Potential collusion and trust: Evidence from a field experiment in Vietnam

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Abstract

In a typical contract farming arrangement, a firm contracts a farmer to deliver a certain quantity-quality combination of a product at a certain point in time for payment at a specified price based on quality attributes. These arrangements tend to be subject to lack of 'trust' on both sides since they are typically subject to asymmetric information because quality attributes are unobservable and costly to assess. We conduct variants of framed trust games using contract dairy farmers in Vietnam as first movers to assess (1) baseline trust between these farmers and the firm that contracts them and (2) the impact of potential collusion between the firm and a third party on trust. While farmers are more likely to trust in the presence of the third party, potential collusion does not significantly reduce their propensity to trust. We discuss the external validity of our findings and some implications for policy.

Keywords: collusion, trust game, contract farming, Vietnam, field experiment
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1. Introduction

Trust is important for sustaining relationships, even when such relationships are formalized by contracts. This insight has sparked a relatively large and growing literature on trust, reciprocity, and mutual cooperation, particularly in developing countries where formal institutions tend to be weak. Berg et al. (1995), Cox (2004), Fafchamps (2004), Hill et al. (2012), and the numerous references within all discuss the importance of trust and reciprocity for engaging in economic transactions. Insight into the conditions under which trust can be built, sustained, or undermined is therefore crucial for understanding the potential existence of formal and informal institutions.

One such institution is contract farming. In a typical contract farming arrangement a firm contracts a farmer to deliver a certain quantity-quality combination of a product at a certain point in time for payment at a specified price (see for example Glover 1987, de Janvry et al. 1991, Porter and Phillips-Howard 1997, Roy and Thorat 2008, Miyata et al. 2009 and the references within for additional discussion). These arrangements tend to be complicated since typically there is asymmetric information on both sides. Additionally, both parties may have incentives to renege on the contract when the specified time comes (for example, Boselie et al. 2003 and Reardon and Berdegué 2002).

The key problem of asymmetric information arises when quality attributes are unobservable and a special technology is required to assess them given the price of the product is based on such quality attributes. In the absence of such ability to verify quality, both sides can 'cheat' and thus lack of trust emerges. In an environment in which the contracting firm possesses such technology and the farmer does not, the final quality assessment remains unobservable to the farmer and, therefore, the contract is incomplete (Gow and Swinner 1998) and subject to the traditional problem of moral hazard. This can have important consequences for farmers' trust levels, since the firm may ex post try to discredit the quality of farmers' goods in an attempt to reduce the agreed-upon price. Vukeena and Leegomonchai (2006) indicate that this may result in farmers under-investing in productivity or quality improvements. This could also lead to a reduced tendency to engage in contracts and higher likelihood for contract breach. Reardon et al. (2003) find that these issues are further exacerbated in the case of smallholder farmers.

This article adds to an existing literature on third-party intervention in trust games (see for example Vollan 2011 in field contexts) by exploring whether potential collusion between the third party and the second mover reduces trust.[1] We conduct framed field experiments (FFEs; Harrison and List 2004) with Vietnamese dairy farmers as first movers and the firm by which they are contracted as potential second movers (this is further discussed in the study design section). Our experimental design comprises three between-subjects treatments. The first treatment is a dichotomous trust game (TG). The second treatment introduces a third party in the trust game (3TG), the so-called "auditor," who has the option to force the

[1] Our article also contributes to an existing literature on credence goods (see for example Dulleck et al. 2011).

firm to reciprocate when trusted. Finally, the third treatment allows for potential collusion between the firm and the auditor (3TGC). In particular, if the firm chooses not to reciprocate when trusted, the auditor has the option to share the benefits from defection with the firm, thus making them both better off and leaving the farmer with nothing. We are interested to what extent the potential for collusion affects farmers' likelihoods to trust.

The experiments reported in this article are part of a larger project that seeks to test contract-farming arrangements between a dairy distributor in Vietnam and its contract farmers using randomized controlled trials (RCTs). One of the RCT treatments (see Saenger et al. 2014 for more detail) put in place the following third-party quality-verification system. Every farmer received three non-transferable vouchers, each valid for one independent analysis of milk quality. Vouchers could be executed whenever eligible farmers felt the need to challenge the testing results reported by the milk company. The experiments reported here relate to these RCTs in the following way.

