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A Contextual and Cultural Comparison of  
Japan and Turkey**

S. Nazli Wasti  
Middle East Technical University

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**PREDICTORS OF TRUST IN BUYER-SUPPLIER RELATIONS: A  
CONTEXTUAL AND CULTURAL COMPARISON OF JAPAN AND  
TURKEY**

*S. Nazli Wasti*

*Middle East Technical University  
Department of Business Administration  
Inonu Bulvari  
06531 Ankara, Turkey  
Tel: +90-312-2102010  
Fax: +90-312-2101243  
e-mail: nazli@ba.metu.edu.tr*

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## **PREDICTORS OF TRUST IN BUYER-SUPPLIER RELATIONS: A CONTEXTUAL AND CULTURAL COMPARISON OF JAPAN AND TURKEY**

Trust is a dimension of buyer-supplier relations being researched widely, but studies have generally focused on developed economies. Developing countries, however, have contextual and cultural factors that may differentiate them from developed countries. This study attempts to apply a theoretical model developed for the US, Japan, and Korea to a developing country context, namely Turkey. While Turkey has cultural similarities to Japan in terms of collectivism and risk aversion, the results of the theoretical model show that it does not fit the Turkish case. Suggestions are made to extend the model theoretically and measurement-wise to help explain trust building factors in developing countries.

## INTRODUCTION

The development of trust between two parties in an exchange seems to be a critical point being emphasized within the broader framework of buyer-supplier relations, as reflected by proliferation of recent literature expanding the concept of interpersonal trust to the domain of interorganizational relations (for example, Blois, 1999; Das and Teng, 1998; Doney and Cannon, 1997; Doney, Cannon and Mullen, 1998; Hagen and Choe, 1998; Ring, 1997; Sako and Helper, 1998). Most of the present literature on trust in buyer-supplier relations has been based on American or Japanese firms and has often contrasted the institutionalized forms of trust relationships in Japan with the explicit contracts in the U.S. (Choi, Lee and Kim, 1999). However, knowledge gained in one country does not necessarily work effectively in another, primarily because of the role of the contextual variables in determining organizational functioning and effectiveness (Wasti, S. A., 1998). Due to factors such as cultural differences, the history of extant relations, the contractual framework, and economic and/or political instability, buyer-supplier relations are expected to develop differently in different country contexts. Increasingly, researchers and practitioners have pointed out to the necessity of utilizing socio-cultural features of the given society for overall organizational effectiveness (e.g., Erez and Earley, 1993).

Even though 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 U.S. and Japan (e.g., Burchell and Wilkinson, 1997; Dyer and Chu, 2000; Morris and Imrie, 1992), little research has been carried out in developing countries (Choi, Lee and Kim, 1999; Humphrey and Schmitz, 1998). What has been less understood are the patterns of institutional and organizational mechanisms and processes that have emerged in the absence of strong legal regimes (Choi, Lee and Kim, 1999). Where contracts cannot be enforced, firms have to build up personalised trust relationships to sustain even simple transactions, so the absence of an effective legal system compounds the problem of creating trust (Humphrey and Schmitz, 1998). Economic transactions and institutional configurations are significantly influenced by trust relationships in developing countries, where organizations faced with environmental uncertainty and complexity may prefer, or actively seek to design, a governance structure that could try to develop a partner-specific trust (Choi, Lee and Kim, 1999). Since raising competitiveness in developing countries requires rebuilding inter-firm relations, the manner in which effective cooperation can be achieved in highly uncertain business environments as those typified by emerging economies needs to be understood (Humphrey and Schmitz, 1998). This brings about the need to investigate the issue of trust using country-specific data if the socio-cultural aspects of the country do not match the nations already studied. 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 (Choi, Lee and Kim, 1999; Doney and Cannon, 1997; Doney, Cannon and Mullen, 1998).

As a recent example to studies on trust in buyer-supplier relations, Dyer and Chu (2000) have developed a model of buyer-supplier trust that holds in the US, Japan, and Korea. Since Dyer and Chu have applied their model to two countries that are considered to have collectivistic cultures in their study, it would be expected that the model would also apply to other collectivistic cultures such as Turkey. Japanese and Turkish scores on Hofstede's (1980) dimensions regarding collectivism show Turkey and Japan have only a 9-point difference. Similarly, Turkey's and Japan's uncertainty avoidance scales are also almost the same (a 7-point difference). However, the level of development may also be a contextual factor that needs to be taken into account since trust cannot be easily designated as a cultural, as opposed to an economic, phenomenon. Hence it will be useful to test this model on a country like Turkey, which has similarities to Japan in terms of cultural dimensions, but is at an earlier developmental stage economically.

This study will focus on the Turkish automotive sector, not only because it is the third largest sector in Turkey, but because a large number of findings on the U.S. and Japanese automotive industries allow for comparisons as well. The Dyer and Chu (2000) study mentioned above also takes the automotive industries in the US, Japan, and Korea as its domain, enhancing the opportunity of comparative discussion. Furthermore, while studies such as Gules et al. (1997) and Wasti, S. N. (1998) have provided detailed background information on the buyer-supplier relations in the Turkish auto industry, the factors affecting these relations, and the development of trust between exchange partners in particular, have not been investigated. The purpose of this study is to use questionnaire data from 106 Turkish supplier firms in order to identify determinants of trust in buyer-supplier relations in the rapidly expanding Turkish automotive industry and, wherever possible, to compare results with findings from developed countries. This study will use the model developed by Dyer and Chu as its baseline and determine its fit with the Turkish case, and suggest possible changes to make the model more suitable to a developing country context.

