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Drinking Tea with the Neighbors: Informal Clubs, General Trust, and Trustworthiness in Mali

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There has been scant empirical evidence linking associational membership to general trust and trustworthiness. This study explores urban youth clubs in Mali and asks: is membership in these groups associated with greater trust and trustworthiness toward society? It leverages 18 months of fieldwork, including 375 group surveys, 2,525 individual surveys, over 1,300 trust games, and transcripts from 66 focus groups. We use propensity score matching to analyze how members and nonmembers play the trust game with strangers. Members are more trustworthy; they return 12% more to their partners than nonmember peers. We do not find a systematic effect of membership on trust. Trustworthiness in the game is also positively correlated with self-reported trust and tolerance as well as real-world behaviors including volunteering and helping friends. Focus group data highlight five mechanisms by which membership fosters general trustworthiness: bonding among diverse members, bridging, public goods provision, socialization, and psychological support.

INTRODUCTION

Social capital theory posits that certain types of voluntary, associational membership have the potential to generate general trust and trustworthiness[1] that extends beyond fellow members to broader society (Putnam 2000).[2] As Putnam (2000) writes, "Frequent sets of interaction among a diverse set of people tends to produce a norm of generalized reciprocity (21)." These heightened levels of general trustworthiness act as a "lubricant" for broader social exchange, facilitating reciprocity and cooperation in society (Ostrom and Ahn 2009; Putnam 2000). However, group membership can also generate particularized trust in co-members at the expense of general trust in broader society (Berman 1997; Chambers and Kopstein 2001; Moser and McIlwaine 2006). Gangs, criminal networks, or xenophobic political movements may have diverse members and norms that promote solidarity and cooperation among members, but negatively affect broader society.

This article brings the study of voluntary associations to Mali: a poor state in the Global South where elections have failed to generate substantial service provision (Gottlieb and Kosec 2019). Due to weak government performance and pervasive corruption, some scholars would be skeptical that general trust and trustworthiness could flourish (Rothstein 2013; Rothstein and Stolle 2008). While state underperformance necessitates cooperation between citizens for service provision, the emergence of collective action in these settings is typically theorized among co-ethnics, kinship groups, or other homogeneous populations; it relies on information and norm enforcement and favors insiders (Bowles and Gintis 2002; Habyarimana et al. 2007). In a diverse urban environment, some scholars are skeptical that voluntary, associational membership can increase general trust and trustworthiness (Fukuyama 1995; 2001). However, Mali is home to vibrant associational life and its citizens are thought to have relatively high levels of trust. Thus, it is a good place to explore the potential relationship between voluntary, associational membership, and pro-social behavior (Goertz 2017).

We explore the relationship between associational membership and general trust and trustworthiness in

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[1] We use the term general trust or trustworthiness to refer to trust and trustworthiness toward strangers in society. Other scholars refer to this same concept as social, thin, or diffuse trust/trustworthiness.
[2] Social capital, as explained by Putnam (2000), consists of "connections among individuals—social networks and reciprocity and trustworthiness that arise from them (19)."

informal, urban, social clubs—locally called *grinw*.[3] *Grinw* are groups whose members meet regularly, usually around tea, to discuss local news and to share information and gossip. These groups are theoretically interesting in that they have norms of reciprocity, diverse membership, frequent face-to-face interaction, and can engage in public goods provision, which are characteristics of groups thought to be capable of fostering general trust. However, they are typically made up of underemployed, young men, whom we might not expect to generate broader social cohesion while hanging out. In this article, we ask: is membership in tea-drinking clubs associated with higher levels of general trust and trustworthiness toward other members of society?

This study draws from mixed methods data based on 18 months of fieldwork in Mali. It includes 375 surveys of these voluntary associations, 2,525 individual surveys of members and nonmembers, more than 1,300 trust games, and 66 focus groups in out-of-sample *grinw*. We employ the games to compare trust and trustworthiness of members and nonmembers toward strangers. We embed between-subjects experimental variation that allows us to measure how people play with partners from clearly defined social categories: co-linguists, non-co-linguists, and players with no specified linguistic group. We use a propensity score matching (PSM) technique, to analyze the role of group membership in our trust game results. PSM allows us to control for observable individual attributes that could influence *grin* membership, as well as trust and trustworthiness.

The games reveal that members of these informal social clubs are more trustworthy than nonmembers. They give around 12% more back to their partners irrespective of the treatment related to their language identity. In contrast, we do not find a significant and consistent relationship between membership and generalized trust. We find that being trustworthy in the game is associated with attitudinal trust, tolerance, and some reported real-world behaviors: time spent volunteering in the neighborhood and time spent helping friends.

We explore the mechanisms underlying the relationship between *grin* membership and trustworthiness using qualitative methods. We use Causal Map (Powell 2023) software to analyze focus group respondents' description of causal processes linking membership to general trustworthiness (Cyr 2016; Goertz 2017; Mahoney 2012). In the focus group transcripts, respondents state that these groups contribute to social cohesion. They discuss five main mechanisms by which these groups could generate trustworthiness: bonding among diverse members, bridging across groups, participation in public goods provision, socialization, and psychological support.

The article makes three distinct contributions. First, we provide suggestive evidence linking membership in a specific type of voluntary association and greater general trustworthiness. To date, there has been scant empirical evidence of the relationship between associational membership and general trust and trustworthiness (Hooghe and Stolle 2003; Newton 2001; Stolle 1998; 2001; 2003). We show that members of these groups are consistently more trustworthy than nonmember peers in the game. We demonstrate how trustworthiness in the game aligns with stated trust, tolerance, and real-world behaviors.

Second, we conduct our research in the Global South, in contrast to most social capital research, which has been conducted in OECD countries.[4] Literature on civil society in Africa has documented the many ways that civil society groups have provided members with self-help, government advocacy, or private/club goods (Bratton 1989; Gyimah-Boadi 1996; Hern 2019; Johnson 2021; Kang 2015; Tripp 2001), but there has been little exploration of the effect of membership on societal social capital. Urban, informal groups that link members of different ethnic and socioeconomic groups have been unexplored in discussions of civil society on the African continent. We describe the composition, function, and characteristics of these groups; our findings suggest that they could potentially play a role in generating social capital and trustworthiness in some urban contexts.

Finally, this study offers a rich mixed-methods study of an important population: young, urban men. We conduct over 1,300 trust games with a relatively understudied population—predominantly youth males in an urban environment. We demonstrate how behavior in the games correlates with self-reported pro-social action. We complement the games and survey data with focus group transcripts to highlight five distinct mechanisms cited by respondents as driving pro-social behavior inside these groups. This triangulation of data gives us greater confidence in the relationship between membership and general trustworthiness, but also identifies specific pathways for the development of pro-social behavior that researchers could explore in other urban, youth associations on the continent.

TRUST, TRUSTWORTHINESS, AND ASSOCIATIONAL MEMBERSHIP

General trust and trustworthiness are thought to be critical for a range of outcomes, including economic development (Knack and Keefer 1997), disaster response (Aldrich 2012), and democratization (Putnam 2000). Trust and trustworthiness are even more critical among citizens in weak states since communities often need to solve collective action problems themselves (Ostrom and Ahn 2009).

General trust is distinct from particular or in-group trust in that it extends out to broader society rather than just to those whom one knows and interacts with regularly (Putnam 2000). As Ostrom and Ahn (2009)

[3] *Grin* is singular in Bambara; the plural is *grinw*.

[4] Prominent exceptions include Krishna (2007) and the edited volume by Grootaert and van Bastelear (2002).

argue, general trust "reflects the average level of trust in society" (14). Yamagishi and Yamagishi (1994) describe it as a type of cognitive bias: "a belief in the benevolence of human nature in general and thus is not limited to particular objects" (139). Some scholars describe general trust as a stable predisposition formed early in life and difficult to change (Uslaner 2008; 2016).[5]

Another, arguably more important, element of pro-social behavior is trustworthiness. Trustworthiness is critical to generating patterns of reciprocity within greater society as past experience of others' trustworthiness drives one's trusting behavior in the future (Hardin 1996; Ostrom and Ahn 2009). Trustworthiness can be thought of as a norm or value, and, thus, more responsive to experiences over time. Levi and Stoker (2000) write that trustworthiness is rooted in "moral values that emphasize promise-keeping, caring about the truster, incentive compatibility, or some combination of the three" (476). General trustworthiness also differs from general trust in that people respond to information (what they were entrusted with); trustees can observe behavior of a "truster" and decide whether or not they want to engage in a reciprocal fashion.

Several factors determine general trust and trustworthiness. Context-specific characteristics and institutions, such as geographical conditions, culture, governance, property rights, and contract enforcement institutions, explain large cross-country variations (Falk et al. 2018; Fehr 2009; Rothstein 2013; Rothstein and Stolle 2008). Substantial variations in trust and trustworthiness are also determined by individual traits like gender, age, cognitive ability, and social factors, like language and ethnic cleavages, social status, or income segregation (Alesina and La Ferrara 2002; Brandt, Wetherell, and Henry 2015; Delhey and Newton 2003; Falk et al. 2018; Glaeser et al. 2000).