First, since the firm currently assesses milk quality using three tests, two of which occur *behind closed doors*, there is distrust between the firm and its contract farmers.[2] TG represents this status quo of distrust. Specifically, we can think of a second-mover defection in TG as the external situation in which the firm fails to give the farmer the highest assessment for all three milk tests. Second, 3TG represents the quality-verification intervention. In particular, the third mover's action forcing the second mover to reciprocate when trusted can be seen as the case in which the laboratory contests the firm's assessment. Finally, 3TGC represents a situation in which the firm and the test lab collude at the expense of the farmer. While the RCTs were designed to mitigate collusion, farmers could still have the perception that the firm may seek to bribe the test lab. The 3TGC allows us to test this a priori.

Like previous studies, we find that farmers significantly respond to the introduction of a third party – they are more likely to trust in 3TG than in TG. However, the potential for collusion does not significantly reduce their propensity to trust.

The remainder of the article proceeds as follows. Section 2 discusses the design of the study. Section 3 covers the main results. Finally, Section 4 concludes and discusses some policy implications.

2. Study design

A subsample of the farmers in the abovementioned RCTs participated in the FFEs. These farmers were located in two representative provinces, Long An and Tien Giang, south of Ho-Chi-Minh City (HCMC), and delivered to four milk collection centers (MCCs) belonging to the contracting firm.

2.1 Experimental games

As explained in the introduction, we conducted three types of *framed* trust games: TG, 3TG, and 3TGC.[3]

[2] The baseline survey shows that almost 50% of the farmers disagree that the firm is trustworthy.
[3] Complete subject instructions are available from the authors' websites.

We framed the games in order to facilitate subject understanding. Each farmer was randomly allocated to one of the games.

Figure 1. Extensive form of trust game (TG)

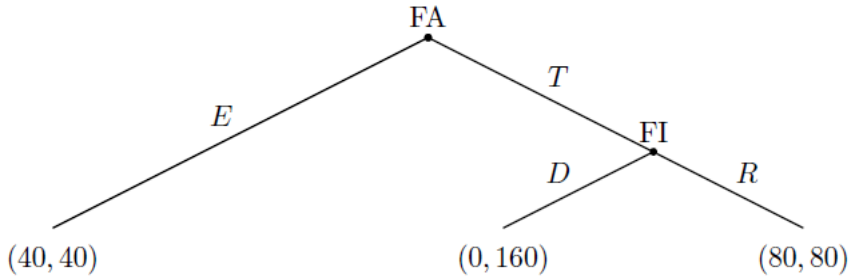


Figure 1 displays the extensive form of TG. At the beginning of the game, both the first mover (the farmer, player FA) and the second mover (the firm, player FI) had 40,000 Vietnamese dong (VND).[4] The farmer had the choice between not investing (a move denoted by E for "exit") or investing in a fund managed by the firm (a move denoted by T for "trust"). If the farmer chose E, the game ended and both players had 40,000 VND. If the farmer chose T, then the firm received 120,000 VND in addition to the initial 40,000 VND as a benefit of the investment. The firm then had the choice between keeping all 160,000 VND and leaving the farmer with 0 (a move denoted by D for "defect") or paying the farmer his return on investment by splitting the money equally at 80,000 VND (a move denoted by R for "reciprocate").[5]

Figure 2. Extensive form of third-party trust game (3TG)

