



Trust in buyer–supplier relations: the case of the Turkish automotive industry

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Abstract

While the topic of interorganisational trust is gaining attention in academic literature, research on developing countries remains sparse. With the premise that certain contextual elements may be more relevant for developing countries, we expand on existing models by testing the effect of initial support, use of just-in-time delivery, and informal commitment to predict the trust that Turkish automotive suppliers have towards their buyers. The results support the predictions that soft technologies and informal commitment increase trust.

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INTRODUCTION

The development of trust between two parties in an exchange seems to be a critical point that is emphasised within the broader framework of buyer–supplier relations, as reflected by the proliferation of recent literature expanding the concept of interpersonal trust to the domain of interorganisational relations (e.g., Gao, Sirgy, & Bird, 2005; Johnston, McCutcheon, Stuart, & Kerwood, 2004; Kwon & Suh, 2005; Miyamoto & Rexha, 2004). Most of the extant literature on trust in buyer–supplier relations has been based on American or Japanese firms, and has often contrasted the institutionalised forms of trust relationship in Japan with the explicit contracts in the US (Choi, Lee, & Kim, 1999). Nevertheless, it is becoming more common to see research on governing and facilitating business exchanges, and on trust in supplier relations, in geographical areas or firms of nationalities other than the US and Japan (e.g., Nguyen, Weinstein, & Meyer, 2005; Wong, Then, & Skitmore, 2000; Yilmaz, Sezen, & Ozdemir, 2005). In one of the more recent and comprehensive studies on trust antecedents, Dyer and Chu (2000) tested a model of buyer–supplier trust focusing specifically on the automotive industry across the US and Japan, as well as South Korea. Defining trust in a similar way to goodwill trust (Sako, 1992), the authors argued that the length of the relationship, the extent of face-to-face communication between the parties, continuous repeated exchange, assistance provided by the buyer, and the buyer's ownership of supplier stock would positively predict the supplier's trust in the buyer. Using data from 135 US, 101 Japanese and 217 Korean automotive suppliers, the

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authors found different results across countries, suggesting that the context plays an important role in influencing inter-firm trust.

This study will investigate the trust of suppliers towards their buyers in the Turkish automotive sector, which is the third largest industry in Turkey. While studies such as Gules, Burgess, and Lynch (1997) and Wasti (1998) have provided detailed background information on buyer–supplier relations in the Turkish auto industry, the factors affecting the development of trust between exchange partners in particular have not been investigated. Specifically, this study aims to complement the model developed by Dyer and Chu (2000) with variables that may be particularly relevant for a developing country such as Turkey. Economic transactions and institutional configurations are significantly influenced by trust relationships in developing countries, which are characterised by the absence of strong legal regimes (Choi et al., 1999; Humphrey, 1998; Humphrey & Schmitz, 1998), rapidly growing economies, structurally dynamic industries, volatile but promising markets, regulatory systems in undergoing transition, and widespread opportunism (Luo, 2006). In emerging markets, governmental regulations are more variable, market information is harder to verify, and legal systems allow contracts to be ignored more often (Luo, 2006). In the present analysis, it will be argued that, when organisations are faced with environmental uncertainty and complexity, they may prefer, or actively seek to design, a governance structure that could try to develop a partner-specific trust (Choi et al., 1999;

Luo, 2006). Considering that much of the existing research on buyer–supplier relations is set in industrialised contexts, the present analysis is expected to provide important insights into the generalisability of current models, as well as contribute to the building of a more universal understanding of trust.

The paper is structured as follows. Drawing on the historical evolution of buyer–supplier relations in the Turkish automotive industry presented below, the next section will advance hypotheses regarding antecedents of trust (namely, initial support from the buyer, the use of soft technologies such as just-in-time (JIT) in purchasing, and the buyer's informal commitment) thought to be particularly relevant to developing country contexts. The methods section will describe the study's measures, methods, and sample, followed by the results. The discussion section will evaluate the contribution of the proposed antecedents in explaining suppliers' trust towards their buyers over and above variables previously investigated by Dyer and Chu (2000). The paper will end with a discussion of the limitations and main conclusions.

THE CONTEXTUAL BACKGROUND OF BUYER–SUPPLIER RELATIONS IN THE TURKISH AUTOMOTIVE INDUSTRY

The first automotive assembly operation in Turkey began in 1929, though substantial development of the industry did not start until the 1960s (see Figure 1 for a graphical depiction of the developments in the early stages of the Turkish automotive industry). From 1954 to 1980, a period during

