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ORIGINAL ARTICLE

The effect of trust and social pressure on member commitment in agricultural cooperatives – Evidence from China

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Abstract

Member commitment has an impact on the viability and success of cooperatives. While there are studies on member engagement in European and American cooperatives, empirical research on member commitment in Chinese agricultural cooperatives is rare. Using a sample of 391 farmer cooperative members in China, this study investigates the factors associated with member commitment, particularly whether trust in the cooperative leadership and social pressure at village level affect member commitment. In addition, the study explores the pathway how trust and social pressure affect member commitment by employing structural equation modelling. Our results show that both trust and social pressure are positively associated with the three components of member commitment – affective commitment, continuance commitment and normative commitment – in a direct way. Furthermore, trust in the leadership impacts affective commitment indirectly via the mediation of member participation. These findings can be used by cooperative leaders, policy makers and rural administrators to strengthen member commitment and thereby the economic viability of agricultural cooperatives and the communities in which they are embedded.

KEYWORDS
Organizational commitment, trust, leadership, member participation, social environment

1 | INTRODUCTION

Member commitment within cooperatives can be conceptualized as a distinctive manifestation of organizational commitment, as defined by Mowday et al. (2013) as the relative strength of an individual's identification with and involvement in a particular organization. Building on organizational commitment literature (Meyer et al., 2002; Solinger et al., 2008), member commitment has been characterized as an individual's attitude and behaviour towards the cooperative (Cechin et al., 2013). Like organisational commitment, member commitment reduces withdrawal and opportunistic behaviour, and enhances organizational performance (To and Huang, 2022). A high level of member commitment fosters loyalty and decreases member turnover, particularly under shifting transactional landscapes and appealing alternatives (Fulton, 1999; Chanana, 2021).

Substantial strides have been made in understanding the mindset that leads to commitment. Antecedents of member commitment encompass economic factors, such as the pricing of products and services, and social factors, notably trust and identification (Fulton and Giannakas, 2001; Hidalgo-Fernández et al., 2020; Zhang et al., 2022). Also the internal governance of the cooperative, particularly the extent of member participation in decision-making, influences member commitment (Cechin et al., 2013; Iliopoulos and Valentinov, 2022). Additionally, the degree of membership heterogeneity and the delineation of property rights have been recognized as determinants of commitment (Cook, 1995; D'Amato et al., 2022).

Most studies on member commitment have focussed on European and American cooperatives while research on commitment in Chinese agricultural cooperatives is still rare, with Chen et al. (2023) as the exception. Still, there is a need to study member commitment among Chinese cooperatives as they are quite different in organisational structure compared to their European and American counterparts. Chinese farmer cooperatives are often initiated by a consortium of farmers, local governments, and local agribusiness entrepreneurs (Liang and Hendrikse, 2013; Hao et al., 2018; Wilmsen et al., 2023). As a result, these cooperatives do not necessarily follow a democratic decision-making structure and are expected to have weak member commitment (Zeng et al., 2023). Some scholars even question the future of Chinese farmer cooperatives (Yuan, 2013; Deng and Wang, 2014).

The Confucian philosophy, characterized by a deep respect for hierarchy and maintaining harmonious interpersonal relationships, may have an impact on member commitment in cooperatives (Li and Sun, 2015). China's society embodies high power-distance and collectivism, with the strong 'saving face' culture (Hofstede, 2001). This culture places significant importance not only on an individual's own reputation but also on preserving the face of others (Oetzel and Ting-Toomey, 2003). How does this mutual-face culture influence member commitment in agricultural cooperatives in China?

Within the organizational behaviour literature, trust in leadership is recognized as an important determinant of attitude toward and participation in the organization (Barling et al., 2010; Wulandhari et al., 2022). Extending this logic to the cooperative context in China, we investigate how much trust members place in their leaders and how this trust influences their commitment.

Based on empirical analysis involving 391 members of farmer cooperatives in China, this study endeavours to explore the determinants of member commitment.

The objectives of our study were twofold. First, we wanted to develop an integrated analytical framework that considers member commitment from the perspectives of both cooperative members and cooperative leaders. We were particularly interested in exploring how typical cultural factors like China's mutual-face culture influences member commitment. Second, we wanted to study how the specific leadership situation in Chinese agricultural cooperatives affect member commitment. For both questions, we designed an empirical study. While member commitment is well-known in the literature, there is very little empirical research on member commitment in the context of Chinese agricultural cooperatives.

The paper is structured as follows. Section 2 lays out the hypotheses underpinning our research, thoughtfully constructed through an examination of the literature. Sections 3 and 4 provide a comprehensive exposition of our research methodology and the estimation results. Finally, in Section 5, we conclude with a discussion on future research and on limitations.

2 | LITERATURE REVIEW AND HYPOTHESES

Commitment has been discussed under four different settings: commitment between buyers and sellers; organizational commitment of employees towards an employer; member commitment to associations and clubs; and member commitment to cooperatives (Sloot, 2016). We build our theoretical framework on Meyer and Allen's (1991) three-component model of organizational commitment. Both organizational commitment and cooperative commitment is about the connection between individuals and the organization they are part of.

Allen and Meyer (1990) have conceptualized commitment in three different components: affective commitment, continuance commitment and normative commitment. Affective commitment refers to an individual's identification with the organization. Individuals with a strong affective commitment have positive emotional attachment to the organization (Hidalgo-Fernández et al., 2020). Normative commitment is obligation-based and is the result of internalization of normative pressures (Wiener, 1982). Individuals with a high level of normative commitment believe that staying within an organization is the right thing to do (Meyer and Allen, 1991). Continuance commitment reflects that individuals are aware of the costs associated with leaving the organization. Members stay within the organization because they do not want to bear the cost of leaving.

2.1 | The antecedents of commitment

Meyer and Allen (1991) have argued that given the conceptual differences of the three components of commitment, the antecedents of the three components are also different. For instance, individuals who feel competent to meet job challenges tend to have a higher level of affective commitment; while having alternative options is an important antecedent of continuance commitment (Stanley et al., 2013; Wulandhari et al., 2022). Meyer et al. (2002) have categorized the antecedents of commitment are into four groups: demographic characteristics, individual characteristics, work experiences, and the attractiveness of alternatives. Franken et al. (2022) have emphasized social factors, including trust and social pressure, and organizational factors such as participation. Ostrom (1990; 2010) has shown that trust is an important determinant of cooperation, thus commitment. Specifically for the Chinese context, social pressure is expected to

be an antecedent of commitment (Qi, 2013). Organizational characteristics like the number of participants and transparency in decision-making are known to affect commitment (Ostrom, 2010).