Group membership gives members personal benefits such as access to information, networks, and other kinds of supports (Portes 1998; Putnam 2000). It can also provide individuals with experience practicing reciprocity. By building in-group solidarity, trust/trustworthiness, and mutual support, membership facilitates collective action (Ostrom and Ahn 2009). However, only some types of group membership are thought to foster general trust and trustworthiness beyond their base of members. In some instances "bonding social capital" between members enhances particularized trust or trustworthy behavior toward other members, but does not extend to broader society. This in-group bonding can come at the expense of trust toward greater society (Berman 1997; Bourdieu 2011; Fukuyama 2001; Ostrom and Ahn 2009; Portes 1998), for instance, as out-group member discrimination (Scacco and Warren 2018). Therefore, it is critical to identify groups that have the attributes theorized to generate general trust and trustworthiness.

Existing literature reveals characteristics of groups thought to be capable of generating general trust and trustworthiness. First, they should be relatively open and be able to connect members of different sectors of society with weak ties (Granovetter 1973; Putnam 2000). Ideally, the groups connect members from across different cleavages to ensure that bonding happens among diverse rather than homogeneous members (Stolle 2002; Stolle and Rochon 1998). This diversity of membership can also facilitate bridging with nonmembers across different groups in society as it offers access to a broader set of networks (Granovetter 1973). Second, groups need to generate positive norms of reciprocity, which can happen through private, club, or public goods provision to members (Putnam 2000) and/or through socialization and learning about pro-social norms (Stolle 2003). In a cross-societal study of ultimatum games, Henrich et al. (2001) find that people's exposure to market place integration is correlated with cooperation. *Grinw* members may draw on past experiences with reciprocity when interacting with nonmembers. Third, more practically, people need to spend substantial time in these groups to facilitate face-to-face interaction (Feigenberg et al. 2014). Finally, groups that engage in public goods provision or volunteerism can foster pro-social orientation among members (Putnam 2000; Putnam, Campbell, and Garrett 2012).

In weak state contexts, civil society organizations play a central role in providing welfare services, self-help, and governance (Brass 2012; 2016; Cammett and MacLean 2011). In Africa, much of the existing research on associational membership focuses on homogeneous groups, including ethnic hometown and business associations (Bates 1974; Ekeh 1975), traditional leaders and their constituencies (Baldwin 2013; Dionne 2017; Koter 2016), religious groups (McCauley 2017; McClendon and Riedl 2015), funeral groups (LeMay-Boucher 2012), and village-based associations (Johnson 2021). However, Scacco and Warren (2018) suggest that the composition of group members is key: bonding within homogeneous groups could negatively affect society. Homogeneous groups are not the venues where we would anticipate that group membership could stimulate trust and trustworthiness behavior toward nonmembers.

In many urban areas, informal friend groups and social clubs bridge ethnic, socioeconomic, and regional cleavages. A few studies have found that participation in informal friend groups, rather than more formal associational membership, is positively associated with general trust (Delhey and Newton 2003; Valdivieso and Villena-Roldan 2014). Paller's (2014) ethnography of urban friendship in Ghana suggests that friends can play an important role in generating general trust and social capital. One reason political science has not explored the impact of these friend groups or social clubs is that they are highly informal, and, thus, difficult to identify.

[5] Though there is a debate as to the extent to which experiences can shape general trust (Glanville and Paxton 2007).

THE MALIAN CONTEXT

Mali is a low-income, Muslim-majority country characterized by weak government performance and significant corruption—traits that are typically associated with lower general trust. While trust rates in Africa are lower than in other continents, Mali is among the most "trusting countries" in Africa (Etang, Fielding, and Knowles 2011; Logan, Seydou, and Katenda 2020). Mali is ethnically diverse, but has been historically characterized as a tolerant and peaceful society without strong ethnic parties or particularly politicized identities (Koter 2016).[6] This is in part due to vibrant indigenous institutions that created cross-cutting cleavages, called *sanankuya* or joking cousins (Samassékou 2011). Centuries ago, these institutions were established as conflict mitigation mechanisms (Dunning and Harrison 2010). Mali has strong norms of pro-social behavior and generosity toward strangers and visitors. For example, the Bambara word *mogoya*, or one's personhood, is often evaluated by one's self-knowledge (Skinner 2015), but also behavior toward others. Another word, *jatigiya*, describes the practice of being a host (to a stranger or foreigner).[7] These norms continue to shape behavior in Malian society.

Over the last few years, Mali's social fabric has again been tested by conflict and insecurity. At the beginning of 2012, a series of insurgencies erupted in Northern Mali, followed by a coup d'état.[8] More than 450,000 persons had been displaced since 2012 and more than two hundred thousand remained displaced during our fieldwork. Despite a return to multi-party elections in 2013, there has been an increase in the number of insurgent groups which have expanded into the center region. This has affected the population's livelihoods and heightened inter-communal tension (Ibrahim 2021; Sangaré 2016). At the time of the survey, there was a strong North-South cleavage, with many Southerners blaming Northerners for the rebellion. Still, Mali is among the more unified and trusting countries on the continent. Eighty percent of respondents to the 2020 Afrobarometer survey thought there is more that unites than divides fellow citizens in Mali—making it the seventh most "unified" country on the continent (Logan, Seydou, and Katenda 2020).[9] Mali was ranked fourth highest among 34 countries in the Afrobarometer surveys for the percentage of respondents (23%) who said that most people could be trusted (Logan, Seydou, and Katenda 2020).[10]

We conducted our study in two Malian cities: Bamako and Mopti/Sevare.[11] Bamako, located in the South of the country, is the capital of Mali, whereas Sevare and Mopti are located in the Center of the country—closer to the ongoing conflict. Both cities faced rising insecurity and absorbed large numbers of internally displaced persons at that time of data collection (2014–15).

GRINW AS CONDUITS OF SOCIAL CAPITAL

We focus on one specific type of group within civil society, which is theoretically suited to generate general trust and trustworthiness: the *grin*. To systematically study these types of groups, we use a multi-stage, mixed-methods research strategy. This allows us to understand the conceptual boundaries of these groups, to identify and catalog them, and to survey groups and their members.[12] First, we conducted ethnographic research and group-level interviews to properly define our concept, *grin*, and our population of interest. *Grinw* are groups who meet regularly around tea, or another beverage, to discuss local news and members' personal lives, and to share information. They are typically composed of diverse members who live on the same neighborhood blocks (see Section 3 of the Online Appendix for further details on the definition).

There was no existing list of *grinw* in Mali, so we needed to generate a sample by conducting an original household survey. To obtain a representative sample of the local population, we adopted a clustered multi-stage probability sampling procedure. This allowed us to generate a sampling frame to select geographical clusters and households (details in Appendix A of the Supplementary Material). We sampled 1,128 households (642 in Bamako and 486 in Mopti). We collected demographic information on 4,303 household members aged 18–45 (our population of interest), including a question about their participation in a *grin*. To obtain a representative sample of *grinw*, we drew a random sample of 370 groups from the list of household members who belonged to a *grin* and then conducted a *group survey* in those groups. From the *household survey*, we find that nearly 44% of the sample, that is, individuals aged 18–45 living in households sampled, claim to be members of *grinw*. We find that members are systematically different than nonmembers: a young educated single male, who is not head of household and who is working in the informal sector, is more likely to

[6] The exceptions are three previous rebellions led primarily by members of the Tuareg ethnic group. See Section 1 of the Online Appendix (available at the APSR Dataverse, Bleck et al. 2023) for more information on context.

[7] This practice is so socially ingrained, that there is a formal social category of someone who hosts a stranger at their home as the stranger's *jatigi*, which includes obligations to provide for that guest (Donaldson and Fenayon 2023).

[8] See Section 1 of the Online Appendix for additional information on the political and security environment.

[9] Similarly, Mali ranks eighth in terms of Afrobarometer countries prioritizing national over ethnic identity and is among the lowest-ranked countries, with respondents reporting that they feel "treated unfairly" by others.

[10] Respondents were asked: "Generally speaking, would you say that most people can be trusted or that you must be very careful in dealing with people?"

[11] For the remainder of the article, we use Mopti to refer to the twin cities of Sevare and Mopti (located only 10 kilometers apart).

[12] The data collection took place over 18 months between 2014 and 2015. Two of the authors were present for this entire period. The study's timeline is described in Section 2 of the Online Appendix.