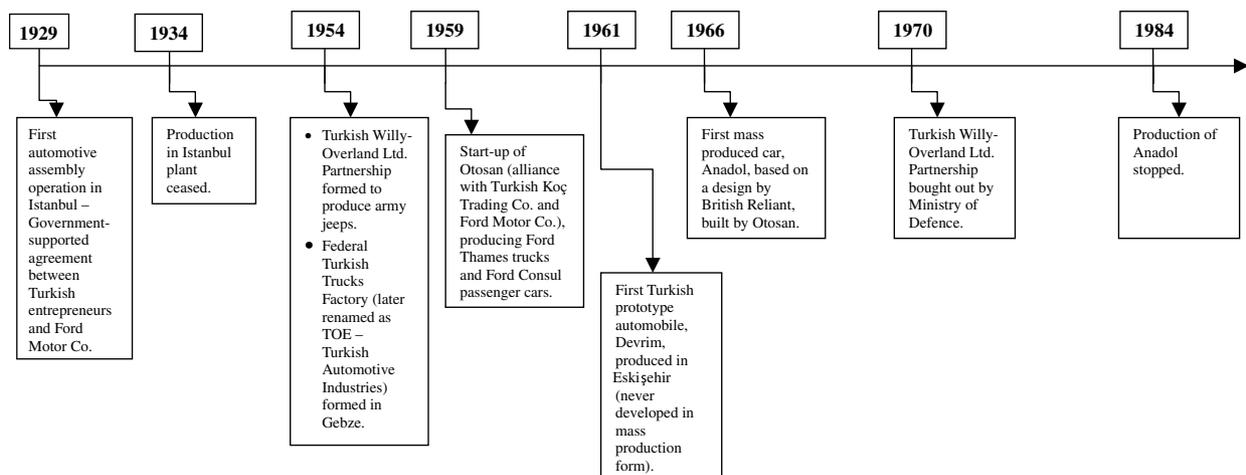


Figure 1 Timeline of the early history of the Turkish automotive industry. Based on Azcanlı (1995), Erdoğan (1999) and Gules et al. (1997).

which an import substitution strategy was adopted, local content was encouraged and a protection from foreign competition was observed. This prompted foreign automakers to produce locally through joint ventures with Turkish partners; hence the Fiat SpA Torino Group and Renault began production in 1971. Yet the stringent technology transfer and licensing agreements with these foreign firms prevented the newly formed alliances from being competitive in the global market. Although overcapacity existed in the automotive sector by 1964, new investments were supported, which resulted in the assemblers producing most of their components in-house. Because of the large number of models, economies of scale could not be reached, and the local suppliers could not fully develop themselves. With the limitations on imports, local suppliers also lacked the drive to enhance quality. The local automakers opted to take advantage of the protected market, and emphasised price over quality when outsourcing (Nedimoğlu, 1997). While this situation can be described as arm's length relationships between buyers and suppliers, the initial scarcity of local suppliers stimulated the automakers to offer technical and financial support to potential suppliers in order to persuade them to commence production for the growing automotive sector.

In the 1980s the import substitution strategy was replaced with an export-oriented one, which removed quotas of local contents and enabled assemblers to look overseas for better suppliers. To maintain their cost competitiveness, assemblers put a great deal of pressure on their suppliers, increasing their requirements in the areas of quality, delivery and flexibility, and playing suppliers off against each other (Burgess & Gules, 1998).

Beginning with Opel in 1989 and Toyota in 1990, the government allowed new foreign investments. Tax rates on imported vehicles were also reduced during the 1990s, forcing assemblers to compete head on with overseas competition. Meanwhile, Honda and Hyundai both started production in 1997, which increased the proportion of locally produced models that did not have a local supplier base in Turkey. Automakers preferred to import from multinational supplier firms that could reach economies of scale and provide better quality. Local suppliers were pushed towards exporting their products and also getting the quality certifications required in the European market. Further, with the Customs Union agreement with the European Community, Turkey agreed to adopt the standardi-

sation, measurement, accreditation, test, and certification legislation of the Community. Efforts at getting ISO 9000–9001 certifications turned into an institutionalised norm, and increasing numbers of suppliers are receiving internationally accepted quality certifications (Akbulut, 1997; Bedir, 1999, 2002; Kuruüzüm & Anafarta, 2001).¹

In the late 1990s, the relationships turned into a quasi-collaborative stage, where assemblers reduced their number of direct suppliers and encouraged them to build partnerships (particularly with foreign component suppliers) to reach economic production scales, the latest technology, and higher quality (Burgess & Gules, 1998). As assemblers often retained the option of importing parts, suppliers were reluctant to get locked into a relationship with a particular buyer, owing to the demand volatility and economic circumstances. The level of technical support, while focusing on meeting the assemblers' demands, was relatively higher than before. Owing to the increased integration with the global economy, there are signs that the collaborative arrangements between buyers and suppliers will increase in number and depth in the coming years (e.g., Bedir, 1999, 2002; Gules et al., 1997; Sanyer, 2002; TAYSAD, 2003).

HYPOTHESES

As can be seen in the previous section, the Turkish automotive industry is a relatively young one, with full-scale mass production having a history of barely half a century. Furthermore, the development of buyer–supplier relationships in Turkey clearly demonstrates that they have not shown a consistent pattern since their inception. In this context, characterised by political and economic uncertainty, overcapacity, and intense competition, the history shows rough patches in relationships. Furthermore, the relatively limited supply base, while encouraging continuous relations due to constrained opportunities to switch suppliers, may have generated mutual dependence, rather than trust. We argue that, in such a context, it is not the length or the continuity of the relationship *per se* that affects the trust between organisations, contrary to some research on buyer–supplier trust (e.g., Dyer & Chu, 2000; Gounaris & Venetis, 2002).