While a concise and universally accepted definition of trust remains elusive, it can be construed as a psychological state characterized by a perception of vulnerability stemming from uncertainty about the motives, intentions, and future actions of others (Kramer, 1999). Much of the research on trust within organizational settings centres on trust in supervisors and top managers. Notably, when subordinates place trust in their leaders, this trust can extend to encompass the entire organization, as these leaders are perceived as representatives of the organization itself (Hughes et al., 2018).

Within cooperatives, members' vulnerability is determined by their dependence on the cooperative for both revenue and information (Borgen, 2001; Barraud-Didier et al., 2012). This dependence gives rise to uncertainty regarding the behaviour of cooperative leaders, making trust a critical determinant of the attitude and behaviour of members. Within Chinese farmer cooperatives, the chairperson plays an important role both in the initiation and the operation of the cooperative. The chairperson's capability in information sharing and marketing affects the viability and development of the cooperative (Liang and Hendrikse, 2013).

According to Salancik and Pfeffer (1978), individual attitude and behaviour can be predicted by the informational and social environment where attitude forms and behaviour occurs and adapts. We define social pressure as a personal concern with the impact of the social environment on the person's feelings, thoughts, and behaviour. Social pressure is a personal interpretation of social norms.

Interpersonal relationships (or *guanxi*) are an important characteristic of China society. Chinese tend to "view themselves interdependent with the surrounding social context" (Tsui and Farh, 1997, p.60) and thus value not only self-face, but also others' face. *Guanxi* is double edged (Qi, 2013). On the one hand, *guanxi* is one's social capital. On the other hand, *guanxi* is a social norm to follow. Concerns for *guanxi* and mutual-face influence one's attitude in relationship within organizations. These concerns are a form of social pressure, and they affect the choices of individuals.

Though views diverge on how to define participation in a group (Agarwal, 2001), we follow Mwambi et al. (2020) in defining participation as the member's involvement in the decision-making process within the cooperative. The importance of member participation for the cooperative is determined by the key organizational characteristics: owned, controlled, and patronized by its members (Dunn, 1988). Members' participation is the effectuation of democracy as one of the core principles of all cooperatives. When members are not able to (fully) participate in the decision-making process, member commitment is expected to decrease.

2.2 | The relationship among trust, member participation, and member commitment

Trust in the cooperative has far-reaching implications, impacting not only members' participation levels within the cooperative but also their overall satisfaction with the cooperative. In the specific Chinese context, the survival and growth of Chinese farmer cooperatives are often contingent on leaders, which makes trust in those leaders of major importance. Trust in cooperative leaders is closely and positively associated with the perception of their ability, benevolence, and integrity (Tan and Tan, 2000). Trust in cooperatives improves members' participation in the governance

(Borgen, 2001). Nilsson et al. (2009) and Ruzo-Sanmartín et al. (2022) have found that trust in the managers of the cooperative is positively correlated with members' involvement in the cooperative decision-making process. We thus hypothesize that:

H1: Trust in the cooperative improves member participation in the decision-making process.

Research consistently demonstrates that higher levels of trust in cooperative leaders are positively correlated with member commitment (Yilmaz and Hunt, 2001). Members who trust their leaders are more likely to commit to the cooperative's long-term goals. Jiang and Probst (2019), studying administrative professionals at a large university, show that trust in leaders is positively related to affective commitment. When the members trust their cooperative, identification with the cooperative becomes stronger (Jiménez et al., 2010) and commitment increases (Grashuis and Cook, 2019). For Chinese cooperatives, we also hypothesize that:

H2: Trust in the cooperative is positively associated with member commitment.

Member commitment is related to member participation in the cooperative. Osterberg and Nilsson (2009) maintain that member participation in the cooperative decision-making process positively relates to members' commitment to the cooperative. The more the members perceive that they participate in the governance of the cooperative governance, the more committed to the cooperative they are. Liu et al. (2023) found that participation in the governance of the cooperative improves member satisfaction. We thus hypothesize that:

H3: Member participation is positively associated with member commitment.

Not only does trust impact members' commitment to cooperatives directly, it also affects commitment indirectly via member participation in the decision-making process. Therefore, we hypothesize that:

H4: Member participation is a mediator between trust and member commitment.

2.3 | The relationship among social pressure, member participation, and member commitment

Social pressure can be a motivator for member participation. Members in a community can observe each other's behaviour and reaction (Kandori, 1992). Social norms, particularly peer monitoring and sanction rules, can force members to participate in community activities. Feldman and Bolino (2000) have shown that the expectation of peer members serves as a powerful incentive for members to actively engage in cooperative activities. When individuals perceive that their level of participation is valued by their peers, they are more likely to contribute to the cooperative's initiatives and projects (Marwell and Oliver, 1993). We thus hypothesize that:

H5: Social pressure is positively associated with member participation.

Social pressure, which can emanate from peers, supervisors, and the organizational culture, plays a pivotal role in shaping employees' affective commitment (Mowday et al., 2013),

in three ways. Firstly, social pressure reinforces and communicates organizational norms and expectations. When employees perceive that their peers and supervisors endorse a strong emotional attachment to the organization, they may feel compelled to align their own attitudes accordingly (Meyer et al., 2002). Secondly, social pressure can influence affective commitment by fostering social support networks within the workplace. When employees experience social pressure to participate in social activities, engage in team building, or develop close relationships with colleagues, they are more likely to form emotional bonds with the organization (Eisenberger et al., 1997). Thirdly, colleague relationships can exert significant social pressure on affective commitment. When employees observe their peers demonstrating high levels of emotional attachment to the organization, they may feel encouraged to do the same. Applying these insights to the context of member commitment leads to the following hypothesis:

H6: Social pressure is positively related to affective commitment.