TABLE 1. Grin Characteristics

	(1) No. of obs.	(2) Mean	(3) SD	(4) Min	(5) Max
Group formation: neighbours	375	0.851	0.357	0	1
Ethnic diversity ELF index	375	0.626	0.222	0	0.880
Presence of displaced people	375	0.136	0.343	0	1
Presence of people from the North	375	0.331	0.471	0	1
Economic advantage from grin	375	0.741	0.438	0	1
Duration of the grin, in years	375	8.941	5.727	1	40
Daily grin meetings	375	0.752	0.432	0	1
Grin has a leader	375	0.819	0.386	0	1
New members decided by all	375	0.531	0.500	0	1
Tea payer: cost-sharing	375	0.251	0.434	0	1
Provide public good	374	0.714	0.453	0	1

be a member. Interestingly, ethnic affiliation is not significantly correlated with membership. [13]

Table 1 shows the descriptive characteristics of *grinw* from our survey of 375 groups. This allows us to see if these groups are aligned with characteristics described in the theory.[14] The majority of *grinw* (85%) were formed by a group of individuals coming from the same neighborhood area. Neighborhoods in Bamako and Mopti are very heterogeneous in terms of class and linguistic composition; as a result, we observe a relatively high mean ethnolinguistic fractionalization score of 0.63.[15] They also include members from across salient cleavages: a third of all groups had a member who originally hailed from the North of the country. Fourteen percent of groups admitted an internally displaced person as a member during the two prior years. While some of these displaced people, may have been family of *grin* members who fled insecurity in the North, others were displaced people (IDPs) who had recently moved to the neighborhood and were welcomed into the group. In both instances, IDPs bring with them an intimate knowledge of the insecurity in the region that they fled.

Members engage in positive, cooperative norms and they derive individual benefits from membership, including access to financial resources, advice, and even job opportunities. *Grinw* offer members mutual help and insurance—generating positive norms of reciprocity within the group. Most *grinw* afford members benefits and experiences of reciprocal support. In 88% of *grinw*, members provide financial help for fellow members, which can be allocated for baptisms, weddings, funerals, accidents, and illnesses. These funds help members to cover their own expenses, but also to care for dependents, which is a critical marker of adulthood and responsibility in Mali. Members describe economic advantages of membership, such as access to information about jobs or business opportunities—reported in 74% of these groups. *Grinw* have regular meetings. Due in part to high unemployment and weak welfare provision, many young citizens regularly participate as a means to get information, solve problems, and obtain psycho-social support. Over three quarters of these groups meet daily. Additionally, they are relatively long-lasting. The average duration of groups in our sample was about 9 years. In addition, many groups engage in voluntary work. Our data also document that around 71% of *grinw* provide public goods ranging from common space cleaning to sensitization campaigns. Overall, we confirm that *grinw* embody the characteristics of groups thought to be capable of generating general trust and trustworthiness: diversity of membership, positive norms of reciprocity, substantial face-to-face interaction, and public goods provision.

TRUST GAMES

Experimental Design

We employ a trust game, first introduced by Berg, Dickhaut, and McCabe (1995), which is thought to be an improved measure as compared to self-reported trust and trustworthiness (Glaeser et al. 2000; Johansson-Stenman, Mahmud, and Martinsson 2009; Karlan 2005). A number of related studies have used trust games to help reveal the ways citizens view and engage with in-group and out-group members (Becchetti, Conzo, and Romeo 2014; Delavande and Zafar 2015; Etang, Fielding, and Knowles 2012; Fershtman and Gneezy 2001). We use a between-subjects design, where about half of the respondents play the role of senders, which enables us to evaluate their levels of trust. The other half plays the role of receivers, which measures their trustworthiness. Trust is defined as the inclination of a person A (the sender) "to believe that another person B (the receiver) who is involved with a

[13] Table C.1 in the Supplementary Material shows the results from a linear probability model where the dependent variable is a dummy taking the value of 1 for individual grin membership, and 0 otherwise. It is regressed on a set of individual sociodemographic variables. Results are similar if we use probit or logit estimation techniques.

[14] For a detailed description of variables operationalization, see Section D of the Supplementary Material.

[15] The index is equal to 0 for ethnically homogeneous groups and to 1 for fully diverse groups, where all members belong to different ethnicities.

certain action will cooperate for A's benefit and not take advantage of A," while "trustworthiness is the willingness of a person B to act favorably toward a person A, when A has placed an implicit or explicit demand or expectation for action on B" (Ben-Ner and Halldorsson 2010, 65).

All players are instructed that they are playing with a stranger. Each sender is given 300 CFA Francs (about 50 cents in U.S. dollars at the time of our survey) and an envelope and told that their actions in the game would be anonymous. The endowment represents about 15% of the average daily wage or enough money to buy lunch. In addition, all players receive 200 CFA as compensation for participating in the game and survey. This was announced once a player was selected. Senders can decide to pass the receiver amounts of 0, 100, 200, or 300 CFA (no other amount is allowed: none of the 200 CFA of compensation can be passed on) in an envelope. The administrator explains that the amount given by the sender is tripled and delivered to the receiver. The receiver is provided with full information about the choices and information that were presented to the sender. Then the receiver (Player B) is told the actual amount given by the sender, and she returns any increment of 100 CFA Francs (ranging from 0 to a potential maximum of 900: what player B could return came solely from what was sent by Player A). We record the amount given by the sender (Player A) to measure trust and the amount returned by the receiver (Player B) as trustworthiness. The game played is not repeated. Thus this one-shot game does not allow players to learn and adapt over multiple rounds.[16]

Many papers find substantial in-group and out-group effects for salient identities (Carlin, Love, and Young 2020; Fowler and Kam 2007; Iyengar and Westwood 2015; Martini and Torcal 2019). We use linguistic identity to create in-group and out-group treatments. We operationalize "insider" and "outsider" status along a linguistic cleavage. Given our theoretical interest in general trust toward others in society, it is important to be specific in our discussion of those "others."[17] Each sender is randomly assigned to one of three treatments, in which we manipulate the identity of their partner: (T1) playing with another Malian whose language is not specified (general trust/trustworthiness); (T2) playing with another Malian who speaks the same language at home as the selected player (in-group); and (T3) playing with another Malian who speaks a different language at home (out-group). Senders and receivers are then randomly matched based on the treatment, and their actual choices are implemented, to avoid any deception.

We choose linguistic identity over ethnicity due to the low politicization of ethnicity, high rates of intermarriage, and the fact that many different ethnic groups speak the market place language. We anticipate that linguistic cleavages send a stronger signal about group membership than ethnicity. In these diverse, multi-ethnic communities, an ethnic minority who uses the trading language at home, is distinct from a minority who speaks their mother tongue.

Sample and Data

The total sample of individuals playing the trust games and answering the questionnaire consists of 2,525 individuals: 754 nonmembers and 1,771 members. We sourced players for the trust game from two environments. First, from the 370 *grinw* selected for our *group survey*. Within each, four players are randomly selected among the members who are present at the time of our visit: members of the same *grin* all individually play as senders or as receivers, based on a random draw at the level of the grin. In turn, each of those four individuals plays the trust game according to one of the treatments, randomly selected. Second, we sourced respondents from several marketplaces in Bamako and Mopti.[18] In this environment, players were selected at random using a screening questionnaire. This allowed us to select members and nonmembers with specific characteristics (gender and age) similar to the pool sampled from the *grinw*. Two stations were set up at separate sides of each market. One station recruited senders and the other recruited receivers. Additional information on the way we selected individuals from *grinw* and the market and on the way they played the game is in Sections A.5 and A.6 of the Supplementary Materials. Among the members, 1,409 played during *grin* meetings and 362 at public market stalls.

We aimed for half of all respondents to play under the control condition (with other Malians—no language specified) and 25% to play treatment 2 (linguistic insiders), and 25% to play treatment 3 (linguistic outsiders). After the game is played, each respondent answers an *individual survey*. Table 2 provides descriptive statistics on the entire sample and the sub-sample of grin members under the different treatment conditions. We see that 58% of the sample plays the game with another Malian (our control category), 22% plays with someone who speaks the same language at home, and 20% play with someone who speaks a different language at home. Forty-four percent of games are played in the market. Slightly more than half of the sampled individuals played as a sender (52%).

Our study sample is mostly male (83%); the average age is 26; a little over half of respondents speak a language other than Bambara.[19] About 12% have no schooling (the reference category in the analysis), 30%

[16] We report the protocol and the full trust game script in Section 4 of the Online Appendix.

[17] Reliance on vague definitions of "general" trust raises concerns about what respondents are imagining when they think of "most people" (Delhey, Newton, and Welzel 2011).

[18] We were careful to select markets that were frequented by a cross-section of those living in Bamako including major markets where people buy fruit, meat, and fabric, but also the main market for cell phone supplies and repairs. Markets were geographically dispersed across the city.

[19] Since Bambara is the dominant market language in Bamako and Mopti, we code all other languages as minority languages.

