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A Relational Study of Supply Chain Agility and Firms' Performance in the Services Providers

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ABSTRACT

The link between agile supply chain dimensions and business performance in the Iranian service industry is assessed in this study. A questionnaire covering important agility criteria identified in the literature was designed and administered to a sample of 420 managers and users of supply chain in service providers. The response rate achieved was 16%. Validity and reliability were statistically tested. Line regression analysis was also used and all tests confirm normal distribution of data. By testing the full supply chain related with agile practices, the findings indicated there was a significant connection between supply chain agility and business performance such as user satisfactions, information systems and advertisement.

Keywords: Supply Chain Agility, Firm Performance, Industrial Organization, Iranian Servies Industries
JEL Classifications: L16, E01

1. INTRODUCTION

According to previous studies, supply chain management (SCM) integrates key business processes, from raw material suppliers to product, service and information end users (Lambert and Cooper, 2000). SCM is a collaborative method to commerce through the planning and control of materials and information of dealers to end clienteles (Golroudbary and Zahraee, 2015). At first, SCM was supposed as the logistics of manufacturing and distribution, which expand from customers and suppliers. Nevertheless, it is now conceptualized as the integration of all business processe. Thus, the new SCM model includes additional business functions, such as extensive suppliers and end customers (Pihkala et al., 1999; Yusuf et al., 2014).

The supply chain presents many attractive challenges for effectual system skill. Supply chain members should be compete as dependent members. The most critical matter faced by companies today is how to deliver products or materials fast, at low cost and good quality (Zahraee, 2016; Memari et al., 2013). The product used by the end users to adding value to the product before it is consumed. There are high levels of uncertainty at each SCM stages causing it to be known as a complex process (Zahraee and Kafuku, 2014). Furthermore, some factors like globalization have intensified uncertainty and risk contact of supply chains. (Gharajedaghi, 2011; Skyttner, 2005). The results from the study give to helpful management of services and distribution, which as a result will support service needs and products (Ngai et al., 2011). Hill (2000) asserted that business have the income and performance to provide a service from the starting to the finishing (Hill, 2000). Ramdas and Spekman (2000) contended that because purchased goods and services account for 50-70% of a manufacturing company's potential value, the firm's competitive advantage depends largely on the links it forges with external organizations rather than its internal capabilities (Yusuf et al., 2014). Furthermore, Richardson (1972), and Grandori and Soda (1995) argued that from a transaction cost economics point of view, the industry should take cognizance of similarities and complementarities of activities. In fact, some activities in the value stream of the service delivery system are often not undertaken

by the organization itself but sourced from external vendors (Yusuf et al., 2014). This supports the need to successfully deal with the inner and outer store network stages as a coordinated entirety. The administration production network is naturally exemplified by the above attributes, with a plenitude of little and medium-sized ventures (SMEs) that give administrations and innovation to bolster vitality sparing operations. How well these administration suppliers are overseen as a major aspect of the general inventory network of real organizations is of critical significance to the viability and proficiency of the administration production network.

The overview results reported in this study show the connections between the measurements of readiness and business execution. This study is isolated into four sections. Taking after the presentation, the main part contains the writing audit, which looks at worries in production network administration. The second part talks about the approach, including the exploration questions, test profile and information gathering. The third segment introduces the outcomes and investigation trying to answer the examination questions. The fourth and last area contains the conclusions and recommendations for further research.

2. LITERATURE REVIEW

Supply chain agility has been explored in a number of studies. It is defined with respect to the agile enterprise (Whitten et al., 2012; Gehani, 1995; Breu et al., 2002; Browne and Zhang, 1999), products, the workforce (Breu et al., 2002), capabilities (Yusuf et al., 2014), virtual teaming (Bal et al., 1999), and the environment (Robertson and Jones, 1999). This supports the need to successfully deal with the inner and outer store network stages as a coordinated entirety. The administration production network is naturally exemplified by the above attributes, with a plenitude of little and medium-sized ventures (SMEs) that give administrations and innovation to bolster vitality sparing operations. How well these administration suppliers are overseen as a major aspect of the general inventory network of real organizations is of critical significance to the viability and proficiency of the administration production network.

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Goldman et al. (1995) defined agility as a dynamic, context-specific, aggressive change that embraces and pursues growth, success, profit, market shares and customers (Goldman, 1995). Gehani (1995) and Gligor and Holcomb (2012) contended that an agile organization can quickly satisfy customer orders, introduce new products frequently in a timely manner, and speedily get in and out of strategic alliances with trading partners (Gehani, 1995; Wilding et al., 2012). In this case, the nimbleness of alliance and partnership formation also constitutes agility, underscoring that the notion of agility is context-specific (Goldman et al., 1995; Whitten et al., 2012). Readiness has likewise been characterized regarding particular exercises and operational issues. Kidd (1994) proposed an operational meaning of nimbleness as a blend of various ventures, such that each has some center abilities or skills to add to a joint business operation. Along these lines, agreeable undertakings are empowered to adjust and react rapidly to changing client prerequisites (Yusuf et al., 2014).