## **THE TURKISH CONTEXT AND THE EVOLUTION OF BUYER-SUPPLIER RELATIONS IN THE TURKISH AUTOMOTIVE INDUSTRY<sup>1</sup>**

Turkey is an example of a developing country, considered to be one of the big emerging markets for global business (Jennings, 1996)—one of less than a dozen countries that, despite constant change and occasional instability, are expected to account for the overwhelming incremental growth in world imports (Garten, 1996). According to Garten (1996), Turkey will play a

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<sup>1</sup>The historical descriptions in this section are based on the detailed descriptions provided by Azcanli (1995) and Gules et al. (1997).

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. Hence, it is at the border between the developed and developing worlds, on the front line of the dynamic exchanges that will define the nature of the 21<sup>st</sup> century. Garten (1996) also notes that in recent years an economic renaissance has made the Istanbul stock market one of the most attractive in the world. Despite having entered a period of difficulties, Turkey has managed to recently undertake serious economic reforms, which include an accelerated privatization program, eased foreign investment restrictions, and reduced import charges/fees. Foreign companies are investing in Turkey as part of their global expansion strategy rather than to sell outdated technology (Gules, Burgess, and Lynch, 1997). The case of Turkey is also of special interest because of its unique cultural and historical factors. Since the establishment of the republic in 1923, Turkey can be said to be in transition from a rural, agricultural, traditional, patriarchal society to a modern, industrialized, urbanized and egalitarian one; a newly industrializing country with the society holding both traditional and modern values side by side (Wasti, S. A., 1998).

Given that trust is not strictly an economic phenomenon and is tied strongly to socio-cultural factors, the same model of determinants may not hold in each country (Sako and Helper, 1998), so it is likely that a difference will be observed for the Turkish case. In a very broad sense, Turkish sensitivities are more likely to show agreement with Japanese responses because both are generally collectivist, family-oriented societies with proud traditions. On Hofstede's dimensions, the Turkish culture is described as collectivistic, risk averse (uncertainty avoiding), feminine, and having high power distance (Hofstede, 1980). While being particularly close to Japan on the dimensions of uncertainty avoidance and collectivism, Turkey occupies an in-between level on cultural dimensions when compared to the U.S. and Japan, which perhaps makes it harder to derive directly relevant lessons from the literature on either country. Furthermore, although many nations including Turkey are defined to be collectivist, it is only in Japan where the collectivism of Japanese culture has been carried over to the companies (Tayeb, 1994). According to Triandis (1995), collectivists differentiate ingroup and outgroup members very clearly, and treat the latter very harshly in case of conflict. In Turkey, the dominant ingroup is the family and Turkish social life involves interaction with family members to a great extent (Bradburn, 1963). This is in contrast to the Japanese case. As argued by Kashima and Callan (1994), although the family or household (*ie*) represents an accurate metaphor for the Japanese organization, the Japanese household structure is different than that of a typical kin collectivist culture as it allows the expansion of the family structure beyond immediate relatives to non-kin employees. Kashima and Callan (1994) argue that in the Japanese family system, households may form a larger grouping (*dozoku*) when a branch household (*bunke*) is established by giving it a portion of the family assets. The establishment of *abunke* does not need to be through kinship. On the contrary, Turkish people have difficulty trusting and cooperating with people outside blood relations (TUSIAD, 1991). Hence, while the risk aversion scores of the Japanese and Turks are quite close, the differences in the concept of "ingroup" may make trust formation towards the buyer more difficult in Turkey than in Japan.

	<i>Uncertainty Avoidance</i>	<i>Femininity/ Masculinity</i>	<i>Individualism Collectivism</i>	<i>Power Distance</i>
Turkey	92	95	46	54
Japan	85	45	37	66
United States	46	62	91	40

Table 1. Scores of Turkey, Japan and the United States on Hofstede's (1980) dimensions.

Other contextual variables could also affect the determinants of trust. Extant research on enforcement of agreements has contrasted institutionalized forms of trust relationships in Japan with the explicit legal contracts in the U.S. However, international business transactions involving developing regions of the world are characterized by uncertain environments where neither contracts nor trust-type enforcement mechanisms may be effective (Choi, Lee and Kim, 1999). Hence, this study will take the Dyer and Chu (2000) model as its baseline model and will test how well it fits the Turkish case, given the contextual factors noted above.

The first automotive assembly operation in Turkey began in 1929 through a government supported agreement between Turkish entrepreneurs and Ford Motor Company. However, due to the international economic circumstances preceding World War II, production in this Istanbul plant quickly decreased and production ceased soon after 1934. The second attempt to create an automotive industry was in 1954, when a company called Turk Willys-Owerland Ltd. Partnership was formed to produce jeeps for the army. This factory continued production till 1970 after which it was bought out by the Ministry of Defense. Later came the formation of the Federal Turkish Trucks Factory (later renamed as TOE-Turkish Automotive Industries Ltd.) in 1954 in Gebze, and the start up of Otosan in 1959 (an alliance with Turkish partner Koc Trading Co. and Ford Motor Co.), the latter producing Ford Thames trucks and Ford Consul passenger cars. The first Turkish prototype automobile, Devrim, was produced in 1961 in Eskisehir, but this prototype was never developed into a mass production form. The first mass produced car, Anadol, based on a design by British Reliant, was built by Otosan in 1966, and its production continued until 1984.

From 1954-1980, a period during which an import substitution strategy was adopted, local content was encouraged and protection from foreign competition was observed. This prompted foreign automakers to either produce locally through joint ventures, or to quit the Turkish market. The foreign manufacturers opted for the former, and companies such as Fiat S.p.A. Torino Group and Renault began production in 1971 with local partners in Bursa. On the other hand, 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. Due to 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, noting that they would not be able to expand their markets beyond the nation's borders and that they had to use a certain quantity of local components, opted to take advantage of the protected market and emphasized price over quality when outsourcing (Nedimoglu, 1997). Within this policy, suppliers were not expected to develop new products and the buyers' main goal was to have alternative suppliers. The scarcity of local suppliers stimulated assemblers to provide technical and financial support to build their own supplier base. With the profit levels satisfactory in the market, the automakers were not prompted to develop new products even when not constrained by their licensors.