TABLE 2. Individual Characteristics

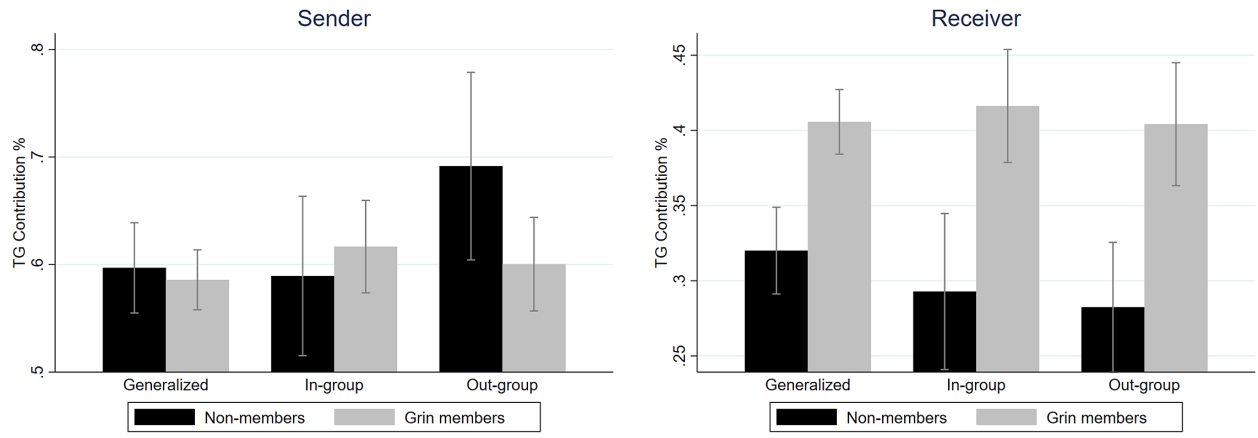
	(1)	(2)	(3)	(4)	(5)	(6)
	Mean	SD		Mean		
	Whole sample		T1	T2	T3	*p*-value
Panel A: Trust Game (TG) features ($N = 2,525$)						
T1: Generalized	0.581	0.493				
T2: In-group	0.219	0.414				
T3: Out-group	0.2	0.4				
Games played at market/public place	0.441	0.497	0.504	0.345	0.362	0.000
Player is sender	0.522	0.5	0.521	0.523	0.521	0.999
TG contrib., as % of endowment (sender)	0.600	0.326	0.589	0.610	0.623	0.297
TG contrib. > 0 (sender)	0.917	0.275	0.917	0.913	0.920	0.959
TG contrib. $> 50\%$ (sender)	0.658	0.495	0.539	0.608	0.608	0.044
TG contrib., as % of endowment (receiver)	0.378	0.248	0.376	0.388	0.373	0.765
TG contrib. > 0 (receiver)	0.920	0.270	0.924	0.924	0.904	0.642
TG contrib. $> 50\%$ (receiver)	0.240	0.427	0.235	0.238	0.256	0.806
Panel B: Individual characteristics ($N = 2,525$)						
Female	0.17	0.376	0.168	0.19	0.156	0.259
Age	26.4	7.6	26.3	26.1	27.0	0.036
Minority language	0.543	0.498	0.591	0.376	0.586	0.000
Lives in couple	0.378	0.485	0.368	0.38	0.406	0.251
Schooling: basic or religious	0.31	0.463	0.32	0.291	0.303	0.376
Schooling: secondary school	0.303	0.459	0.299	0.316	0.297	0.743
Schooling: professional/university	0.266	0.442	0.252	0.28	0.289	0.09
Has income generating activity	0.585	0.493	0.592	0.593	0.556	0.29
Risk averse	0.736	0.441	0.759	0.714	0.693	0.000
Lent money, last 6 months	0.189	0.392	0.181	0.203	0.2	0.389
Contribution in dictator game	167.5	78.1	162.4	175.8	173.2	0.000
Grin membership	0.701	0.458	0.658	0.769	0.749	0.000
HH size	12.9	8.1	13.2	11.9	12.9	0.000
HH members from the North	0.225	0.418	0.209	0.253	0.24	0.009
Asset index, 0–6	3.5	1.4	3.6	3.5	3.5	0.175
Location: Mopti	0.585	0.493	0.506	0.675	0.713	0.000
Panel C: Grin member characteristics ($N = 1,769$)						
Amount for support from grin, 10K CFA	0.358	1.229	0.365	0.431	0.26	0.049
Received economic support from grin member	0.151	0.359	0.141	0.141	0.19	0.004
Reason participation: integration, cohesion	0.222	0.415	0.21	0.212	0.262	0.023

Note: The table shows the mean for the whole sample and for different treatment arms: (T1) the trust game is played with another Malian whose language is not specified; (T2) playing with another Malian who speaks the same language at home as the selected player; and (T3) playing with another Malian who speaks a different language at home. Column 6 reports the *p*-value of a joint significance test of equality of means across treatment arms.

received basic or religious education, 30% attended up to secondary school, and 26% had professional or university education. Fewer than 60% of the respondents in our sample have some income-generating activities. Seventy percent of our sample are *grin* members, and the remaining 30% are nonmembers. The average household size is about 13 people, and in 22% of cases at least one household member comes from the North, which could generate another form of exposure to diverse populations. 59% of the sample is drawn from Mopti, and the remaining 41% from Bamako. We construct an index using reported household assets, ranging from 0 to 6, whose mean is 3.5. 74% of our respondents are risk averse (measured through hypothetical questions about a lottery game). Altruism is measured through the contribution in a hypothetical dictator game: respondents are invited to split an endowment of 300 CFA. Individuals give, on average, slightly more than half of this endowment (167.5 CFA). 19% of respondents had lent money to someone in the last six months. Details on the construction of these variables are provided in Section D of the Supplementary Material.

We evaluate results separately: senders' (N=1,317) behavior proxies trust and receivers' (N=1,208) behavior proxies trustworthiness. We measure our dependent variable, player's contribution, in three ways: whether it is more than 0 (binary variable), the

FIGURE 1. Share of Contributions for Senders and Receivers, by Treatments and *Grin* Membership



Note: We plot the mean of the share of the endowment given by treatment and for *grin* members and nonmembers. Whiskers indicate 95% confidence intervals.

contribution as a share of the initial endowment (continuous variable), and whether it is more than 50% of the initial endowment (binary variable). On average, senders give 60% of their initial endowment, and receivers send back 38% of what they have been given by the sender. Ninety-two percent of senders and receivers give something to their partners.

Figure 1 offers a visual comparison of the differences between members and nonmembers across treatments. For senders, there are no significant differences in what nonmembers and members send for treatments T1 and T2. Nonmembers appear to send more (measured by TG contrib %) when treated with T3. For receivers and across treatments, members send back significantly more. Formal tests of mean differences are shown in Table D.1 of the Supplementary Material.

RESULTS

The Impact of Grin Membership on Trust and Trustworthiness

We make a strategic choice to study organic groups because they are thought to be better at generating social capital than groups put together for the purpose of research (Krishna 2007; Ostrom 2000). Assessing the causal impact of grin membership on trust and trustworthiness is empirically challenging due to self-selection (Scacco and Warren 2018; Valdivieso and Villena-Roldan 2014). Simple comparisons of outcomes between members (Y_1) and nonmembers (Y_0) may lead to biased results due to selection effects. This bias arises because members and nonmembers are selected groups that could potentially have different outcomes even in the absence of grin membership. The existence of observable and unobservable factors that potentially influence the decision to join a *grin* (selection process T) and the outcome of interest leads to the fallacy of simple comparison. PSM can be used to mitigate the selection bias problem under two main assumptions. First, the conditional independence assumption (CIA), that is, conditional on observable characteristics, X, potential outcomes are independent of treatment assignment. This means that selection is solely based on observable characteristics and that variables playing a role both in the treatment assignment (selection) and in the potential outcomes are actually observed. The second assumption is (weak) overlap or common-support condition. It ensures that, for each treated unit, there are control units with the same levels of X. Under the CIA and the overlap condition, the average treatment effect on the treated (ATT) can be identified as follows (Imbens 2004; Rosenbaum and Rubin 1983b):

$$ATT = E(Y_1 - Y_0|T=1) = E(Y_1|X,T=1) - E(Y_0|X,T=0) \quad (1)$$

As matching on each of the characteristics included in X may become difficult when the number of dimensions increases, Rosenbaum and Rubin (1983a) suggest using a propensity score $P(X)$. The propensity score is the individual probability of being treated given the observable characteristics: $P(X) = P(T=1|X)$. Under the CIA, Y_0 and Y_1 are independent of the treatment, conditional on $P(X)$. The propensity score satisfies the so-called balancing property, that is, observations with the same score value have the same distribution of observable characteristics regardless of treatment status; moreover, the exposure to treatment or control status is deemed random for a given value of the score. These properties allow the use of the propensity score as a summary metric of all X.

