Role of Guanxi (interpersonal relationship) in bribe-taking behaviors: evidence from China

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Abstract

Bribery, an illegal conspiracy between two transactional parties, has a wide range of destructive effects on society. From an interpersonal interaction perspective, we explored how Guanxi (interpersonal relationships, including direct and indirect ones) influences individuals, especially government officials' bribe-taking probability, using behavioral experiments and questionnaires. The findings suggested that direct Guanxi promoted individuals' acceptance of bribes (Study 1a), and indirect Guanxi had the same role and effect sizes (Study 1b). However, the mechanisms were slightly different. Government officials were more likely to accept bribes from family members and friends (direct Guanxi) (than strangers) because they had more trust and felt more responsible and obligated to help them (Study 2). However, accepting bribes from those who contacted them through their family or friends (indirect Guanxi) (vs. strangers) was only driven by trust (Study 3). The present study explores the lubricant role of Guanxi in corruption, extends the literature on why bribery occurs from a new perspective, and provides suggestions for fighting corruption.

Keywords Direct Guanxi · Indirect Guanxi · Bribe-taking decisions · Trust · Responsibility-obligation

Introduction

Bribe-taking, one of the most serious and dangerous acts of corruption (Nastase, 2020), impairs and even destroys the foundations of organized societies and states. Above all, it flourishes in times of crisis such as the COVID-19 pandemic. The essence of bribe-taking is a transaction in which public officials take advantage of their positions to accept other people's property and seek benefits for others illegally (Dungan et al., 2014; Li et al., 2015; Shleifer & Vishny, 1993). Bribery can occur without a monetary transaction, such as jumping the queue to obtain a license; however, many briberies that require prior monetary transactions, such as inappropriate approval of construction projects,

often have serious social consequences (Gaspar & Hagan, 2016). Thus, this study focused primarily on the latter, that is, the acceptance of bribes by individuals.

Although researchers have examined factors that influence bribery, such as transaction situations (e.g., Abbink et al., 2002; García-Gallego et al., 2020; Guerra & Zhuravleva, 2021; Kobis et al., 2017), individual personality (e.g., Bai et al., 2014; Liang et al., 2016; Swamy et al., 2000; Vranka & Bahník, 2018; Zhao et al., 2016, 2018, 2019), and social culture (e.g., Ajzenman, 2021; Fischer et al., 2014; Husted, 1999; Mazar & Aggarwal, 2011; Shleifer & Vishny, 1993; Treisman, 2000), very few empirical studies have investigated how bribe-taking behavior occurs from the perspective of interpersonal relationships between bribe-givers and bribe-takers. Bribe-taking is an illegal and complicated behavior between transaction parties (Abbink, et al., 2002); therefore, the role of interpersonal relationships cannot be overemphasized, especially in East Asian cultures where Guanxi (the Chinese expression of interpersonal relationships) plays an important role in people's daily lives (Chen & Chen, 2004; Fei, 1948; Hwang, 1987; Tsui et al., 2000; Chang et al., 2014). However, a primary question yet to be clarified is how Guanxi between the two parties in bribery influences the decisions of individuals, especially government officials, to take bribes.

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Specifically, does Guanxi facilitate or inhibit bribery? What are the underlying psychological reasons for individuals to take bribes from people who are close to them?

Before exploring how Guanxi affects bribery, we briefly describe Guanxi. Guanxi is a term used in Chinese culture to express relationships between people (Lee & Humphreys, 2007; Chen & Chen, 2004). It is a set of interpersonal connections that facilitates the exchange of favors between people (Hwang, 1987). The degree of relationship from near to far includes family relationships, familiar relationships (such as friends), and strangers (i.e., no relationship) (Yang, 1993). According to the Guanxi theory, different relationships correspond to different psychological and social meanings and are governed by different social norms (Tsui et al., 2000). Family relationships are stable and emotionally strong. Loyalty to (and related favoritism toward) family members is an obligation, and it is largely rendered without an obligation of reciprocity (Tsui et al., 2000). In family relationships, individuals are required to treat family members and the strong bond formed by kinship-like relationships with a high degree of specificity and responsibility (Bian & Zhang, 2013; Yang & Yu, 1993). Familiar relationships such as friends have relatively weak emotional connections. Individuals might give special treatment to their friends; however, this favoritism is often accompanied by an expectation of reciprocity (Hwang, 1987; King, 1989). The defining characteristic of a stranger relationship is instrumentality without affection, unlike the family relationship, which primarily involves affection, or the familiar relationship that has both instrumental and affective components. Individuals treat strangers based on a profit-driven and low-specificity principle (Bian & Zhang, 2013; Yang & Yu, 1993). According to the above analysis, the closer/higher the Guanxi, such as family relationship, the higher the individual emotional involvement, the lower the instrumental purpose and reciprocity expectations in the interaction, and the more the interaction is an obligatory behavior. On the contrary, the more distant/lower the Guanxi, such as strangers, the lower the individual emotional involvement, the higher the instrumental purpose in the interaction, and the more the interaction is a profit-driven behavior.

The Guanxi-increase hypothesis vs. the Guanxi-decrease hypothesis

The Guanxi-increase hypothesis

Guanxi possibly increases the probability of bribery. Previous studies support this view. For example, Luo logically predicted that Guanxi would provide fertile soil for corruption in China (Luo, 2008). Jin and Zhao argued that Guanxi is the cultural root of corruption in China by analyzing literature and life examples. They also found that institutional deficiencies and personal desires lead people to use Guanxi to corrupt (Jin & Zhao, 2010). Zhan concluded that Guanxi can create both means and incentives for officials to engage in corruption by taking the reform era in China as an empirical case. According to Guanxi theory, the closer/higher the Guanxi is, the more the individual needs to actively participate in the interaction and treat the other party in the interaction in a special way. Positive interactions facilitate communication, and treating the other person as special means that individuals are likely to bypass normal interaction rules and even distort normal norms to deal with others' needs. Therefore, they pointed out that Guanxi can improve communication efficiency, optimize the transaction process, and distort norms by mispresenting certain illicit behaviors as normatively acceptable practices, ultimately leading people to corruption through Guanxi (Zhan, 2012). These studies have inspired us to understand the relationship between Guanxi and bribery. However, the view that Guanxi increases corruption remains to be empirically verified (Luo, 2008), and the psychological mechanisms by which Guanxi influences bribery are unclear.

Therefore, we aimed to test the idea that Guanxi increases bribe-taking behaviors through an experimental approach and to reveal the underlying psychological mechanisms by which Guanxi influences bribe-taking behaviors. We speculate that the closer Guanxi is, the higher the probability of taking bribes, and Guanxi may take effect via different routes. First, Guanxi may increase trust between corrupt partners, which is important for the Guanxi-increase hypothesis. Clearly, bilateral transaction parties in bribery cannot sign a contract that receives legal protection. Thus, they must engage in corrupt cooperation based on mutual trust (Abbink et al., 2002). High trust implied in close Guanxi (Lewis & Weigert, 1985; Song et al., 2015) can promote cooperation (Balliet & Van Lange, 2013). Previous research has also suggested that high levels of trust can decrease perceived risks (Siegrist et al., 2005) and anxiety about punishment, and a low risk of being detected contributes to corruption (Groenendijk, 1997). Second, Guanxi may weaken moral conflicts, which can also promote bribery. To some degree, bribe-taking behavior is a moral dilemma in which individuals must choose between safeguarding the public interest, fairness standards, and abusing power in pursuit of personal interests (Dungan et al., 2014). Individuals involved in bribery might consider their accommodating behavior as helping family or friends rather than violating moral norms. These moral disengagements can obscure the immorality of bribery and increase it (Bhattacharjee et al., 2013; Waytz & Epley, 2012; Zhao et al., 2018, 2019). Furthermore, empirical studies have shown that close interpersonal relationships can migrate cognitive and emotional conflicts in moral dilemmas

(Zhan et al., 2018, 2020). Therefore, we argue that Guanxi may have similar effects in alleviating the moral conflict of corruption.