Indeed, trust is hard to build when the power relationship is asymmetrical (Fawcett, Magnan, & Williams, 2004), and the basis for the development of trust is particularly in the hands of the dominant partner (Humphrey & Schmitz, 1998). Sako and Helper (1998) argue that, in the automotive



industry, the buyer typically has greater power in relation to its suppliers. This is particularly true for Turkey, where the key players in the automotive business are giant firms by Turkish – and even regional – standards (Öz, 1999), whereas the supplier base consists mostly of SMEs (TAYSAD, 2003), making the latter financially and strategically more vulnerable. Moreover, manufacturers in Turkey seek system suppliers rather than individual parts suppliers. For suppliers to become systems suppliers, they need to generate the resources required and develop their own product design capability and managerial skills, a task that not all suppliers can achieve without outside help (Ulusoy, 2003), making buyer assistance all the more crucial. Dyer and Chu (2000) further argue that the automaker's offer of assistance is considered a signal of goodwill and commitment, because it suggests the automaker is genuinely concerned. As an example, in the Japanese context, the willingness of large manufacturers to help subcontractors solve various operational problems has encouraged subcontractors to respond in a trusting manner (Dyer & Chu, 2000; Hagen and Choe, 1998). The buyer's investment in a supply chain partner's capabilities has been found to be a significant antecedent of trust in other contexts as well (Fawcett et al., 2004).

A specific form of support or guidance may be particularly relevant for understanding buyer–supplier trust in developing countries such as Turkey. Gules et al. (1997) have observed that the elapsed stages of the automotive industry development in Turkey follow almost the same pattern as Lamming's (1993) four-stage model for more developed economies. What differs is the first half of the first phase, which arises from the special conditions of the early years of the Turkish automotive industry. During the initial stages of industry development, vehicles had to contain an increased percentage of domestically purchased components each year. As a result of the requirements imposed by the state, the local content of passenger cars exceeded 60% at the end of 1973, and the local content requirements imposed by the automakers' permit agreements rose to 85% in subsequent years (Erdoğan, 1999). The scarcity of local suppliers and the obligation of assemblers to increase local supply stimulated assemblers to provide financial and technical support to build their own supplier base. Many suppliers who had not produced automotive components before were encouraged and supported in various ways to operate as suppliers to the automakers. For the suppliers, typically SMEs with

limited financial and technological resources, entering the growing automotive component business would not have been possible without such external help, despite their advantages of low-cost labour.

The phenomenon of initial support continues to this day, even though many suppliers today have much better managerial and technical skills and are active in exports. Facing increasing pressure to increase new model variety after the Customs Union with the European Union, high imported car rates (approaching 70% as of the end of October 2005, according to motor vehicle industry monthly reports posted at the Automotive Manufacturers' Association website, www.osd.org.tr), with relatively low numbers in the qualified automotive supplier base, the local automakers often make offers to capable local suppliers to commence production of a component the suppliers may have never produced before. Turkey is to a large degree dependent on foreign firms' technology in the automotive sector, which means that the local automakers have to translate the technological requirements of new vehicle models commencing production in Turkey to the suppliers, who are less technologically sophisticated than the automakers themselves. In return, the automaker offers technical support (e.g., technical training, joint work on specifications, technology transfer) and some financial support (e.g., paying for dies, advance payments).^{2,3} Therefore, in order to test whether the support of buyers in the suppliers' stage of "liability of newness" (cf. Stinchcombe, 1965) aids in the generation of trust, the following hypothesis is advanced:

Hypothesis 1: The greater the provision of initial support by the buyer, the higher is the supplier's trust in the buyer.

Trust requires open communication, not just selective information exchange (Fawcett et al., 2004). In other words, trust can thrive only in a setting of frequent, open, and honest communication (Fawcett et al., 2004). The intensity of communication, as reflected in higher levels of face-to-face communication, was not found to be a significant predictor of trust in previous studies (e.g., Dyer & Chu, 2000). In fact, the study by Dyer and Chu (2000) revealed that the face-to-face meetings of US suppliers were spent unproductively on negotiations or on assigning blame. One can posit that the content of communication, the nature of knowledge transferred, and the reciprocity of the information exchange are more important than the

mode (Dyer & Chu, 2000; Kotabe, Martin, & Domoto, 2003; Liker, Kamath, Wasti, & Nagamachi, 1996; Sako, 1998).

A JIT operation requires much more sophisticated buyer–supplier communication systems (O’Neal, 1987), thus allowing greater technological diffusion between the automaker and supplier, and facilitating easier communication and compatible information systems (Turnbull, Oliver, & Wilkinson, 1989, 1992). In part due to the enhanced communications in such environments, it has been argued that the rise in total quality management (TQM) and JIT has resulted in a shift towards cooperative purchasing strategies (Burgess & Gules, 1998; Matthyssens & Van den Bulte, 1994). In a JIT supplier–buyer relationship the calculative contract is not appropriate (Macbeth, 1987). By forging closer links between parties, JIT can promote follow-up agreements (Landry, Trudel, & Diorio, 1998).