The selection of variables from the individual survey to be included in the PSM estimation follows the existing literature and the theory of group participation. We

estimate the propensity score for grin membership vs nonmembership, using logit models (see Table E.1 in Appendix E of the Supplementary Material). The PSM specification included: gender, age, marital status, education, household size, having a member from the North living in the household, having an income-generating activity, household wealth, risk aversion (as measured by a lottery game), access to financial markets (saving and loans), geographical location, altruism (measured by the dictator game), and past lending behavior. Separate propensity scores are estimated for senders vs. receivers and for the different treatment sub-sample. By looking at the distribution of the propensity score for sender and receivers in Figures E.1 and E.2 in Section E of the Supplementary Material, one can see that the overlap assumption seems fulfilled.

We apply kernel matching to estimate the average treatment effects on the treated (ATT). We assess the quality of matching in an attempt to ensure balance in the distribution of covariates across members and nonmembers. We find that balance is satisfactory. Details are provided in Section E of the Supplementary Material.

In Table 3, we report the estimation results for the sender (Panel A) and for the receiver (Panel B). We find no effect of *grin* membership on trust. The only exception is that members give 9 percentage points less of their initial endowment as senders than nonmembers when playing under treatment 1. The fact that nonmembers give more as senders runs counter to our expectations. While this finding is less reliable across different specifications of the dependent variable than our finding on trustworthiness, we offer speculation as

TABLE 3. The Impact of Membership on Trust and Trustworthiness, PSM Estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	TG contrib >0			TG contrib %			TG contrib >50%		
	Mean control	ATT	Critical Γ	Mean control	ATT	Critical Γ	Mean control	ATT	Critical Γ
Panel A: Sender									
All	0.898	−0.014		0.612	−0.044		0.579	−0.019	
		(0.025)			(0.029)			(0.042)	
		[1]			[0.134]			[1]	
T1: Generalized	0.899	−0.027		0.597	−0.083**	1–1.1	0.547	−0.07	
		(0.031)			(0.036)			(0.053)	
		[1]			[0.095]			[1]	
T2: In-group	0.913	0.024		0.589	0.113*	1–1.4	0.594	0.092	
		(0.053)			(0.06)			(0.091)	
		[1]			[0.102]			[1]	
T3: Out-group	0.881	−0.007		0.692	−0.123		0.687	−0.079	
		(0.077)			(0.087)			(0.113)	
		[1]			[0.134]			[1]	
Panel B: Receiver									
All	0.898	0.083***	1–1.1	0.309	0.115***	1–1.6	0.124	0.164***	1–2.3
		(0.025)			(0.019)			(0.030)	
		[0.005]			[0.001]			[0.001]	
T1: Generalized	0.889	0.077**	1–1.3	0.320	0.115***	1–1.1	0.152	0.173***	1–1.6
		(0.033)			(0.025)			(0.042)	
		[0.032]			[0.001]			[0.001]	
T2: In-group	0.932	−0.029		0.293	0.093*	1–1.7	0.051	0.168**	1–2.8
		(0.048)			(0.052)			(0.066)	
		[0.574]			[0.021]			[0.004]	
T3: Out-group	0.900	−0.002		0.282	0.111**	1	0.083	0.224***	1–2.3
		(0.062)			(0.043)			(0.069)	
		[0.961]			[0.007]			[0.001]	

Note: The table reports PSM estimates of the impact of grin membership on trust and trustworthiness, overall and by treatment arms. Columns 1, 4, and 7 report the mean of the outcome among nonmembers. ATTs in columns 2, 5, and 8 are estimated using kernel matching. The propensity score is separately estimated for each subsample. Common support option is imposed. Columns 3, 6, and 9 report critical values of Rosenbaum's bounds. They are expressed in ranges of Γ within which the upper bound of the test statistic turns insignificant ($p > 0.1$). Sample sizes for members and nonmembers are as follows. Senders: 868, 392 (All); 461, 256 (T1); 94, 69 (T2); 97, 67 (T3). Receivers: 817, 361 (All); 401, 242 (T1); 1033, 59 (T2); 101, 60 (T3). Bootstrapped standard errors are in parentheses. Sharpened *q*-values in square brackets control the false discovery rate for tests across treatments (Benjamini, Krieger, and Yekutieli 2006; List, Shaikh, and Yang 2019). ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

to why this might be the case. First, given a context of insecurity and surges in patriotism, there might be increased social desirability bias among nonmembers to give larger endowments to their partners as prosocial behavior (Gilligan, Pasquale, and Samii 2014). *Grin* members might feel less social desirability bias since they are more likely to be integrated into a diverse friend group and/or already discussing the evolving current events. Second, when players imagine that they are playing with strangers, *grin* members might think of their *grin* as a reference category, which depresses relative assessments of strangers (outside of their group).

By contrast, we observe consistent evidence that being a member is associated with greater trustworthiness in the game—measured by players' contributions in the role of receiver. Across all games, *grin* members give back around 12 percentage points more than nonmembers (column 5). Members' heightened trustworthiness is significant across most outcome operationalizations of the dependent variable except when we measure the probability that someone gives more than 0.

When we focus on columns 5 and 8, we do not find evidence that the effects of group membership are significantly different across treatments, that is, the other player's language (all $p-values > 0.1$). We check the robustness of our results to multiple hypothesis testing, following the two-stage procedure for controlling the false discovery rate (FDR) proposed by Benjamini, Krieger, and Yekutieli (2006). Results for trustworthiness preserve a high degree of confidence, with false discovery rates below 0.03 for all significant coefficients. The only significant result for trust in Panel A reaches a false discovery rate of 0.076.

In the impossibility of directly testing for the Conditional Independence Assumption (CIA), we use the bounding approach suggested by Rosenbaum (2002) to check the sensitivity of the impact estimates to hidden bias. Overall, the results appear relatively robust to hidden bias, with the exception of general and out-group trustworthiness. More details are provided in Section E of the Supplementary Material. In that section, we also present various robustness checks. First, we repeat the PSM estimations using alternative matching algorithms in Table E.3 of the Supplementary Material and find qualitatively similar results. We also check whether our results are context-dependent by looking at the extent to which individuals who play the game within their *grinw* do so in a systematically different manner than those who played in the market. For that, we repeat the PSM estimations in Table E.4 in the Supplementary Material, restricting the sample to individuals who played the game in the market. We find suggestive evidence that membership is associated with a higher probability of contributing any positive amount for senders, hence fostering trust, and leads to an increase in the contribution and in the probability to give more than half of the endowment for receivers. Overall, results for receivers confirm previous findings. This mitigates the concern that context could play a significant role in driving our main results.

Individual and Group Determinants of Trust and Trustworthiness

We examine the extent to which individual characteristics of members, their experiences in *grinw*, and characteristics of their *grinw* correlate with trust and trustworthiness. For this, we use OLS regressions with the sub-sample of senders and receivers surveyed in their *grinw*. Results are shown and further discussed in Section F of the Supplementary Material. Results demonstrate few consistent patterns as few characteristics of individuals or of their *grinw* are predictive of trust or trustworthiness. We limit our discussion to a few notable exceptions that showed up in multiple specifications of the outcome variables and are relevant to our theoretical expectations.

First, in the sub-sample of *grinw* members in Tables F.1 and F2 of the Supplementary Material, individuals who had gotten economic support from members or who were part of a group that provided financial help gave more as receivers (trustworthiness). This is consistent with our expectations and suggests that past support in the network may affect how members play the game with strangers. Second, exposure to diversity did not have consistent correlations with trust or trustworthiness. However, a few of the related variables were significant. In particular, having household members from the North is correlated with trustworthiness.[20] Unexpectedly, having displaced persons join your group was correlated with lesser trustworthiness in the game. It may be that displaced persons told fellow *grin* members about their exposure to conflict or other experiences of displacement, which dampened norms and expectations of reciprocity. Third, contribution in the dictator game, a proxy of altruism, correlates positively with trust and trustworthiness.

Tables F.3 and F.4 in the Supplementary Material show the results for the full sample, including both *grin* members and nonmembers. Grin membership is positively and significantly associated with trustworthiness, confirming our earlier results from the PSM estimations. However, it appeared overall to play no significant role in trust (excluding a mildly positive one shown in column 7) which is not aligned with our PSM estimations. As before, contribution in the dictator game correlates positively with trust and trustworthiness. Having household members from the North positively correlates with trust but not trustworthiness. As in Carlin and Love (2013) we investigate whether receivers' initial endowment, that is, the amount passed by the sender multiplied by three, correlates with trustworthiness. We find that it is positively associated with the probability of giving back and with that of giving

[20] 218 of the 568 respondents who claimed to have household members from the North came from ethnic groups we would typically associate with the three northern regions of the country: Tuareg, Songhroy, Arab, and Bella. The remaining respondents spanned ethnic groups found in the South, Center, and the whole of Malian territory.

back at least half of the endowment but not with the share of contribution given back.[21]

From Table F.3 in Section F of the Supplementary Material we see that minority language speakers send a smaller percentage to co-language speakers (under treatment 2) in column 7. This means that when they are playing with someone who speaks the same language at home, they give a smaller percentage of their endowment than when Bambara speakers play with other Bambara speakers. However, this result is not robust when we look at other definitions of the dependent variable (TG contrib > 0 and TG contrib > 50%). We observe no such difference if we look at the subsample of receivers in Table F.4. In the subsample of members, we see the same trend: minority speakers giving less to co-language speakers under treatment 2 as senders (Table F.1). This result is consistent across all three definitions of the dependent variables. Once again, we observe no such difference if we look at the subsample of *grin* members playing as receivers in Table F.2. We might interpret this finding in a few different ways. First, it may be that people playing others who speak the same minority language feel less of a social desirability bias to be altruistic than those who are playing with a vaguer category of others who speak a market language. It might also be that *grin* members who are also minority language speakers, juxtapose their experience in the *grin* with their experience in the family compound. They self-select into this diverse setting and, as such, may be more skeptical (and less trusting) of others like them than of strangers. Again, we see no effect of minority language identity on trustworthiness.

