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Factors Preventing the Way to Success of the Retail Supply Chain

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Abstract. The observation of the crucial success factors influencing the supply chain is involved by way of many scientists nowadays. This research carried out in Ho Chi Minh metropolitan with more than two hundred samples at retail businesses and used Binary Logistic regression to research the results during the length of August to October 2017. Through an evaluation of the literature, 15 factors have been discovered to be critical to the success of the retail supply chain and the results showed that 8 factors (stock, manufacturing, location, Transportation, facts, Strategic supply Chain, Collaborative and pinnacle control help) impacted the achievement of Vietnam retail deliver chain. This study may indicate the outline of newest techniques and tools for the Vietnamese successful retail supply chain.

Keywords: Crucial Factors; Successful Factors; Retail Business; Supply Chain; Vietnam

1. Introduction

Vietnam is a transitional market country, having geographically widespread with the eighth largest population in Asia. Therefore, Vietnam is a potential and challenging market. One of these challenges is to build a supply chain spanning more than 1,600 kilometers to serve the growth of the business. Professionalism in the distribution system of Vietnamese enterprises is still poor and localized (Phan and Nguyen 2014). Meanwhile, the success of the supply chain will bring

a significant competitive advantage to businesses (Ravinder et al. 2015). Figure 1 shows a typical supply chain process flow chart.

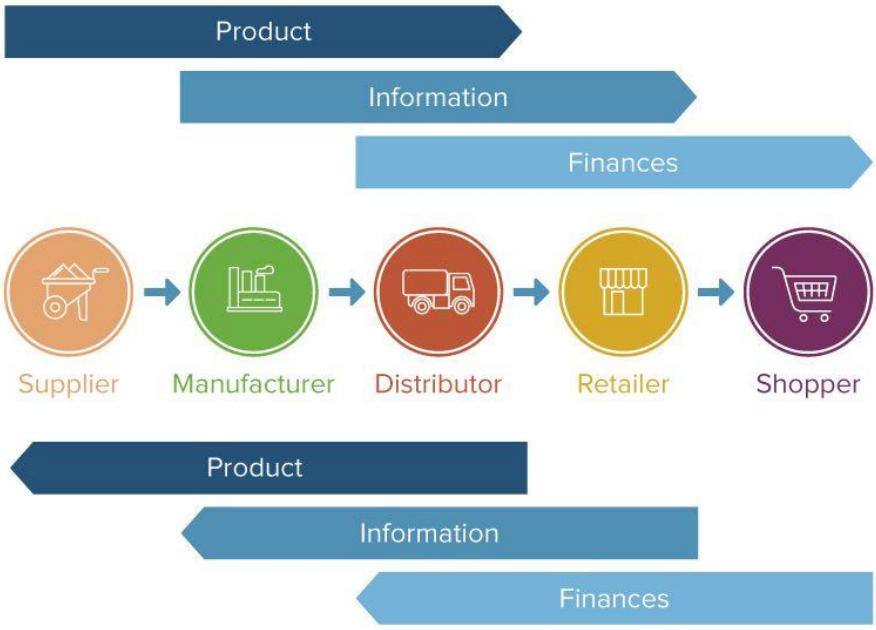

Fig. 1: typical supply chain process flow chart. (Gunasekaran, Patel, & McGaughey, 2004)

Many studies around the world seek to find the factors that drive supply chain success. This is also a concern for many businesses because the success of the business is based on the success of the supply chain (Lee 2000). Businesses that want to succeed in today's global economy need to focus on critical success factors without having to pay close attention to all of different aspects. This helps the company focus its limited resources in the right place to achieve the goals. Michael (2003) argued that for successful supply chains, Inventory, Manufacturing, Location, Transportation and Information need to be addressed.

Henry et al. (2012), while studying the pallet industry in the USA, argued that the critical success factors that affect the success of the supply chain are Environmental Uncertainty, Information Technology, Supply Chain Relationships, Manufacturing, Business Management and Customer Satisfaction. While researching a manufacturing business in Malaysia, Huam et al. (2011) again reaffirmed the influence of Information Technology on the success of the supply chain. In addition, they also found that Performance Measurement and Collaborative also had a significant impact on the success of the supply chain.

Some studies also show that Top Management Support (Christian and Julia 2015), Human Resource (Lin et al. 2013), (Pettit and Beresford 2009) and Strategic Supply Chain (Thakkar et al. 2013), (Pettit and Beresford 2009) have also had a great impact on the success of the supply chain.