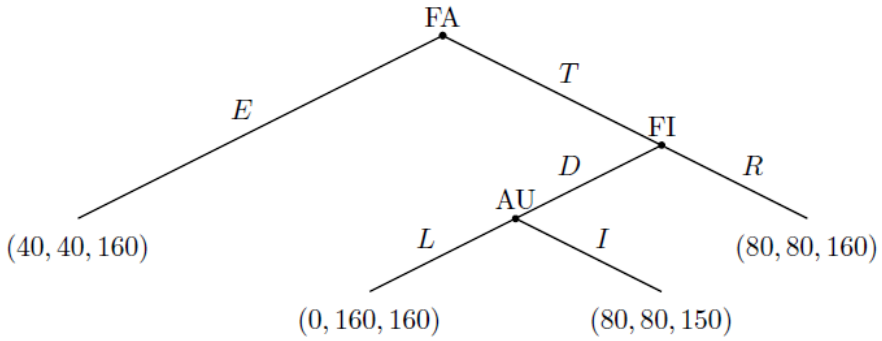


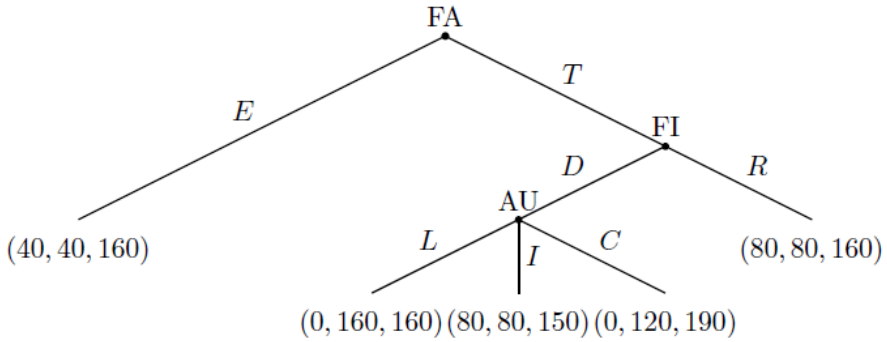
Figure 2 displays the extensive form of 3TG, which introduced an auditor (player AU) who had a role to play only if the firm did not reciprocate. The auditor could leave the situation as is (a move denoted by L for "leave") or rule that the firm had to reciprocate (a move denoted by I for "intervene"). We calibrated the game such that, if action I were taken, the firm would have the same payoff as if s/he had

[4] During the month the experiments were conducted, US$1 was on average equal to 17,811.35 VND. The total daily income for this sample is approximately 176,671 VND (standard deviation: 134,974 VND).

[5] This is a dichotomous version of the trust game. Both the farmer and the firm had only two possible actions, as in Hill et al. (2012). This is different from for example the trust game in Berg et al. (1995) where players had more than two possible actions.

reciprocated. So, differential behavior across TG and 3TG by the farmer would depend on whether or not she expected the auditor to intervene if the firm chose D. We also calibrated the game such that action I was costly, because we wanted uncertainty as to whether or not the auditor would choose I. A costly action I was also easier to motivate to the subjects, given the parallel with the naturally occurring environment, for example, if legal action were to become necessary to discipline the firm.[6] Empirically, if farmers did not expect the auditor to choose I, there should be no statistically significantly different behavior across TG and 3TG. The fact that there is, suggests that farmers expect the auditor to intervene.

Figure 3. Extensive form of third-party trust game with potential collusion (3TGC)



Finally, Figure 3 displays the extensive form of 3TGC, which allowed for the possibility of collusion between the firm and the auditor. Relative to the 3TG, the auditor had a third possible move (denoted by C for "collude") in which the benefits from the investment would be shared with the firm at the expense of the farmer. This action was also costly, since colluding requires effort.

2.2 Protocol

Our protocol starts from the premise that we are interested in farmers' trust levels across the different treatments. Given this and the fact that manually implementing multi-person sequential games is complex in the field, we maintained the following protocol. 204 dairy farmers were randomly assigned to play the role of first mover in TG, 3TG, or 3TGC. Similarly to experiments where subjects play with computer agents, the assistant experimenter played the roles of the second (the firm) and third movers (the auditor). The assistant experimenter prepared a sheet of random second-mover responses (that is, R or D) and third-mover responses (that is, L, I, or C) beforehand, which were tagged by the first mover's seat number.[7] As illustrated by the instructions, subjects had little information regarding the actual

[6] It is an empirical question whether farmers' trust would be affected if we varied the costs from taking action I. While we do not address this question as part of our experimental design, we speculate that farmers would have been more (less) likely to trust were the costs of taking action I lower (higher).

[7] We drew the second mover's decision from a binomial distribution with mean of 0.5. This is comparable to the likelihood that the milk company assigns the farmer a high milk-quality assessment, based on actual quality assessment data during the year prior to the experiments. Jamison and Karlan (2011) use a comparable approach when paying subjects for a task. In order to avoid having to implement a time preference protocol, they assign a nondegenerate (as opposed to a more uniform) probability to such task being selected for payment.

decisionmaking process by second and third movers. We consciously chose to withhold such information in order to avoid deception. Subjects were told that the second mover could be another farmer, an employee of the firm, an MCC employee, or some other random person. When applicable, they were also told that the third mover could be thought of as someone who was put in place by the government to monitor the investment fund.