Burgess and Gules (1998) found that, in line with the rest of the global automotive industry, there is a restructuring process in the Turkish automotive industry towards soft technologies. The transplanting of Japanese manufacturing practices is one factor behind the change towards more collaborative buyer–supplier relations in Turkey (Anon, October 1995a, b; Burgess and Gules, 1998; Gules et al., 1997). Burgess and Gules’s (1998) data also showed that buyers sought more collaborative relationships with their suppliers as they increased the level of soft technology implementation. Research indicates that, under conditions of environmental uncertainty, buyer firms are less likely to make supplier-specific investments (Bensaou & Anderson, 1999; Sutcliffe & Zaheer, 1998). We propose that if a buyer firm makes supplier-specific investments (such as JIT), even under conditions of chronic environmental uncertainty (typical of developing countries), it will be a strong predictor of supplier trust. Under high uncertainty conditions, there will be a greater need to stay close to one another. That means partners will interact and exchange information more frequently, and such behaviours are important for the development of trust (Anderson & Narus, 1990; Larson, 1992). Hence, considering the trust-developing features of enhanced communications in JIT-type environments, the following hypothesis is advanced:

Hypothesis 2: The greater the buyer’s implementation of collaborative practices with the supplier through the usage of soft technologies such as JIT, the higher is the supplier’s trust in the buyer.

The majority of literature in economics and management on contract enforcement has focused on the use of formal, legally enforceable agreements (Choi, 1994), which are the basis of formal commitments in business relations. Informal commitment, on the other hand, has a stronger attitudinal component and is strongly related to trust (Mudambi & Helper, 1998). According to the typology developed by Mudambi and Helper (1998), the type of commitment is a function of the strength of the legal and social institutions in the environment. In an environment with free markets, good information availability, and strong legal institutions (as is predominantly the case in developed countries), the form of cooperation is likely to be formal. However, in an environment where society is relatively closed and there are strong informal institutions such as social norms and traditions (i.e., the social institutions are strong), and where legal institutions are weak, the predominant form of commitment is informal. This type of environment is more typical of developing countries.

The notion of informal commitment may be particularly relevant for the Turkish context, which is characterised by a slow and cumbersome judicial system (TÜSİAD, 1998, 2002). As legal contracts are difficult to enforce, the contracts are generally short term, and the volatility of the economic circumstances encourages or even legitimises breaking of promises (Bedir, 1999, 2002).⁴ In the Turkish economic and legal institutional framework, contracts can even increase costs: in an inflationist economy, waiting for the results of a court case can be more costly than the benefits that can be gained (Oba & Semerciöz, 2005). Therefore it is argued that suppliers will try to infer the level of commitment of the buyer not by explicit sanctions or reliance on written contract terms, but through certain informal actions that provide assurance.

As noted earlier, in addition to the peculiarities of the institutional environment, social norms also affect the type of commitment. Collectivist cultures such as Japan, Korea and Turkey (Hofstede, 1980) are characterised as high-context cultures, in which the external environment, situation, and non-verbal behaviour are crucial for communication (Boyacıgiller & Adler, 1991). In contrast to low-context cultures such as the United States, where the emphasis is on legal documents, high-context cultures rely more on face-to-face personal agreement. Indeed, subcontracting in Japan is relational, and draws on face-to-face relations to help enforce

minimally specified contracts (Hagen & Choe, 1998). In a recent study by Oba and Semerciöz (2005) on inter-firm relations in a Turkish industrial district, 97% of the Turkish respondents stated that they do not use contracts in their transactions.⁵ Thus, in such a context, it is predicted that trust will be enhanced by the buyer signalling commitment beyond simply fulfilling letter of the contract:

Hypothesis 3: The greater a buyer's informal commitments to a supplier, the higher will be the supplier's trust in the buyer.

METHOD

Participants and Procedure

A preliminary questionnaire was developed and presented for comments to numerous officials from automotive companies (both buyers and suppliers) and automotive associations by way of interviews that lasted an average of 1.5 h. With the feedback received in the pretests, a self-administered mail questionnaire was designed and sent to over 300 Turkish automotive parts suppliers. The results presented in this paper are based on 106 responses, resulting in a response rate of approximately 30%. Given that this was a lengthy and detailed questionnaire of 10 pages, the response rate comes across as reasonable.⁶ The public guides that were used to construct the mailing list did not provide additional information about the suppliers, hence only a comparison of early and late respondents was done on key variables to test for non-response bias, and no significant differences were noted. Since the questionnaire asks quite a few questions about supplier views and obstacles regarding product development, it is possible that the responses might show a bias towards technologically superior suppliers who have some background and capability in product or process innovations and who were not alienated by such questions.

Measures

Trust. A trust measure was formed by the summation of the following three items, to be answered keeping the supplier's main customer in mind and measured on a five-point Likert scale, ranging from "none" to "very much":

- (1) "Does your main customer have a market reputation as being trustworthy and fair?"
- (2) "Is your main customer fair towards you?"

- (3) "If your main customer asked you to make a customer-specific investment without a written contract, how willing would your company be?"

Initial support. Initial support or guidance provided by the buyer at the foundation stage was measured with a single item, to which a dichotomous yes/no response option was provided:

"Did your company commence the production of your main component with the guidance and support of your main customer?"