The community applies both awards and punishments to members depending on member behaviour on social norms (Bowles and Gintis, 2002). Individual socialization is reached by living by the social norms of the community and receiving punishment when not complying. Social pressure generates internalization and identification (Bagozzi and Dholakia, 2002), thereby having a positive influence on normative commitment. Hence, we hypothesize that:

H7: Social pressure is positively related to normative commitment.

Social pressure plays a significant role in shaping continuance commitment within organizations. Social pressure can create a perception that quitting would lead to social consequences, such as damage of reputation and loss of social networks within the community. These perceived costs can act as a strong motivator for employees to stay (Eisenberger et al., 2001). In the Chinese context, social pressure comes from individuals' concerns about *guanxi*. Destroying *guanxi* with others affects individuals' economic and other benefits. Leaving the cooperative can make Chinese farmers experience a social loss. Continuance commitment is also influenced by social pressure through the process of organizational identification. Social pressure to conform to organizational norms and expectations leads to organizational loyalty (Haslam et al., 2003). Therefore, we hypothesize that:

H8: Social pressure is positively related to continuance commitment.

Figure 1 presents our hypotheses in one conceptual framework.

3 | METHODOLOGY

3.1 | Research settings and sample selection

We conducted a field survey of farm households from January to March 2015 in two main apple production regions: Shaanxi Province (Loess Plateau area) and Shandong Province (Bohai Gulf area). Apple is an important agricultural product in China, being the fruit crop with the largest acreage and highest production value (Wang and Huo, 2014).

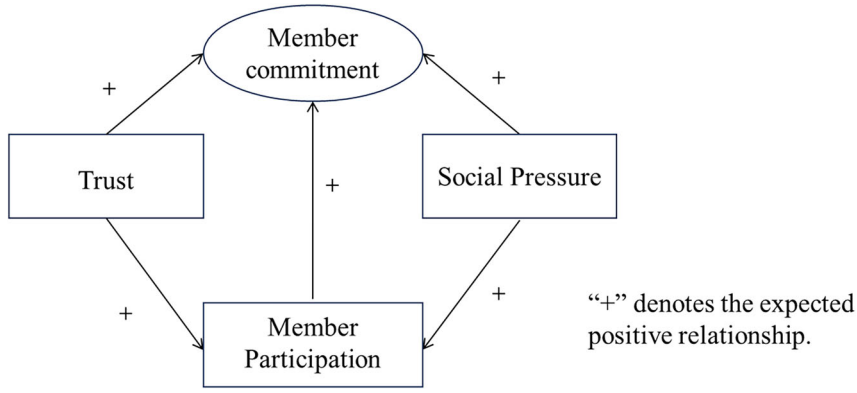

FIGURE 1 Conceptual framework. [Colour figure can be viewed at wileyonlinelibrary.com]

We used a multistage sampling strategy to select observation units. First, the probability proportional to size (PPS) method was applied to select 7 counties (out of the 10 most important apple production counties) in Shaanxi and 8 counties in Shandong out of the 10 most important apple production counties in respective provinces according to the size of apple production in 2014. Second, we obtained the list of apple cooperatives in the county from the local Agricultural Bureau and then randomly chose 5 cooperatives from the list in each county. We thus first selected 75 cooperatives. However, 12 out of the 75 selected cooperatives could not be reached and were dropped from our sample resulting in a final sample of 63 cooperatives (30 in Shaanxi and 33 in Shandong).

Face-to-face interviews were carried out with the chairperson or other official involved in cooperative management. We also did interviews with individual cooperative members, to obtain data on farmer and farm characteristics, including age, education, attitude towards the cooperative leaders, and attitude towards other members. Finally, 429 members were interviewed. Because of missing information, 38 out of the 429 were removed from the sample. Data about 391 members were thus used in the analysis.

3.2 | Measurement

Despite the theoretical and practical importance of commitment, its measurement is difficult. Member commitment is generally measured in two ways, either by behaviour or by attitude. Following recent organizational commitment literature (Solinger, et al., 2008; Cechin, et al., 2013), member commitment is defined as members' attitudinal commitment to the organization. Our measurement is based on the well-established three-component model by Allen and Meyer (1990) and Meyer et al. (2002), who distinguish affective commitment (AC), normative commitment (NC), and continuance commitment (CC). The affective component is the emotional attachment to and identification with the organization. The normative component refers to members' sense of obligation towards the organization. The continuance component corresponds to commitment due to a lack of alternatives. We adapted the items to the farmer cooperative context. Table 1 presents the descriptive statistics for the variables measured and the latent constructs.

For measuring commitment, we developed an instrument with 10 separate commitment items measuring AC, CC, and NC (Table 1). Responses to statements about member attitude towards the cooperative were made on a 5-point Likert scale (1 = strongly disagree and 5 = strongly agree).

TABLE 1 Descriptive statistics.

Variable name	Mean (S.D.)	Reliability coefficient α	Scale reliability coefficient	Description
age	51.793 (8.077)	na	na	Age of the household head
education	8.440 (2.918)	na	na	Education years of the household head
village cadre	0.258 (0.438)	na	na	Whether the household head or other family member has the work experience of being the village cadre. (0 = no)
housesize	3.775 (1.372)	na	na	Household size
non-farm	0.102 (0.320)	na	na	Whether the household participates in the non-farm work (0 = no; 1 = yes)
land	8.181 (7.386)	na	na	Size of land bearing fruits (unit: mu)
share	0.148 (0.356)	na	na	Whether the member has shares in the co-op (0 = no; 1 = yes)
dividend	0.138 (0.345)	na	na	Whether the co-op pays out dividend (0 = no; 1 = yes)
BoD	0.404 (0.491)	na	na	Whether the Board of Directors is democratically elected (0 = no; 1 = yes)
exit	0.100 (0.300)	na	na	Whether there is a constraint to exit the co-op (0 = no; 1 = yes)
satisfaction	4.043 (0.917)	na	na	Degree of satisfaction with the co-op in general (in Likert scale: 1 = very unsatisfied; 5 = very satisfied)
land_coop	3995.9 (5581.8)	na	na	The total land size of the members and the co-op (unit: mu)
region	0.483 (0.500)	na	na	Regional dummy (Shandong = 0; Shaanxi = 1)
cohesion1	2.637 (1.334)	na	na	Members care little about the co-op's future development.
cohesion2	4.202 (1.001)	na	na	The members can generally solve the problems together.
trust1	4.455 (0.884)	0.722	0.812	I trust in the co-op chairman's character.
trust2	4.320 (1.046)	0.722		I trust in the chairman's management ability.
trust3	4.189 (1.043)	0.779		The co-op has a reputation of being reliable.
Pressure1	2.059 (1.271)	0.742	0.812	The reason why I stay in the co-op is that social pressure forced me to do so.
Pressure2	2.315 (1.398)	0.755		My relationship with the members will be disturbed if I quit the co-op membership.

