Collaborations and Operational Flexibility on Strategic Orientations-Performance: 3PLs User Perspective

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Abstract: This study seeks to explore the possible effects of strategic orientations on performance in which firm has outsourced its logistic functions to third-parties (3PLs). A sample of 193 companies in Pearl River Delta with experiences in 3PL services were identified for this study. Collaborations and operational flexibility mediated the relationship between strategic orientations and performance in structural equation modeling. The data analysis showed firstly, strategic orientations had direct effect on logistics performance and indirect effect on logistics performance through collaborations and operational flexibility. Secondly, strategic orientation had no direct effect on market performance but three indirect ways to affect on market performance: the first one was through collaborations and operational flexibility, the second one was through logistics performance, the third one was through collaborations, operational flexibility and logistics performance. Based on these findings, it is suggested that firms have to consider outsourcing non-core functions to the outsiders for getting a good result in the market. Hence, a conclusion was arrived that the collaborations with third party logistics service providers is one possible strategic move for firms in advancing the operations.

Keywords: Strategic orientations, Collaborations, Operational flexibility, 3PL

I. Introduction

In the last ten years, China has been increasingly integrated into the world economy at a stunning pace [26]. Its rapid economic development and drastic change in the marketplace provided great opportunities for firms in China [20]. To capture these opportunities, the strategic marketing literature suggests that firms have to be competitor and customer oriented. A firm's strategic orientations is held to be the primary predictor of its market performance [7]. It was, however, evidenced in recent research works that the link between orientation and performance may not fully reveal the whole picture of firm's results [21]. In view of the relationship theory, it is held that firms can get more by working closely with third parties. Such effect may account for the firm's performance and mediate the orientation-performance link. Hence, collaboration with third parties is conceived to be one of the major determinants of firm's market performance. This study is founded under this research proposition to empirically investigate the interrelationship among strategic orientations, collaborations, operational flexibility, logistics performance and market performance.

In the following pages, past research works on strategic orientations, collaborations, operational flexibility, logistics performance and market performance are first reviewed leading to the development of a conceptual model and hypotheses. Data analysis and results are then reported after research methods. Subsequently, conclusions are drawn based on the findings and presented before limitations and future research.

II. Literature Review

Strategic Orientations

Gatignon and Xuereb [9] defined strategic orientations as the specific approach that firms implement in achieving a superior performance. An example of adopting strategic orientations is to direct organizational resources to collect and gather information regarding competitor's activities and customer's needs [17]. Such orientations are found to strongly influence the organizational culture and behavior that determine the firm's market performance [15] [23]. In this study, strategic orientations are composed of two dimensions: competitor orientation and customer orientation. Competitor orientation is defined as the ability and willingness of firms to identify, analyze, and respond to competitors' actions [15]. It was suggested that this orientation is significantly related to market performance by enhancing the firm's competitiveness [18].

Customer orientation means the provision of products and services that can fully satisfy the need of customers [8]. Zhou et al. [27] reported that customer orientation has a positive effect on firm's performance.

Collaborations

Collaborations are defined as how well the firm's operations are being combined with third-parties and internal departments. It refers to the firm's willingness in sharing information, risk and even profit with partners to create mutually beneficial outcomes for all. In a company, usually 3PLs collaborate directly with logistics department, so 3PL, logistics department and market department need to work closely to share logistics and market information in order to improve logistics performance and satisfy customer needs.

In this study, 3PL collaboration means the third party logistics providers and the company they served work closely to help the company to be better in the market. A number of studies have focused on how firms capitalize on their unique resources by managing relationships to encourage interfirm cooperation and collaboration [2] [5] [12]. The implication is that firms utilize relationship management in order to encourage integration of organizational processes and activities. Doing so augments the firm's unique resources that would subsequently enhance organizational performance [1] [4] [13]. It is held that the degree of collaboration reflects the closeness of parties concerned, leading to a better market performance [6]. It is argued that the collaboration with third parties can result a better market performance [25].