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 and played them off against each other. The increased usage of Advanced Manufacturing Technologies (AMTs) by the assemblers increased their requirements from the suppliers in the areas of quality, delivery, and flexibility.

Beginning with Opel in 1989 and Toyota in 1990, the government allowed new foreign investments. Tax rates on imported vehicles were also reduced during 1990s, forcing assemblers to compete head on with overseas competition. Local assemblers were forced to increase variety and quality. Further, under the Customs Union agreement with the European Community, Turkey agreed to adopt the standardization, measurement, accreditation, test, and certification legislation of the Community over a period of 5 years. Meanwhile, investment permissions were given to Honda and Hyundai in 1993, to Mazda in 1996, and to Kia and Daewoo for future years. These permissions initiated the production of 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 thus have lower prices. Local suppliers were pushed towards exporting their products and also getting quality certifications required in the European market. In the late 1990s, the relationships reached into a quasi-collaborative stage, where assemblers reduced their number of direct suppliers and suppliers were being encouraged to build partnerships (particularly with foreign component suppliers) to attain economic production scales, the latest technology, and higher quality. While assemblers often retained the option of importing parts, suppliers were also reluctant to get locked into a relationship with a particular buyer due to the demand volatility and economic circumstances. The level of technical support, while focusing on meeting the assemblers' demands, was relatively higher than before. Due to the increased integration with the global economy, it is expected that the collaborative arrangements between buyers and suppliers will increase in number and depth in the upcoming years.

Turkey's joining the European Customs Union in 1996 has had the impact of more stringent



quality requirements in any industrial product exported to Europe. This factor has acted as an impetus for Turkish manufacturers to study Japanese methods to reach the higher quality standards and implement quality control processes. Efforts at getting ISO 9000-9001 certifications have turned into an institutionalized norm. Even though the transplanting of Japanese manufacturing practices is one factor behind the change in more collaborative buyer-supplier relations (Gules, Burgess, and Lynch, 1997), the effects of Toyota and Honda's entrance are yet to be fully observed. At this point, the production volumes of these Japanese joint venture firms are still quite low compared to their Turkish competitors (for an overview of the players in the Turkish automotive industry, see Appendix). However, interviews with ToyotaSA's (Toyota's joint venture with the Turkish giant, Sabanci Holding) top management have demonstrated ToyotaSA's eagerness to enhance relations with the supplier base (Anon., Oct. 1995; Anon., Nov. 1995).

## **HYPOTHESES**

This section will first briefly explain the hypotheses in Dyer and Chu's cross-national study on buyer-supplier trust. The hypotheses developed in their study will be supplemented with arguments geared towards adapting their study to the Turkish context where appropriate.

Using arguments from the trust literature, Dyer and Chu (2000) expect that higher levels of trust will emerge in exchange relationships where the transactors have a long history of interacting. The development of trust implies an investment in the time dimension of relationships (Ring, 1997). Along the same lines, one can say that trust evolves through the process of a growth of knowledge and understanding of the people with whom we interact plus the actual experience of working with them (Blois, 1999). More specifically, trust is most likely to be the accumulation of prior satisfactory experiences (Das and Teng, 1998; Sako and Helper, 1998). The experience of the trading relationship indicates the underlying trustworthiness of potential partners and a deepening of trust involves a learning process (Humphrey and Schmitz, 1998). According to Doney and Cannon (1997), the length of time represents an investment both parties make in the relationship and the process of prediction can also be invoked as a relationship grows older. When exchange relationships have a history, the outcomes of previous business episodes provide a framework for subsequent interaction. With increased experience, firms are more likely to have successfully weathered critical shake-out periods in their relationship and gained a greater understanding of each other's idiosyncrasies (Doney and Cannon, 1997). We posit that the following will also hold for the Turkish case:

Hypothesis 1: The supplier's trust in the buyer is positively associated with the length of the relationship.

Dyer and Chu (2000) argue that face-to-face communication increases supplier-buyer trust by (1) facilitating the development of personal ties, thereby increasing the efficacy of social sanctions, and (2) providing superior information to assist transactors in detecting trading partners that are the untrustworthy “type.” Subcontracting in Japan, a collectivistic culture like Turkey, goes beyond such mechanisms and is also relational, drawing on face-to-face relations to help enforce minimally specified contracts (Hagen and Choe, 1998). Das and Teng (1998) also argue that communication and proactive information exchange form yet another tactic to boost trust among partners. Firms need to collect evidence about their partners’ credibility and trustworthiness, and communication facilitates this process. Furthermore, communication helps build trust because it provides the basis for continued interaction from which partners further develop common values and norms. The first item in Dyer and Chu’s statement above may be particularly relevant for the Turkish case, since in a traditional society like Turkey having close personal relationships is a common way to do business (Gudum and Kavas, 1996) and Turkish suppliers seem to have quite long relationships (an average of over slightly over 12 years) with their main customer (Wasti, 1998). Therefore we can state the following hypothesis:

Hypothesis 2: The supplier’s trust in the buyer is positively associated with the extent of face-to-face communication between the two parties.

A concept related to the length of the relationship is the anticipation of its continuity. Dyer and Chu (2000) make the argument that a buyer’s willingness to stay with the same supplier is likely to be interpreted by the supplier as a signal of commitment and trustworthiness. Along the same lines, the authors expect frequent competitive switching of suppliers to be associated with low trust. Based on the concept of the “shadow of the future” regarding the long-term commitment into the future, Sako and Helper (1998) posit that the longer the informal commitment made by the customer to continue trading with the supplier, the higher is the supplier’s trust for its customer. Furthermore, Hofstede (1980) implies that in uncertainty-avoiding cultures such as Turkey, stability would be prized higher than other forms of material gain. These arguments can also be tested as follows:

Hypothesis 3: The supplier’s trust in the buyer is positively associated with the track record of continuous repeated exchange with the buyer.