While it is possible that revealing additional details about the second and third movers' natures could have led to different levels of trust, we would expect this shift to occur in all three treatments. Given we identify our main effects across treatments, we do not expect any significant confounding effects.

2.3 Implementation

Each treatment was conducted across two sessions (one in the morning and one in the afternoon; that is, with different subjects) and each session consisted of two rounds of decisionmaking (with the same subjects in the same session). TG had 64 individuals with 31 in session 1 and 33 in session 2; 3TG had 61 individuals with 32 in session 3 and 29 in session 4; and 3TGC had 58 individuals with 28 in session 5 and 30 in session 6. Each individual subject played the same game (TG, 3TG, or 3TGC) twice in the same session (these are the two rounds) in order to test for consistency in decisionmaking.[8] The farmer did not receive feedback between rounds. To mitigate end-of-game effects, farmers were informed that they would play the game more than once, but they were not informed of the exact number of rounds.

In order to increase attendance to the experiments, the following measures were taken. First, we collaborated with the Institute of Policy and Strategy for Agriculture and Rural Development (IPSARD) and the MCCs when recruiting the farmers, since the farmers consider them trusted parties.[9] The collaboration with IPSARD, which is the main agricultural research institute of Vietnam, was particularly important to ensure that farmers saw the experiments as potentially informing policy. Second, we personally invited farmers to attend the experiments using an official letter endorsed by these institutions. Third, we arranged transportation for those farmers who were furthest away from the experiment site. Eventually, 90% of the 204 farmers showed up for the experiment sessions.[10]

As illustrated in Figure 4, each session had the following timeline: (1) registration, (2) instructions, (3) questions and answers, (4) two rounds of decision-making with no feedback, (5) a post-quiz, and (6) payment. The same experimenter conducted all sessions in English with line-by-line translation to Vietnamese by the same trained translator. The assistant experimenter, who was in a separate room (behind the scenes), was also the same across all sessions. In order to mitigate peer effects and maximize subject privacy during decisionmaking, the sessions were conducted in a very large room, which allowed

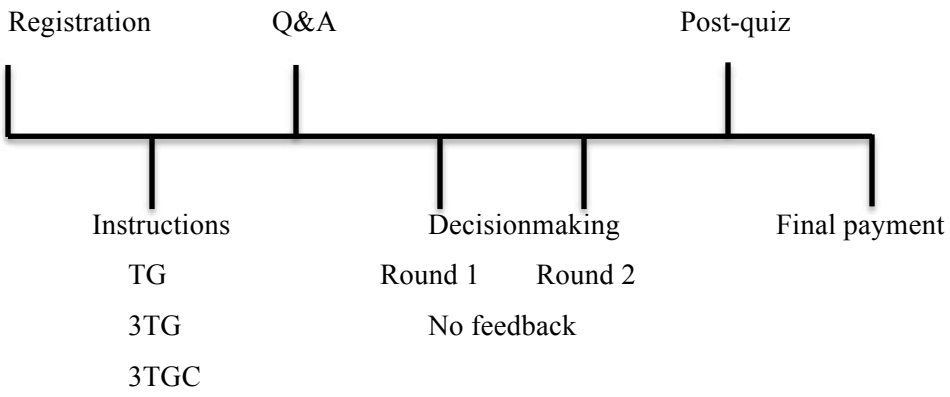
[8] 93% of the subjects made the same decision across rounds.

[9] The experiment data were kept anonymous from IPSARD and the MCC.

[10] Attrition was typically due to random circumstances and balanced across treatments.

for a lot of space between farmers. Furthermore, subjects made decisions behind large voting boxes, which made it impossible to observe peers' decisions. Sessions lasted on average two hours and paid 101,309 VND (standard deviation: 42,126 VND; recall the reported daily income for this sample in footnote 4). Payment was arranged by the assistant experimenter and provided to the subjects in a sealed envelope by the experimenter.