The Guanxi-decrease hypothesis

In contrast, the other hypothesis is that Guanxi can backfire. In other words, the closer Guanxi is, the lower the probability of taking bribes. This hypothesis is justified mainly by cultural norms in East Asia, especially by Guanxi theory, which explains the different behavioral logic corresponding to different levels of Guanxi (Chen, & Chen, 2004; Fan, 2002a, b; Fei, 1948; Hwang, 1987; Tsui & Farh, 1997, Tsui et al., 2000). A representative theory is the "face and favor" theory introduced by Hwang (1987). This theory views the two parties involved in social interaction as petitioners and resource allocators. When the resource allocator is required to give out social resources to benefit the petitioner, the potential allocator first considers carefully: "What is the Guanxi between us?" Then, the resource allocator allocates resources according to different principles and the relationship between the two parties.

Several important elements/principles of this theory may eventually lead to the Guanxi-decrease hypothesis. First, different levels of Guanxi imply varying responsibilities and obligations. People have a responsibility or obligation to help their family and friends without expecting rewards or obtaining benefits from them (Chen & Chen, 2004; Hwang, 1987; Li, 2010; Tsui & Farh, 1997). It seems utilitarian and uncustomary for East Asians to accept bribes from close ones, leading to feelings of disgrace. Second, the different levels of Guanxi rely on different foundations. Family relationships and friendships (versus stranger relationships) are primarily driven by emotions and/or affection (Chen & Chen, 2004). The closer Guanxi is, the stronger the affection. If there is no emotion or affection, Guanxi for family or friends is likely to break. Thus, individuals should interact with people close to them, especially family members, to maintain emotional connections (rather than resource exchanges). In East Asia, "talking about money hurts people's feelings." Thus, individuals cannot accept money from those close to them. If they do so, they are likely to be labeled as valuing money more than affection, which eventually destroys the bilateral Guanxi between them.

Direct Guanxi and indirect Guanxi

Guanxi consists of both direct and indirect forms in the context of East Asian culture, especially in China. Direct Guanxi refers to the interdependent relationship existing before corrupt transactions, such as the relationship between the bribe-takers and their family members or friends, which are classified as family and friend conditions in the current

study. Indirect Guanxi refers to the interdependent relationship that needs to be established through an intermediary, such as bribe-takers' family or friends. These indirect relationships are classified as indirect Guanxi through family and friend conditions in the current study. The essential difference between direct and indirect Guanxi is whether an intermediary is required to bridge the relationship between the two parties to interaction (Bian, 1997). Direct Guanxi is a relationship without an intermediary, while indirect Guanxi is a relationship with an intermediary.

According to "the differential mode of association" theory introduced by Fei Hsiao-tung (Fei & Zhang 1949), Chinese relationships are like "ripples radiating out from where a rock landed in a pond of water" (Hamilton, 2015), with the self at the center of the waves. As the waves move from the inside to the outside, the relationship becomes increasingly weak (Fei et al., 1992). Family members are in the inner layer of the wave, followed by friends, and those in the outer layer of the wave are estranged. When relationships do not exist, individuals must first build relationships through intermediaries (i.e., the other person's family or friends). In other words, individuals must establish indirect Guanxi and gain access to social resources (Kim, 2002). Tsui et al. (2000) argued that both direct and indirect Guanxi play important roles in individuals' social networks. In corrupt practices, the parties involved in the bribery may have direct Guanxi, such as the parties being family members or friends of each other; however, other parties involved in the bribery often do not have any relationship before committing the corrupt behavior and need to establish a relationship through the introduction of an intermediary to complete the bribery. In fact, this type of bribery, through indirect Guanxi, is more common in daily life. Thus, the distinction between direct and indirect Guanxi is not only in line with the social reality in East Asia but also helps to highlight the relationship between Guanxi and bribery decisions. Unfortunately, few empirical studies have differentiated between the two types of Guanxi. This study aims to fill this gap in the literature by investigating the relationship between Guanxi types and bribe-taking decisions. Given the higher costs of individual interactions with those who have indirect Guanxi compared to those who have direct Guanxi, especially when engaging in illegal behaviors (Yang & Bian, 2016), we speculate that indirect Guanxi may trigger less corrupt behaviors than direct Guanxi.

The moderating effects of risk and amount

According to the cost-benefit theory of corruption, the cost of risk and the amount of benefit are fundamental factors in corruption (Groenendijk, 1997), examining how these two factors moderate the influence of Guanxi on bribery decisions can contribute to a comprehensive understanding

of the boundary conditions of the Guanxi effect. Previous research has found that risk helps reduce corruption (Wei et al., 2015). Thus, we speculate that risk may moderate the effect of Guanxi on bribery. Specifically, under the Guanxi-increase hypothesis, risk reduces the impact of Guanxi on bribery, and the higher the risk, the lower the influence of Guanxi on bribery. Under the Guanxi-decrease hypothesis, risk may increase the influence of Guanxi on bribery, and the higher the risk, the higher the influence of Guanxi on bribery. Furthermore, according to the cost-benefit theory of corruption (Groenendijk, 1997), high returns are often associated with high risk. Therefore, we speculate that high amounts may affect the relationship between Guanxi and bribery in the same way that high risk does. Specifically, in the Guanxi-increase hypothesis, the higher the amount, the lower the influence of Guanxi on bribery, while under the Guanxi-decrease hypothesis, the higher the amount, the higher the influence of Guanxi on bribery.

The current research

In the present study, we differentiate between two types of Guanxi: direct and indirect. Our main goal was to test two competitive hypotheses, the Guanxi-increase hypothesis and the Guanxi-decrease hypothesis, and to explore the underlying psychological mechanisms. Additionally, this study examined the moderating roles of risk and amount in the relationship between Guanxi and bribe-taking decisions. Furthermore, unlike previous bribery research, which only recruited non-official participants, our research deliberately enlisted government officials to improve ecological validity. According to Alatas et al. (2008), officials are more intolerant of corruption than non-officials such as students. Thus, we hypothesize that officials have a lower probability of bribery than non-officials do.

Three studies were conducted in this research. Study 1 tested the influencing pattern (facilitation or inhibition) of direct (Study 1a) and indirect Guanxi (Study 1b) on the decisions of individuals, especially government officials, to take bribes. The two studies also examined the moderating effects of risk and amount and compared the differences in bribe-taking decisions between officials and non-officials. Studies 2 and 3 explored the potential mechanisms (trust, moral, responsibility-obligation, and affection) through which direct and indirect Guanxi influence government officials' decisions to take a bribe. By comparing Study 1a with Study 1b and Study 2 with Study 3, we investigated any potential differences in effect sizes and underlying mechanisms between direct and indirect Guanxi in impacting bribery decisions.

Study 1

Study 1 had two sub-studies. Study 1a had three aims: 1) to test whether bribees were more likely or less likely to accept bribes from people who had direct Guanxi with them (family condition, friend condition) than from total strangers (control condition); 2) to examine the moderating effects of risk and amount on direct Guanxi influencing bribery; and 3) to compare the differences in bribery decisions between government and non-government officials. Study 1b examined the three questions mentioned in Study 1a from an indirect Guanxi perspective.

Study 1a

Methods

Participants

Ninety-eight participants in China, including 53 non-government officials and 45 government officials, were recruited for this study (63 male, 35 female; mean age = 35.51, $SD = 12.08$). Non-government officials (mean age = 29.40, $SD = 11.45$) consisting of college students, merchants, teachers, and service staff were recruited through offline advertisements. Government officials (mean age = 42.71, $SD = 8.27$) were recruited by convenience sampling. Post-hoc sensitivity analysis (ANOVA: Repeated measures, within-between interaction) conducted using G*Power suggested that a sample size of 98 could detect $\eta^2 = 0.11$ for the critical main effect of direct Guanxi (power = 0.80, $\alpha = 0.05$).

Task

Bribe-taking decision task An improved repeated bribe-taking game (Leng & Zhou, 2014) was used to capture the participants' bribe-taking decisions. Bribery and other similar words did not appear in the task to reduce social desirability. The scenario is as follows:

> Imagine that you hold a position in a government agency and are responsible for the approval of a project. Someone gives you some benefits to obtain the project. You must decide whether to accept this benefit. If you choose to accept it, you may not be discovered and receive the benefit fee; it may also be discovered and you may lose a certain amount of money. If you choose to decline, you will not experience any gains or losses. The amount of benefit fee available and the risk probability of being

Fig. 1 Sequences of events in a single trial in the bribe-taking task in Study 1

discovered are displayed on the screen. Please make the decision according to your true inner thoughts; all results are anonymous and confidential.