The basis for the development of trust is partially in the hands of the partners and particularly in the hands of the dominant partner (Humphrey and Schmitz, 1998). 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 and Chu, 2000; Hagen and Choe, 1998). According to Das and Teng (1998), trust is earned from partners if one adapts to the needs of cooperation in partnerships. Specifically, flexibility and the willingness to accommodate deviations from the contract when necessary are key to interfirm adaptation. Sako and Helper (1998) argue that in the automotive industry, the buyer typically has greater power in relation to its suppliers, and therefore the weaker partner is more grateful for technical assistance from its buyer. Sako and Helper

(1998) find that technical assistance from the buyer is significant in enhancing trust in Japan (a collectivistic culture) and not in the US (an individualistic culture). Dyer and Chu (2000) argue that the automaker's offer of assistance is considered a signal of goodwill and commitment because it suggests the automaker is genuinely concerned. The above arguments seem relevant for Turkey (a collectivistic culture) as well, as almost 63% of suppliers stated that they entered their current line of business with support and guidance from their main customer (Wasti, S. N., 1998)

Hypothesis 4: The supplier's trust in the buyer is positively associated with the extent of assistance provided by the buyer.

One of the trust building practices mentioned in the Japanese business is the cross-shareholding between buyers and suppliers in the vertical keiretsu (Dyer and Ouchi, 1993). Creation of mutual commitments through hostage exchange overcomes the weaknesses of implicit trust, reputation, or ethics in highly uncertain and unpredictable environments (Choi, Lee and Kim, 1999), which is typically the case in developing countries. The customer's ownership of its suppliers may be interpreted by the latter as a form of credible commitment for long-term relationship (Sako and Helper, 1998). The results from descriptive data on Turkish suppliers indicate that such a governance mechanism does not seem to be widespread in Turkey (Wasti, S. N., 1998). Almost 99% of Turkish suppliers state that they are not wholly-owned subsidiaries of their main customer, and about 97% state that their main customer do not own stock in their company. While a positive relationship was hypothesized in the Dyer and Chu (2000) model, we do not expect stock ownership to be a significant variable for the Turkish case under present circumstances.

Hypothesis 5: The supplier's trust in the buyer has no association with the extent of supplier stock owned by the buyer.

Though related to the issue of continued repeated exchange in Hypothesis 3 but not included in Dyer and Chu's model is the issue of supplier switching costs; how easily a customer can switch from one supplier to another. A signal for commitment a buyer can display is to increase its dependence on the supplier. Sako and Helper (1998) argue that the more difficult it is for the buyer to switch away from the supplier, the greater the supplier's trust in its buyer. A bilateral relation that involves investment in specific assets cannot be maintained unless the parties in the relation are effectively protected from each other's opportunism by certain arrangements, such as each party making specialized investments of value only to their joint business (Hagen and Choe, 1998). A buyer may buy a greater portion of its needs from one buyer (moving single to sole sourcing) or implement technologies that necessitate closer links between the exchange partners. Such actions will give the supplier a relation-specific skill, and hence increase the switching cost of the buyer. The more alliance-specific the investments, the more risk there is for partner firms (Das and Teng, 1998), so a buyer undertaking such cooperative purchasing strategies may be said to be increasing its switching costs. Burgess and Gules (1998) argue that the rise in TQM, JIT, and related concepts have resulted in a shift towards cooperative purchasing strategies. Such soft technologies are demanding

in their implementation, requiring the strong support of suppliers. Based on data on the Turkish automotive industry, Burgess and Gules (1998) found support to their hypothesis that soft technology implementation contributed more to explaining variations in buyer-supplier collaboration. Furthermore, as stated above, the Turkish culture is identified as being uncertainty avoiding (Hofstede, 1980), hence:

Hypothesis 6: The supplier's trust in the buyer is positively associated with the extent the buyer has high switching costs.

## METHODS

A preliminary questionnaire was developed in 1997 and presented for comments to numerous officials from automotive companies, both buyers and suppliers, and automotive associations by way of interviews that each lasted an average of 1.5 hours. 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 received by March 31<sup>st</sup>, 1998, 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<sup>2</sup>. The public guides that were used to construct the mailing list did not provide additional information about the suppliers listed, hence a comparison of early and late respondents was done on key variables to test for nonresponse bias. 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.

Among the items relevant to the study most had less than 10% missing, two had between 10-20%, and two had 22.6% missing. Means substitutions can be used for low missing data ratios (less than 10-15%) and for uncorrelated ( $r= 0.2-0.3$  or lower) data (Beale and Little, 1975; Heitjan, 1997; Roth, 1994), which was the case for this dataset. For the remaining respondents, missing values were imputed for scales using a missing data imputation procedure called "two-way imputation" (Bernaards & Sijtsma, 2000) where both the person mean and the item mean was used to impute data<sup>3</sup>. Where this was not a feasible approach, regression imputation (Buck, 1960; Little, 1988; Roth, 1994;

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<sup>2</sup> As an example, another study on the nature of trust between buyers and sellers by Doney and Cannon (1997) has a 31% response rate.

<sup>3</sup> The formula used was: (item mean + person mean for the scale - mean of item means on answered items). This formula was applied on a scale-by-scale basis to impute missing values.

Switzer III, Roth and Switzer, 1998) was utilized to supplement the data available.