JIT. This variable attempts to understand the extent to which the buyer has utilised soft technologies such as JIT, which incorporate cooperative purchasing strategies that increase the interdependence and communication between the buyer and the supplier. The suppliers were asked the following question:

"Does your company deliver its products to its main customer just-in-time?"

The response was made on a dichotomous yes/no scale.

Informal commitment. Informal commitment was measured by the summation of the following items, using a five-point response scale ranging from "1: Not at all" to "5: Very much". The first three items were reverse-coded so that higher scores indicated higher levels of informal commitment.

- (1) "Does your main customer use other domestic suppliers as an ace up its sleeve?"
- (2) "Does your main customer use foreign suppliers as an ace up its sleeve?"
- (3) "Does your main customer move to another supplier at the purchasing stage even after it has established close relations with your company earlier?"
- (4) "Does your main customer give you guaranteed orders?"

Control variables⁷. Organisation size (operationalised as the number of employees at the firm level), and technological uncertainty (operationalised as the technological uncertainty of the component) were included in the analysis as control variables. The technological uncertainty measure consisted of two items, which assessed the

frequency of technological change in the product (response scale ranging from “1=Very infrequent” to “5=Very frequent”) and the extent of change in product design over the last 5 years (response scale ranging from “1=No change” to “4=Complete change”). Responses to both items were standardised and combined into a summated index.

The survey administered in the Turkish automotive industry also allowed the testing of Dyer and Chu’s (2000) model of supplier trust. Therefore the variables in the Dyer and Chu model were included in the analysis as baseline antecedents of trust. This not only allowed for a test of the generalisability of Dyer and Chu’s model to a developing context, but also enabled an assessment of the added value of the proposed extensions to the model. The scales employed to measure the antecedents in the Dyer and Chu (2000) study are presented below.

- *Length of the relationship*: Length was operationalised as the number of years since the supplier first began selling products to the automaker.
- *Face-to-face communication*: Face-to-face communication was measured by the following single-item measure, with a response scale ranging from 0 (“Never”) to 5 (“Daily”):⁸
“Approximately how frequently do your engineers and technical employees exchange information regarding the design of your component with your main customer via face-to-face meetings?”
- *Continuity of the relationship*: Relationship continuity was measured with the following item:
“When a new model of your main customer is out and you get the business of producing your component for it, does your company continue selling the component to your customer during the entire production cycle of the new model?”
The response was made on a dichotomous yes/no scale.
- *Automaker assistance to the supplier*: Assistance was measured with three items assessing whether the automaker provides financial (investing in more appropriate equipment), technical (e.g., training) and general assistance (“buying extra components, giving you new business, reimbursing you for stocks not purchased in case of a component change, etc.”) Responses were made on a five-point Likert response scale, and summed into a scale score, with higher scores indicating higher levels of assistance.
- *Stock ownership*: This variable was measured by a single item, which assessed the percentage of supplier stock owned by the automaker.

RESULTS

Prior to the analyses, missing values were imputed for the multi-item scales using the “two-way imputation” procedure (Bernaards & Sijtsma, 2000), where information from both the person mean and the item mean is used. For single-item scales, item means were imputed for missing values.⁹ Table 1 presents the descriptive statistics and the correlations among the variables.

To test the hypotheses advanced in the previous section, a hierarchical regression analysis was employed. In the first step, organisational size and product type were entered as control variables. In the second step, the trust antecedents proposed in the Dyer and Chu model were entered. In the final step, the variables regarding the hypothesised extensions to this model were entered.

The results are presented in Table 2. As can be seen in the second step of the regression, Dyer and Chu’s model seems to provide a fairly modest fit to the Turkish sample in terms of the variance explained and the number of significant predictors. The results for the Turkish data indicate that only assistance is found to be a significant predictor of trust ($\beta=0.37$, $p<0.01$). In the original study, assistance was found to be a highly significant variable in Japan as well as in Korea but not in the US. In Korea and the US, continuity, or expectations of repeated exchange, emerged as a significant variable, but this relationship was not observed for the Turkish and Japanese data. Only in the Japanese case was the length of the relationship significantly positive. Finally, neither for the Turkish sample nor in the original study did stock ownership and face-to-face communication predict any significant variance in explaining trust.

It is clear from Table 2 that the expanded model has substantially more explanatory power for the Turkish sample than Dyer and Chu’s baseline model, both in terms of variance explained and in terms of significance of factors. In this model both soft technologies ($\beta=0.20$, $p<0.05$) and informal commitment ($\beta=0.22$, $p<0.05$) are significant. As predicted, the usage of JIT is associated with higher levels of trust: suppliers who deliver their products to their customers JIT feel more trust towards their main customer. Further, the more the main customer signals that it is committed to the supplier, the more trust the supplier feels. Of the variables in the original model, again only assistance is significant ($\beta=0.39$, $p<0.01$). It appears that suppliers receiving financial and technical help from their customers feel more trust towards them. In contrast,