(Continues)

TABLE 1 (Continued)

Variable name	Mean (S.D.)	Reliability coefficient α	Scale reliability coefficient	Description
Pressure3	2.223 (1.347)	0.738		Since the majority of the villagers have joined in the co-op, I will be isolated if I exit.
Pressure4	2.049 (1.230)	0.814		I worry that I will make the chairman to feel lose face if I want to quit.
AC1	4.005 (1.114)	0.741	0.774	I will treat the co-op business as my own.
AC3	4.090 (1.125)	0.669		I don't think that I could become as emotionally attached to another co-op as this one.
AC4	4.317 (0.884)	0.678		I feel that the members are like my families.
CC1	3.437 (1.448)	0.800	0.800	It would be very economically costly for me to leave my co-op.
CC2	3.816 (1.280)	0.696		I can have stable marketing channels if I stay in the co-op.
CC3	3.693 (1.325)	0.703		I can sell my apples with higher prices if I stay in the co-op.
CC4	4.279 (1.063)	0.790		I can have better access to market information if I stay in the co-op.
NC1	3.453 (1.447)	0.801	0.772	Jumping from this co-op to other organization seems unethical to me.
NC2	4.271 (0.935)	0.667		I believe that loyalty is important and therefore I feel a sense of moral obligation.
NC3	4.115 (1.137)	0.594		I was taught to remain loyal when I was young.
participation	2.463 (1.092)	na	na	Self-evaluated level of participation in the decision-making process: •Merely membership in the group •Attending meetings and listening in on decision making, without speaking up •Being asked an opinion in specific matters without guarantee of influencing the decisions •Fully expressing opinions, whether or not solicited

Note: "na" denotes not applicable. S.D. denotes standard deviations.

Column 4 in Table 1 lists the reliability coefficients for the 10 commitment constructs. All coefficient alphas are above 0.70, except for NC3 that is at 0.56. These alphas are acceptable given the early stage of research with these constructs. Additionally, the result of exploratory factor analysis indicates that the items for AC, CC and NC load nicely onto a single latent factor, respectively. The construct validity will be discussed in the Appendix.

We measure trust in the leadership of the cooperative, which is defined as members' confidence in the leader's motives with respect to member interests and the leader's ability to manage the cooperative business. Given the critical role of the cooperative chairperson, we measure members' trust in the cooperative by measuring trust in the chairperson's motivation and ability as well as the member's self-evaluation of the trustworthiness of the cooperative in general (Table 1). The reliability test shows that all coefficient alphas are above 0.7 and the result of the exploratory factor analysis indicates that the items for trust load nicely onto a single latent factor.

We have four statements to represent social pressure (descriptions about Pressure1-Pressure4 shown in Table 1). The coefficient alphas of these four items are around 0.75. The exploratory factor analysis indicates that the items for social pressure nicely load onto a single latent factor.

We measure participation in the decision-making process. We follow the typology proposed by Agarwal (2001), where the participation levels is defined by the extent of an individual's activeness in relation to the decision-making process, ranging from mere membership in the group (level 1) to fully expressing opinions, whether or not solicited (level 4).

Besides member participation in the decision making process, other aspects of organizational structure are taken into account, such as internal governance, which refers to structures and processes of decision-making (Bijman et al., 2014). We include variables measuring whether a member has shares in the cooperative, whether the cooperative distributes dividend to members, and whether the Board of Directors is elected democratically. Land size of the cooperative and its members and constraints for members to exit the cooperative are also included.

Control variables include members' demographic and household characteristics. Self-evaluated group cohesiveness (cohesion1 and cohesion2; Table 1) is included for both participation and member commitment models. Additionally, we measure member satisfaction with the service provided by the cooperative. Member satisfaction is indicated by the farmer on a 5-point Likert scale ranging from very unsatisfied (1) to very satisfied (5).

4 | RESULTS

To test the hypotheses, structural equation modelling (SEM; maximum likelihood estimation) is used for the analysis, which allows simultaneous examination of both measurement and structural equations. The measurement equation identifies the relationship between the indicators and the constructs they represent (Bollen and Long, 1992). The structural equation specifies the relationships among constructs. Though these two equations can be estimated together, they should be interpreted separately (Hulland, 1999). The estimates of the measurement equations and structural equations are shown in Table 2 and Table 4, respectively.[1]

[1] Tests of the overall model fit can be found in Appendix A.

TABLE 2 Estimation results from measurement models by using SEM.

Construct	Indicators	Coefficient	Standard Errors
TRUST	trust1	0.785***	0.027
CR = 0.88	trust2	0.799***	0.026
AVE = 0.59	trust3	0.722***	0.031
SOCIAL PRESSURE	Pressure1	0.788***	0.029
	Pressure2	0.764***	0.029
CR = 0.88	Pressure3	0.762***	0.031
VE = 0.53	Pressure4	0.573***	0.041
AFFECTIVE COMMITMENT (AC)	AC1	0.717***	0.031
CR = 0.86	AC2	0.738***	0.030
AVE = 0.55	AC3	0.764***	0.029
CONTINUANCE COMMITMENT (CC)	CC1	0.589***	0.037
CR = 0.88	CC2	0.842***	0.022
AVE = 0.53	CC3	0.836***	0.022
	CC4	0.610***	0.036
NORMATIVE COMMITMENT (NC)	NC1	0.570***	0.040
CR = 0.86	NC2	0.806***	0.031
AVE = 0.55	NC3	0.826***	0.036

Note: *** denotes the 1% significance level. CR is composite reliability, and AVE is average variance extracted.