Figure 4: Session timeline



2.4 Hypotheses and empirical strategy

Given the random assignment of subjects to TG, 3TG, or 3TGC and the existence of two rounds of data, we estimate the main treatment effects associated with TG and 3TGC relative to the baseline 3TG by means of the following random-effects Generalized Least Squares (GLS) regression:[11]

$$T_{FA,t} = \beta_0 + \beta_{TG} D_{TG} + \beta_{3TGC} D_{3TGC} + \Sigma_j \beta_{S_j} S_j + \Sigma_k \beta_{M_k} MCC_k + \beta_{R_t} R_t + \beta_{X_{FA}} X_{FA,t} + \nu_F + \varepsilon_{FA,t},$$

where the dependent variable $T_{FA,t}$ is whether the farmer chose to trust the firm ($T = 1$) or exit ($T = 0$) in round t, β_0 is a constant term, D_{TG} takes the value 1 if the subject is in TG, D_{3TGC} takes the value 1 if the subject is in 3TGC, $\{S_j\}$ is a set of session dummies for $j = 1,2,\dots,6$, $\{MCC_k\}$ is a set of MCC dummies for $k = 1,2,3,4$, R takes the value 1 if the subject is in round two, $X_{FA,t}$ is a set of individual characteristics in round t (we elaborate when discussing the results), ν_{FA} is an individual-specific random effect, and $\varepsilon_{FA,t}$ is an individual-specific, time-variant error term.

We are interested in the coefficients β_{TG} and β_{3TGC}. Taking the 3TG as the baseline treatment, we would expect $\beta_{TG} < 0$, reflecting the fact that introduction of the third party (the auditor) increases farmers' trust towards the firm. We also expect $\beta_{3TGC} \leq 0$, reflecting the fact that (perceived) potential collusion (weakly) reduces trust.

[11] We cannot estimate the treatment effects in the presence of individual fixed effects since the treatment effects are themselves individually invariant and, thus, will be wiped out by such estimation. Random effects specifications need not be problematic if our randomization was successful. When analyzing the results, we test for this by checking for balance on observable characteristics across treatments.

3. Results

We start by assessing whether the randomization was successful by looking at the difference in means across TG and 3TG, TG and 3TGC, and 3TG and 3TGC. Table 1 summarizes these differences for some key characteristics. Some of the variables are at the individual (respondent) level and some at the household level. In 5% of the cases, the person responding to the household questionnaire did not coincide with the participant in the experiment. We correct for this in our analysis, as necessary. The individual-level characteristics reported in table 1 are the participant's age (in years), gender (a female dummy), and preferences, which include proxies for trust (a dummy that takes the value 1 if the respondent lent a significant amount of money in the past five years), altruism (a dummy that takes the value 1 if the respondent gave a significant amount of money in the past five years), risk, and time. The risk preference question presented the participant with a choice of hypothetical lotteries that increased the mean and variance for each subsequent option (see Binswanger 1980 for a detailed discussion). The risk proxy is on a scale from 1 to 5, where 1 represents the least-risky lottery chosen. The time preference question presented the participant with a choice of hypothetical options that offered a fixed amount of money today or a larger and growing amount of money one month from today. The respondent is assumed to be patient (a dummy that takes the value 1) if she chose the future amount when it implied a monthly interest rate of 3.5% percent or less.

The household-level characteristics are the household (HH) head's education (in years), the HH size, the number of cows owned (we use this as a proxy for income and wealth since the income data are relatively noisy), the average price received per liter of milk (in thousands of VND), the distance to the closest paved road (in kilometers), and a dummy variable that takes the value 1 if the HH borrowed money during the past five years.

Table 1 suggests that, relative to TG, subjects in 3TGC are significantly more likely to be (1) male, (2) farther from a paved road, and (3) impatient. They are also significantly less likely to have borrowed money in the past five years. In order to control for this potential selection, as indicated in our estimating equation, we will control for these observables when estimating the treatment effects. These variables are what was previously referred to as $X_{FA,t}$.

Prior to discussing the main treatment effects, we summarize average trust levels across rounds (1, 2) within treatments (TG, 3TG, and 3TGC) and across sessions within treatments (TG: Session 1, 2; 3TG: Session 3, 4; and 3TGC: Session 5, 6). These statistics are in Table 2. The table suggests that, holding the round fixed, farmers are more likely to trust in 3TG and 3TGC than in TG. However, the session-level statistics show some interesting patterns. When pooling across rounds, there are session-level patterns that get masked. This suggests that it is important to control for session-level dummies when estimating the main treatment effects, as indicated by the estimating equation (recall $\{S_j\}$.