Table 1 Descriptive statistics and correlations

Variable	No. of items	Mean (% yes)	s.d.	Alpha	1	2	3	4	5	6	7	8	9	10
1. Trust	3	3.73	0.57	0.73										
2. Length of the relationship	1	12.44	7.40	—	−0.08									
3. Face-to-face communication	1	2.06	1.17	—	0.15	0.15								
4. Continuity	1	(97%)		—	−0.06	0.06	0.12							
5. Assistance	3	2.55	0.67	0.80	0.33**	−0.01	0.20	0.07						
6. Stock ownership	1	1.81	11.11	—	0.17	−0.15	0.02	0.02	0.15					
7. Initial support	1	(61.5%)		—	−0.05	0.25*	−0.12	0.10	0.27**	0.12				
8. Soft technologies (JIT)	1	(49.5%)		—	0.18	0.09	0.01	0.18	−0.04	0.16	−0.06			
9. Informal commitment	4	3.23	0.48	0.67	0.32**	−0.14	0.21	0.10	0.33**	0.09	0.02	−0.04		
10. Organisation size	1	246.92	358.37	—	0.003	−0.11	0.22*	0.06	−0.12	0.27**	−0.03	−0.06	−0.08	
11. Technological uncertainty	2	0	1.73	0.67	0.11	−0.14	0.14	−0.07	0.06	0.25*	−0.09	0.15	−0.09	0.49**

* $p < 0.05$ (two-tailed); ** $p < 0.01$ (two-tailed).

Table 2 Standardised regression coefficients (and standard errors) predicting trust

	Model 1	Model 2	Model 3
<i>Step 1: Control Variables</i>			
Technological uncertainty	0.19 (0.18)	0.07 (0.17)	0.02 (0.17)
Organisation size	−0.09 (0.001)	−0.02 (0.001)	0.07 (0.001)
<i>Step 2: Dyer and Chu's model</i>			
Length		−0.01 (0.04)	−0.04 (0.04)
Face		0.08 (0.24)	0.003 (0.22)
Continuity		−0.11 (1.40)	−0.15 (1.38)
Assistance		0.37** (0.08)	0.39** (0.09)
Stock		0.12 (0.02)	0.07 (0.02)
<i>Step 3: Extensions to Dyer and Chu</i>			
Initial support			−0.18 (0.57)
Soft technologies (JIT)			0.20* (0.54)
Informal commitment			0.22* (0.07)
R^2	0.03	0.21	0.31
Adjusted R^2	0.03	0.13	0.22
ΔR^2	0.03	0.18	0.11
F-value	1.15	2.91**	3.47**

* $p < 0.05$; ** $p < 0.01$.

One-tailed tests for hypothesised effects; two-tailed tests for control variables.

entering their line of business with support and guidance from its main customer is not associated with supplier trust. Finally, for exploratory purposes we also investigated whether the salience of the expanded model was a function of supplier

experience. Drawing on arguments that firm experience determines sensitivity to local conditions (Barkema, Shenkar, Vermeulen, & Bell, 1997; Delios & Henisz, 2000, 2003; Luo, 2004), we ran moderated regression analyses where supplier

experience in terms of producing the main component (in years) was included as a control variable and interaction terms for supplier experience with usage, informal commitment, and initial support were entered in the final step. However, the results did not reveal main or interactive effects for this variable.

DISCUSSION

This study investigated the trust of suppliers towards their buyers in the Turkish automotive sector, testing variables that may be particularly relevant for developing countries. The results revealed the use of soft technologies (operationalised as the use of JIT delivery) to be significantly associated with trust. As suggested by Burgess and Gules (1998) for the Turkish context, soft technologies such as TQM and JIT are demanding in their implementation, requiring the strong support of suppliers. Indeed, in developing country contexts it is often the case that soft technologies, particularly JIT, are introduced and extensively developed by multinational buyers that seek cost-effective ways of maintaining operations (Lawrence & Lewis, 1996; Lee, 1997). This assistance is highly valued by suppliers in developing countries, because in such contexts the implementation of JIT systems has strategic rather than operational importance in terms of the nation's industrial progress (Hum, 1991). Not surprisingly, we find that suppliers delivering their product JIT to their customers feel more trust toward their buyers, possibly because the tightly knit coordination required in JIT allows both parties to get to know each other's work habits and share information.

The significance of this variable may be further explained in terms of the uncertainty-avoiding culture as well as the turbulent economical conditions of Turkey, which are characteristics also typical of most developing countries (Kanungo & Jaeger, 1990). Also common in developing countries is the fact that the dominant partner is typically the buyer (Humphrey & Schmitz, 1998). In such economically volatile environments, where actors act in an "each for his own" manner, one would expect buyer firms to safeguard themselves by keeping alternative suppliers handy and playing them off each against other in order to gain favourable prices and/or delivery dates. By knowingly putting itself into a dependent position, the buyer demonstrates its commitment to the supplier, thus gaining the trust of the smaller and more vulnerable supplier, especially in a volatile economy

like Turkey. In other words, while we had posited that the buyer's investment in soft technologies might be conducive to supplier trust, owing to its implications with respect to increased communication quantity as well as quality, it should be noted that this investment may be indicative of the buyer's trust in the supplier, which in turn fuels reciprocation.