Situation presentation and data acquisition were performed using MATLAB (MathWorks Inc.) and Psychtoolbox3 (Brainard, 1997) on a computer. As shown in Fig. 1, each trial began with a fixation (a white cross against a black background). After 500 ms, either the direct Guanxi word (family, friend) or the control condition word (stranger) was presented in the center of the display for 1000 ms. Next, the risk (e.g., "Risk 20%") and amount of money (e.g., "Amount 5万") were printed inside two white frames, which were presented on the left and right of the screen, respectively (position balanced). Participants then decided whether to take the bribe by pressing either the "F" (accepting the bribe) or "J" (refusing the bribe) button on the keyboard. There was no time limit for decision making. After participants decided, feedback, which consisted of a sentence "The result of your decision is," and the specific resulting numeral was presented on the screen. To distinguish the valence of the outcome, the "+" or "–" was added before the numeral. Moreover, the "+" and subsequent numeral were printed in red, whereas the "–" and subsequent numeral were printed in green if the participants decided to accept the bribe. By contrast, if participants rejected the bribe, the resulting symbol and numeral would be "+0" printed in white. The feedback was presented 5000 ms maximally. During this period, the participants pressed the space bar to enter the next round. The inter-trial interval was 1000 ms. At the end of the experiment, the amount of money accumulated during all trials was presented on a screen. As the participants were told, the actual risk was the risk presented on the screen. The experiment consisted of 4 blocks of 48 trials each. Each block had 16 trials for the "family," "friend," and "stranger" conditions. Prior to the formal test, a practice block containing 24 trials was conducted. After the experiment, participants were briefly interviewed about whether, when, and why they decided to accept the money.

Procedure

Participants read stories about bribery situations on a computer and then made decisions on whether to accept bribes with different bribery risks and amounts. The entire experiment lasted for approximately 30 min.

Design

A $3 \times 2 \times 2 \times 2$ mixed design was used. There were four independent variables: Direct Guanxi (family, friend, and stranger), Risk (20%, 80%), and Bribe Amount (5万 and 50万, i.e., 50,000 RMB and 500,000 RMB) were within-subject factors, and Participant Type (non-government official, government official) was a between-subject factor. The dependent variable was the proportion of bribe-taking, that is, the number of decisions to accept bribes divided by the total number of decisions, which represented the possibility of bribe-taking.

Results and discussion

Repeated-measures ANOVA results are presented in Table 1.

Direct Guanxi effect The main effect of direct Guanxi was significant [$F(2, 192) = 33.52$, $p < .001$, $\eta_p^2 = .26$]. As shown in Fig. 2a, Bonferroni post-hoc multiple comparisons indicated that the probability of accepting bribes from closer Guanxi, including family ($M_{family} = .35$, $SD_{family} = .20$) and friends ($M_{friend} = .33$, $SD_{friend} = .20$), was significantly higher than that of strangers ($M_{stranger} = .23$, $SD_{stranger} = .20$) ($ps < .001$). There was a marginally significant difference between the family and friend conditions ($p = .071$). The Guanxi-increase hypothesis was confirmed.

The moderation effects of risk and amount The Direct Guanxi × Risk interaction [$F(2, 192) = 23.88$, $p < .001$, $\eta_p^2 = .20$], the Direct Guanxi × Bribe Amount interaction [$F(2, 192) = 4.17$, $p < .001$, $\eta_p^2 = .04$], and the Direct Guanxi × Bribe Amount × Risk interaction [$F(2, 192) = 5.21$,

Table 1 Results of multivariate ANOVA for Study 1a (direct Guanxi) and Study 1b (indirect Guanxi)

Independent variables		Dependent variables			
		df	F	p	η_p^2
Guanxi	Study1	2, 192	33.52	< .001	.26
	Study2	2, 192	26.39	< .001	.22
Risk	Study1	1, 96	200.85	< .001	.68
	Study2	1, 96	143.38	< .001	.56
Bribe Amount	Study1	1, 96	1.02	.316	.01
	Study2	1, 96	.19	.664	.002
Participant Type	Study1	1, 96	10.26	.002	.10
	Study2	1, 96	3.38	.069	.03
Guanxi ×Risk	Study1	2, 192	23.88	< .001	.20
	Study2	2, 192	14.31	< .001	.13
Guanxi × Bribe Amount	Study1	2, 192	4.17	.017	.04
	Study2	2, 192	.63	.536	.01
Guanxi ×Participant Type	Study1	2, 192	.48	.619	.01
	Study2	2, 192	.16	.853	.002
Risk × Bribe Amount	Study1	1, 96	.07	.792	.001
	Study2	1, 96	.16	.686	.002
Participant Type × Risk	Study1	1, 96	9.07	.003	.09
	Study2	1, 96	2.73	.102	.03
Participant Type ×Bribe Amount	Study1	1, 96	5.52	.021	.05
	Study2	1, 96	12.65	.001	.12
Guanxi × Risk × Bribe Amount	Study1	2, 192	5.21	.006	.05
	Study2	2, 192	1.08	.340	.01
Participant Type ×Risk × Bribe Amount	Study1	1, 96	4.00	.048	.04
	Study2	1, 96	14.95	< .001	.13
Guanxi × Risk ×Participant Type	Study1	2, 192	.18	.838	.002
	Study2	2, 192	.21	.815	.002
Guanxi ×Bribe Amount × Participant Type	Study1	2, 192	.94	.391	.01
	Study2	2, 192	2.64	.074	.03
Guanxi × Participant Type ×Risk × Bribe Amount	Study1	2, 192	1.34	.264	.01
	Study2	2, 192	1.05	.351	.01

$p = .006$, $\eta_p^2 = .05$] were all significant. For the three-way interaction, in each Bribe Amount condition, Direct Guanxi × Risk was significant [F_{5wan} (2, 194) = 24.97, $p < .001$, $\eta_p^2 = .21$; F_{50wan} (2, 194) = 13.04, $p < .001$, $\eta_p^2 = .12$]. In other words, the nature of the three-way interaction was that of degree, instead of direction. Therefore, we focused the analysis on two-way interactions.

Because the Direct Guanxi × Risk interaction was significant, we conducted a simple effect analysis. The results showed that for the low-risk condition, the simple effect of direct Guanxi was significant [F (2, 192) = 34.90, $p < .001$, $\eta_p^2 = .27$]. The probabilities of accepting bribes from family ($M_{family} = .60$, $SD_{family} = .40$) and friends ($M_{friend} = .58$, $SD_{friend} = .40$) were higher than those from strangers ($M_{stranger} = .41$, $SD_{stranger} = .40$) ($ps < .001$), and there was no difference in the probability of accepting bribes from family and friends ($p = .89$). However, for the high-risk condition, the simple effect of direct Guanxi was attenuated, although

this effect was also significant [F (2, 192) = 7.46, $p = .001$, $\eta_p^2 = .07$]. The probability of accepting bribes from family ($M_{family} = .09$, $SD_{family} = .19$) was higher than that from friends ($M_{friend} = .07$, $SD_{friend} = .10$) ($p = .025$) and strangers ($M_{stranger} = .05$, $SD_{stranger} = .10$) ($p = .004$), and there was no difference in the probabilities of accepting bribes from friends and strangers ($p = .277$). The simple effect of Guanxi decreases with an increase in risk, which confirms the moderating effect of risk. In addition, the difference in the post-hoc comparison results between the two risk conditions also reflects the moderating effect of risk. With elevated risk, individuals viewed friends and strangers as a category with a similarly low probability of receiving bribes from them rather than viewing friends and family as a category with a similarly high probability of accepting bribes. In other words, individuals were more cautious at higher risk.

