

Uncertain Supply Chain Management

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The role of quality in supply chain management in development of brand equity

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ABSTRACT

This paper presents an empirical investigation to study the role of quality in supply chain management in development of brand equity. The study uses two questionnaires, one for measuring quality in supply chain adopted from Fynes et al. (2014) [Fynes, B., De Burca, S., & Marshall, D. (2004). Environmental uncertainty, supply chain relationship quality and performance. *Journal of Purchasing and Supply Management*, 10(4), 179-190.] and the other for measuring the brand equity, which was adopted from Buil et al. (2013) [Buil, I., De Chernatony, L., & Martinez, E. (2013). Examining the role of advertising and sales promotions in brand equity creation. *Journal of Business Research*, 66(1), 115-122.]. The survey has accomplished among auto part producers in Iran. The study selects 385 randomly selected people who were active in this industry. Using Spearman correlation ratio as well as Stepwise regression techniques, the study has concluded that there were positive and meaningful relationships between three supply chain factors, namely relationship, commitment and compatibility, and brand equity.

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1. Introduction

During the past few years, one of the primary concerns in supply chain management has been to determine how to setup an appropriate quality within supply chain. There are literally several studies on detecting uncertainties associated with supply chain quality (Tan et al., 1998). According to Fynes et al. (2005), there are several studies concentrating on the interaction between the different dimensions of supply chain (SC) relationships including trust, commitment, adaptation, communication and collaboration. Fynes et al. (2005a) investigated whether or not it is possible to measure the multi-dimensional nature of SC relationships and learned the impact of SC relationships on quality performance. They developed a conceptual framework by considering different dimensions of SC relationships and quality performance and examined it using the data from 200 suppliers in the electronics sector in the Republic of Ireland. They reported positive and meaningful relationships between different SC factors and quality performance. Fynes et al. (2005b) in other study also reported that SC relationship quality had an impact on SC performance quality and the competitive environment could moderate this relationship. Vickery et al. (2003) investigated the performance implications of an

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integrated supply chain strategy, with customer service performance as well as financial performance as performance constructs. They determined two major components of an integrated SC strategy; namely integrative information technologies and SC integration. The proposed model was examined based on data from a sample of some 150 independent first tier automotive suppliers to the Big 3 in North America. The results indicated positive direct relationships between integrated information technologies and SC integration, SC integration and customer service, and customer service and performance. They also determined an indirect relationship of SC integration to financial performance through customer service. Li et al. (2006) conceptualized and developed five dimensions of supply chain management (SCM) practice including strategic supplier partnership, customer relationship, level of information sharing, quality of information sharing, and postponement and examined the relationships between SCM practices, competitive advantage, and organizational performance. Kuei et al. (2001) examined middle managers' perceptions on the relationship between SC quality management practices and organizational performance. They reported that high quality-tendency systems could yield better performance than low quality-tendency systems on cost savings. High quality-tendency firms in their survey could be differentiated from medium quality-tendency firms in areas such as productivity, sales growth, and earnings growth. Medium quality-tendency systems also appeared to be differentiated from low quality-tendency systems on indicators like employee satisfaction, productivity, and sales growth. Their results recommended that organizational performance could be enhanced through improved SC quality management.

2. The proposed study

This paper presents an empirical investigation to study the role of quality in supply chain management in development of brand equity. The study uses two questionnaires, one for measuring quality in supply chain adopted from Fynes et al. (2014) and the other for measuring the brand equity, which was adopted from Buil et al. (2013). The survey has accomplished among auto part producers in Iran. The population of the survey includes all experts who were involved in auto part producing in Iran. The sample size is calculated as follows,

$$N = Z_{\alpha/2}^2 \frac{p \times q}{e^2}, \quad (1)$$

where N is the sample size, $p = 1 - q$ represents the probability, $z_{\alpha/2}$ is CDF of normal distribution and finally ε is the error term. For our study we assume $p = 0.5$, $z_{\alpha/2} = 1.96$ and $e = 0.05$, the number of sample size is calculated as $N = 386$. We have designed a questionnaire and distributes it among 400 randomly selected people and managed to collect 386 properly filled ones. Fig. 1 shows personal characteristics of the participants in our survey.