Attitudinal Measures and Real-World Outcomes

We use data collected in the individual survey of members to run a series of regressions to assess whether behavior in the game, that is, the share of contribution, is correlated with attitudes on trust and tolerance, and related actual behavior, like volunteering. For the whole sample, we look at engagement in voluntary activities to help friends and the neighborhood.[22] We also look at self-reported responses to questions about trust toward various groups (same language, from the North, other ethnic groups, other languages).[23] We also ask a question about whether they agree with the statement that "most Malians are selfish." As proxies for tolerance, we inquiry the extent to which individuals are willing to allow their child to marry someone from a salient ethnic group,[24] religion, and linguistic group (measured as a dichotomous variable).

For the sample of *grinw* members, we explore whether individual contributions in the trust game are correlated with *grin*-level outcomes related to public goods contribution. This includes whether groups carry out activities in the neighborhood, support economically members, and contribute to community amenities. Table 4 shows the relationship between senders' behavior, reported real-world behavior, trust, and tolerance as well as *grin* activities for the sample of members from surveyed *grinw*. We find that a higher percentage of initial endowment sent by Player A is correlated with the respondent reporting they did voluntary work in the neighborhood. Contributions by senders are not significantly correlated with either self-reported trust and tolerance measures in Panels B and C. For the subsample of members, larger trust game contributions are correlated with a greater likelihood of being in a *grin* that conducts voluntary activities in the neighborhood.

Table 5 examines the same relationships, but this time in relation to the receivers' behavior. We find more consistent evidence of the relationship between trustworthiness in the game and reported attitudes and behaviors. Those with greater contributions in the game report more hours helping friends and more hours doing voluntary work in the neighborhood. Giving more in the game as receiver is associated with greater reported trust of those speaking the same language, other ethnic groups, and those speaking another language. It is also associated with a higher likelihood of accepting a wedding with someone speaking a different language at home (our measure of tolerance). However, this correlation is not significant with accepting their child to marry someone from a salient ethnic group or from a different religion. Finally, in the subsample of members, those who gave more in the game as receivers were more likely to be from a *grin* that collected contributions from members to support the broader community.[25] We check the robustness of these results against multiple hypothesis testing. Results for receivers are broadly confirmed.

Exploring Mechanisms with Focus Group Data

This section analyzes transcripts from focus groups in 66 out-of-sample *grinw* to trace the ways that respondents articulate causal linkages between membership

[21] However, we reject that the relationship is linear in most specifications: coefficients of the variables 'Endowment received=900' and 'Endowment received=600' in Table F.4 are positive and significantly different from the benchmark category ('Endowment received=300'). However, we do not reject that they are equal in most models.

[22] One variable captures the extensive margin, if they engaged in the activity or not. Another variable captures the intensive margin, by estimating the number of monthly hours they spend engaging in the activity.

[23] Respondents were asked, on a 0–2 scale, about their trust toward different groups.

[24] In most instances, we used Tuareg (the group associated with the start of the rebellion); when the respondent was Tuareg, we used Bambara ethnicity.

[25] The same estimations for alternative definitions of the outcome variable (for TG contrib > 0 and TG contrib > 50%) are presented in Section 5 of the Online Appendix. Results are broadly in line.

TABLE 4. Correlation of Trust Game Contribution and Real-World Outcomes, Sample of Senders

	(1)	(2)	(3)	(4)	(5)
	Voluntary work				
Panel A: Volunteering	to help friends	Hours to help friends	in the neighb.	Hours in neighb.	
TG contrib, %	0.066	1.185	0.080*	3.663*	
	(0.041)	(3.378)	(0.041)	(1.953)	
	[0.139]	[0.222]	[0.139]	[0.139]	
No. of obs.	1,313	1,313	1,313	1,313	
R^2	0.112	0.123	0.119	0.206	
Mean dep. var.	0.687	18.69	0.667	14.32	
	Trust toward				
Panel B: Self-reported trust	same language	from the North	other ethnic groups	other language	Agree on: most Malians are selfish
TG contrib, %	0.063	0.042	−0.05	0.064	−0.003
	(0.043)	(0.055)	(0.041)	(0.042)	(0.044)
	[0.397]	[0.397]	[0.397]	[0.397]	[0.613]
No. of obs.	1,312	1,308	1,238	1,300	1,311
R^2	0.097	0.073	0.046	0.039	0.081
Mean dep. var.	1.201	0.828	1.250	1.038	0.655
	Accept wedding with				
Panel C: Tolerance	different language	different religion	different ethnic group		
TG contrib, %	0.018	0.005	0.025		
	(0.025)	(0.045)	(0.042)		
	[1.00]	[1.00]	[1.00]		
No. of obs.	1,313	1,313	1,313		
R^2	0.040	0.093	0.069		
Mean dep. var.	0.909	0.549	0.714		
Panel D: Grin-specific outcomes	Provide public good	Contrib. for economic support of members	Contrib. for economic support of members CFA	Contrib. for community benefits	Contrib. for community benefits CFA
TG contrib, %	0.138**	0.010	5,865*	0.001	3,597
	(0.062)	(0.070)	(3,148)	(0.066)	(4,741)
	[0.161]	[1.00]	[0.161]	[1.00]	[0.813]
No. of obs.	730	731	731	731	731
R^2	0.044	0.039	0.063	0.022	0.058
Mean dep. var.	0.691	0.518	7,591	0.377	11,174

Note: The table reports the correlation between the main trust game outcome (the contribution as a share of the endowment received) and the real-world outcomes reported in the headings. Regression coefficients are estimated for the sample of senders only. Panel D is based on the sample of grin members. In Panel A, voluntary hours are monthly; in Panel B, the measures of self-reported trust are on a 0–2 scale. Each regression also includes the following controls: female, age, lives in couple, basic or religious school, secondary school, tertiary school, household size, household member from the North, minority language, has income generating activity, asset index, risk averse, Mopti, contribution in the dictator game. Full results are shown in Section 5 of the Online Appendix. Sample sizes may vary due to missing values in the dependent variable. Robust standard errors are in parentheses. Sharpened q values in square brackets control the false discovery rate for tests across outcomes in each panel (Benjamini, Krieger, and Yekutieli 2006). ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

in a *grin* and greater trustworthiness.[26] This approach privileges members' understanding of general trustworthiness' "internal causal influence mechanisms" (Laukkanen 2012, 5).[27]

[26] These groups are made up of members aged 18–45 and located in the same cities to mirror the groups in our sample.

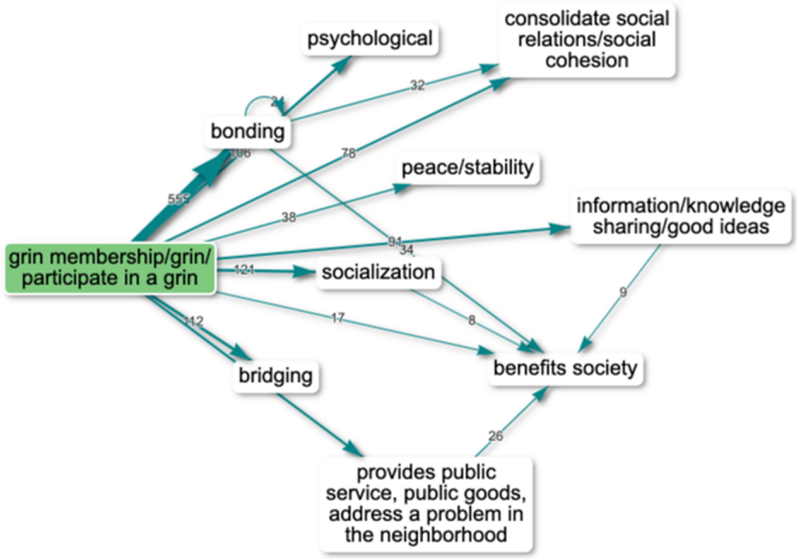
[27] We search for causal process observations, guided by theory, to probe potential mechanisms linking membership to greater general trustworthiness (Mahoney 2012; Mahoney and Goertz 2006).