Internal collaboration means the different units, departments or persons in a company work together to make sure information sharing. A company that seeks to attain a competitive edge through external collaboration also must become more focused on internally, so that it may better respond to customer expectations and accommodate customer needs. Germain and Iyer [10] found that extreme failure in one area of downstream integration and internal integration was sufficient to make null and void potential performance gains. A well-orchestrated effort will achieve goals more effectively and efficiently than an ill-coordinated campaign. Empirical evidence supports the positive association between internal coordination and performance [3].

Operational Flexibility

Operational flexibility represents the ability of firms in adopting changes in the business environment [22]. It was shown in previous research that firms with greater operational flexibilities are less likely to have disputes with partners and may, therefore, result a good performance [24].

Logistics performance

Logistics performance here refers to the effect that distributes the products or materials to customers with helping of 3PLs service providers. The original reason for companies to collaborate with 3PLs is to improve operational flexibility, logistics performance and even market performance.

Market Performance

Market performance is a proxy of firm's profitability. It represents how well the firm performs in the market comparing to its competitors. It is held that the performance of firms is influenced by a list of factors including firm's orientations and the collaboration with third parties [17] [25].

Ⅲ. Model and Hypotheses

Based on these discussions, Figure1 presents a conceptual model that shows the interrelationship among strategic orientations, collaborations, operational flexibility, logistics performance and market performance. It is proposed that firm's orientations account for the extent of collaboration with third parties, which subsequently affect logistics performance and even market performance. In sum, the following hypotheses are going to test in this study.

H1: Strategic orientations positively affect collaborations. That is, the more competitor and customer oriented of the firm, the closer collaboration with third parties and departments.

H2: Strategic orientations positively affect operational flexibility. That is, the more competitor and customer oriented of the firm, the better flexibility of the operation.

H3: Strategic orientations positively affect logistics performance. That is, the more competitor and customer oriented of the firm, the better logistics performance of the firm.

H4: Strategic orientations positively affect market performance. That is, the more competitor and customer oriented of the firm, the better the performance of the firm in the market.

H5: 3PL collaboration is one the factors of collaborations.

H6: Internal collaboration is one the factors of collaborations.

H7: Collaborations positively affect operational flexibility. That is, the closer collaborations with 3PLs and departments, the better flexibility of the operation.

H8: Collaborations positively affect logistics performance. That is, the closer collaborations with 3PLs and departments, the better logistics performance of the firm.

H9: Collaborations positively affect market performance. That is, the closer collaborations with 3PLs and departments, the better the performance of the firm in the market.

H10: Operational flexibility positively affects logistics performance. That is, the more flexibility of the operation, the better logistics performance of the firm.

H11: Operational flexibility positively affects market performance. That is, the more flexibility of the operation, the better the performance of the firm in the market.

H12: Logistics performance positively affects market performance. That is, the better the logistics performance, the better the performance of the firm in the market.

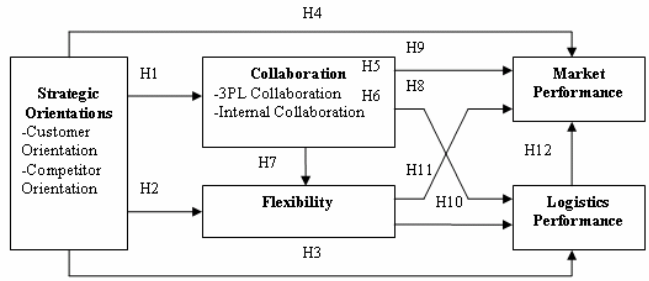

Figure 1. A Conceptual Model of Strategic Orientations, Collaborations, Flexibility, Logistics Performance and Market Performance