### ***Testing the Dyer and Chu baseline model***

This study takes the Dyer and Chu (2000) model for supplier-automaker relations as a baseline model to compare the Turkish case to results from developed countries. Dyer and Chu's model has been applied to the U.S., Japan, and Korea, and hence its appropriateness (or lack thereof) for the Turkish case can provide interesting cross-country insights, particularly considering the fact that both Japan, Korea, and Turkey are considered collectivistic cultures (Hofstede, 1980). Simply stated, their model can be shown as:

$$\text{TRUST} = a + b_1 \text{LENGTH} + b_2 \text{FACE} + b_3 \text{CONTINUITY} + b_4 \text{ASSISTANCE} + b_5 \text{STOCK}$$

where TRUST is operationalized as the sum of the following submeasures:

1. The extent to which the supplier trusts the manufacturer to treat the supplier fairly.
2. The extent to which the automaker has a reputation for trustworthiness (following through on promises and commitments) in the general supplier community<sup>4</sup>
3. If given the chance, the extent to which the supplier perceives that the automaker will take unfair advantage of the supplier (reverse scored).

In Dyer and Chu's model, LENGTH is operationalized as the number of years since the supplier first began selling products to the automaker, and FACE is the annual "man-days" that the supplier and automaker spent in face-to-face contact during the past year. CONTINUITY is operationalized as the percentage of time the supplier's business had been renewed when there was a model change and STOCK is the percent of supplier stock owned by the automaker. ASSISTANCE is measured by the following three items:

1. The extent to which the automaker provides assistance to help the supplier improve product quality.
2. The extent to which the automaker provides assistance to help the supplier reduce

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<sup>4</sup> According to Blois (1999), given the costs and difficulties of creating a 'water tight' contract, it can be attractive to deal with a firm which has a reputation for being a good customer since one has confidence that regardless of the contract they will be anxious to treat their suppliers fairly. Blois states that a reputation is the result of the organization's past behaviour and will provide information on how the organization has previously dealt with contingencies. Also according to Das and Teng (1998), locating a partner with a good reputation seems to be an effective starting point. A firm with a reputation of being honest, fair and trustworthy gives the other party the first piece of evidence to take some initial risk. In Japan, for instance, since subcontractors maintain long term relations with large assemblers, they have considerable info about large assemblers' policies and welfare. Any unfair action by large manufacturers toward them would be discovered easily quickly disseminated through the dense web of interfirm and interpersonal relations. The cost of such negative reputation could be high as suppliers would be reluctant to take part in long-term trade relations with such an opportunistic company by investing in transaction-specific assets and skills (Hagen, James M., Soonkyoo Choe. 1998).

manufacturing costs.

3. The extent to which the automaker provides assistance to help the supplier improve inventory management/delivery.

The available data on the Turkish automotive industry provides for the testing of the above model with highly similar, if not the same, operationalizations. A trust measure was formed using the Turkish data based on 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?

The Cronbach alpha for this construct was 0.72.

The measures for LENGTH and STOCK were the same in the Turkish data as the Dyer and Chu study. CONTINUITY was measured on slightly different terms. Since model changes in the Turkish automotive industry are not as frequent as in the developed world, the question that was deemed more relevant was as follows:

"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? Yes/No."

FACE was measured by a similar measure, based on a scale ranging from 0: "Never" to 5: "Daily"<sup>5</sup>:

"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?"

ASSISTANCE was measured in a broader way than in Dyer and Chu's model. ASSISTANCE1 is similar to Dyer and Chu's operationalization, based on the following two items on a five-point Likert scale, ranging from 1: "No" to 3: "Maybe" to 5: "Yes":

"If you do not satisfy your main customer with your production (in terms of delivery date or performance), what do you think the result would be:

1. Our main customer would financially assist us in investing in more appropriate equipment
2. Our main customer would provide us with technical assistance (e.g. training) in identifying and solving problems."

This construct had a Cronbach alpha value of 0.67.

According to Ring (1997), trust is enhanced by actions that occur over and above the strict

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<sup>5</sup> 1: "Annually", 2: "Quarterly", 3: "Monthly", 4: "Weekly."

observance of norms, rules, and contracts. Burchell and Wilkinson (1997) also found that flexibility outside the contract (e.g., being ready to help in an emergency, being prepared to give and take and being willing to overlook occasional faults) was associated with trust, particularly in their British sample. While it was not included in Dyer and Chu's operationalization, we felt such a variable would help in explaining further variance in our dependent variable. Hence we decided to expand the definitions of "assistance" to delve into the nuances of its meaning for suppliers. To capture this concept, ASSISTANCE2 is was devised as a more specific measure, trying to get at the types of assistance that would normally be above and beyond the call of duty. We asked the following question, measured on a 5-point Likert scale, ranging from 1: "Not at all" to 5: "Very much":

"Does your main customer provide assistance such as buying extra components, giving you new business, reimbursing you for stocks not purchased in case of a component change, etc."

ASSISTANCE3 is another extension to Dyer and Chu's baseline operationalization. It is based on the historical accounts of the Turkish automotive industry and information collected during the pretest interviews and may be somewhat peculiar to certain nations (e.g., Japan). Gules, Burgess and Lynch (1997) have observed that the elapsed stages of the automotive industry development in Turkey follows almost the same pattern as Lamming's 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, the scarcity of local suppliers and the obligation of assemblers to increase the use of domestically produced components stimulated assemblers to provide financial and technical support to build their own supplier base. This stage, where risk sharing was high among exchange partners, is named as the "supportive phase" of buyer-supplier relations in the automotive industry (Gules, Burgess, and Lynch, 1997). In order to test if the support of buyers to the suppliers in their stage of "liability of newness" aids in the generation of trust, we asked the suppliers the following question:

"Did your company commence the production of your main component with the guidance and support of your main customer? Yes/No."

SWITCHING is measured in a multifaceted way. SWITCHING1 attempts to understand the extent to which the buyer has utilized cooperative purchasing strategies as described by Burgess and Gules (1998) that may increase its switching costs. The suppliers were asked the following question:

"Does your company deliver its products to its main customer Just-in-Time? Yes/No."

