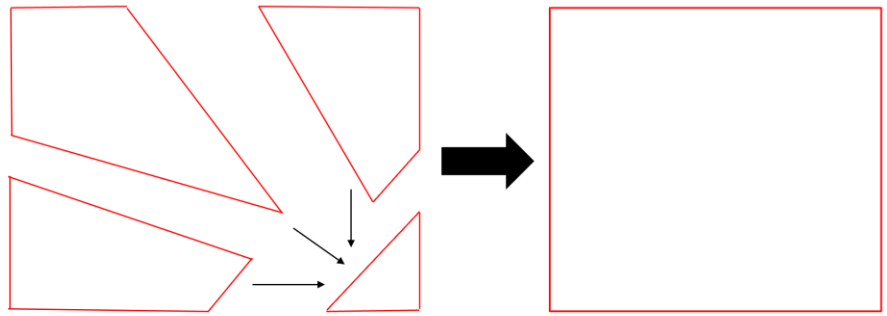
But attention to diversity, should not be simply about underrepresentation; it should not be limited to cataloging the presence or absence of leaders from diverse groups. Attention to diversity and leadership means expanding the traditional leadership paradigms of traits, situations, and systems to include those of individuals from diverse

identity groups. It means examining what leaders from such groups might bring to their styles of leadership that might be different from those of majority group leaders. Creating an inclusive culture has to focus beyond diversity- based recruitment and diversity training and include holistic ways to leverage on diversity. It involves rephrasing the conversation about diversity and inclusion, and addressing biases, both conscious and unconscious that may hinder integration.

We have come a long way from the early days of underrepresentation of minorities. Today female representation in leadership is much higher in politics and education than they were even a decade ago. According to Global Gender Gap report (2020), overall, the gender gap has reduced by 0.6 percentage points since 2018 and by a compounded 4 percentage points since 2006 (or an average of almost 0.3 points a year). The Political Empowerment gender gap globally improves to a score of 24.7%, which is 1.8 percentage points higher than 2019. There has been a particular strong increase in the number of women in terms of ministerial positions. Although the number of women ministers remains low, this progress will hopefully contribute to generating a more women-friendly environment in political parties and institutions while setting role models for the private sector as well. Some of the motivating success stories of women in leadership are that of Jacinda Arden, Prime Minister of New Zealand and Angela Merkel, Germany's Chancellor. Through their unique leadership styles, they were able to curb the covid-19 death toll in their countries and handle the pandemic much better as compared to many other countries.

## APPENDIX A

## A.1 Puzzle Cuts



No envelope contains all the above 4 pieces to make a square.

The complete square

Figure 2.8 This figure (left) shows the cuts of the square puzzle. Each square was cut exactly in these shapes. Putting together these 4 pieces as shown in the figure(left) will make a complete square (right). Each rectangle also had the exact same cuts.