4.1 | Measurement model results and discussion

The results presented in Table 2 indicate that all measures are significant at the 1% level and about or above the 0.60 loading level. Loading with a minimum of 0.60 indicates that the measures account for at least 60 percent of the variance of the underlying latent variable (Chin, 1998). Furthermore, construct validity requires convergent and indiscriminant validity (Hair et al., 2010). Specifically, convergent validity can be assessed with average variance extracted (AVE) and composite reliability (CR) statistics, while indiscriminant validity is measured by comparing AVE values with squared correlations (SC) among latent variables (Fornell and Larcker, 1981). The values of AVE for the latent constructs are all above 0.5 and CR for the constructs are all above 0.7, which indicates that there is no problem with convergent validity. All AVE values of the latent variables are larger than the SC values.[2] These results confirm the validity of the latent constructs.

4.2 | Structural model results and discussion

The structural model is applied to test the hypothesized relationships. In this study, we do step-by-step estimations by using SEM to test the effect of trust and social pressure on different components of member commitment and on member participation. This also allows us to

[2] The largest value of SC of the latent variables is 0.519 and the smallest value of AVE is 0.528. According to the criterion supporting discriminant validity only when all of the AVE values are larger than all of the SC values, we can conclude that the latent constructs are of indiscriminant validity (Fornell & Larcker, 1981).

examine the role of participation in the relationship between trust, social pressure, and member commitment. The results are presented in Table 3.

First, we only include trust in the SEM to estimate the direct effect of trust on AC, NC, and CC, respectively. The results are presented in Table 3, panel A. We learn that trust has a positive direct effect on AC, NC and CC, respectively. Similarly, we include only social pressure in the SEM to estimate the direct effect of trust on AC, NC and CC, respectively. Panel B shows that social pressure has positive direct effect on AC, NC and CC.

To explore the pathways through which trust and social pressure influence different components of commitment, we introduce member participation and trust (or social pressure) as antecedents for AC, NC, and CC, as indicated in Panel C and Panel D of Table 3. Results reveal that trust has a positive direct effect on member participation for all three commitment components. Conversely, social pressure does not have a significant direct effect on member commitment. Both trust and social pressure exert significant indirect effects on AC and NC through member participation. Trust does not exhibit a significant indirect effect on CC, while social pressure does.

We then proceed to conduct full model estimations, incorporating both trust and social pressure along with other control variables, as presented in Table 4. [3] Further dissection of the effects of trust and social pressure on various commitment components can be found in Table 5. The coefficients indicate that trust has a positive direct impact on member participation and all three commitment components. However, trust indirectly influences only AC, with no significant indirect effects on NC or CC. Nevertheless, the total effect of trust on all three commitment components is significant and positive (as depicted in Table 5), thereby confirming hypotheses H1 and H2.

The results from Table 4 indicate that member participation is positively associated solely with AC, with no significant association with the other two commitment components, which is partly in line with H3. It is worth noting that the estimates for participation vary as we introduce more explanatory variables into the model, as evidenced in Panel C and Panel D in Table 3. This suggests that member participation closely aligns with members' emotional attachment to the cooperative but lacks a significant connection with perceived continuance benefits or social norms and obligations. This conclusion aligns with the voluntary participation principle of cooperatives, where members engage in decision-making activities out of desire rather than obligation. The absence of a significant impact of social pressure on member participation can also be attributed to the voluntary and self-motivated nature of member participation, a conclusion consistent with H5 and supported by Bagozzi and Dholakia (2002).

Furthermore, we find that social pressure directly and positively correlates with all three components of member commitment, supporting hypotheses H6, H7, and H8. To further explore the pathways through which trust and social pressure exert their effect on the dependent variables, we conduct mediation tests for trust and social pressure separately. Following the methods of Baron and Kenny (1986) and Avolio et al. (2004), we observe that member participation partially mediates the relationship between trust and AC, suggesting that trust impacts AC both directly and indirectly through member participation, partially supporting H4. In contrast, social pressure demonstrates a significant direct effect on all three commitment components.

Regarding the influence of other organizational factors, our findings from Table 4 reveal that when the Board of Directors is elected democratically and members face no constraint in exiting

[3] To test multicollinearity of the full estimation models, we have calculated the VIF values of the full models in Table 4. VIF values from AC, NC and CC models are 1.001, 1.000 and 1.004, respectively. The models thus are free from the concern of multicollinearity problem.

TABLE 3 Estimates of direct and mediating effects of trust and social pressure on AC, NC and CC.

Panel A: Direct effect, only including trust						
		AC		**NC**		**CC**
Trust		0.662*** (0.042)		0.418*** (0.055)		0.576*** (0.045)
R^2		0.438		0.332		0.174
Panel B: Direct effect, only including social pressure						
		AC		**NC**		**CC**
Social pressure		0.147** (0.061)		0.330*** (0.055)		0.120** (0.059)
R^2		0.021		0.332		0.014
Panel C: Effect of trust on AC/NC/CC, respectively (including trust and participation as antecedents of AC/NC/CC)						
	participation	**AC**	**participation**	**NC**	**participation**	**CC**
Trust	0.260*** (0.05)	0.615*** (0.04)	0.262*** (0.05)	0.399*** (0.05)	0.259t*** (0.05)	0.579*** (0.04)
participation	–	0.180*** (0.04)	–	0.092* (0.055)	–	−0.013 (0.050)
Direct effect	1.602*** (0.368)	1.130*** (0.298)	1.723*** (0 .410)			
Indirect effect	0.122*** (0.034)	0.068* (0.042)	−0.010 (0.039)			
Panel D: Effect of social pressure on AC/NC/CC (including social pressure and participation as antecedents of AC/NC/CC, respectively)						
	participation	**AC**	**participation**	**NC**	**participation**	**CC**
Social pressure	0.015 (0.033)	0.14** (0.059)	0.015 (0.05)	0.329*** (0.05)	0.015(0.037)	0.118** (0.059)
participation	–	0.336*** (0.05)	–	0.169*** (0.05)	–	0.133** (0.053)
Direct effect	6.387 (14.635)	16.630 (55.159)	6.159 (16.046)			
Indirect effect	0.228*** (0.039)	0.129*** (0.043)	0.101** (0.042)			

Note: *, **, *** denote significant levels of 10%, 5% and 1%, respectively. Standard errors are inside the brackets.

