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## **The role of emotion and rational self-interest in trust perception: Case of the dairy value chain**

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### **Abstract**

The problem of coordination and cooperation stands as a cornerstone in value chain management. Although formal institutions guarantee the contractual arrangements, it is recognized the role that human capital can play to ensure the sustainability of these arrangements. Trust among actors in the value chain plays an important role in contracting decision and cooperative membership. There is however a concern to understand trust decisions and the determinants of trust perception. In this paper, trust is decomposed into its components; the emotional and the rational self-interest or calculative trust. The aim is to understand the role of emotional component in trust perception. Non calculative trust and calculative self-interest trust are both present in local rural economies, making this context appropriate to test our hypothesis regarding the importance of emotional trust in networking and therefore contracting in the value chain. We used a sample of breeders in a local community i) to measure the level of trust amongst breeders and dairy collection centres, ii) to construct the two components of trust, and iii) to investigate how these two trust components contribute to generate trust decisions. The results provide support that emotional trust fosters trust perception; despite opportunistic behavior and distrust, breeders are able to build trusty links using close relationships. The results suggest the key role of existing social bonding in managing transactions in the local economy and in initiating network cooperation and more formal arrangements. Smallholder dairy farmers could use existing social networks to foster trust and institute sustainable contract as a way to coordinate transactions and improve overall innovation process in the community.

### **Introduction**

The contract is a social construct in which trust plays an important role in contracting decision and cooperative membership in local economies (Ayari and Zaibet, 2019). There is an ongoing debate among scholars and actors on how to build and maintain trust along the value chain to foster coordination and to improve the overall performance along value chains. In Tunisia, trust amongst actors in the dairy sector is insufficient and the sector suffers from the lack of coordination between the various stakeholders (LACTIMED, 2013). Reasons for the recurrent crises in the sector are the absence of a sustainable contractual system and the small number of cooperatives and producers' associations. Ayari and Zaibet (2019) show that trust is a key factor in the organization of exchanges and the construction of more formal institutions, such as production contracts through the reduction of uncertainties and transaction costs. In the dairy sector in Tunisia the use of informal network is common to manage any transactions. Actors in

the dairy sector are expected to build trust relationships and to invest more in creating the necessary emotional bonds to overcome the existing problems.

Cooperation is based on trust in personal ties that are strong, and cooperation creates a context in which the emotional trust is quite intense. Building the emotional bonding could be the solution to fill the gaps in the dairy value chain and may lead to a refinement of decision making by actors. Neuroscientists claim that emotion is a basis of decision making (Damasio, 1994). McAllister et al, (2006) show an important role of emotional links and bonds within trust relationships and point out that emotional bonds merit consideration. An important question is how this emotional bond is associated with the trust perception and behaviour of breeders. Earlier work (McAllister, 1995; Myers and Tingley, 2011) indicates that emotion might have an influence on trust decision. Our study expands this research by decomposing trust into its two components and to understand how the emotional part of trust emerging from relationships between breeders and collection centers affects trust perception.

## **Methodology**

The data were collected with a bovine random sample of 45 breeders of the region of Utique between April and June 2016; the mode of sampling is random in two degrees; the centre of collection represents the first degree and the bovine breeder, the second degree. The data were collected through a questionnaire survey, using a five-point Likert scale that isolates the emotional component of trust from Calculative self-interest trust. The questionnaire addressed to dairy breeders was designed to measure trust and to construct the two components of trust (the emotional trust and calculative self-interest trust). Data were analyzed using SPSS version 20 with the principal component analysis method. To measure the effect of the emotional component of breeder's trust decision, we use logistic regression.

## **Results**

### *Trust measures*

Principal component analysis (PCA) was used to construct the two trust components with Eigenvalues  $>1$ , explaining 61.549 % of the total variance. The measure of sampling adequacy (KMO) was 0.792. A varimax rotation was applied to delimit the factor structure. The first indicator is labeled "calculative self-interest trust" since the eight variables with high loadings of 0.4 namely integrity (0.849), competence (0.806), satisfaction with past interactions (0.601), the availability of credible information (0.774), share the same interest (0.572), trust is honored (0.836), recognition of the honesty of your partner (0.48), common relations (0.513). The emotional trust is defined by variables such as the breeder is a friend (0.679); frequency of meetings (0.667); the breeder belongs to the same category (0.858); common relations (0.677); recognition of the honesty of your partner (0.671). This dimension was related to the emotional component of trust largely due to the link between close breeders and partner contacts shared through the network.

A joint frequency distribution is used to look for relations between trust perception and network structure. The major predictors of trust for breeders on their partners are given in Table 1.

Results show that trust perception increases with closest and strongest ties (Table1). Friendship and the frequency of contacts is a key predictor in trust perception. Only 3,7% of close friend distrust their partners. 20% of responders meet daily and tend to trust their partners (Table 1). Breeders who shared categories tend to trust more their partners because they properly understand each other. This show that trust perception depends on the structure of the network and its dynamics. Building trust requires first building, bonding as homogeneous as possible after gathering the bonding in the form of bridging.