For the significant interaction of Direct Guanxi × Bribe Amount, simple effect analysis showed that for small bribe
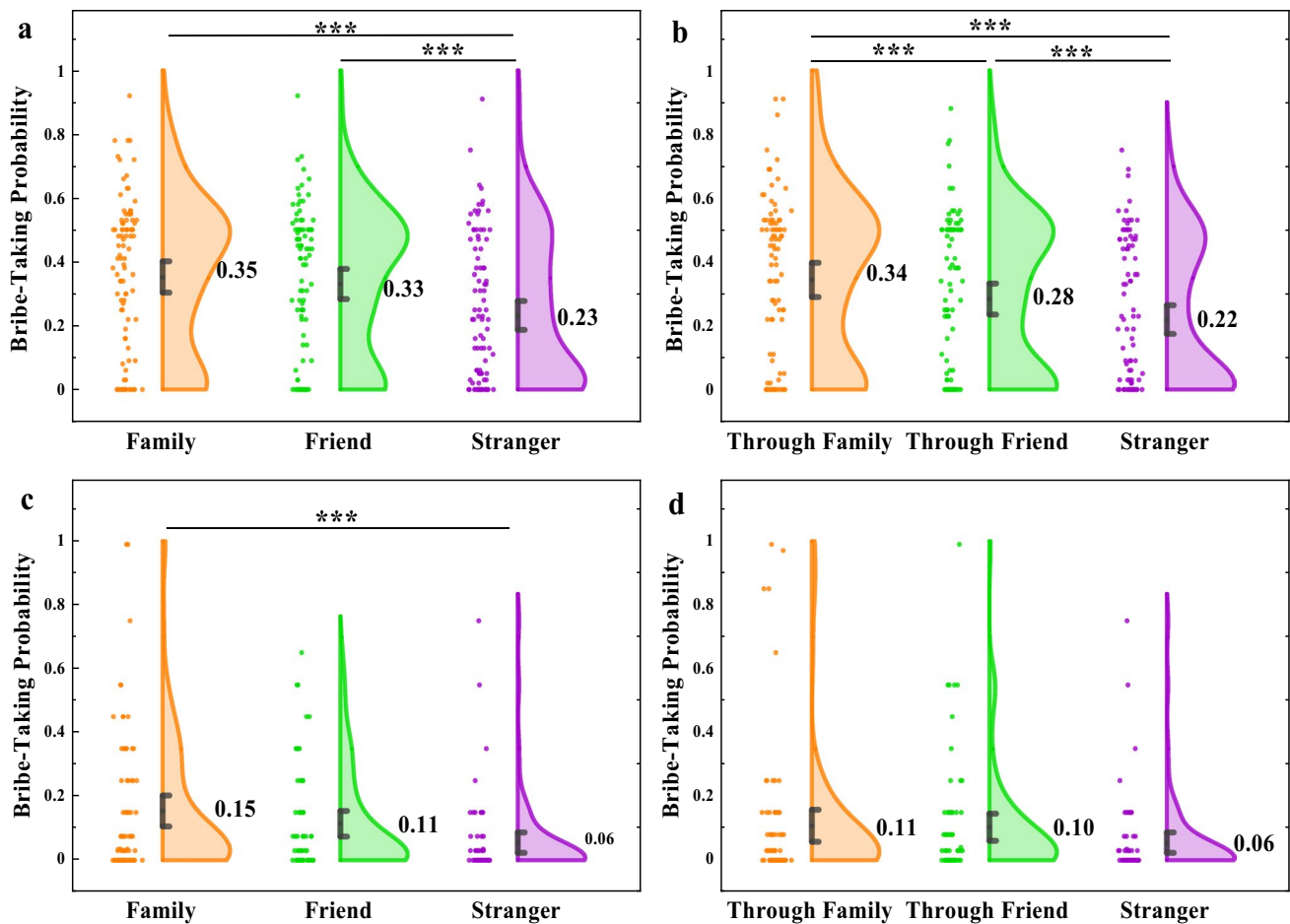
Fig. 2 Half violin plot with jittered data for individual bribe-taking probability depending on different Guanxi in **a**) Study 1a, **b**) Study 1b, **c**) Study 2, and **d**) Study 3. Error bars indicate 95% confidence intervals around the mean (black square). Orange, green, and purple dots represent the individual bribe-taking probability. The "half violin" areas reflect the data distributions

amount condition, the simple effect of direct Guanxi was significant [$F(2, 192) = 34.34$, $p < .001$, $\eta_p^2 = .26$]. The probabilities of accepting bribes from family ($M_{family} = .35$, $SD_{family} = .30$) and friends ($M_{friend} = .32$, $SD_{friend} = .19$) were higher than those from strangers ($M_{stranger} = .21$, $SD_{stranger} = .19$) ($ps < .001$), and there was no difference in the probabilities of accepting bribes from family and friends ($p = .056$). For large bribe amount condition, the simple effect of direct Guanxi was significant, but with a smaller effect size [$F(2, 192) = 23.63$, $p < .001$, $\eta_p^2 = .20$]. The probabilities of accepting bribes from family ($M_{family} = .35$, $SD_{family} = .30$) and friends ($M_{friend} = .33$, $SD_{friend} = .19$) were also higher than those of strangers ($M_{stranger} = .24$, $SD_{stranger} = .19$) ($ps < .001$), and there was no difference in the probabilities of accepting bribes from family and friends ($p = .39$). The simple effect of Guanxi decreases with an increase in the amount, which confirms the moderation effect of the amount. In addition, the post-hoc comparisons also confirmed the Guanxi-increase hypothesis. The

post-hoc comparison results under the small amount condition were consistent with the post-hoc comparison results under the low-risk condition, that is, individuals grouped family and friends as a category with a similarly high probability of receiving bribes from them. However, the post-hoc comparisons results under the larger amount condition differed from those under the high-risk condition, that is, individuals did not group friends with strangers as a category with a low probability of accepting bribes from them. This may be because the large amount did not bring a strong and intuitive sense of threat to individuals as high-risk did. We describe the amount of bribes in the scenario as "the amount of the benefit fee available," which represents benefits, whereas the risk is defined as "the risk probability of being discovered," which represents threat or loss. The participants might have preferentially interpreted bribe amounts as gains, although some individuals might have understood that the bribe amount might implied punishment. However, the risk represents the threat only and nothing else. Thus,

the large amount may do not trigger a sense of threat similar to the high risk.

The comparison of different participant types on bribe-taking decision The main effect of participant type was significant [$F(1, 96) = 10.26$, $p = .002$, $\eta_p^2 = .10$]. Consistent with Alatas et al. (2008), the bribery probability of government officials ($M = .23$, $SD = .30$) was significantly lower than that of non-government officials ($M = .37$, $SD = .30$).

Moreover, the Participant Type × Risk interaction [$F(1, 96) = 9.07$, $p = .003$, $\eta_p^2 = .09$], the Participant Type × Bribe Amount interaction [$F(1, 96) = 5.52$, $p = .021$, $\eta_p^2 = .05$], and the Participant Type × Bribe Amount × Risk interaction [$F(1, 96) = 4.00$, $p = .048$, $\eta_p^2 = .04$] all reached significance. For the three-way interaction, in each Bribe Amount condition, Participant Type × Risk interaction was significant [$F_{5wan}(1, 96) = 4.47$, $p = .037$, $\eta_p^2 = .04$; $F_{50wan}(1, 96) = 12.07$, $p = .001$, $\eta_p^2 = .11$], which indicates that the nature of the three-way interaction is that of degree instead of direction. Thus, in the next analysis, we examined the two-way interactions.

For the significant Participant Type × Risk interaction, simple effect analysis showed that for both officials and non-officials, the high risk significantly ($M_{government\ official} = .05$, $SD_{government\ official} = .19$; $M_{non\text{-}government\ official} = .09$, $SD_{non\text{-}government\ official} = .19$) reduced the bribe-taking probability compared to low risk ($M_{government\ official} = .41$, $SD_{government\ official} = .49$; $M_{non\text{-}government\ official} = .65$, $SD_{non\text{-}government\ official} = .49$) [$F(1, 44) = 47.95$, $p < .001$, $\eta_p^2 = .52$; $F(1, 52) = 1993.69$, $p < .000$, $\eta_p^2 = .79$, respectively]. Moreover, government officials (vs. non-officials) were less likely to take a bribe at low risk [$F(1, 96) = 10.95$, $p = .001$, $\eta_p^2 = .10$].