Kumar and Motwani (1995) characterized readiness as an association's capacity to advance exercises quickly on a basic way, which is an immediate marker of the association's ability to contend on the premise of responsiveness. In this way, lithe supply chains use absolute process duration pressure as a parameter of rivalry (Mason-Jones et al., 2000). Similarly, agile supply chains may be defined as being about mastering market turbulence (van Hoek et al., 2001). Different approaches such as lean tools are implemented in industry and service environment in order to improve the efficiency of resources (Zahraee et al., 2015). Companies implement lean concept to keep their competitiveness over their competitors by improving the organization's productivity (Rohani and Zahraee, 2015; Zahraee et al., 2014). This requires particular capacities, notwithstanding those achievable by method for incline considering. A key thought in this definition is the way that dexterity is based on leanness. In this manner, an association needs to wind up incline by executing hones that will decrease operational waste before it can accomplish dexterity. Leanness and deftness are therefore corresponding as opposed to totally unrelated. In this manner, leanness and deftness can be incorporated (Yusuf et al., 2014). From a manufacturing perspective (Snow et al., 2000; Yusuf et al., 2014; Bargshady et al., 2014), agility can be defined as the successful adoption of competitive bases (speed, flexibility, innovation proactivity, quality and profitability) through the integration of reconfigurable resources and best practices in a knowledge-rich environment to provide customer-driven products and services in an uncertain market setting.

The consistent subjects can be outlined as client affectability, system reconciliation, process mix, and utilizing the effect of individuals and data. These four foremost measurements of spryness will be tried for their effect on administration business execution. It is vital in this manner for the real business administrators to lead the advancement of SCM. This is progressively being perceived, as significant administration supplier organizations for instance, trust that the light-footed store network as opposed to inner operations will turn into the primary wellspring of execution change. Truth be told, SCM practices are currently seen as offering chances to upscale execution when the scope for cutting inward expenses and re-designing business forms has been depleted or is non-existent. This takes after the pattern effectively set in different segments (Ramdas and Spekman, 2000).

As an increasing number of multinational companies in the sector streamline and focus on their core competencies (Yusuf

et al., 2014), the challenge is to be able to operate as system integrators (akin to the much publicized case of Boeing in the aerospace industry). This includes dealing with a mind boggling web of suppliers, administration suppliers, other working organizations, and clients over the worth chain. The business' quality chain includes investigation, creation, refinement, dispersion and promoting. Albeit some advancement has been made in industry with respect to the utilization of inventory network innovations, for example, EDI, it remains slacking in the utilization of coordinated arranging and booking over the production network. In any case, dangers, venture instability, and prospecting and generation expenses are still among the most elevated on the planet, even in the wake of reducing cost pressure as an aftereffect of all inclusive activities that look to fortify incline rehearses (Swafford et al., 2008). A key challenge in the industry today is, therefore, finding organizational solutions to enhance supply chain agility and performance (Yusuf et al., 2014; Wilding et al., 2012; Sletbakk Ramstad et al., 2010; Xia and Li-Ping Tang, 2011).

3. METHODOLOGY

A questionnaire was designed to collect data for this study. In order to achieve the objectives, information and communications technology (ICT) service companies were selected as the population for the study. The data were obtained from various ICT service firms in LinkedIn. This list of service firms consists of ICT service companies. Personnel partaking in the survey were managing directors, executive managers as well as quality managers and executives. From 50 firms and 420 selected respondents, only 67 managers and executives responded to the questionnaire.

In order to attain better insight into agility in service firms and its impact on performance, it is important to explore the prevalence of the four principal dimensions of agility and their attributes, such as customer satisfactions, impact of information, impact of people, and intensity of change.

Therefore, the following questions are posed in this study: (1) What is the relationship between the significant factors of the service supply chain agility and firm performance? (2) What is the correlation between service supply chain agility attributes and firms performance?

The questions were designed on a 5-point Likert scale to evaluate the coverage of explanation on each item. The scale ranged from 1 to 5, where 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly agree. A major consideration in the current survey tool design was to maintain its brevity with focus on obtaining a sufficient response rate.

For reliability testing, Cronbach's alpha was utilized. According to Sekaran, reliability testing is used to indicate the instrument's stability and consistency. In general, the agreed-upon lower limit for Cronbach's alpha is 0.70 (Tippins and Sohi, 2003). Emails were also sent to the respondents, requesting their cooperation in filling out the questionnaires.

4. DATA ANALYSIS AND FINDINGS

The SPSS statistical package (version 21) was employed to analyze the data. Different analyses were done with SPSS, such as demographic analysis to determine the character of respondents and correlation analysis to demonstrate the relationships between the supply chain and firm performance and to obtain an accurate extent of the relationships between the supply chain and firm performance.