Ⅳ. Research Methods

A survey was conducted in Pearl River Delta targeting to companies with experiences in 3PL services. By using the snowball method, a sample consisting of 193 companies was successfully recruited from various industries that come from manufacturing, retailing, and trading sectors. They have been working with an average of 3.18 third-party logistics service providers (3PLs) at the time of this study.As shown in Table 1, most of these sampled companies are manufacturers and traders. One possible reason is that from the distribution perspective, manufacturers and traders focus much on logistics than retailers. Another reason maybe usually the big or chain stores require 3PL service. As shown in Table 1, the private-owned enterprises accounted for the most. Given the success of recent industrial re-forms in firm's ownership such as the split-share structure reform, many state-owned enterprises (SOEs) were transformed to private companies in the transitional economy of China. Due to economic development and geographic strength of Pear River Delta, many entrepreneurs are able to create their own companies. Hence, it is deemed to be acceptable for having a high proportion of manufacturers, traders and private-owned companies in the sample of this study to reflect changes and situation in Pearl River Delta economy.

Table 1. Characteristics of Sampled Companies

	All Companies	Manufacturers (46.6%)		Traders (40.2%)		Retailers (13.2%)	
	Freq.	*Freq.*	%	*Freq.*	%	*Freq.*	%
Ownership							
State-owned	31	16	16.84	14	17.07	4	14.81
Private-owned	88	33	34.74	50	60.98	10	37.04
Collective-owned	21	15	15.79	4	4.88	3	11.11
Foreign-owned	53	31	32.63	14	17.07	10	37.04
Working with __ 3PLs							
One	31	13	13.68	15	18.29	4	14.81
Two	46	19	20.00	21	25.61	10	37.04
Three	36	18	18.95	14	17.07	5	18.52
Four	18	11	11.58	6	7.32	5	18.52
Five or more	62	34	35.79	26	31.71	3	11.11

n = 193 (valid counts=204)

Respondents were all senior staff members with a key responsibility in managing the distribution function of sampled companies. They had to answer a set of Likert scale-type questions on firm's strategic orientations, market performance, and processes of work with 3PLs. All questions were modified from the existing scales with references to the local context in China [17] [21].

Ⅴ. Data Analysis and Results

Three steps were taken to analyze the data for testing hypotheses in the conceptual model. Firstly, factor analysis was performed to explore underlying factor structures of strategic orientations and Collaborations. Besides, Pearson correlations and Cronbach's alphas of these research variables were computed. Secondly, independent samples tests were conducted to ensure whether business type, ownership and respondents' position have significant difference to the research variables. Thirdly, the interrelationships of these research variables were examined using structural equation modeling (SEM) that the total, direct, and indirect effects were reported.

Factor analysis

The corresponding items of strategic orientations and collaborations were factorized separately using a principal component method with varimax rotation. A two-factor solution was eventually obtained to represent each of these constructs. All retained items reported a loading value greater than 0.60, showing a clear and undisputable structure [11]. Strategic orientations are represented by competitor orientation and customer orientation. Each of them has 4 items, which are accountable for 55.54% of the variance in strategic orientations. Similarly, a 73.28% variance of collaborations was found to be explained by 3PL collaboration (3-item) and internal collaboration (3-item). The composite reliability was 0.77 and 0.84 respectively for strategic orientations and collaborations, which indicated a good internal consistency of reported factor structures [19].

Pearson correlations and reliability analysis

As shown in Table 2, a positive and moderate association was found among research variables in a correlation analysis. Besides, all correlations were significant, which suggested a possibility of causal relationship among these research variables.

Independent samples test

Since the samples are composed of different business types, different ownerships and the respondents' position are a little different. So it's necessary to do independent samples test to show whether these have significant difference on research variables. As shown in Table 3, Table 4 and Table 5 the results show that companies that belong to different business type or ownership have no significant