Table 1. Sample means of basic characteristics by treatment

	1: TG	2: 3TG	3: 3TGC	Δ_{12}	Δ_{13}	Δ_{23}
Age	45.43[a]	42.62	44.29	2.81	1.14	-1.67
	(1.31)[b]	(1.28)	(1.35)	(1.84)	(1.88)	(1.86)
Female	0.25	0.21	0.12	0.04	0.13*	0.09
	(0.06)	(0.05)	(0.04)	(0.08)	(0.07)	(0.07)
Education (years)	8.70	7.83	8.36	0.87	0.34	-0.53
	(0.39)	(0.38)	(0.40)	(0.54)	(0.56)	(0.55)
Household size	4.36	4.38	4.45	-0.02	-0.09	-0.07
	(0.21)	(0.18)	(0.19)	(0.28)	(0.28)	(0.27)
Number of cows[d]	6.98	7.23	8.05	-0.25	-1.07	-0.82
	(0.60)	(0.57)	(0.80)	(0.83)	(0.98)	(0.97)
Average milk price	6821.51	6773.52	6854.80	47.99	-33.29	-81.28
per liter (Viet dong)	(91.63)	(45.80)	(43.11)	(105.70)	(104.67)	(62.89)
Distance to closest	0.29	0.41	0.50	-0.12	-0.21**	-0.09
paved road (km)	(0.06)	(0.12)	(0.09)	(0.13)	(0.11)	(0.15)
Borrowed money	0.63	0.57	0.47	0.06	0.16*	0.10
during past 5 years	(0.06)	(0.07)	(0.07)	(0.09)	(0.09)	(0.09)
Trust[e]	0.23	0.33	0.28	-0.10	-0.05	0.05
	(0.05)	(0.06)	(0.06)	(0.08)	(0.08)	(0.09)
Altruism[f]	0.16	0.20	0.16	-0.04	0.00	0.04
	(0.05)	(0.05)	(0.05)	(0.07)	(0.07)	(0.07)
Risk[g]	1.88	1.97	1.76	-0.09	0.12	0.21
	(0.16)	(0.17)	(0.15)	(0.23)	(0.21)	(0.22)
Patience[h]	0.44	0.39	0.28	0.05	0.16*	0.11
	(0.06)	(0.06)	(0.06)	(0.09)	(0.09)	(0.09)

[a] mean for given treatment group, [b] standard error in parenthesis.

[c] Δij represents the difference in means for treatment group i and j (i.e., mean_i-mean_j)

Note: *** p<0.01, ** p<0.05, * p<0.1 based on two-sided *t*-test on difference in means.

[d] We use the total number of cows throughout as a proxy for income and wealth, since the income variable is relatively noisy (income is not different across treatments).

[e] The respondent is trusting if she lent a significant amount of money in the past five years.

[f] The respondent is altruistic if she gave a significant amount of money in the past five years.

[g] Based on a framed Binswanger-style lottery on scale 1 to 5 with 5 being the riskiest choice.

[h] The respondent is patient if she chose to wait at an implied interest rate of 3.5%.

Table 2. Mean trust levels[a]

TG		3TG		3TGC	
Round 1	Round 2	Round 1	Round 2	Round 1	Round 2
0.53[b]	0.50	0.59	0.57	0.72	0.71
(0.50)[c]	(0.50)	(0.50)	(0.50)	(0.45)	(0.46)
Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
0.36[d]	0.67	0.44	0.74	0.77	0.67
(0.48)	(0.48)	(0.50)	(0.44)	(0.43)	(0.48)

[a] Recall that there are three treatments: TG, 3TG, and 3TGC with 64, 61, and 58 individuals respectively, each making two rounds of decisions in the same session. [b] Average trust by round. [c] Standard deviation in parentheses. [d] Average trust by session across two rounds (N=31, 33, 32, 29, 28, 30 per round for session 1, 2, 3, 4, 5, and 6 respectively).