TABLE 4 Estimation results of structural models: standardized estimates of AC, NC, CC, and participation.

Explanatory variables	Participation		AC		Participation		NC		Participation		CC	
	coef.	S. E.	coef.	S. E.	coef.	S. E.	coef.	S. E.	coef.	S. E.	coef.	S. E.
age	0.068	0.053	0.103**	0.048	0.068	0.053	0.093*	0.054	0.068	0.053	−0.081	0.050
education	0.099**	0.050	0.008	0.045	0.100**	0.050	−0.046	0.051	0.099	0.050	0.031	0.047
village cadre	0.055	0.052	−0.034	0.047	0.055	0.052	0.033	0.053	0.055	0.052	0.016	0.049
non-farm	−0.039	0.050	−0.022	0.045	−0.039	0.050	0.027	0.051	−0.039	0.050	−0.074	0.047
land size	0.001	0.049	−0.055	0.044	0.001	0.049	−0.064	0.050	0.001	0.049	−0.007	0.046
share	0.007	0.070	−0.021	0.062	0.007	0.070	0.006	0.070	0.008	0.070	−0.005	0.065
dividends	0.059	0.070	0.040	0.063	0.059	0.070	0.053	0.071	0.058	0.070	0.014	0.066
BoD	0.089*	0.049	−0.002	0.045	0.089*	0.049	0.013	0.050	0.089	0.049	0.089*	0.046
exit	−0.085*	0.048	0.009	0.044	−0.086*	0.048	−0.013	0.049	−0.085	0.048	−0.083*	0.046
satisfaction	−0.017	0.056	0.234***	0.051	−0.017	0.056	0.259***	0.056	−0.018	0.056	0.199***	0.052
land_coop	−0.109	0.048	0.034	0.043	−0.109	0.048	0.047	0.049	−0.109	0.048	−0.075*	0.045
region	0.243	0.051	0.128***	0.048	0.243	0.051	0.154***	0.054	0.243	0.051	0.049	0.051
cohesion1	−0.050	0.052	−0.129***	0.047	−0.049	0.052	0.003	0.053	−0.050	0.052	−0.133***	0.048
cohesion2	−0.031	0.054	0.219***	0.048	−0.031	0.055	0.106**	0.055	−0.031	0.054	0.120**	0.051
Participation	–	–	0.152***	0.046	–	–	0.057	0.053	–	–	−0.051	0.048
Trust	0.260***	0.067	0.371***	0.062	0.260***	0.067	0.222***	0.071	0.261	0.067	0.396***	0.065
Pressure	−0.025	0.055	0.098**	0.049	−0.026	0.055	0.256***	0.055	−0.025	0.055	0.120***	0.051
constant	2.237	0.693	–	–	2.233	0.693	–	–	2.238	0.693	–	–

Note: *, **, *** denote significant levels of 10%, 5% and 1%, respectively. S.E. stands for standard errors.

TABLE 5 Mediating role of participation between trust, social pressure and different components of commitment.

	Affective Commitment		Normative Commitment		Continuance Commitment	
	Trust	**Social Pressure**	**Trust**	**Social Pressure**	**Trust**	**Social Pressure**
Direct effect	1.041*** (0.322)	0.078** (0.040)	0.642** (0.268)	0.211*** (0.051)	1.188*** (0.374)	0.103** (0.045)
Indirect effect	0.112*** (0.034)	−0.003 (0.007)	0.043 (0.040)	−0.001 (0.003)	−0.040 (0.038)	0.001 (0.003)
Total effect	1.153*** (0.323)	0.075* (0.040)	0.685*** (0.265)	0.210*** (0.051)	1.148*** (0.374)	0.104** (0.045)

Note: *, **, *** denote significant levels of 10%, 5% and 1%, respectively. Standard errors are inside the brackets.

TABLE 6 Estimation results of structural models by PLS-SEM: standardized estimates of AC, NC, CC.[a]

Key explanatory variables	AC	NC	CC
	coef.	coef.	coef.
Trust	0.526*** (0.000)	0.328*** (0.000)	0.503*** (0.000)
Social Pressure	0.120*** (0.002)	0.281*** (0.000)	0.121*** (0.001)
Control variables	Yes		

Note: *, **, *** denote significant levels of 10%, 5% and 1%, respectively. P-values are inside the brackets.
[a]We exhibit only the coefficients of the key explanatory variables.

the cooperative, members tend to engage more actively in decision-making. Additionally, larger cooperative size negatively associates with CC. Higher member satisfaction levels with cooperative services and enhanced group cohesiveness positively affect all three of member commitment components. Moreover, higher levels of education among members correlate with increased participation in decision-making processes, while older individuals exhibit stronger AC and NC to their cooperative.

4.3 | Robustness check

To assess the robustness of our research findings, we have undertaken a comprehensive analysis using Partial Least Squares Structural Equation Modelling (PLS-SEM). PLS-SEM stands as an alternative to the more commonly known Covariance-Based SEM. The selection between these two modelling approaches is contingent upon the distinct research objectives they serve. As elucidated by Hair et al. (2014), PLS-SEM is particularly well-suited for the purpose of predicting key target constructs or identifying the pivotal 'driver' constructs within a given study context. Conversely, SEM is typically favoured when the primary aim revolves around theory testing and theory confirmation.

As articulated by Rigdon et al. (2017), PLS-SEM is not limited to predictive modelling alone; it can also be effectively harnessed for exploring the structural relationships within a research framework. Considering these considerations, we have employed PLS-SEM as the chosen methodology for conducting a robustness check on our estimation results. Estimation results of structural models are shown in Table 6. The results show that both trust and social pressure variables exert positive and statistically significant effect on different components of member commitment, namely AC, NC, and CC, respectively, which are in line with the results estimated by SEM shown in Table 4.