Table 2. Results of Pearson Correlations and Reliability

	Mean[1]	Standard Deviation	Competitor Orientation		Customer Orientation		3PL Collaboration		Internal Collaboration		Operational Flexibility		Logistics Performance		Market Performance
Competitor Orientation	3.83	0.63	(0.72)												
Customer Orientation	3.97	0.65	0.55	**	(0.73)										
3PL Collaboration	3.12	0.84	0.34	**	0.33	**	(0.77)								
Internal Collaboration	3.94	0.78	0.46	**	0.48	**	0.45	**	(0.84)						
Operational Flexibility	3.56	0.70	0.29	**	0.33	**	0.49	**	0.25	**	(0.73)				
Logistics Performance	3.70	0.66	0.27	**	0.44	**	0.34	**	0.32	**	0.40	**	(0.78)		
Market Performance	3.62	0.76	0.29	**	0.41	**	0.39	**	0.28	**	0.38	**	0.61	**	(0.85)

[1]1 = strongly disagree, 5 = strongly agree
Reliabilities are shown in parentheses
** Correlation is significant at the 0.01 level (2-tailed).

difference on the research variables. The different positions of the respondents have no significant difference on the research variables too.

Table 3. Independent Samples Test of Business Type

	Business Type	Number	Mean	Std. Deviation	Std. Error Mean	T
Competitor Orientation	Manufacturer	95	3.8158	.64640	.06632	-.368
	Trader or Retailer	98	3.8495	.62460	.06309	
Customer Orientation	Manufacturer	95	3.9842	.68106	.06988	.350
	Trader or Retailer	98	3.9515	.61411	.06203	
3PL Collaboration	Manufacturer	95	3.0807	.88154	.09044	-.712
	Trader or Retailer	98	3.1667	.79553	.08036	
Internal Collaboration	Manufacturer	95	3.8982	.70136	.07196	-.689
	Trader or Retailer	98	3.9762	.85922	.08679	
Operational Flexibility	Manufacturer	95	3.4947	.68609	.07039	-1.313
	Trader or Retailer	98	3.6276	.71818	.07255	
Logistics Performance	Manufacturer	95	3.6711	.67365	.06912	-.665
	Trader or Retailer	98	3.7347	.65489	.06615	
Market Performance	Manufacturer	95	3.5816	.75920	.07789	-.609
	Trader or Retailer	98	3.6480	.75372	.07614	

Table 4. Independent Samples Test of Business Ownership

	Ownership	Number	Mean	Std. Deviation	Std. Error Mean	T
Competitor Orientation	State-owned or Collective-owned	52	3.8846	.63682	.08831	.686
	Private-owned or Foreign-owned	141	3.8138	.63415	.05341	
Customer Orientation	State-owned or Collective-owned	52	4.0240	.53381	.07403	.735
	Private-owned or Foreign-owned	141	3.9468	.68388	.05759	
3PL Collaboration	State-owned or Collective-owned	52	3.2885	.72619	.10071	1.660
	Private-owned or Foreign-owned	141	3.0638	.87006	.07327	
Internal Collaboration	State-owned or Collective-owned	52	3.9038	.63430	.08796	-.365
	Private-owned or Foreign-owned	141	3.9504	.83470	.07029	
Operational Flexibility	State-owned or Collective-owned	52	3.5433	.65252	.09049	-.226
	Private-owned or Foreign-owned	141	3.5691	.72402	.06097	
Logistics Performance	State-owned or Collective-owned	52	3.6250	.53893	.07474	-.997
	Private-owned or Foreign-owned	141	3.7323	.70308	.05921	
Market Performance	State-owned or Collective-owned	52	3.7115	.65751	.09118	1.076
	Private-owned or Foreign-owned	141	3.5798	.78735	.06631	