In a related vein, this study also investigated the impact of informal commitments from the buyer in generating supplier trust. We considered informal commitments to be the supportive actions signalled by buyers. Narayandas and Rangan (2004) argue that weaker parties in relationships (which do not have the power to structure a formal agreement or set up formal safeguards to protect their investments) will attempt to construct psychological agreements that pave the way for subsequent formalisation. Performance outside the terms of the contract is important for jump-starting the trust-building process (Narayandas & Rangan, 2004). In countries with political and economic uncertainty and cumbersome legal systems, it can safely be assumed that the effect of such informal commitments will be even stronger than in stable environments. Our results supported these arguments.

The present study also allowed a test of the generalisability of Dyer and Chu's model to the Turkish context. Of the variables proposed in the Dyer and Chu model, only assistance turned out to be predictive of trust for the Turkish data. Assistance was not significant only for the US, where automakers have historically offered little assistance (Dyer & Chu, 2000). For Korea and Turkey automaker assistance is arguably very critical, as the suppliers lack the required technological capability. Yet Dyer and Chu (2000) note that assistance is high and important in Japan as well, despite the fact that the suppliers are technically competent. Taken together, these results seem to support Doney, Cannon, and Mullen's (1998) argument that benevolence is a more common as well as a more valued trust-building mechanism for collectivistic, uncertainty-avoiding cultures. It is interesting to note that, taken with the results for initial support, Turkish suppliers seem to give more credence to ongoing assistance rather than the guidance or support provided at the beginning of the relationship. Given the historical instability of the Turkish economy, and the competitive pressures in the automotive industry, it may be natural for the suppliers to act in a risk-averse



fashion and not wish to face the external uncertainty on their own. Being able to look to their buyers for technical and/or financial assistance in difficult times may thus generate feelings of trust.

Looking at the effect on trust of Dyer and Chu's variables in the Turkish context can provide further insight into the dynamics of trust generation. We do not find a relationship between the duration of the relationship and the suppliers' trust towards their buyers for the Turkish case. As mentioned in the hypotheses section, given that the Turkish automotive buyer–supplier relationships have had periods of distrust, the length of the relationship by itself may not say much. In other words, the length of a relationship does not guarantee that manufacturing firms will treat suppliers better (Yu, Liao, & Lin, 2006). Furthermore, since almost all Turkish suppliers stated that they got repeated orders from their customers, the effect of continued repeated exchanges could not be fully captured for the Turkish case. However, it should be noted that, because of infrequent model changes in the Turkish automotive industry, the measure assessed continuity only throughout the production cycle of a new model, and not continuity from one new model to the next. Therefore, while perhaps being comparable in terms of duration of orders for components purchased, this variable may not truly point to equivalent levels of continuity with the developed country cases.

Stock ownership was not related to trust for the Turkish case. Such a governance mechanism is not common in the Turkish context, and indeed, descriptive statistics for this variable revealed that only 3% of the respondents responded affirmatively to the question that enquired whether the buyer had any stock ownership. More importantly, however, Dyer and Chu (2000) also questioned the meaningfulness of this variable as a determinant of trust, as they argued that stock ownership could be better viewed as a substitute for trust. On the other hand, one can argue that hostage exchanges (e.g., shared ownership structure) avoid trust by structuring the transactional context in such a way that opportunism becomes irrational or deterred (Bradach & Eccles, 1989; Gulati, 1995). Hence hostage exchange cannot be considered an indicator of goodwill trust, but rather of some form of calculative trust. In fact, Bradach and Eccles (1989) state that Zucker's (1986) characteristic-based trust is often tied to formal structures (e.g., financial cross-shareholdings). Thus it appears that this

variable should also be reconsidered in further refinements of Dyer and Chu's (2000) model.

Finally, the intensity of communication, as reflected in higher levels of face-to-face communication, was not found to be significant for Turkey, nor for the other countries in Dyer and Chu's study. As noted earlier, the quality of communication can be assumed to be more important than the quantity. To explore this possibility, trust was regressed onto some other variables (included in the original survey) that tapped into other aspects of communication. Specifically, in addition to frequency of face-to-face communication, sharing of classified technical information, sharing of unclassified technical information, and the frequency of any mode of communication over a product development process were included as predictors of trust. The results showed that sharing of technical information, classified or unclassified, predicted trust significantly ($p < 0.10$), whereas the mere frequency of any mode of communication did not seem to matter. When the two variables reflective of the communication content were added to the expanded model, the regression results indicated that the sharing of classified technical information was the only significant communication variable ($p < 0.05$). These observations suggest that in future work a more complex measurement of the nature of communication is necessary, attempting to capture the openness, reciprocity, breadth, and promptness of the communication (Das & Teng, 1998; Kanter, 1994; Larson, 1992).

LIMITATIONS AND CONCLUSIONS

Although a preliminary investigation, this study contributes to the extant literature on trust in buyer–supplier relations in several ways. It investigates three new variables particularly pertinent to developing country contexts as antecedents of suppliers' trust towards their buyers. While testing the effect of these variables on trust, it also extends the results to incorporate an existing theoretical model that has been applied to industrialised countries in order to observe the changes in explanatory power. As such, this study is an important addition to the comparative literature on the world automotive industry.