Similarly, a simple effect analysis for the significant two-way interaction of participant type and bribe amount showed that the bribe-taking probability of government officials was not affected by the size of the bribe amount [($M_{small\ bribe\ amount} = .24$, $SD_{small\ bribe\ amount} = .30$; $M_{large\ bribe\ amount} = .22$, $SD_{large\ bribe\ amount} = .30$; $F(1, 44) = 1.19$, $p = .281$)], whereas the bribe-taking probability of non-officials increased with an increase in the amount of bribes [($M_{large\ bribe\ amount} = .39$, $SD_{large\ bribe\ amount} = .30$; $M_{small\ bribe\ amount} = .34$, $SD_{small\ bribe\ amount} = .30$; $F(1, 52) = 4.89$, $p = .031$, $\eta_p^2 = .09$)].

Study 1b

Methods

Participants

Ninety-eight participants in China (66 male, 32 female; mean age = 32.90, $SD = 11.75$) were recruited. The total sample included 53 non-government officials (mean age = 24.47, $SD = 6.57$) and 45 government officials (mean age = 42.82, $SD = 8.20$). The composition of non-government officials was similar to that of Study 1a. As it was difficult to recruit official volunteers who could actively cooperate with our research, the government officials in Study 2 were the same batch of officials used in Study 1a. To control for the confounding effects of experimental sequence and familiarity, half of the government officials completed Study 1a first, followed by Study 1b. The other half completed these two experiments in the reverse order.[1] The average time interval between the two experiments was three days. Post-hoc sensitivity analysis (ANOVA: Repeated measures, within-between interaction) conducted using G*Power showed that a sample size of 98 could detect $\eta^2 = 0.11$ for the critical main effect of indirect Guanxi (power = 0.80, $\alpha = 0.05$).

Task, procedure, and design

The task, procedure, and design were similar to those of Study 1a, except for the description of Guanxi. In Study 1b, participants were told that the money-givers were all strangers, except that some of them established relationships with them through their family or friends. Thus, there were three levels of indirect Guanxi conditions: through family, through friend, and stranger/baseline.

Results and discussion

Repeated-measures ANOVA results are presented in Table 1.

Indirect Guanxi effect In line with the Guanxi-increase hypothesis, the main effect of indirect Guanxi was significant [$F(2, 192) = 26.39$, $p < .001$, $\eta_p^2 = .22$]. As shown in Fig. 2b, the probability of accepting bribes from people who established Guanxi through family members ($M_{through\ family} = .34$, $SD_{through\ family} = .30$) was higher than that of people who established Guanxi through friends ($M_{through\ friend} = .28$, $SD_{through\ friend} = .19$), and both were higher than that of strangers ($M_{stranger} = .22$, $SD_{stranger} = .19$) ($ps < .001$).

The moderation effect of risk Consistent with our expectations, bribe risk moderated the effect of indirect Guanxi

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[1] Government officials who completed Study 1a first, then followed by Study 1b, were coded as group 1 ($n = 24$), and government officials who completed Study 1b first, followed by Study 1a, were coded as group 2 ($n = 21$). We conducted an independent sample t-test on the overall bribe-taking probability of the two groups in Study 1a and Study 1b. The results showed that the experimental order did not affect the government officials' bribe-taking decision both in Study 1a and Study 1b ($t(43) = 1.64$, $p = .11$; $t(43) = 1.57$, $p = .13$, respectively).

on bribery probability. The results showed that the Indirect Guanxi × Risk interaction was significant [F (2, 192) = 14.31, $p < .001$, $\eta_p^2 = .13$]. Simple effect analysis indicated that, for the low-risk condition, the simple effect of direct Guanxi was significant [F (2, 192) = 25.48, $p < .001$, $\eta_p^2 = .21$]. The probability of accepting bribes from people who established Guanxi through family ($M_{\text{through family}} = .58$, $SD_{\text{through family}} = .40$) was higher than that of people who established Guanxi through friends ($M_{\text{through friend}} = .51$, $SD_{\text{through friend}} = .40$) ($p = .001$), and both were higher than that of strangers ($M_{\text{stranger}} = .40$, $SD_{\text{stranger}} = .40$) ($ps < .001$). However, for the high-risk condition, the simple effect of direct Guanxi was attenuated, although the effect was significant [F (2, 192) = 8.72, $p < .001$, $\eta_p^2 = .08$]. The probability of accepting bribes from people who established Guanxi through family ($M_{\text{through family}} = .10$, $SD_{\text{through family}} = .19$) was higher than that of people who established Guanxi through friends ($M_{\text{through friend}} = .05$, $SD_{\text{through friend}} = .10$) and strangers ($M_{\text{stranger}} = .05$, $SD_{\text{stranger}} = .10$) ($p = .007$, $p = .011$, respectively), but there was no difference in the probability of accepting bribes from people who established Guanxi through friends and strangers ($p = 1.000$). The differences in post-hoc comparisons under different risk conditions also reflected the moderating effect of risk. In the low-risk condition, individuals were progressively less likely to accept bribes from three types of bribe-givers (bribe-taking probability: through family > through family > strangers); however, in the high-risk condition, individuals viewed friends and strangers as a category with a similarly low probability of receiving bribes from them. This suggests that, as risk increased, individuals became more cautious.

The results showed that the Indirect Guanxi × Bribe Amount interaction [F (2, 192) = .63, $p = .536$] and Indirect Guanxi × Bribe Amount × Risk interaction [F (2, 192) = 1.08, $p = .340$] did not reach significance. We further analyzed the nature of the Indirect Guanxi × Bribe Amount interaction. Simple effects analysis showed that in each of the three indirect Guanxi conditions, there was no significant difference in the probability of accepting the large bribe amount (50万) and the small bribe amount (5万) [in the through family condition: F (1, 97) = .001, $p = .971$; $M_{5万} = .34$, $SD_{5万} = .28$; $M_{50万} = .34$, $SD_{50万} = .28$; in the through friend condition: F (1, 97) = 1.21, $p = .274$; $M_{5万} = .27$, $SD_{5万} = .25$; $M_{50万} = .29$, $SD_{50万} = .26$; in the stranger condition: F (1, 97) = .52, $p = .471$; $M_{5万} = .22$, $SD_{5万} = .24$; $M_{50万} = .23$, $SD_{50万} = .24$]. However, the bribe amount effect in the three indirect Guanxi conditions was significantly different [F (2, 194) = 26.66, $p < .00$, $\eta_p^2 = .22$]. The bribe amount effect in the through family condition ($M_{\text{through family}} = .34$, $SD_{\text{through family}} = .27$) was significantly higher than that in the through friend condition ($M_{\text{through friend}} = .28$, $SD_{\text{through friend}} = .24$; $p < .001$), and both were significantly higher than those in the stranger

condition ($M_{\text{through stranger}} = .23$, $SD_{\text{stranger}} = .23$; $ps < .001$). These results suggest that the amount of bribes and indirect Guanxi interact to influence individuals' probability of bribery. Although there is no difference between the two bribe amounts in each of the three indirect Guanxi conditions, the overall effect of the bribe amount decreases as indirect Guanxi becomes more distant. In other words, if the bribe-giver has a specific indirect Guanxi with the bribe-taker, the bribe-taker does not treat differently between different bribe amounts from the bribe-giver. However, if the indirect Guanxi between the bribe-giver and the bribe-taker is distant, the bribe amount, regardless of its size, has a limited effect.

The comparison of different participant types on bribe-taking decision The main effect of participant type was marginally significant [F (1, 96) = 3.38, $p = .069$, $\eta_p^2 = .03$]. The bribe-taking probability of government officials ($M_{\text{government official}} = .24$, $SD_{\text{government official}} = .30$) was numerically lower than that of non-government officials ($M_{\text{non-government official}} = .32$, $SD_{\text{non-government official}} = .30$).