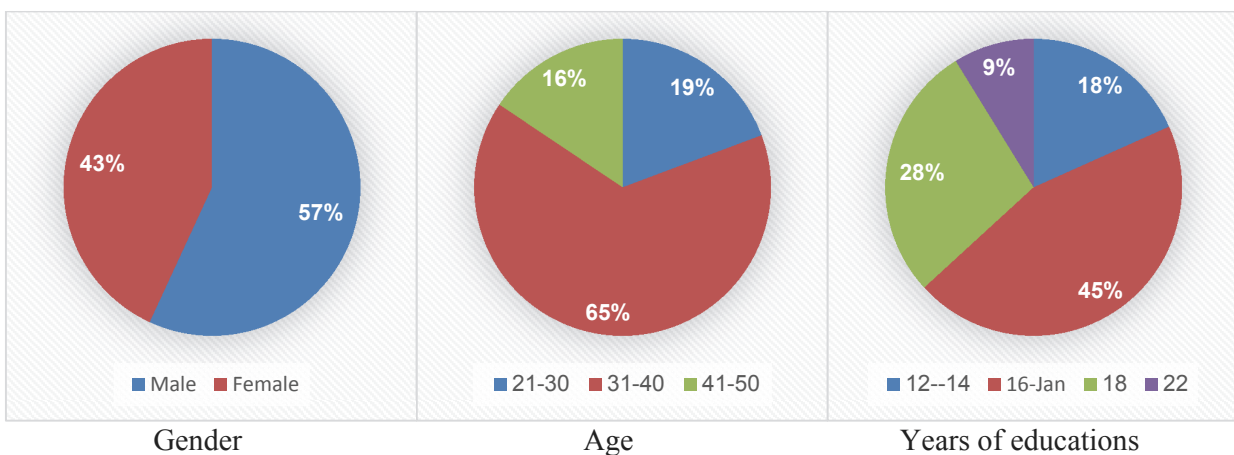


Fig. 1. Personal characteristics of the participants

As we can observe from the results of Fig.1, 57% of the participants were male and the remaining 43% were female. In terms of their age, most participants were middle aged people and most participants in our survey hold good educational background. Moreover, Fig. 2 demonstrates participants' job experiences as well as job titles and we can observe that 39% of the participants were manager and 61% of them were regular employees. In addition, 71% of the participants maintained at least 5 years of job experiences.

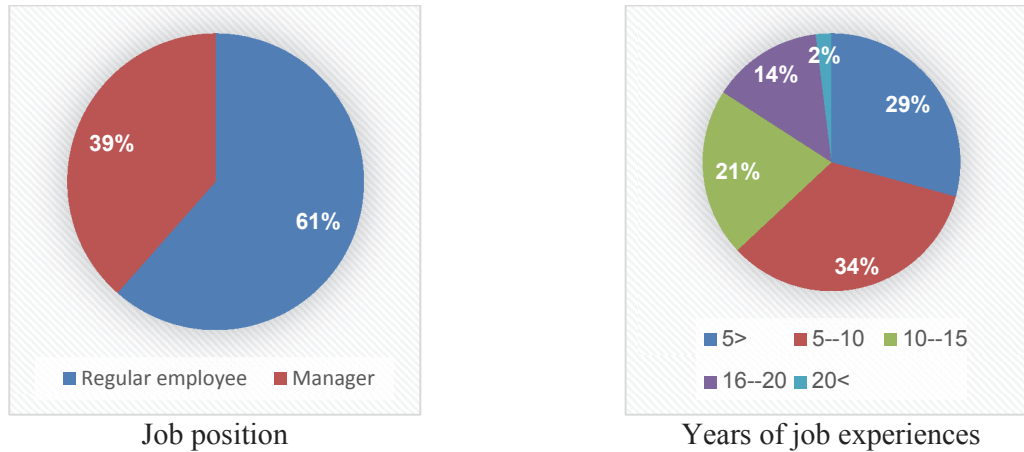


Fig. 2. The summary of job title and years of job experiences

For the proposed study of this paper, we examine the effects of six variables, trust, compatibility, communication, relationship, commitment and cooperation among partners on brand equity. Fig. 3 demonstrates the structure of the proposed study.