Nevertheless, the findings of the current investigation must be evaluated, taking into account the potential limitations of the research design. This study employed a cross-sectional, single-source

survey method, which raises concern over the effects of common method variance. To curtail this potential problem, the scales in the actual survey were ordered so that the dependent variable of interest (trust) did not precede the independent variables (Podsakoff & Organ, 1986). It should also be noted that some non-significant relations were also observed in the analysis. Therefore it appears that common method variance is not a likely explanation for the results obtained. A related limitation is that it is not possible to infer causality, owing to the cross-sectional nature of the data. Future research that utilises longitudinal designs with appropriate time lags would be greatly contributory.

As a first attempt at developing measures for a different context, some limitations regarding the operationalisation of the proposed new constructs need to be acknowledged as well. In particular, the measurement of soft technologies relied on a single item, which only tapped into JIT delivery. In future research, this construct may benefit from a broader measurement that takes into account TQM practices (Burgess & Gules, 1998; Humphrey, 1998) or other collaborative practices to enhance transactional dependence that are predicted to generate goodwill trust (Humphrey, 1998). It should also be noted that the assumption of a weak legal system may not hold for all developing countries. Measures of legal systems are moving more towards the specifics of institutional effects and the transactions at hand (e.g., Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2003; La Porta, Lopez-de-Silanes, Shleifer & Vishny, 1998).

Last, but not least, the fact that the data were collected in a single country and industry may raise questions regarding the generalisability of the findings. In this respect, as discussed above, the results of the present study have clear implications for other developing countries. Furthermore, from a practical standpoint, it should be noted that the Turkish case is not only interesting but also an important one to study. Despite the constant change, chronic inflation and political and economic instability that have been Turkey's trademark in the last decades of the 20th century, Turkey is expected to play a pivotal role in the future, for it is both the link and the buffer between Europe and the Middle East and the southern tier of the former Soviet Union (Berköz, 2001; Erdal & Tatoğlu, 2002; Garten, 1996). Moreover, Turkey has well-established political and economic links through the European Union, of which it is a full

candidate for membership, and Turkish companies are increasingly establishing joint ventures with large European multinationals (Tatoğlu & Glaister, 1998).

The new variables offered in this study, taken together with the ones previously studied in the literature, may also have implications beyond emerging-market industries.¹⁰ Kotabe et al. (2003) argue that, in both the US and Japan, developing relation-specific assets facilitates the transfer of complex technological knowledge, and in turn affects the benefits accrued by the parties. Hence the implementation of collaborative and integrative soft technologies such as JIT would be expected to generate benefits for both parties in the automotive industries of Western Europe or North America as well, providing ground for trust-building. Likewise, informal commitments may not be as influential in generating trust in developed economies with more established legal systems and less volatile economic circumstances, but they can still have a strong positive effect on trust. In fact, Dyer and Chu (2000) also give examples of the use of such commitments by Japanese automakers with their US suppliers (e.g., telling them they would re-win the business if they performed well). Finally, although in the present study it did not emerge as a significant variable, the provision of initial support may be particularly relevant to new industries. Early-stage support could be valued, for instance, in any high-technology industries or industries with large entry barriers.

Nonetheless, we welcome further replications that may validate or challenge the current findings. As businesses grow beyond national borders, studies that involve examining how antecedents of trust between exchange partners differ across different contextual elements should prove useful to managers. Given the paucity of empirical research evidence from developing countries, such efforts will provide a necessary complement to the growing literature on trust in interorganisational relationships.

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NOTES

¹www.taysad.org.tr, the official website of the Association of Automobile Parts and Component Manufacturers, also has supporting reports.

²Ercan Tezer, General Secretary of the Automotive Manufacturers Association, personal communication, 11 October 2005, 31 October 2005.

³Burak Arkan, Board Member of the Uludag Automotive and Sub-Industry Exporters Union, personal communication, 18 October 2005, 10 November 2005.

⁴Bedir (1999) reports that there is a widespread belief among Turkish automotive suppliers that the buyer company would reduce or cancel its orders in case of a shrinkage of its own market. This leads to suppliers working with more than one buyer to achieve economies of scale, a factor that Bedir (2002) claims exacerbates the lack of cooperation between buyers and suppliers.

⁵When the remaining 3% of firms that used contracts were probed as to the nature of the

contracts, it was seen that orders given by fax were considered to be a contract.

⁶As an example, another study on the nature of trust between buyers and sellers by Doney and Cannon (1997) has a 31% response rate.

⁷As suggested by one of the reviewers, we also controlled for foreign ownership. However, neither the main nor the interaction effects with the hypothesised antecedents were significant, and the results did not change.

⁸1: 'Annually'; 2: 'Quarterly'; 3: 'Monthly'; 4: 'Weekly'.

⁹Research indicates that the choice of missing data technique becomes more important when the amount of missing data approaches 15–20% of the data set (Roth, 1994). Since the missing data percentages on the single-item scales were in the range of 2–7% of the data, mean substitution was considered appropriate.

¹⁰We thank an anonymous reviewer for this suggestion.

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