Table 5. Independent Samples Test of Business Respondents' Position

	Respondents' Position	Number	Mean	Std. Deviation	Std. Error Mean	T
Competitor Orientation	General Manager or Others	106	3.8278	.67995	.06604	-.122
	Market or Logistics Manager	87	3.8391	.57690	.06185	
Customer Orientation	General Manager or Others	106	4.0142	.60733	.05899	1.104
	Market or Logistics Manager	87	3.9109	.69044	.07402	
3PL Collaboration	General Manager or Others	106	3.1918	.82673	.08030	1.233
	Market or Logistics Manager	87	3.0421	.84878	.09100	
Internal Collaboration	General Manager or Others	106	3.9308	.78304	.07606	-.137
	Market or Logistics Manager	87	3.9464	.79057	.08476	
Operational Flexibility	General Manager or Others	106	3.6297	.66210	.06431	1.476
	Market or Logistics Manager	87	3.4799	.74730	.08012	
Logistics Performance	General Manager or Others	106	3.7264	.62443	.06065	.532
	Market or Logistics Manager	87	3.6753	.71030	.07615	
Market Performance	General Manager or Others	106	3.6415	.69180	.06719	.532
	Market or Logistics Manager	87	3.5833	.82886	.08886	

Structural equation modeling

Good factor structures and significant correlations warranted to proceed with structural equation modeling (SEM) to investigate the interrelationship among strategic orientations, collaborations, and operational flexibility, logistics performance and market performance. First, the conceptual model appeared to be the same of the actual model, which was derived from the data (χ^2 = 527.84, df = 285, p < 0.001) (Jöreskog 1969). Second, alternative fit indices were employed to assess the overall model fit. These fit indices were goodness-of-fit index (GFI), root mean square residual (RMR), and normed chi-square (χ^2 / df). All indices were found to meet the conventional level of acceptances (GFI = 0.83, RMR = 0.05, χ^2 / df = 1.85). The conceptual model was deemed to be established.

As shown in Figure 2, competitor orientation and customer orientation loaded significantly onto strategic orientations. The same result was also reported from 3PL collaboration and internal collaboration that their factor loading to collaborations was 0.75 and 0.74 respectively. Strategic orientations was found to significantly predict collaborations (β = 0.81, t = 5.46, p < 0.001) and logistics performance (β = 0.46, t = 1.70, p < 0.1), but its effects on operational flexibility and market performance were weak. Thus, H1 and H3 were found to be supported by the data while H2 and H4 were rejected. Collaborations was found to significantly predict operational flexibility (β = 0.82, t = 2.15, p < 0.05), 3PL collaboration (β = 1, p < 0.001) and internal collaboration (β = 0.93, t = 5.99, p < 0.001), but its effect on logistics performance and market performance were weak. Thus, H5, H6 and H7 were found to be supported by the data while H8 and H9 were rejected. Operational flexibility was found to significantly predict logistics performance (β = 0.32, t = 2.35, p < 0.05) and market performance (β = 0.58, t= 3.70, p < 0.001). Thus, H10 and H11 were found to be supported by the data. Market performance was explained by logistics performance (β = 0.66, t = 4.83, p < 0.001). H12 was also supported.

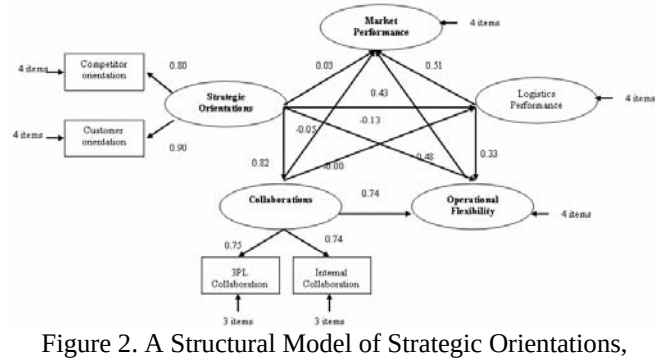

Figure 2. A Structural Model of Strategic Orientations, Collaborations, Operational Flexibility, Logistics Performance and Market Performance

Direct, indirect, and total effects

Although strategic orientations appeared to have weak effect on operational flexibility and market performance, it may be absorbed by collaborations and operational flexibility. As shown in Table 6, Table 7 and Table 8, strategic orientations reported larger indirect effect than its direct effect on operational flexibility and market performance, which were insignificant. It suggested that the total effects of strategic orientations on operational flexibility (β = 0.47) and market performance (β = 0.51) may not be negligible. Similarly, collaborations appeared to have weak effect on logistics performance and market performance, it may be absorbed by operational flexibility. As shown in Table 6, Table 7 and Table 8, collaborations reported larger indirect effect than its direct effect on logistics performance and market performance, which were insignificant. It suggested that the total effects of collaborations on market performance (β = 0.42) may not be negligible.