SWITCHING2 asks the supplier what percentage of main customer's needs for the product on hand was bought from their company in recent years, while SWITCHING3 tries to get at the switching threats the buyer utilizes towards the supplier. SWITCHING3 is formed by the following items, measured by a 5-point scale ranging from '1: Not at all' to '5: Very much':

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 switch to another supplier right before purchasing starts despite first working closely with your company?

This construct had a Cronbach alpha value of 0.62.

In the Turkish automotive industry, as in many other auto industries, the suppliers are typically smaller than the buyers. According to Hagen and Choe (1998), small firms have few safeguards<sup>6</sup>. Hence size (as measured by the number of employees) was included in this study as a control variable. Table 3 provides descriptive statistics for the Turkish sample. The data was found to be not multicollinear.

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<sup>6</sup>Humphrey and Schmitz (1998) give an example where the risks of opportunistic behavior from their buyer, a large Indian electric company, were greater for the suppliers, many of whom were small.



	Mean	Std. Dev.	N
<b>Trust (3 items, alpha: 0.72)</b>			
Does your main customer have a market reputation as being trustworthy and fair? <sup>a</sup>	4.3	1.0	98
Is your main customer fair towards you? <sup>a</sup>	3.9	1.0	99
If your main customer asked you to make a customer-specific investment without a written contract, how willing would your company be? <sup>a</sup>	3.1	1.2	97
<b>Length of relationship (years)</b>	12.4	7.5	104
<b>Face:</b> “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?” <sup>b</sup>	2.1	1.2	87
<b>Continuity:</b> “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?” (% answering Yes)	1.97		100
<b>Stock</b> (% owned by buyer)	1.81	11.5	99
<b>Assistance1 (2 items, alpha: 0.67)</b>			
“If you do not satisfy your main customer with your production (in terms of delivery date or performance), what do you think the result would be <sup>c</sup> :			
Our main customer would financially assist us in investing in more appropriate equipment.	1.7	1.1	82
Our main customer would provide us with technical assistance (e.g. training) in identifying and solving problems.”	3.0	1.5	86
<b>Assistance2:</b> “Does your main customer provide assistance such as buying extra components, giving you new business, reimbursing you for stocks not purchased in case of a component change, etc.” <sup>a</sup>	2.6	1.4	92
<b>Assistance3:</b> “Did your company commence the production of your main component with the guidance and support of your main customer?” (% answering Yes)	61.5		104
<b>Switching1:</b> “Does your company deliver its products to its main customer JIT?” (% answering Yes)	49.5		104
<b>Switching2:</b> Percent of main customer’s needs for the product on hand that was bought from supplier in recent years	82.8	24.7	93
<b>Switching3 (3 items, alpha: 0.62)</b>			
“Does your main customer use other domestic suppliers as an ace up its sleeve? <sup>a</sup>	3.1	1.4	97
Does your main customer use foreign suppliers as an ace up its sleeve? <sup>a</sup>	3.1	1.5	97
Does your main customer move to another supplier at the purchasing stage even after it has established close relations with your company earlier?” <sup>a</sup>	2.5	1.3	97

Table 2. Descriptive statistics on the Turkish sample.

<sup>a</sup>On a scale from 1: ‘Not at all’ to 3: ‘Somewhat’ to 5: ‘Very much’.

<sup>b</sup> On a scale from ‘0: None’ to ‘5: Daily.’

<sup>c</sup> On a scale designed as ‘1: No’ to ‘3: Maybe’ to ‘5: Yes.’

## RESULTS

Initially, the Dyer and Chu baseline model was run for the Turkish data. The results are given below (Table 3), together with the results found by Dyer and Chu for the U.S., Japan, and Korea:

	<b>Hypothesis number and expected sign in Dyer and Chu (2000)</b>	<b>Turkey</b>	<b>U.S.</b>	<b>Japan</b>	<b>Korea</b>
Length	H1 +	-0.001	-0.02	0.25***	-0.10
Face	H2 +	0.059	-0.09	0.08	-0.02
Continuity	H3 +	-0.576	0.53***	0.05	0.21***
Assistance	H4 +	0.255***	0.04	0.34***	0.35***
Stock	H5 +	0.010	0.04	-0.02	-0.07
<b>R<sup>2</sup></b>		0.17	0.26	0.12	0.20
<b>Adjusted R<sup>2</sup></b>		0.11	0.23	0.08	0.18
<b>N</b>		82	135	101	217
<b>F-value</b>		3.094**	9.1***	3.7**	10.7***

Table 3. Standardized coefficients for the baseline model by Dyer and Chu (2000). The control variable of size was insignificant.

\* p < 0.1

\*\* p < 0.05

\*\*\* p < 0.01

As can be seen from the above table, Dyer and Chu's model seems to fit other collectivistic cultures' samples better than it fits the Turkish sample in terms of factors found significant. In Japan, the length of the relationship and assistance received from the customer are found to be significant. In Korea, expectations of repeated exchange and assistance received from the customer are the significant variables (the US sample is similar to the Korean one in the first variable). In the Turkish case, the only significant variable is the one common to the data from other collectivistic cultures; namely, assistance received from the customer. In all three countries, this variable is highly significant. Due to its significance, it seems that further investigation into the concept of assistance would prove insightful.