Moreover, the Participant Type × Bribe Amount interaction [F (1, 96) = 12.65, $p = .001$, $\eta_p^2 = .12$] and the Participant Type × Bribe Amount × Risk interaction [F (1, 96) = 14.95, $p < .001$, $\eta_p^2 = .14$] were both significant. However, the Participant Type × Risk interaction did not reach significance [F (1, 96) = 2.73, $p = .102$]. For the three-way interaction, when the risk was small (20%), the Participant Type × Bribe Amount was significant [F (1, 96) = 15.79, $p < .001$, $\eta_p^2 = .14$]. However, when the risk was high (80%), the Participant Type × Bribe Amount was not significant [F (1, 96) = .010, $p = .920$]. In other words, risk moderated the interaction between participant type and bribe amount. Thus, we focused our analysis on the two-way interaction between participant type and the bribe amount.

Simple effect analysis showed that the larger the amount, the higher the bribery probability for non-government officials [($M_{\text{small bribe amount}} = .30$, $SD_{\text{small bribe amount}} = .30$; $M_{\text{large bribe amount}} = .35$, $SD_{\text{large bribe amount}} = .30$; F (1, 52) = 7.95, $p = .007$, $\eta_p^2 = .13$)], which was aligned with the results of Study 1a. However, for government officials, the larger the money, the lower the bribe-taking probability in the indirect Guanxi condition [($M_{\text{small bribe amount}} = .26$, $SD_{\text{small bribe amount}} = .40$; $M_{\text{large bribe amount}} = .22$, $SD_{\text{large bribe amount}} = .40$; F (1, 44) = 5.04, $p = .030$, $\eta_p^2 = .10$)], which seems not same as the results in Study 1a (direct Guanxi). However, the ANOVA revealed that there was no difference in the probability of government officials accepting a small bribe from someone who had indirect Guanxi and those who had direct Guanxi with them [F (1, 89) = .10, $p = .754$]. Similarly, there was also no difference in the probability of accepting a large bribe from someone who had indirect Guanxi and those who had direct Guanxi with them

[F (1, 89) = .001, p = .970]. This suggests that for a given amount, the overall probability of government officials receiving a bribe is similar, regardless of whether the bribe-giver has direct or indirect Guanxi.

The comparison of direct guanxi effect and indirect Guanxi effect on bribe-taking decision To explore whether there was any difference between direct and indirect Guanxi influencing bribe-taking decisions, we used cross-data from Study 1a and 1b to conduct a 3 (Guanxi Degree: family, friend, stranger) × 2 (Guanxi Type: direct Guanxi, indirect Guanxi) × 2 (Risk: 20%, 80%) × 2 (Amount: 5 万, 50 万) × 2 (Participant Type: non-government official, government official) repeated measures MANOVA on the proportion of bribe-taking. The results showed that the main effect of Guanxi Type was not significant [F (1, 192) = .34, p = .561], which suggests that direct Guanxi ($M_{direct\ Guanxi}$ = .30, $SD_{direct\ Guanxi}$ = .19) and indirect Guanxi ($M_{indirect\ Guanxi}$ = .28, $SD_{indirect\ Guanxi}$ = .19) had a similar effect on bribery.

Study 2

Study 2 aimed to replicate the direct Guanxi effect in Study 1a through questionnaires and to explore the role of potential factors (trust, moral, responsibility-obligation, and affection) in explaining the relationship between direct Guanxi and government officials' bribe-taking probability.

Methods

Participants

The final sample consisted of 209 Chinese government officials (124 male, 85 female; mean age = 34.88, SD = 10.03) after two participants were removed because of incomplete answers. Among these, 141 participants were gathered via the Credamo Survey (https://www.credamo.com/#/) official pool. The remaining 67 participants were assembled using the Questionnaire Star Platform (http://www.wjx.cn). All participants were randomly assigned to the family condition (n = 79, mean age = 35.27, SD = 10.22), friend condition (n = 66, mean age = 35.05, SD = 10.32), and stranger condition (baseline condition) (n = 64, mean age = 34.22, SD = 9.62). Post-hoc sensitivity analysis (ANOVA: Fixed effects, omnibus, one-way) conducted using G*Power showed that a sample size of 207 could detect η^2 = 0.18 for the main effect of direct Guanxi (power = 0.80, α = 0.05).

Design

Study 3 had a single-factor, between-subjects design. The independent variable was direct Guanxi (family, friend, or stranger/baseline conditions). The mediating variables were trust, moral, responsibility-obligation, and affection. The dependent variable was the probability of bribe-taking.

Measures

Bribe-taking decision The bribery episode was similar to that of the vignette in Study 1, except for the amount and risk. In Study 2, the bribe amount was 50,000 because small bribes were more common in daily life. The risk has 13 conditions (1%, 5%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 95%, 99%) (Berninghaus et al., 2013). In other words, participants needed to decide whether to accept 50,000 bribes from one certain Guanxi (family, friend, and stranger) under 13 risk situations. To avoid the effect of social desirability bias, relevant terms, such as bribery, did not appear in the task or in the following questions. The score of bribery decision making was the critical point of risk between accepting and refusing bribes, which indicated the possibility of accepting bribes in certain Guanxi conditions. The higher the score, the higher is the probability of participants willing to take bribes. For example, if participants accepted money when the risk ranged from 1% to 20% but refused money when the risk ranged from 30% to 99%, the bribe-taking score, namely the bribe-taking probability, was 25%, which was an average of 20% and 30%.

Potential psychological mechanism After making the decisions discussed above, participants were asked to answer why they decided to accept money based on four dimensions (trust, moral, responsibilities-obligation, and affection). For trust (α = .88), items included: "I feel the other person trustworthy" and "I think that I can trust the other person"; for moral (α = .72), items included: "I feel ashamed" and "I feel guilty"; for responsibilities-obligation (α = .83), items included: "I think helping is a kind of responsibility and obligation" and "I feel the responsibility and obligation to help each other"; for affection (α = .90), items included: "I am worried that rejection will hurt feelings" and "I care about the emotional damage caused by rejection." Responses to the above items were provided on a 7-point Likert scale (*1 = Do not conform at all, 7 = Totally conform*). Each factor was summed separately, with higher scores representing a greater degree.

Procedure

Participants first completed the bribe-taking decision, deciding whether to accept the bribe under 13 risks in the vignette, and then completed a psychological mechanism questionnaire. The entire experiment lasted for approximately 30 min.

Fig. 3 The standardized coefficients for the effect of direct Guanxi (between-subjects factor; family condition vs. stranger condition; friend condition vs. stranger condition) on bribe-taking probability in Study 2 via trust, moral, responsibility-obligation, and affection (with 10,000 bootstrap samples). The values in parentheses represent the total effects prior to the inclusion of the mediators. Notes: $^*p < .05$; $^{**}p < .01$; $^{***}p < .001$
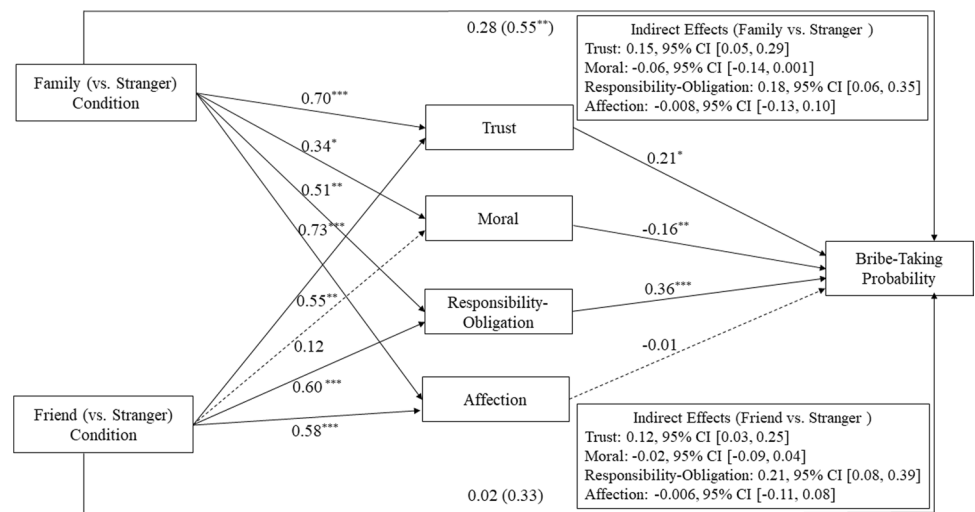
Results and discussion

Direct Guanxi effect In line with "Guanxi-increase hypothesis" and Study 1a, the results of one-way ANOVA on the bribe-taking probability indicated that the effect of Guanxi was significant [$F(2, 206) = 5.61$, $p = .004$, $\eta_p^2 = .05$]. As shown in Fig. 2c, there was no difference in bribe-taking probability between the family condition ($M = .15$, $SD = .22$) and friend condition ($M = .11$, $SD = .16$) ($p = .527$). However, the bribe-taking probability in the family condition was significantly higher than that in the stranger condition ($M = .06$, $SD = .13$) ($p = .003$). The bribe-taking probability in the friend condition was numerically higher than that in the stranger condition, although the difference did not reach significance ($p = .171$).