Table 3 presents the estimates of the main regression with the decision to trust the firm $(T = 1)$ or not $(T = 0)$ as the dependent variable. All specifications take 3TG as the baseline (omitted) treatment and include session-level fixed effects. Specification (1) does not include round fixed effects, MCC fixed effects, or the vector of characteristics $X_{FA,t}$ (recall previous discussion). Specification (2) adds round and MCC fixed effects. Specification (3) adds $X_{FA,t}$. Finally, specification (4) adds other characteristics (age, HH head's education, oldest son's education, HH size, number of cows owned, risk, altruism, and the consistency dummy, which equals 1 if the subject made the same choice across the two rounds) as robustness checks.

In all specifications, it is clear that introduction of the third party significantly increases trust. This effect holds even after controlling for a wide set of covariates including round, session, MCC, and consistency dummies. In fact, even though patient individuals are more likely to trust (this makes sense since trusting represents an investment that pays off over time in this context), this effect does not wipe out the main effect of the third party. The sign of the 3TG dummy is consistent with the prediction in Section 2.4.

On the other hand, the potential for collusion does not significantly reduce trust. While the sign of the 3TGC dummy is negative, as hypothesized in Section 2.4, it is not significant. This suggests that farmers do not perceive collusion between the firm and the auditor as a significant threat. A priori, we expected this effect to be significant. After all, in a context such as this where farmer subjects do not know the second or third movers, they may have expected collusion. However, based on post-discussions with farmers, it seems that the Vietnamese culture tends to trust auditors, especially if instituted by the government. So, after the fact, it is perhaps not surprising that farmers show similar levels of trust in 3TGC as in 3TG.

Table 3. Panel estimates of treatment effects[a] (dependent variable: 1= farmer trusts the firm)

	(1)	(2)	(3)	(4)
TG dummy	-0.39***	-0.38***	-0.39***	-0.37***
	(0.12)	(0.12)	(0.12)	(0.11)
3TGC dummy	-0.08	-0.07	-0.04	-0.03
	(0.11)	(0.11)	(0.12)	(0.12)
Female			0.03	0.07
			(0.09)	(0.09)
Distance to closest			-0.01	0.01
paved road (km)			(0.04)	(0.05)
Borrowed money			-0.05	-0.07
during past 5 years			(0.07)	(0.07)
Patience			0.16**	0.18**
			(0.07)	(0.07)
Constant	0.74***	0.69***	0.73***	0.76***
	(0.08)	(0.10)	(0.12)	(0.26)
Overall R-squared	0.10	0.11	0.15	0.19
Observations	366	366	364	358
Individuals	183	183	182	179
Round/MCC dummies	No	Yes	Yes	Yes
Additional controls[b]	No	No	No	Yes

[a] 3TG is the omitted/baseline treatment. Effects are based on a random-effects GLS panel with session-level dummies included in all specifications. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

[b] Additional controls: age, HH head's education, oldest son's education, HH size, number of cows owned, risk, altruism, and the consistency dummy.

4. Conclusion

We conducted three framed trust games using contract dairy farmers in rural Vietnam in the role of first mover to assess the impact of (perceived) potential collusion on trust in third-party arrangements.

We find that overall farmers respond strongly to the introduction of a third party: They are more likely to trust in 3TG relative to TG. These findings corroborate with existing findings on third-party enforcements such as Volan (2011). However, somewhat surprisingly, the potential for collusion does not significantly reduce the propensity to trust. This may be due to the framing of the third party as an "auditor" – a term that seems to exude trust in the Vietnamese culture.

Our study is part of a larger research project in which an actual third-party contract arrangement is being implemented using RCTs. Given the subjects in these FFEs are a subsample of those in the RCTs and the FFEs were framed as an investment with the contracting firm, we can infer some external validity from our findings. Specifically, the FFEs enable us to assess a priori whether the proposed third-party arrangement at the RCT level is likely to be successful at improving the relationship between the farmers and the contracting firm.

We can thus extrapolate two main conclusions from these experiments. First, the third-party quality assessment is likely to improve the naturally-occurring relationship between the firm and the contract farmers. Second, if farmers perceive the third party as a government-instituted, independent auditor, they are unlikely to be concerned about potential collusion. Of course, some of these effects may be mitigated by the size of contracts (stakes), which tend to be greater in the day-to-day environment.

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