## A.2 Mean Contributions of Leaders and Followers

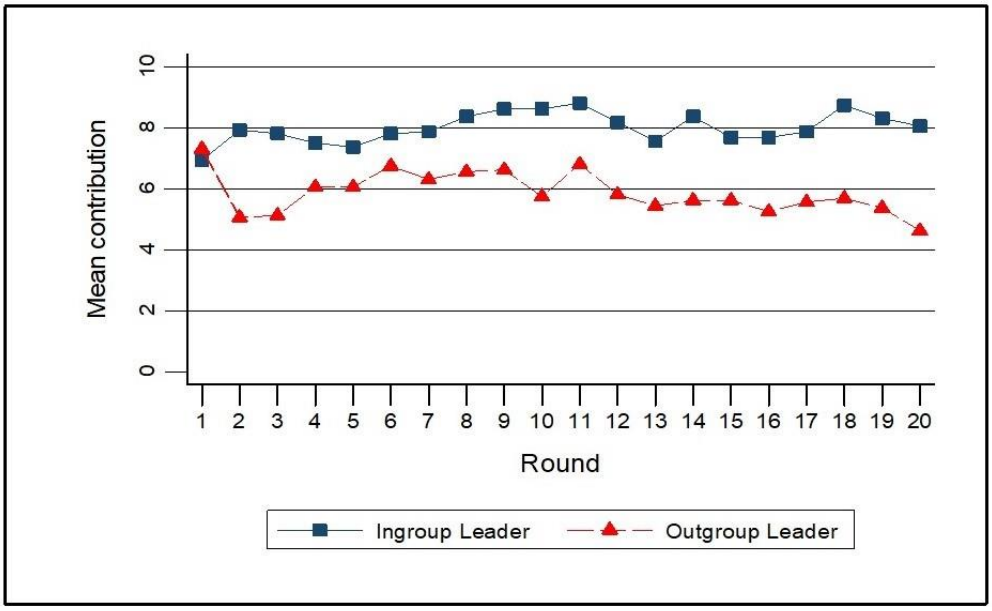



Figure 2.9 Mean contribution to group account (only leaders).

Mean contribution (only leaders) is significantly higher in Ingroup leader treatment than in the Outgroup Leader treatment (8.09 vs.5.87, p = 0.0000, Mann-Whitney two-sided tests.)

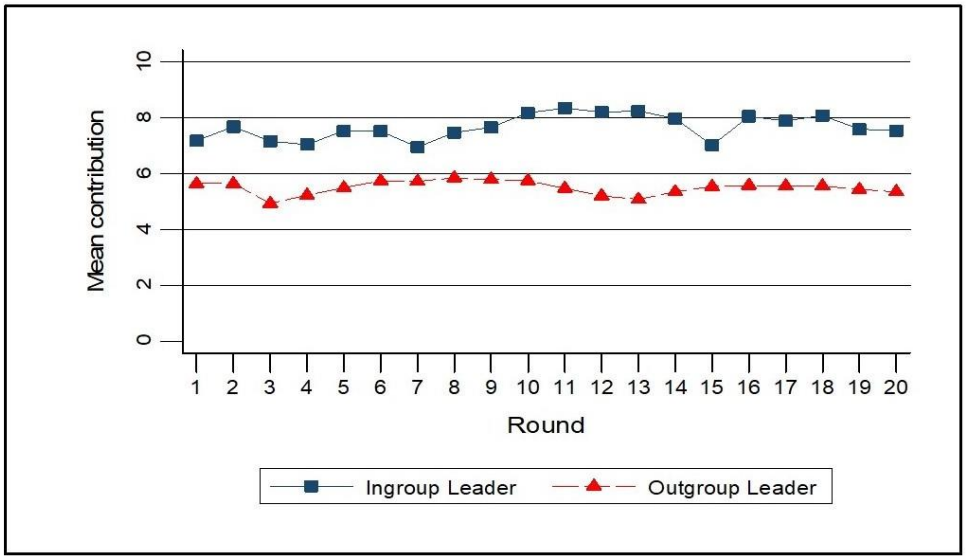



Figure 2.10 Mean contribution to group account (only followers).

Mean contribution (only followers) is significantly higher in Ingroup leader treatment than in the Outgroup Leader treatment (7.67 vs.5.50, p = 0.0000, Mann-Whitney two-sided tests.)

## A.3 Mean Absolute Deviations from Suggested Contributions

We compare mean absolute deviations from suggested contributions across treatments. For each group in each treatment, we calculate the mean absolute deviation from leaders' suggested contributions across all rounds. We then average these means over all groups in a treatment condition.

Table 2.5 Comparison of mean absolute deviations between treatments.

| | Ingroup Leader vs Outgroup Leader |
|---|---|
| Leaders and followers | 2.31 vs 3.22(0.0000) |
| Followers only | 2.39 vs 3.31(0.0000) |
| Leaders only | 2.06 vs 3.32(0.0000) |

*Note: Each mean reported is the average of absolute differences between group members' actual contribution and the amount suggested by the group leader across all rounds and all groups in a particular treatment. Numbers in parentheses are p-values of Mann-Whitney tests. We treat each group as an independent variable.*

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