TABLE 5. Correlation of Trust Game Contribution and Real-World Outcomes, Sample of Receivers

	(1)	(2)	(3)	(4)	(5)
	Voluntary work				
Panel A: Volunteering	to help friends	Hours to help friends	in the neighb.	Hours in neighb.	
TG contrib, %	0.039	9.474***	0.012	12.902***	
	(0.047)	(3.498)	(0.048)	(3.242)	
	[0.371]	[0.011]	[0.675]	[0.001]	
No. of obs.	1,205	1,205	1,205	1,205	
R^2	0.149	0.094	0.181	0.100	
Mean dep. var.	0.765	11.63	0.743	9.857	
	Trust toward				
Panel B: Self-reported trust	same language	from the North	other ethnic groups	other language	Agree on: most Malians are selfish
TG contrib, %	0.295***	0.147*	0.171***	0.200***	0.013
	(0.059)	(0.080)	(0.058)	(0.062)	(0.050)
	[0.001]	[0.034]	[0.004]	[0.003]	[0.188]
No. of obs.	1,204	1,197	1,146	1,196	1,204
R^2	0.157	0.075	0.082	0.042	0.020
Mean dep. var.	1.242	0.932	1.271	1.110	0.754
	Accept wedding with				
Panel C: Tolerance	different language	different religion	different ethnic group		
TG contrib, %	0.075***	−0.048	0.059		
	(0.023)	(0.059)	(0.052)		
	[0.003]	[0.385]	[0.358]		
No. of obs.	1,203	1,201	1,203		
R^2	0.047	0.065	0.147		
Mean dep. var.	0.934	0.632	0.728		
Panel D: Grin-specific outcomes	Provide public good	Contrib. for economic support of members	Contrib. for economic support of members CFA	Contrib. for community benefits	Contrib. for community benefits CFA
TG contrib, %	0.053	−0.035	702	0.197***	−941
	(0.064)	(0.072)	(2,098)	(0.074)	(3,223)
	[1.00]	[1.00]	[1.00]	[0.04]	[1.00]
No. of obs.	667	667	667	667	667
R^2	0.018	0.106	0.042	0.063	0.026
Mean dep. var.	0.735	0.486	5,666	0.297	5,365

Note: See notes in Table 4. Full results are shown in Tables E.3 and E.4 in Appendix E of the Supplementary Material.

FIGURE 2. Causal Map



Notes: Most frequently cited links from membership in a *grin.* The causal map highlights the relationship between membership (influencing factor) and the most-cited consequence factors. This includes respondents' generalizations about what *grinw* do or specific references to experiences from their own *grinw* or other *grinw* they know. The map shows the top 15 links within the 10 variables. The arrows indicate movement from an influence factor to a consequence factor.

We conduct "organic" focus groups with participants in their *grinw*. Similar to Harris-Lacewell's (2010) study of barbershops, Walsh's (2004) work on corner stores, and Wedeen's (2007) ethnography of qat chews, we use this approach to create a relaxed, frank, and open discussion environment. *Grinw* have norms of equality, freedom of expression (and disagreement), and respect among members; they are ideal focus groups since they create a space for participants to agree or disagree and to work through complex phenomena (Cyr 2016). This methodology is particularly helpful as members need to justify and fully articulate their responses in front of the other respondents, which generates greater transparency about the mechanisms behind the responses. Since focus groups are conducted with a group of co-members, this also gives respondents a greater sense of power (and willingness to challenge) a moderator, than if we had grouped strangers together.[28]

We ask respondents to narrate relationships between membership in *grinw* and broader patterns of social relations using the following four questions: *What role do grinw play in Malian society ? Can grinw create social cohesion? Or do grinw create social divisions? Can grinw prevent people from achieving entente and unity with others who are not in the grinw? Do grin provide neighborhoods with access to public goods? If there were not grinw in Mali, what would the situation look like today?* We use the Causal Map software[29] to analyze statements made by more than 330 active participants.[30] Following the logic of Goertz's (2017) within-case causal process tracing, we look for links between membership and general trustworthiness to better understand the mechanisms that could be driving this relationship. The transcript yields 1,402 paths between influence and consequence factors as stated by respondents. We narrow our analysis to the 555 statements that cite a *grin* or membership as an "influence factor" that affects some outcome.

The Causal Map in Figure 2 starts with references to membership in *grinw* as an influencing factor. It then filters for the top nine most frequently cited consequences factors. In Figure 2, the arrows indicate the direction of causation from influencing factor to consequence factors; the numbers indicate the frequency that a link (from influence to consequence factor) is mentioned.

We first analyze the most frequently cited consequence factors to see if *grin* membership (as an influencing factor) is associated with trustworthiness and social cohesion or with negative consequences for broader society. The map indicates that three of the

[28] We recognize that this may bias the data in that members may be unlikely to denounce their own *grin* or its members and more likely to portray their own group in a positive light. However, given the norms of free exchange and debate, we believe that this bias would not skew responses to portray all groups positively.

[29] This software enables us to input cause and effect statements as described by respondents and then develop a causal map charting mechanisms between membership and various outcomes: https://causalmap.app.

[30] The actual number of participants was closer to 1,000, but 330 reflects the number of respondents who actively participated in the discussion. More detail on *grinw* selection and research protocol can be found in Section 6 of the Online Appendix.

most-cited factors are broad pro-social consequence factors that we would associate with greater trustworthiness: social cohesion, peace and stability, and benefits society. In many instances, respondents referenced these outcomes without specifying the pathway. For instance, "*Grinw* even bring peace and social cohesion to the city (Grin 15 Bamako, Respondent 1)."

However, among the other most frequently cited consequence factors, we identify five pathways (Mahoney 2012) that lead from membership to these pro-social outcomes: bonding, bridging, public goods provision, psychological support, and socialization.[31] Three of these are consistent with factors identified by existing literature as generating general trustworthiness: (1) facilitating bonding between members (named as a consequence of membership in all 555 statements); (2) bridging across society and expanding members' networks (consequence of membership cited 112 times); and (3) public goods provision (consequence of membership cited 85 times). Two additional mechanisms emerged inductively from the coding: (4) socializing participants into pro-social norms (cited as a consequence 121 times); and (5) providing psychological support and stress relief (cited as a consequence 106 times).

Below, we include some direct citations from the transcripts to illustrate the different types of linkages between membership and social cohesion.[32] Every statement referenced membership as facilitating bonding, which refers to building reciprocal support and solidarity with group members. Respondents highlighted bonding as happening in three ways. They referenced (1) open discussion and idea-sharing to help collectively problem-solve for members, (2) reciprocal moral, material, and financial support, and (3) mutual empathy and understanding between members. Respondent 2 in Grin 2 explained, "the fact that the *grin* brings you together, that creates a solidarity between us the members, so that we know each other deeply and we support each other, I think this is very important—even for the country." A member of a different *grin* in Bamako elaborated: "If I think that the *grin* can create peace and cohesion between us—(it's) because we are together every day living the same sorrows, problems, worries on a daily basis, but that strengthens our social cohesion, creates love between us beyond mere camaraderie. Our *grin* looks like a family today. If one of us is experiencing difficulties, we inform everyone so that we can support him, and for this everyone does their best to respond to this cause. That's why I say we have gone beyond the stage of friendship to that of kinship…" (Grin 10, R 1).

Since *grin* members are diverse, bonding unites members from different ethnolinguistic groups, locations, and socioeconomic strata. A respondent explains "[…] for example, we sit here, but we all come from different places, so *grinw* can consolidate the cohesion between people to the point of consolidating social kinship. For example, in a *grin*, some may arrive from Douentza, Bamako, Bandiagara, etc. This can origin of the creation of very deep social bonds between people. These connections can benefit all of us in our everyday life. So the *grin* members will have a lot in common. *Grinw* promote kinship, social cohesion and, above all, consolidate social relationships" (Grin 17, Sevare, Respondent 3). Another respondent in Mopti explained: "A *grin* is a good thing since we all come here joyfully and exchange peacefully on topics that we like without constraints or pressure. Additionally, *grinw* allow ethnic social mixing, as is the case here. There are several ethnic groups among us—Songhoy, Peuhl, Bambara, and so on" (Grin 11, Mopti, Respondent 3).

Another highly cited mechanism was "bridging." As described by Putnam (2000), bridging describes the process by which membership exposes members to new relationships and opens up new networks, which can foster social cohesion. By creating these bridges across ethno-linguistic, geographic, and class lines, *grinw* allow members to meet new people and develop a positive orientation toward their networks. For the purposes of this article, we define bridging as relationships that extend outside of the *grin.* A respondent from a *grin* in Bamako stresses how *grinw* build solidarity with broader networks: "When we are part of the same *grin*, it brings our respective families closer together, and a social solidarity develops between us and between our families…" (Grin 2, Respondent 1). Respondents also noted some specific ways that *grinw* facilitated bridging: in a few cases, by facilitating marriages between members, but also, most notably, by encouraging members to attend life events of other members. A respondent from a grin in Bamako talked about how he and fellow members traveled 7 hours up country to participate in a co-member's wedding: "… the whole grin left Bamako to attend a marriage of one of our members in Mopti. Our arrival created not only a huge joy, but also a relief for our friend. Even more, it was the grin and its members that organized everything in Mopti. We did such a good job that after the marriage, his in-laws called us over to congratulate us on our actions" (Grin 6, Respondent 4). We know that *grinw* are diverse, so the act of getting to know other members' families means that participants are gaining access to new networks.