We further explore the pathways how trust and social pressure impact different components of member commitment. To rigorously scrutinize these pathways, we employ the bootstrap sample method complemented by bias-corrected confidence intervals, as advocated by Aguirre-Urreta and Rönkkö (2018). The outcomes of these mediation tests are presented in Table 7. A comparative analysis between the results shown in Table 7 and Table 5 reveals a noteworthy pattern. Specifically, the results consistently exhibit similar signs and levels of statistical significance across both sets of analyses. The primary discrepancy lies in the magnitudes of the observed effects. This consistency in the directional impact and statistical significance fortifies our confidence in the robustness of our estimation results and, by extension, the conclusions drawn from our study.

To further investigate potential variations in our research findings across different segments of the population, shedding light on nuanced insights within our study context. Detailed results

TABLE 7 Bootstrap Sample Method Trust and Social Pressure.

	Affective Commitment		Normative Commitment		Continuance Commitment	
	Trust	**Social Pressure**	**Trust**	**Social Pressure**	**Trust**	**Social Pressure**
Direct effect	0.494*** (0.012)	0.122** (0.040)	0.314*** (0.102)	0.287(0.05)	0.504*** (0.120)	0.121[t]*** (0.045)
Indirect effect	0.032** (0.013)	−0.002 (0.008)	0.014 (0.011)	−0.001 (0.004)	−0.001 (0.010)	0.000 (0.002)
Total effect	0.526*** (0.013)	0.120*** (0.040)	0.328*** (0.268)	0.281*** (0.05)	0.503*** (0.121)	0.121*** (0.045)

Note: *, **, *[N]** denote significant levels of 10%, 5% and 1%, respectively. Standard errors are inside the brackets.

and explanations about composition of effects of trust and social pressure on 4 different types of member commitment can be found in Appendix B.

5 | CONCLUSIONS, IMPLICATIONS, AND LIMITATIONS

5.1 | Conclusions

Member commitment is important to the viability of (agricultural) cooperatives, but its determinants are still poorly understood. We systematically investigate the factors contributing to the different components of member commitment from the perspectives of both member and organizational characteristics. Given the important role chairpersons play in Chinese cooperatives and the importance of Confucius culture in Chinese society, we specifically examine the role of trust in cooperative leaders and of social pressure.

The contribution of this paper is twofold. Firstly, our study provides an integrated analytical framework that considers member commitment from the perspectives of both cooperative members and the cooperative leaders. We show that social pressure, intricately linked to China's mutual-face culture, exerts a notable positive impact on member commitment. Furthermore, we show that trust in the leaders - often entrepreneurial farmers – is a major determinant of member commitment in Chinese cooperatives. Secondly, our paper addresses an empirical gap in the literature. While the importance of member commitment within cooperatives is well-recognized, there is very limited empirical research about the antecedents of member commitment in Chinese agricultural cooperatives. We provide the data and analysis that was missing until now.

Using a sample of 391 farmer cooperative members in China, our study finds that both trust and social pressure are positively associated with the three components of member commitment – affective commitment, continuance commitment, and normative commitment. Member participation in decision-making plays a mediating role only between trust and affective commitment. These findings offer empirical evidence of the importance of trust in the cooperative leadership and of social pressure in maintaining member commitment. Organizational factors such as democratic election of the Board of Directors and constraints in exiting the cooperative significantly affect members' participation in the decision-making process, but do not affect member commitment.

In general, the results are in line with the hypotheses, which were built on the existing literature on member commitment in (cooperative) organizations. Specifically, the heterogeneity analysis (in the Appendix) shows that trust and social pressure exert different effect on different components of member commitment. As a result, a customized approach is essential when formulating strategies to bolster AC, NC and CC. Strategical design should take into account the unique attributes and preferences characterizing the age and education groups found within our studied population.

Our findings extend the existing research on member commitment, particularly in the Chinese society, where trust in the leaders of cooperatives and social pressure from the community positively associate with member commitment. Organizational and societal characteristics like trustworthy and capable leaders and a Confucius atmosphere support organizational commitment.

5.2 | Implications

Since 2006, the Chinese government has been encouraging farmers to participate in cooperatives to strengthen their market access. However, the genesis of cooperatives in China is often not the result of bottom–up collective action by small farmers but rather the outcome of political pressure and the converging interests of political and agribusiness entrepreneurs. Given that the initiative was not taken by (smallholder) farmers themselves, the question raises whether Chinese cooperatives will develop into sustainable rural organizations.

Our research provides a partial answer to this question from both member and cooperative perspective. Social factors like member trust in cooperative leaders and the Chinese concern for social relationships are positive in forming member commitment. Besides improving trust among members, the chairpersons and other managers of cooperatives need to enhance management skills. Meanwhile, cooperatives can improve their service quality in order to increase member satisfaction. Additionally, cooperatives should stick to democratic principles and involve members in decision-making processes, thereby improving members' affective commitment. Finally, cooperatives should be aware of negative effect of growth and expansion, because a larger scale can have negative effect on member continuance commitment.

5.3 | Limitations

Despite these above contributions, we acknowledge the limitations of our research, which are due to methodological and data constraints. Because member commitment is measured with Likert scales, Generalized Structural Equation Modelling (GSEM) would be more appropriate than standard linear SEM. However, GSEM is a new modelling method. Post-estimation tests, especially the test for the goodness fit, and the following mediating effect test cannot be carried out STATA. We therefore chose SEM instead of GSEM. The other limitation refers to the measurement of latent variables. The data used is based on self-reporting by members. Although we have tested the reliability and discriminate validity of constructs of latent variables, the results must be interpreted with caution. Additionally, the results emphasize the correlation between the main concepts, not necessarily causal relationships.

Although we employed a Probability Proportional to Size sampling strategy to enhance the randomization and representativeness of our data, constraints in terms of time and financial resources led to the collection and analysis of data from a modest sample of 391 farmers representing 63 cooperatives located in Shaanxi and Shandong Provinces. This limitation in data availability restricts the generalizability of our findings. Given the geographical expanse of China, it is imperative to acknowledge that our conclusions and findings may not be extrapolated to all cooperatives across the entire nation. Hence, considering the constraints arising from both model specifications and data availability, the policy implications derived from this study are mainly applicable to cooperatives with similar agricultural activities.