Table 6. Summary of Direct Effects among Constructs

Independent variables	Dependent variables			
	Collaborations	Operational Flexibility	Logistics Performance	Market Performance
Strategic Orientations	.820	-.132	.432	.029
Collaborations	——	.737	-.002	-.050
Operational Flexibility	——	——	.332	.475
Logistics Performance	——	——	——	.512

Table 7. Summary of Indirect Effects among Constructs

Independent variables	Dependent variables			
	Collaborations	Operational Flexibility	Logistics Performance	Market Performance
Strategic Orientations	——	.604	.155	.484
Collaborations	——	——	.244	.474
Operational Flexibility	——	——	——	.170
Logistics Performance	——	——	——	——

Table 8. Summary of Total Effects among Constructs

Independent variables	Dependent variables			
	Collaborations	Operational Flexibility	Logistics Performance	Market Performance
Strategic Orientations	.820	.472	.587	.512
Collaborations	——	.737	.242	.424
Operational Flexibility	——	——	.332	.645
Logistics Performance	——	——	——	.512

Ⅵ. Discussions and Conclusions

There were six major contributions from this study to the strategic marketing literature. Firstly, it empirically supported the 2-factor structure of strategic orientations. This construct is measured by a multiple-item scale consisting of eight items. Secondly, it created and empirically tested the 2-factor structure of collaborations which emphasized that internal collaboration is also important for the company that collaborate with 3PLs. This construct is measured by a multiple-item scale consisting of six items. Thirdly, strategic orientations were found to positively predict collaborations and logistics performance. It suggested that firms tend to have a closer collaboration with 3PLs and internal departments and better logistics performance should they strategically focus their resources against competitor activities and customer needs. Fourthly, collaborations were found to positively predict operational flexibility. It suggested that firms tend to operate flexible should they have closer collaboration with 3PLs and internal departments. Fifthly, operational flexibility was the key predictor of logistics performance and market performance. The operational flexibility appeared to be a favorable factor of logistics performance and market performance. Sixthly, logistics performance was the key predictor of market performance. The better logistics performance the better market performance is which in some extent tested the importance of logistics to a company.

To conclude, this study integrated the literature on strategic marketing by proposing two constructs in representing the firm's orientation towards competitors and customers and the collaboration arising from working with third-parties. The construction of these high-level constructs was seen to be an important step in discovering the effect of firm's orientation on market performance and in what extend the third-parties mediate such relationship [1] [17]. Collaborations, operational flexibility mediated the relationship between strategic orientations and performance. It suggested that the collaborations with third-parties such as 3PLs and internal departments can largely enhance a firm's operational flexibility, logistics performance and market performance. The implication is that firms may have to consider outsourcing non-core functions to third-parties for the sake of better efficiencies. This may be one of the directions for local Chinese firms to adopt on logistics management by keeping cores such as product innovation while leaving other less important areas to third-parties.

Ⅶ. Limitations and Future Research

Although this study contributed the development of the strategic marketing literature, it suffered several limitations. Firstly, this study was confined to logistic services, which other areas with a good potential to outsource are not examined. It may limit the generalizability of findings towards effects to various collaborations in business. Furthermore, the study examines a particular period in the ongoing relationship between the firm and 3PL. Since 3PL collaboration's benefits may be a function of how the partners work together over time, a longitudinal study may produce different results. It may be that the effects of the processes, behaviors, and approaches may be contingent upon the life cycle of the relationship. Hence, a basis for future research would be to examine time as a contributory factor to relationship development and management. A longitudinal approach is encouraged to address these issues.

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