The third mechanism was participation in public goods provision. These activities ranged from street cleaning, mentoring, and raising money for local infrastructure to sewage management. In the environment of increasing insecurity in Mopti and Sevare, one *grin* gave an example of how they provided surveillance and identified potential threats (Sevare, Grin 20, R1). Many others described their presence in the streets as contributing to security for the neighborhood (Bamako *Grinw* 4, 6, 17, 23, 25, 29; Mopti *Grinw* 12, 13, 16, 17; Sevare *Grinw* 14, 25, 26), some explicitly highlighting that they could play an even greater role if they solicited to do so (Bamako Grin 1, Mopti Grin 14). Social capital theory anticipates that participation in public goods provision and volunteerism can shape future engagement with

[31] In some instances, they describe this mechanism as an outcome without explicitly referencing the rest of the casual chain.

[32] We exclude one of the most-cited consequence factors—information sharing. Though it may have a positive benefit for society, we do not have a reason to believe that it is linked to pro-social outcomes.

society in a positive way. As Putnam (2000) writes: "networks of community engagement can foster networks of reciprocity (20)"; this volunteerism shapes members' orientation toward society more broadly (Putnam, Campbell, and Garrett 2012). These *grin* activities also linked into bridging as they helped them to meet and collaborate with nonmembers as they worked to achieve a goal. Members referenced the ways that *grinw* activities created interaction with nonmember neighbors.

Fourth, many respondents spoke of *grinw* as schools to socialize members into good behavior consistent with Malian social norms. These processes were expressed as a *grin* teaching or socializing members into good behavior or correcting bad (anti-social) behavior. As one member explained: "There are a lot of things in our assembling together. For example, some of us have bad behaviors. We try to correct those bad behaviors and, inversely, those that have a good orientation, we encourage them to continue on the right track…" (Grin 20, Bamako, Respondent 6). Mali has a strong heritage of Indigenous institutions, such as the *sanankuya* or cousinage, that were intentionally designed to promote pro-social behavior. *Grinw* are venues where *sanankuya* can be practiced and norms of peace and tolerance can be diffused. "In my view, if you see that we say Mali is a good place to live—it's because of certain things, 'cousinage' and social cohesion, and that is translated by *grinw* at all levels and getting together creates social linkages that make *grinw* very important" (Grin 3, R 2).[33]

Lastly, consistent with anthropological work (Bondaz 2013; Masquelier 2019; Schulz 2002), *grinw* provide psycho-social support to youth who have limited job opportunities, but are under a lot of pressure to provide for dependents. Participation in a group alleviates stress and provides participants with a sense of agency. Given the marginalized position of youth in a gerontocracy, one could imagine that these feelings of empowerment and stress release could contribute to broader social trustworthiness. A respondent from Sevare explained: "it allows us to forget about our worries and social problems. The *grin* is the only place where we are most comfortable in society. The *grin* connects us in joy as well as in sadness" (Grin 19, Respondent 2). Some studies have found stress to be an impediment to interpersonal trust (Guinot, Chiva, and Roca-Puig 2014). To the extent that feeling relaxed and empowered motivates people to act in a more trustworthy manner, this may constitute an additional mechanism for generating pro-social behavior.

CONCLUSION

Our study offers mixed-methods evidence linking associational membership and the formation of general trustworthiness. We find that *grin* members are more trustworthy than nonmembers when playing trust games with strangers. Members send approximately 12% more back to their partners across all treatments. Additionally, we find evidence that trustworthiness in the game is significantly correlated with stated trust, tolerance, and real-life behaviors that we would associate with trustworthiness. We do not find differences in amounts sent across treatments, which suggests that the linguistic cleavages we use as the treatments are not as salient as we thought or that young, urban Malians are not as responsive to in-group or out-group distinctions as players in other contexts. Analysis of focus group data suggests that membership builds *general* trustworthiness through multiple mechanisms: bonding with diverse members, bridging, public goods provision, socialization, and psycho-social support.

The results supports the theoretical emphasis on trustworthy behavior as the key ingredient to general reciprocity (Hardin 1993; Putnam 2000). While *general trust* may be cemented in early life and very difficult to change (Uslaner 2003), trustworthiness is thought to be more malleable. Associational membership is theorized to be able to impact trustworthy behavior by offering experience participating in reciprocity and by inculcating pro-social norms (Putnam 2000). When members are provided information about an endowment given by a partner, they may draw on these existing experiences and norms.

Results from PSM and OLS do not offer a consistent picture on whether *grin* membership plays a significant role on trust. Additionally, trust, as measured in the game we use, correlates positively with real-life behavior but less consistently than trustworthiness. This could come from two factors. Despite us controlling for altruism, the measure of trust we get from our game cannot be disentangled from inequality aversion or players having quasi-maximin preferences (Ashraf, Bohnet, and Piankov 2006). By contrast, the receiver's action is thought to be a cleaner measure of trustworthiness. In that respect, our findings are consistent with some other trust game studies, which have found reported trustworthiness in the game (rather than trust) to be correlated with self-reported general trust (Glaeser et al. 2000; Karlan 2005).

There are important scope conditions for our findings. First, our sample is not representative of Malians. Our population of interest is 18–45. It is heavily male (83%), urban, and skewed toward members of *grin* (70%). The average *grin* member is less likely to be a head of household and more educated than the average Malian. We are mostly describing young, urban men in our sample and cannot speak to other important groups like urban women or rural dwellers (55% of Malians still live in rural areas). Second, since the period of study (2014–15), there has been a continued deterioration of the security situation, more entrenched junta leadership, and the expansion of armed groups in Mali. In an environment of greater suspicion and more limited discussion and debate, it is unclear whether grinw continue to play the same role in the current context.[34]

[33] Also referenced by Grin 1 Bamako, R4, Grin 1 Sevare, R3.

[34] See the Online Appendix Section 1 for a discussion of the increase in violence since the period of research ended.

The literature to which we contribute looks mostly at the correlation between membership in voluntary associations and answers to various yes or no questions proxying "generalized trust" or other measures of social engagement. Our work represents one of the very few attempts at investigating the correlation between such membership and results from a trust game. Given that, and despite us using a standard form of the trust game in our study design, we are unable to make direct comparisons to a comparable rich literature.

These findings point to the need to further explore the ways that informal associations, ubiquitous in urban Africa, may affect general trustworthiness. There is a great diversity of informal, youth groups in urban areas. Similar groups, such as *fada* in Niger (Masquelier 2019), *attaya* in Senegal and Gambia, or street parliaments in Kenya, DRC, and Uganda (Banégas, Brisset-Foucault, and Cutolo 2012), exist in other African capitals. However, in other contexts, even *grinw* can be politicized and mobilized along cleavages and in ways that are at odds with a pro-social or *general* trustworthy orientation (Banegas 2011; Vincourt and Kouyaté 2012). Some of the mechanisms described by respondents, such as the presence of *sanankuya* or the reinforcement of pro-social norms, suggest that causal pathways within *grinw* may reflect specific aspects of Malian or Sahelien political culture. Mali is a relatively "extreme case" among countries in Africa as it appears to have relatively high reserves of general trust and trustworthiness relative to other countries on the continent (Logan, Seydou, and Katenda 2020) and, thus, we should be cautious about generalization to urban associations in other countries without empirical testing (Seawright and Gerring 2008)—particularly in deeply divided societies (Boix and Posner 1998). Given the prominent role of associations in the Global South (Bratton 1989), it is worth understanding what types of groups or under what conditions youth groups contribute to or detract from general trust and trustworthiness.

SUPPLEMENTARY MATERIAL

To view supplementary material for this article, please visit https://doi.org/10.1017/S0003055423000709.

DATA AVAILABILITY STATEMENT

Research documentation and data that support the findings of this study are openly available at the American Political Science Review Dataverse: https://doi.org/10.7910/DVN/THYJ8J.

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CONFLICT OF INTEREST

The authors declare no ethical issues or conflicts of interest in this research.

ETHICAL STANDARDS

The authors declare the human subjects research in this article was reviewed and approved by the Notre Dame IRB, Heriot Watt's School of Management and Languages Ethics Officer, as well as the CNRST and l'Instat in Mali. Certificate numbers are provided in Section 7 of the Online Appendix. The authors affirm that this article adheres to the APSA's Principles and Guidance on Human Subject Research.

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