Psychological mechanisms We evaluated whether trust, moral, responsibility-obligation, and affection mediated the relationship between direct Guanxi and bribe-taking probability (with 10,000 bootstrap samples, Model 4) using SPSS PROCESS packages (Hayes & Preacher, 2014). Because direct Guanxi had three categories, we set the direct Guanxi as a multicategorical independent variable and used the indicator approach to code the variable with the stranger condition as reference category (stranger condition = 0, family condition = 1, friend condition = 2). Trust, moral, responsibility-obligation, and affection were the mediators, and the bribery probability was the dependent variable. Following Doolaard et al. (2020), four mediating factors were entered into the model simultaneously to control for possible interference between factors. As shown in Fig. 3, the results of the mediation analysis indicated that the effects of family condition (vs. stranger condition) and friend condition (vs. stranger condition) on bribe-taking probability were significantly positively mediated by trust (neither of the confidence intervals included 0, 95% CI $_{\text{family condition}}$ [.05, .29],

95% CI $_{\text{friend condition}}$ [.03, .25]) and responsibility-obligation (no confidence intervals included 0, 95% CI $_{\text{family condition}}$ [.06, .35], 95% CI $_{\text{friend condition}}$ [.08, .39]). Moral and affection were not reliable mediators (all confidence intervals included 0; moral: 95% CI $_{\text{family condition}}$ [−.14, .001], 95% CI $_{\text{friend condition}}$ [−.09, .04]; affection: 95% CI $_{\text{family condition}}$ [−.13, .10], 95% CI $_{\text{friend condition}}$ [−.11, .08]). These results suggest that officials are more likely to accept money from family and friends because they trust their family and friends more and feel more responsible and obligated to help them.
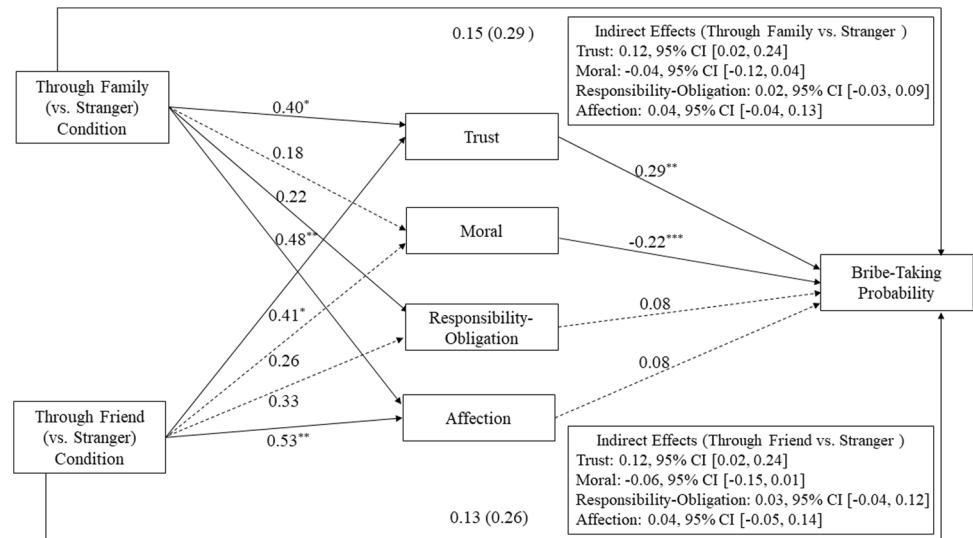
Study 3

Study 3 aimed to replicate the indirect Guanxi effect in Study 1b through questionnaires and to explore the role of factors (trust, moral, responsibility-obligation, and affection) in explaining the relationship between indirect Guanxi and government officials' bribe-taking probability.

Methods

Participants

Data from 210 government officials (128 male, 79 female; mean age = 34.48, $SD = 9.33$) were collected in China. None of the participants were excluded from the analysis. The recruitment approach was the same as in Study 3. Owing to the difficulty in recruiting government officials, this study shared the control group participants ($n = 64$, mean age = 34.22, $SD = 9.62$) with Study 2. The remaining 143 participants were newly recruited and randomly assigned to the through family condition ($n = 75$, mean age = 35.21, $SD = 8.8$) and through friend condition ($n = 71$, mean age = 33.93, $SD = 9.67$) groups. Post-hoc sensitivity analysis (ANOVA: Fixed effects, omnibus, one-way)

Fig. 4 The standardized coefficients for the effect of indirect Guanxi (between-subjects factor; through family condition vs. stranger condition; through friend condition vs. stranger condition) on bribe-taking probability in Study 3 via trust, moral, responsibility-obligation, and affection (with 10,000 bootstrap samples). The values in parentheses represent the total effects prior to the inclusion of the mediators. Notes: $^*p < .05$; $^{**}p < .01$; $^{***}p < .001$

conducted using G*Power showed that a sample size of 210 could detect $\eta^2 = 0.18$ for the main effect of indirect Guanxi (power = 0.80, $\alpha = 0.05$).

Design, measures, and procedure

The design, measures, and procedure were all similar to those in Study 2, except that the independent variable was indirect Guanxi (through family and through friend conditions). The reliability of the questionnaires met the requirements (trust, $\alpha = .87$; moral, $\alpha = .70$; responsibilities-obligation, $\alpha = .82$; affection, $\alpha = .89$).

Results and discussion

Indirect Guanxi effect As shown in Fig. 2d, results of the one-way between-subjects ANOVA on the bribe-taking probability indicated that the probabilities of government officials accepting bribes from those who have close indirect Guanxi with them ($M_{\text{through family}} = .11$, $SD_{\text{through family}} = .22$; $M_{\text{through friend}} = .10$, $SD_{\text{through friend}} = .18$) were numerically higher than those from strangers ($M_{\text{stranger}} = .06$, $SD_{\text{stranger}} = .13$) [$F(2, 207) = 1.69$, $p = .19$]. This trend is consistent with the Guanxi-increase hypothesis.

Psychological mechanism The analysis method was similar to that used in Study 2. As shown in Fig. 4, the results indicated that the effects of the through family condition (vs. stranger condition) and through friend condition (vs. stranger condition) groups on bribe-taking probability were only significantly positively mediated by trust (neither of the confidence intervals included 0, 95% CI $_{\text{through family condition}}$ [.02, .24], 95% CI $_{\text{through friend condition}}$ [.02, .24]). Other

factors (moral, responsibility-obligation, affection) were not reliable mediators (all confidence intervals included 0; moral: 95% CI $_{\text{through family condition}}$ [−.12, .04], 95% CI $_{\text{through friend condition}}$ [−.15, .01]; responsibility-obligation: 95% CI $_{\text{through family condition}}$ [−.03, .09], 95% CI $_{\text{through friend condition}}$ [−.04, .12]; affection: 95% CI $_{\text{through family condition}}$ [−.04, .13], 95% CI $_{\text{through friend condition}}$ [−.05, .14]). These results suggest that government officials trust money-givers who are introduced by their family and friends more than money-givers who are strangers, and this trust promotes their bribe-taking behavior.

General discussion

This study investigated how Guanxi, both direct and indirect, influences the bribe-taking probability of individuals, especially government officials. Across three studies, consistent evidence showed that Guanxi (direct and indirect) increased bribe-taking probability compared with strangers (control condition). Furthermore, indirect Guanxi had a similar impact magnitude as direct Guanxi in increasing bribe-taking probability. However, the underlying psychological mechanisms of the two Guanxi effects are slightly different. Government officials take bribes from family and friends because they have more trust in them, and feel more responsible and obligate to help them. However, they accepted bribes from people with indirect Guanxi (through family members or through friends), mainly because of trust.