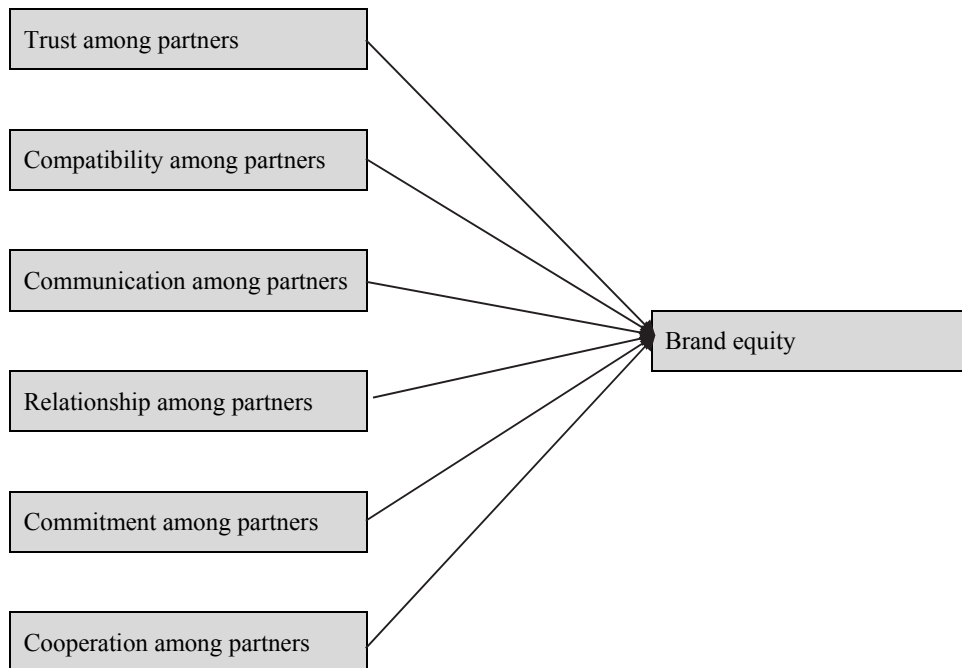


Fig. 3. The structure of the proposed study

As we can see from Fig. 3 there are six hypotheses associated with the proposed study of this paper. The implementation of Kolmogorov-Smirnov test has indicated that the data were not normally distributed and therefore, we use Spearman correlation test to examine the hypotheses of the survey.

3. The results

In this section, the results of the implementation of Spearman correlation as well as Stepwise regression techniques are presented. Table 1 shows the results of our survey.

Table 1
The summary of Spearman correlation test

Hypothesis	Correlation	Sig.	Result
Trust → brand equity	0.203	0.000**	Confirmed
Compatibility → brand equity	0.408	0.003**	Confirmed
Communication → brand equity	0.399	0.0015**	Confirmed
Relationship → brand equity	0.247	0.000**	Confirmed
Commitment → brand equity	0.352	0.000**	Confirmed
Cooperation → brand equity	0.360	0.009**	Confirmed

*Sig. < 0.05

**Sig. < 0.01

According to the results of Table 1, all hypotheses of the survey have been confirmed and there were positive and meaningful relationships between six strategies and brand equity. The results have also indicated that compatibility strategy plays the most important role followed by communication, cooperation and commitment. Table 2 presents the results of Stepwise regression model,

Table 2
The summary of Stepwise regression

Variable	Change coefficient	Standard error	Standard coefficient	t-value	Sig.
Intercept	43.756	3.520		11.392	.000
Compatibility	.531	.283	.364	2.614	.016
Communication	.464	.247	.318	2.440	.000
Commitment	.287	.221	.294	2.186	.003

R-Square = 0.209

As we can observe from the results of Table 2, compatibility has maintained the highest positive impact on brand equity followed by communication and commitment.

4. Conclusion and discussion

In this paper, we have presented an empirical investigation to learn more about the effects of quality in supply chain on brand equity in Iranian auto part maker industry. The study has adopted two questionnaires, one for measuring the quality of supply chain management and the other for measuring brand equity and executed the survey among 385 randomly selected people who were active in this industry. Using Spearman correlation ratio as well as Stepwise regression techniques, the study has concluded that there were some positive and meaningful relationships between three supply chain quality factors, namely relationship, commitment and compatibility, and brand equity. The results of this survey are consistent with other findings in the literature (Ulaga & Eggert, 2006).

Stank et al. (2001), for instance, reported that collaborating with customers and suppliers was the first step toward effective collaboration within service organizations. Lin et al. (2005) reported that Quality Management (QM) practices were substantially correlated with the supplier participation strategy and this influenced tangible business results, and customer satisfaction levels. They also reported that QM practices were substantially correlated with the supplier selection strategy. Narasimhan and Nair

(2005) investigated the antecedent role of quality, information sharing and SC proximity on strategic alliance formation and performance and using structural equation modelling, they provided similar results with the proposed model of this paper.

Lai et al. (2010) investigated the effects of corporate social responsibility on brand performance by studying the mediating impact of industrial brand equity and corporate reputation. They reported that that corporate social responsibility (CSR) and corporate reputation had positive impacts on industrial brand equity and brand performance. Moreover, corporate reputation and industrial brand equity could partially mediate the relationship between CSR and brand performance. Kim and Cavusgil (2009) investigated the effect of supply chain integration on brand equity. They reported that both interfirm system integration and SC responsiveness had a direct positive impact on brand equity. They also reported that the effect of interfirm activity integration on brand equity was completely mediated by SC responsiveness.

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