### *Extensions to Dyer and Chu's Baseline Model*

Dyer and Chu's baseline model helps test most of the hypotheses listed in the previous sections of this paper for the case of Turkey. However, it can clearly be seen that the model has less explanatory power for the Turkish sample than for the developed country samples. Firstly, it was

noted from the descriptive statistics that in the Turkish sample the variables STOCK and CONTINUITY did not display much variation<sup>7</sup>. It seems clear that stock ownership is not a widely used governance mechanism in the Turkish automotive sector. Both variables turned out to be insignificant in the baseline model, so it seemed unnecessary to include them in further analyses. Secondly, since it was highly significant in the Japanese, Korean, and Turkish samples, the definition of the concept of ASSISTANCE was expanded as described above to include more types of help from the buyer (ASSISTANCE1, ASSISTANCE2, ASSISTANCE3), and SWITCHING was added with 3 facets (SWITCHING1, SWITCHING2, SWITCHING3) to expand the baseline model. The results of the expanded model are given in Table 4.

	<b>Hypothesis number and expected sign for Turkey</b>	<b>Standardized coefficients</b>
Length	H1 +	-0.015
Face	H2 +	0.007
Assistance1	H4a +	0.251***
Assistance2	H4b +	0.104
Assistance3	H4c +	-0.470**
Switching1	H6a +	0.393**
Switching2	H6b +	-0.007*
Switching3	H6c -	-0.167**
<b>Intercept</b>		4.196***
<b>R<sup>2</sup></b>		0.341
<b>Adjusted R<sup>2</sup></b>		0.268
<b>N</b>		82
<b>F-value</b>		4.716***

Table 4. Results of the expanded model.

\* p < 0.1

\*\* p < 0.05

\*\*\* p < 0.01

It is clear from Table 4 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. The regression model explains over a third of the variance and most of the variables are found to be significant. In this model both ASSISTANCE1 and ASSISTANCE3 are significant, while all three forms of SWITCHING are significant at differing degrees. SWITCHING1 and SWITCHING3 are significant in the predicted directions, while SWITCHING2 is significant in the opposite direction to what was predicted. ASSISTANCE2 does not turn out to be

<sup>7</sup> 100 responses were received for CONTINUITY, 97 of which were answered as Yes and 3 as NO. Likewise, for the questions measuring STOCK and percent of stock ownership were answered by 101 and 98 respondents respectively. For STOCK, only one respondent answered Yes, and the mean of percent stock ownership was 1.81%.

significant. Hence the variables newly added to the baseline model have provided a better picture of the Turkish case. It is seen that suppliers receiving financial and technical help from their customers feel more trust towards their buyer. On the other hand, it is interesting to note that suppliers who have entered their line of business with support and guidance from their main customer feel less trust. As predicted, suppliers who deliver their products to their customers Just-in-Time and those who provide a larger portion of their main customer's needs feel more trust towards their main customer. Furthermore, the more the main customer gives the impression that it may switch to another supplier, the more distrust the suppliers feels, which was an expected result.

## DISCUSSION

Dyer and Chu's baseline model, while not having high R-squared values, helps conduct cross-national comparisons in the developed countries by identifying factors significant in generating supplier trust towards their buyer. As a first step, this model has been applied to the Turkish case in this paper. This comparison is useful in comparing collectivistic cultures among each other in terms of trust. Face-to-face communication did not turn out to be a significant variable for any of the collectivistic cultures studied in this paper and Dyer and Chu. The Mediterraneans, like the Japanese, are high context communicators, so relatively small amount of new information is required for effective communication and networking (Ring, 1997). Hence, the impact of face-to-face communication on trust may be somewhat diluted for collectivistic cultures.

Sako and Helper (1998) had posited earlier that suppliers' trust of customers would not be significantly affected by the degree to which they were vertically integrated by their buyer, and their data supported their hypothesis. Even though they had argued for a positive relationship between the buyer's ownership of supplier stock and supplier's trust towards the buyer, Dyer and Chu (2000) could not find support for this hypothesis in any of the three countries they studied. This relation also holds for the Turkish sample, further reinforcing Sako and Helper's findings and expanding generalizability on this issue. It should also be noted that stock ownership was not found to be common practice in the Turkish case, which is a different case compared to the earlier ones, as Turkey has a less developed and more turbulent economy. It may be the case for such economies that organizations act in an even more risk averse mode, given the uncertainties in the environment.

From the results in Table 3, it seems clear that assistance is the key factor in all three collectivistic cultures studied in this paper. The strength of this variable suggested that it might be worthwhile to analyze it in further detail. Similarly a variable dealt with in the literature, i.e. switching costs, which was not included in the Dyer and Chu model, was added to the model.

The extended model had better a R-squared value and more significant variables for the Turkish sample than the baseline model, indicating the need for enhanced measurement for certain

key concepts such as assistance. As in the baseline model, the extended model also shows assistance from the customer to be highly significant. According to this result, Turkish suppliers receiving technical and/or financial support from their main customers when they face problems feel trust towards their buyers. However, Turkish suppliers that have started their line of business with the support and guidance of their main customer feel distrust towards their customer. This finding, while contrary to our expectations, may be explained to some extent by considering the history of the relationship. It is interesting to note that while length of the relationship is significant in Japan, this factor did not turn out to be significant in the Turkish case. It would be expected that during the history of the relationship, both buyers and suppliers would get to know each other's work habits and tendencies, generating interorganizational trust. In Sako and Helper's (1998) study, the length of past trading to date were associated with greater opportunism in the US. US automotive suppliers frequently experienced untrustworthy behavior from their customers in the past and this bias in expectations was carried forward to current practices (Sako and Helper, 1998). Similarly, the Turkish suppliers may feel locked into a relationship when it has been going on for a long time and when there is the indebtedness of initial support from the customers.