The findings of the present research contribute to a better understanding of Guanxi (interpersonal relationships) and bribe-taking. First, trust is the fundamental reason for Guanxi to increase bribe-taking probability. Previous theoretical analyses have suggested that trust is an important prerequisite for corrupt transactions (Abbink et al., 2002; Kobis

et al., 2017). Our results validated and expanded their speculations by revealing that trust in corruption is conditional. In other words, trust occurs mainly in close interpersonal relationships (Chen et al., 2004; Lewis & Weigert, 1985; Song et al., 2015, Zhai, 2014). If strangers want to gain resources by bribing one official, they should seek the official's family or friends to build a bridge to gain trust in the powerful man. This role of trust in bribery transactions highlights the dark side of trust and contributes to a growing body of literature that suggests a double-edged sword effect of trust (Levine & McCornack, 1991; Jiang et al., 2015; Skinner et al., 2013).

Second, responsibility-obligation is a unique psychological variable that only mediates the relationship between direct Guanxi and officials' bribery decision making. This result is consistent with the Guanxi theory, which suggests that individuals have a higher sense of responsibility and obligation to help their family and friends than to help distant indirect interpersonal relationships (Fan, 2002a, b). Additionally, this mechanism resembles the well-known amoral familism, namely maximizing the material and short-run advantage of the nuclear family (Banfield, 1958), as reported by Putnam et al. (1993), who explored corrupt behaviors in southern Italy. The positive role of responsibility-obligation differs from the prediction of the Guanxi-decrease hypothesis. According to the social norm behind Chinese Guanxi, individuals have the duty and obligation to help people who have close Guanxi with them, and this help is provided largely without the obligation of reciprocity (Tsui et al., 2000). However, corruption is an illegal act, and when individuals use their power to illegally distribute resources to family members or friends, they have to take certain risks. Given the risk of accepting bribes, it is understandable for individuals to reject bribes. Conversely, if individuals accept a bribe, it may be a sign of fulfilling an obligation and responsibility to help family and friends. Moreover, to minimize risks, corruption is often carried out in different stages (Palmer & Maher, 2006), with a long time span between the stages (Zhan, 2012). Thus, to some extent, accepting bribes from family and friends reflects individuals' willingness to fulfill their responsibilities and obligations to help them. Instead, rejecting money seems to indicate that officials are unwilling to help those close to them, which hurts Guanxi.

In addition, to the best of our knowledge, this study is the first to compare the influence of direct and indirect Guanxi on the decision to accept bribes. It was initially found that indirect and direct Guanxi have similar effects on the decision to accept a bribe, with the effect of indirect Guanxi not being weaker than that of direct Guanxi. This result is inconsistent with our hypothesis. This may be because there is as much high trust in indirect Guanxi as in direct Guanxi. Specifically, although indirect Guanxi has an additional intermediary than direct Guanxi, the bribe-giver and

intermediary may be friends in the same circle who are close to each other. Thus, there is a high level of trust between the bribe-giver and intermediary and between the intermediary and bribe-taker, which leads to a high level of trust between the bribe-giver and bribe-taker. In other words, the effect of indirect Guanxi on bribery is similar to that of direct Guanxi, which occurs under the condition of strong trust. Of course, these speculations need to be explored in future research.

This research also enriches the understanding of government officials' bribe-taking decisions in eastern culture. Compared with many empirical studies recruiting non-official participants (e.g., Barr & Serra, 2009; Tan et al., 2020; Zhao et al., 2019), the present study complements the existing literature by revealing that officials' bribery probability is lower than that of non-officials (Alatas et al., 2008), but also that risk can significantly prevent bribery behavior in the Guanxi context. Additionally, officials are cautious when people with indirect Guanxi give them large amounts of money, whereas their behavior of accepting money is not affected by the amount of money when people with direct Guanxi give them money for help. These are interesting findings. On the one hand, the result of direct Guanxi distinguishes it from the traditional cost-benefit theory (Groenendijk, 1997), which assumes that individuals engage in corruption when the benefits are higher than the costs. However, we found that government officials place less value on monetary gain when the bribe-giver has direct Guanxi. On the other hand, government officials' bribe-taking decisions cannot be explained from a moral perspective, which argues that moral guilt and shame can reduce bribery (Dungan et al., 2014). The results of Study 2 and 3 indicate that moral cannot mediate the relationship between Guanxi and bribe-taking; in other words, the effect of Guanxi on bribe-taking behaviors cannot be explained by moral. This suggests that officials from eastern culture care more about the relationship between the parties, rather than whether the interaction behavior is moral.

However, the differential results between government and non-government officials need to be treated with caution because of the differences in age and the nature of the job between the two categories of participants. First, government officials appeared to be older, on average, than non-government officials. Therefore, one possibility is that the differences in bribery decisions between government and non-government officials are because of the age effect. In other words, government officials may be less willing to take the risk of bribing because they are old. Second, government officials have a longer tenure in government ($M = 18.96$, $SD = 10.73$), which makes them more knowledgeable about the policies and inner workings of government agencies, especially those designed to deter corruption. Thus, when asked to imagine themselves holding a position in a government agency and engaging in bribery, they may be more

likely than non-officials to imagine corruption scenarios and the negative consequences of corruption. This might have led to them being less inclined to accept bribes.

This study has important practical implications for the anticorruption movement. It is important to reduce the lubrication function of Guanxi in bribe-taking. First, given that trust is an endogenous characteristic of intimate relationships (Lewis & Weigert, 1985; Zhai, 2014), increasing the high-risk costs of bribery is an outdated suggestion. Second, publicity and education for officials in daily life should not be neglected. Bribery provides a convenient solution for those whose families or friends take power in the government (Marquette & Peiffer, 2015). In this case, officials are likely to "help" them driven by a sense of responsibility and obligation. Additionally, officials are easily rounded up by strange businessmen in corruption traps, which begins by developing a seemingly pure relationship, although they do not want to engage in corruption at first (Xu et al., 2018). Therefore, it is necessary to alert officials to the corruption trap under the guise of interpersonal relationships.

This study has several limitations and prospects. First, this study only focused on the behavior of individuals accepting bribes during corruption. However, it is also common to use power illegally without accepting money. For example, the licensure adjudicator does not accept money from their dearest friend but makes this friend jump the queue to obtain a license. As another example, when a policeman meets his wife who has violated a traffic rule on the road, he does not accept bribe money from his wife, but lets her go without punishment. Corruption behaviors involving no bribes also need to be explored in the future. Second, this study only classified interpersonal relationships into the following categories: family, friends, through family and through friends, and strangers. However, real-life interpersonal relationships are far more complex and diverse. For example, friends can be classified as childhood friends, close friends, confidante, acquaintances, and fair-weather friends. Future research could distinguish more detailed categories to better simulate realistic corruption practices. Third, given that bribery is unethical and illegal, participants, especially government officials, are likely to be influenced by social desirability and less likely to accept bribes in the current research. Future research may measure the level of social desirability of individuals through questionnaires and include social desirability as a control variable in the statistical analysis to reduce the effect of social desirability on the relationship between the independent and dependent variables (Larson, 2019). Fourth, some results were likely underpowered for small effect size. For example, the effect size of some three-way interactions in study 1a and the effect size of the main effect of participant type in study 1b were small. Thus, these findings may need to be replicated in future research for us to have total confidence in them. Finally, caution should be

exercised when using the effects of Guanxi on bribery to explain corruption phenomena in other countries. This study focused on China, albeit a representative sample in East Asia, and future research can further examine the impact of Guanxi on corruption in other East Asian countries. Additionally, to contribute to global joint efforts to combat corruption, we should not ignore the role of culture (Modesto & Pilati, 2020) and examine the influence of relationships on bribery in the context of Western cultures.

Data availability Yes

Code availability Yes

Declarations

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments.

Informed consent Informed consent was obtained from all individual participants included in this study.

Conflict of interest The authors report no conflicts of interest. The authors are responsible for the content and writing of this article.

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