4.1. Demographic Analysis

Table 1 presents some demographic characteristics of the survey respondents, including: (i) Size of organizations based on the employees' number, (ii) respondents' education, (iii) work experience, and (iv) age. Table 1 also presents the results of this investigation.

4.2. Correlation Analysis

Table 2 shows the variables of each factor in business performance and SCM that are used for correlation analysis.

Through correlation analysis, the link between supply chain dimensions and firms' performance is recognized. This analysis showed the relationship between these two dimensions based on the variables identified in Table 2.

Table 3 provides the brief correlation analysis results as discussed above. According to Table 3, the strongest relationship is between advertising and better competition in service firms.

Table 1: Demographical analys1is

Demographic	N	Minimum	Maximum	Mean	Standard deviation
Size of organization	67				
Experience	67	4.00	18.00	11.835	5.29869
Age	67	24.00	48.00	36.281	6.65824
Education	67	1	3	2.31	1.744

Table 2: Factors and variables of dimensions

Dimensions	Factors	Variables
Supply chain agility	Customer satisfactions	On-time delivery Customization of products Increase customer value Customer relationships
	Impact of information	Accessibility Information sharing Responsibility
	Impact of people	Team based performance Reward Team spirit
	Intense of change	Quick decision making Innovation Customer change
	Advertising	Promotion Communication Media
Firms performance	Earnings Profit Market share Better compete	

Table 3: The correlation analysis results

Factors	Firms performance			
	Earning	Profit	Market sharing	Compete better
Customer satisfactions	0.406**	0.404**	0.230	0.429**
Impact of information	0.456**	0.332*	0.467**	0.352*
Impact of people	0.387*	0.313*	0.243	0.367*
Intense of change	0.287*	0.321*	0.203	0.215
Advertising	0.457**	0.418**	0.220	0.483**

*Correlation significant in P=0.05, **Correlation significant in P=0.01

A strong relation was also found between factors such as information impact and market sharing, advertising and earning, information and earning, customer satisfaction and earning, profit and customer satisfaction, profit and advertising, and customer satisfaction and better competition. The weakest relationship found through this study is between intensity of change and management change, especially among its variables and market sharing.

5. RESULTS AND DISCUSSION

In order to examine the relationship between the dimensions of service firms' supply chain agility and business performance, correlation analysis was carried out on the agile supply chain factors attributes and firms performance. In assessing the correlation between agility attributes and firms performance the correlation analysis was done on the five factors. The findings (Table 3) indicated that there were three of the agility attributes which correlated with firms performance very strongly and significantly. The agility characters that presented significant relationship with business performance were user satisfaction, impact of information and impact of advertising. On the other hand, the correlations between impact of people and intensity of change on business performance were not significant.

The results of the analysis reported in Table 3 demonstrated that there was a significant correlation between earning and customer satisfaction. Moreover, there were relationship between advertising and information, which are significant with a $P < 0.01$. Also, it was noted that advertising and customer satisfaction had a strong and important relationship with profit. For market sharing as a factor of firm performance there was a significant relationship with its and information. Finally, it found that there were important and effective relation between firm performance and customer satisfaction and advertising.

In comparison with other research works, there were some similarities in terms of findings, such as a strong relationship between information and customer satisfaction (Yusuf et al., 2014; Swafford et al., 2008; Ngai et al., 2011).

However, a strong relationship between people and intensity of change was not found in the current study as in prior literature (Yusuf et al., 2014; Goldman, 1995).

In this study, a new and significant relationship was found between advertising and supply chain agility. Advertising can impact firm performance efficiency as a new dimension that was not identified in previous studies.

6. CONCLUSION

The findings from this study indicated there was a relationship between supply chain agility and firm performance. Moreover, the relationships and significance of each supply chain agility dimension with firm performance were clarified.

This study presented the impact of supply chain agility on business performance in the services industry of Iran. The findings highlighted the significant role of user satisfactions, information systems and advertisement as supply chain agility factors in earning, profiting and better competitive so they could enhance the firm performance. The results supported the claim that supply chain agility capabilities could enhance the business. Moreover, this study suggested a new model of the supply chain agility role on firm performances. The relationships between the effectiveness supply chain agility variables as the independent variables and business performance as a dependent variable tested. The current research results supported the fact of businesses should improve their supply chain agility skills and capabilities to improve their performance especially in services industries.

The findings would be important for the Iranian services industries which needs to implement effective supply chain to boost their business. Future researchers would extend the scope of this study such as considering how other supply chain agility capabilities would facilitate orgaisations performance. Our findings were limited by the respondents' demographics, therefore, it would be significant for the researchers and managers to test and run these findings in different firms. This study was done only in the service firms, so the present findings are limited to service companies. This could be addressed in further studies concerning firm performance and SCM. The findings would be helpful for management and decision makers in service companies who wish to improve their firms' performance.

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