The second variable added to the baseline model, namely switching, also turned out to be significant for the Turkish sample with all its operationalizations. Incidentally, Sako and Helper (1998) found this concept insignificant in the US and in Japan, both developed countries. As suggested by Burgess and Gules (1998) for the Turkish context, soft technologies such as the TQM, JIT, and related concepts are demanding in their implementation, requiring the strong support of suppliers. We also find that suppliers delivering their product Just-in-Time 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. Also, as expected, the less threat the supplier feels from its main customer regarding switching to another supplier, the more trust it feels. This may be explained in terms of the uncertainty avoiding nature of the Turkish culture. The more security the supplier feels in the relationship, the more trust is generated, given the turbulent economical conditions of most developing countries. Contrary to our predictions, suppliers who deliver a greater portion of their customers' requests feel less trust towards their customers. It would be expected that increasing its dependence on a particular supplier would help the customer gain the supplier's trust. It may be the case that large sales may make small suppliers dependent on their buyers in return, generating a feeling of vulnerability and distrust.

## CONCLUSION

This study is an early contribution to the literature on trust between buyer-supplier relations in the context of developing countries. The study adds insight in several ways: 1) It tests an existing

theoretical model that applies to industrially developed countries (the US, Japan, and Korea) in the context of a developing country, namely Turkey. 2) it brings extensions to the original model that enhance explanatory power and hence provide suggestions for the measurement of certain broad concepts, 3) it tries to discuss similarities and differences across the Turkish and Japanese cultures, and 4) it adds to the comparative literature on the world automotive industry.

Stock ownership is not a widespread phenomenon in Turkey, hence other trust-building activities need to be incorporated to signal trust from a buyer to its suppliers. Similarly, since almost all Turkish suppliers stated that they got repeated orders from their customers, the effect of expectations on continued repeated exchanges could not be fully captured for the Turkish case either. However, some important insights were gained through this study. First and foremost, it can be said that, like in other collectivistic cultures, financial and/or technical assistance from the customer is very important in generating trust towards the buyer for the Turkish sample. Unlike in Japan, the length of the relationship is not significant in Turkey, implying that the nature of the relationship, rather than its duration, is more important and should be measured separately. The fact that not all collectivistic cultures displayed the same results on other variables may also indicate that the level of development may be one of the contextual factors that needs to be considered in future research in the field of interorganizational relations.

As a side issue, the fact that stock ownership turned out to be insignificant in all countries, developed or developing, examined so far in the literature warrants further investigation. Stock ownership is a more common practice in Japan, but Dyer and Chu's results imply that it is other structural arrangements that might accompany stock ownership and not the portion of stock owned that generates trust in Japan. For other countries, stock ownership may even be interpreted as domination and may even cause distrust. Hence the relevance of this variable needs to be fully understood in future research.

It can also be implied from the results that in uncertainty avoiding cultures, suppliers do not like to feel vulnerable towards their buyer. Any over-dependence on customer sales or threat of switching from the buyer creates distrust in suppliers that are typically smaller and less powerful than their buyers. However, buyers can alleviate this distrust to an extent by collaborative purchasing strategies where more information is shared across organizations, such as JIT delivery. This may be a particularly useful strategy for high risk averse cultures.

This study also showed the importance of utilizing multiple operationalizations of broad concepts such as help or switching costs. Additional facets of the same concept that can be captured with alternative operationalizations can provide further insights into complicated phenomena such as interorganizational relations measured in cross-national settings.

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## APPENDIX

General information about Turkish automotive manufacturers. Detailed information on two tractor manufacturers, Tumosan and TZDK were not available. Source: Otomotiv Sanayii Derneği (2000).

Firm	Place of Production	Starting Year of Production	Licence	Share of foreign capital (%)	Vehicle Type	2000 Capacity	1999 Production
Anadolu Isuzu	Istanbul	1966	Isuzu	29.75	Truck Pickup Mini bus Midibus	7200 2400 1000 2600	3600 1454 0 1647
BMC	Izmir	1966	Cummins	0	Truck Pickup Bus Minibus Midibus	10000 5000 500 5000 1000	1773 3928 145 160 149
Chrysler	Kocaeli	1964	Chrysler	0	Truck Pickup Road tractor	4500 4500	1331 1477 10
Karsan	Bursa	1966	Peugeot	0	Pickup Minibus Midibus	15000 5000 5000	3603 1446 5637
M.A.N.	Ankara	1966	MAN	97.8	Truck Bus Road tractor	1500 1000 1250	118 467 232
Mercedes Benz Turk	Istanbul Aksaray	1968 1985	Mercedes Benz	85	Truck Bus Midibus Road tractor	8100 2100 0 0	1177 1521 2 69
Opel Turkiye*	Izmir	1990	GM Opel	100	Passenger car	25000	4297
Otokar	Sakarya	1963	KHD/Land Rover	0	Pickup Minibus Midibus	3200 3200 300	2398 836 0
Ford Otosan	Istanbul Eskisehir	1959 1983	Ford	41	Truck Pickup Minibus Passenger car	14400 10000 15000 25000	1644 16529 9124 804
Otoyol	Sakarya	1966	Iveco-Fiat	27	Truck Pickup Midibus Road tractor	5500 2500 3000 1200	1678 1000 2497 0
Oyak-Renault	Bursa	1971	Renault	51	Passenger car	160000	125026
Temsa	Adana	1987	Mitsubishi	0	Truck Pickup Bus Midibus	7000 6000 1300 1300	1464 1402 194 428
Tofas	Bursa	1971	Fiat	37.8	Passenger car	250000	65510
ToyotaSA	Sakarya	1994	Toyota	50	Passenger car	100000	9041
Traksan	Kocaeli	1994	Universal	0	Farm tractor	N/A	0
Turk Traktor	Ankara	1954	New Holland	37.5	Farm tractor	35000	11866
Uzel	Istanbul	1962	Massey-Ferguson / Perkins	0	Farm tractor	30000	11715
Hyundai Assan	Kocaeli	1997	Hyundai Motor Co.	50	Passenger car Pickup Minibus	10000 15000 5000	10714 5725 936
Anadolu Honda	Kocaeli	1997	Honda	50	Passenger car	30000	6649

\* Recently closed down its manufacturing operations.