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APPENDIX A: OVERALL MODEL FIT

Values of the indices measuring the overall model fit are all below the acceptance criteria. For the overall model, the value for the root mean squared error of approximation (RMSEA) is 0.06, for the comparative fit index (CFI) it is 0.947, and for the standardized root mean squared residual (SRMR) it is 0.054. For affective commitment estimations, the values for RMSEA, CFI and SRMR are 0.031, 0.969 and 0.031, respectively. For continuance commitment, the values for RMSEA, CFI and SRMR are 0.031, 0.967 and 0.033, respectively. For normative commitment, the values for RMSEA, CFI and SRMR are 0.048, 0.927 and 0.033, respectively. The results show that the SEM models fit the data well.

APPENDIX B: HETEROGENEITY ANALYSIS

We have undertaken a heterogeneity analysis by stratifying our sample based on two key demographic attributes of household heads: their age and education years. To facilitate this division, we have utilized the medians of age of the household head (52 years old) and education years (8 education years) as pivotal points. This analytical approach allows us to explore potential variations in our research findings across different segments of the population, shedding light on nuanced insights within our study context. Detailed results about composition of effects of trust and social pressure on 4 different types of member commitment are presented in Tables B1– B3.[4]

Table B1 offers valuable insights into the nuanced nature of our findings concerning the influence of trust on AC within distinct segments of our sample, based on household head age. Specifically, we observe that trust exhibits a partially mediating effect on AC in the subgroup characterized by household heads aged older than 52 years. However, this mediation effect is not statistically significant in the younger age group. This divergence in results may be attributed to the tendency of younger farmers to seek employment opportunities in urban areas, while member farmers predominantly consist of older individuals. Older farmers, as our data suggests, tend to actively engage in the cooperative's decision-making processes, potentially explaining the observed mediation effect of member participation among this group. Besides, social pressure exerts a notable and positive direct effect on AC, with statistical significance evident among farmer members possessing higher levels of education. Conversely, trust exhibits a significant positive direct effect on AC within the group of less educated farmer members.

Table B2 a shed light on our heterogeneous analyses of NC, showcasing distinct patterns among different age groups. Social pressure exerts a more substantial influence on NC among the older farmers, while trust demonstrates a greater impact on NC among the younger cohort. These trends are consistent with the results observed in the estimation outcomes for CC, as depicted in Table B3. Additionally, trust consistently exerts a positive and statistically significant direct effect on CC across different education groups as shown in Table B6.

These findings collectively suggest the need for tailored strategies, each with varying emphases, aimed at enhancing AC, NC and CC. Specifically, our results emphasize the importance of devising strategies that consider the distinctive characteristics and preferences of different age and education groups.

[4] Estimation results of structural models of AC, NC, CC of different member groups have also been estimated. Considering the length limit, these results can be obtained by contacting with authors.

TABLE B1 Heterogeneous analysis of Affective Commitment (in term of household head's age and education years).

Affective Commitment	Household head age > = 52 years old		Household head age <52 years old		Household head education year>8years		Household head education year< = 8years	
	Trust	Social Pressure	Trust	Social Pressure	Trust	Social Pressure	Trust	Social Pressure
Direct effect	0.491*	0.064	0.400	0.231**	0.400	0.231**	1.536**	0.085
	(0.264)	(0.053)	(0.849)	(0.113)	(0.849)	(0.113)	(0.633)	(0.060)
Indirect effect	0.167***	−0.005	0.117	−0.006	0.117	−0.006	0.062	0.002
	(0.046)	(0.014)	(0.074)	(0.017)	(0.074)	(0.017)	(0.050)	(0.005)
Total effect	0.658**	0.059	0.518	0.224**	0.518	0.224**	1.598**	0.087
	(0.261)	(0.054)	(0.840)	(0.114)	(0.840)	(0.114)	(0.635)	(0.060)
Number of Ob.	201		190		201		190	

Note: *, **, *** denote significant levels of 10%, 5% and 1%, respectively. Standard errors are inside the brackets.

TABLE B2 Heterogeneous analysis of Normative Commitment in term of household head's age and education years).

	Household head age > = 52 years old		Household head age <52 years old		Household head education year>8 years		Household head education year< = 8years	
Normative Commitment	**Trust**	**Social Pressure**	**Trust**	**Social Pressure**	**Trust**	**Social Pressure**	**Trust**	**Social Pressure**
Direct effect	0.079	0.269***	1.023**	0..133**	0.912	0.199*	0.641**	0.214***
	(0.279)	(0.075)	(0.484)	(0.065)	(0.971)	(0.102)	(0.282)	(0.062)
Indirect effect	0.113*	−0.002	−0.012	0.001	−0.003	0.000	0.084	−0.003
	(0.059)	(0.010)	(0.052)	(0.002)	(0.056)	(0.002)	(0.052)	(0.006)
Total effect	0.192	0.267***	1.011**	0.132**	0.909	0.200*	0.725***	0.209***
	(0.261)	(0.076)	(0.483)	(0.065)	(0.972)	(0.103)	(0.278)	(0.063)
Number of Ob.	201		190		112		279	

Note: *, **, *** denote significant levels of 10%, 5% and 1%, respectively. Standard errors are inside the brackets.

TABLE B3 Heterogeneous analysis of Continuance Commitment (in term of household head's age and education years).

Continuance Commitment	Household head age > = 52 years old		Household head age <52 years old		Household head education year>8		Household head education year< = 8	
	Trust	Social Pressure	Trust	Social Pressure	Trust	Social Pressure	Trust	Social Pressure
Direct effect	0.432	0.169***	2.052**	−0.013	1.496***	0.092*	1.181**	0.101*
	(0.268)	(0.059)	(0.854)	(0.072)	(0.537)	(0.049)	(0.382)	(0.058)
Indirect effect	−0.026	0.000	−0.041	−0.001	−0.042	0.000	−0.031	0.001
	(0.047)	(0.002)	(0.060)	(0.004)	(0.039)	(0.003)	(0.052)	(0.003)
Total effect	0.406	0.169***	2.012**	−0.014	1.454***	0.093*	1.149***	0.101*
	(0.261)	(0.059)	(0.856)	(0.072)	(0.539)	(0.049)	(0.380)	(0.058)
Number of Ob.	201		190		112		279	

Note: *, **, *** denote significant levels of 10%, 5% and 1%, respectively. Standard errors are inside the brackets.