Table 1 :Type of relation between breeders and collection centers (predictor variables)

	N	%	Trust %	Distrust %
Familiar	8	17.8	85	12.5
Other kin relations	37	82.2	72.9	18
Shared categories : completely	37	82.2	83.7	8.1
Rather than no	4	8.9	75	25
No	4	8.9	0	100
Close friend	27	60	96.3	3.7
Acquaintanships	8	17.8	62.5	25
No friend	10	22.2	30	70
Frequency of contacts 1=daily	9	20	100	0
2= routinely	6	13.3	100	0
3= often	19	42.2	78.9	10
4= rarely	6	13.3	66.6	33.4
5= no contact	5	11.1	0	100

Source: Survey data

### *Determinants of trust perception*

Two logistic regression was completed to investigate empirically the nature of trust relationships in case study by analyzing the relations between trust components (emotional and calculative) and dairy breeders' choice for trust perception (Table 2). The results show that the emotional indicator appears to be positive determinant for trust completely level, which is in line with the first hypothesis. Thus, the positive coefficient on the emotional indicator variable indicates that breeders with the highest rate of close-kin ties are more likely to trust completely rather than no. This suggests that the higher the strength of the emotional bond, the greater the trust perception attitude. Regular communication is positively related to the trust perception. Communications as a ways to resolve problem help to avoid developing distrust and allow trust repair. It serves a crucial, albeit indirect, factors in maintaining trust in economic transactions.

Table 2 Multinomial logit models : Emotinal vs calculative trust

Influencing Factors	Model 1 : Emotional indicator		Model 2 : Calculative indicator	
	p-value	Coefficient B	p-value	Coefficient B
Constant		-13.228		-13.709
Distance from milk collection centers	0.013	31.967	0.076	-16.416
Trust indicator	0.00	0.678	0.00	-5.6
Dependency : Farm size	0.43	-21.936		
herd size			0.001	0.139
Duration of relationship				
Prior exchange (emotional investments)	0.168	0.156		
Expectation of continuity			0.02	1,43
Uncertainty : Variation of quantities sold	0.006	0.027	0.17	-0.02
Regular communication	0.022	20.586		
legal warranties are sufficient	0.552	-42.101		
Opportunism Other marketing channels are more beneficial			0.047	-3.948
Education level			0.028	-0.574
df= 3 p<0,05, Number of Obs=45	Pseudo R2 = 0.941, log likelihood=21.227		Pseudo R2 = 0.853, log likelihood=41.493	

As expected, the results also indicate that calculative indicator determines the probability of trust perception significantly. It is observed that calculative self-interest trust indicator is negatively associated with trust, which is in line with the second hypothesis. When the calculative self-interest arose during the advanced stages of the relationship between actors in the value chain, emotional trust may be violated, breeders felt betrayed, trust destroyed and the relation may be ended. Viewed in this way, calculative self-interest trust is almost a distrust factor. The study indicates that the trust perception declines in contexts of opportunism. When potential opportunistic behaviour exists, calculative trust is needed, rather than emotional trust. The opportunism weakens the relation between the parties and emotional part of the trust may be indifferent from the relation and only transactions count. The existence of another offer more advantageous also influences negatively trust perception. It is considered as violations elements of trust relationship forces the breeder to seek a better outcome. When another more advantageous offer exists, emotional trust declines; characterized by the weakening or absence of the moral element of trust necessary to provide a signal of good faith and a low degree of trust in positive expectations regarding others. Calculative self-interest behaviour toward relationships rises and fuels the appearance of distrust. Moreover, breeders decrease their investment in one another and increase their investment in finding ways to seek better opportunities.

## Conclusions

Survey results show that the viability of the dairy sector is heavily influenced by the type of relation between actors and their degree of connection. The empirical analysis shows that trust building for the agricultural transactions appears to be inherently a consequence of social ties. However, we also find that forward-thinking calculative trust is a critical path of distrust, because it can strengthen the effect of the feeling of betrayal, and thereby foster opportunistic behaviour. This study, stresses the importance of mobilizing as many breeder bonds as possible to raise emotional trust for the new cooperatives and strengthening of linkages between actors. Hence, our findings highlight the need for more appropriate rural breeders' organizations and suitable policy formulation and implementation which enhances breeders' participation in farm associations as this is proved to have a positive implication on wellbeing among cooperative members and local economy. However, participation into breeder's associations could have more emotional foundations by avoiding distrust factors in the future. Therefore, actors undertake to tackle distrust factors that impeding breeders from participating in agricultural cooperatives and to sell the product within the formal market. Contracts require trust and cooperation; trust and cooperation require bonding.

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