From the above, 15 factors will be included in the study to identify the critical success factors for Vietnamese retail supply chains to help the businesses to increase their competitiveness and to survive in the volatile business environment. The analysis will be conducted through the Binary Logistics regression model to predict the key factors for success (De Sousa Mendes and Miller 2013) in accordance with Vietnam's conditions.

2. Methodology

2.1 Survey

The research was conducted based on survey and the managers in retail businesses in Vietnam were the respondents in this study, because the research subject was the retail supply chain. However, due to limited resources, research was conducted in Ho Chi Minh City between August 2016 and October 2017. The survey was completed with the help of professionals working in the supply chain and the retail sector through face-to-face interviews and via emails that sent directly to the personal email account of the respondents.

2.2 Measurement

Dependent variable in this study is the success or failure of the supply chain. This is the result of a qualitative study by interviewing a team of experts in the retail sector. This result is also consistent with a study published in 2008 by the WERC (Warehousing Education and Research Council). Any business that answers "no" in one of the three cases will be counted as "Failure", otherwise will be counted as "Success".

2.3 Data collection

A total of 240 questionnaires were received. Of these, 89 were collected through face-to-face interviews at several locations in Ho Chi Minh City. The remaining 151 were collected via e-mail. However, after sorting, only 112 questionnaires were processed in the form of email qualified. Others were rejected for lack of information. According to Tabachnick and Fidell (1996), the minimum sample size for multivariate regression analysis was 50 + 8 * independent variables. Because there are 15 independent variables, the minimum sample size is 50 + 8 * 15 = 170. So, 201 questionnaires responded to the sample size requirement. Among them, 90 survey questionnaires were identified as successful supply chain enterprises, accounting for about 45% of the total survey questionnaires.

In order to find out the critical success factors that affect the success of the retail supply chain in Viet Nam, this study performed statistics describing the variables in the study and then performed a Binary Logistic regression analysis to determine the model. Since the studies were presented, hypotheses can be set out as these critical success factors affect to the success of the retail supply chain and is used to study the case of Vietnam.

3. Results and Discussion

Table 1: Sample survey statistics by education level of managers and size of enterprises

Descriptions		**Size**			**Total**
		>50	>10 and <= 50	<=10	
Educational level	High school or lower	1	13	15	29
	College	30	43	49	122
	University	6	17	15	38
	Postgraduate	7	2	3	12
Total		44	75	82	201

Table 1 showed the statistic of the survey sample according to the criteria of Manager's education level and the size of the enterprise. Based on this finding, research will be continued by implementing a Binary Logistic regression with the Enter method to find the factors that affect the success or failure of a supply chain. The Enter method is a method of comparing variables at the same time to find the correlation of these variables to the dependent variable.

In table 2, we see that the Sig. value of the model is less than 0.05, so it can be confirmed that the model of the 15 factors studied is appropriate and there are correlations between the dependent and independent variables. For -2LL index = 174.251, it is in the good range and indicates the overall model is quite appropriate. The Nagelkerke R2 index is also quite high = 0.533, indicating that the research model can account for 53.3% of the overall sample size. In addition, it can be seen that the model of 15 research variables can predict exactly 82.6% of cases. This ratio is quite high, indicating that the model is likely to help the company successfully develop the supply chain if it concentrates its resources on solving problems arising from the selected factors.

Table 2: Binary Logistic Regression Results

Variables	Model	
	β	**Sig.**
Inventory	-.597	.038
Manufacturing	-1.451	.004
Location	-.788	.016
Transportation	1.039	.026
Information	-1.122	.018
Enviromental Uncertainty	.036	.927
Information Technology	.095	.805
Supply chain Relationship	-.683	.087
Strategic Supply chain	.767	.033
Performance Measurement	.261	.541
Collaborative	1.318	.002
Business Management	.478	.252
Top Management Support	1.931	.000
Human Resource	-.208	.586
Customer Satisfaction	.828	.053
Constant	-2.638	.170
Model test results		
-2 Log likelihood	174.251[a]	
χ^2	102.196	
Sig.	0.000	
Nagelkerke R^2	0.533	
Classification results		
Percentage Correct		
Success	76.7%	
Failure	87.4%	
Overall Percentage	82.6%	

Table 2 also shows us in this study, Inventory, Manufacturing, Location, Transportation, Information, Strategic Supply Chain, Collaborative and Top Management Support are correlated to the success or failure of the retail supply chain in Vietnam.

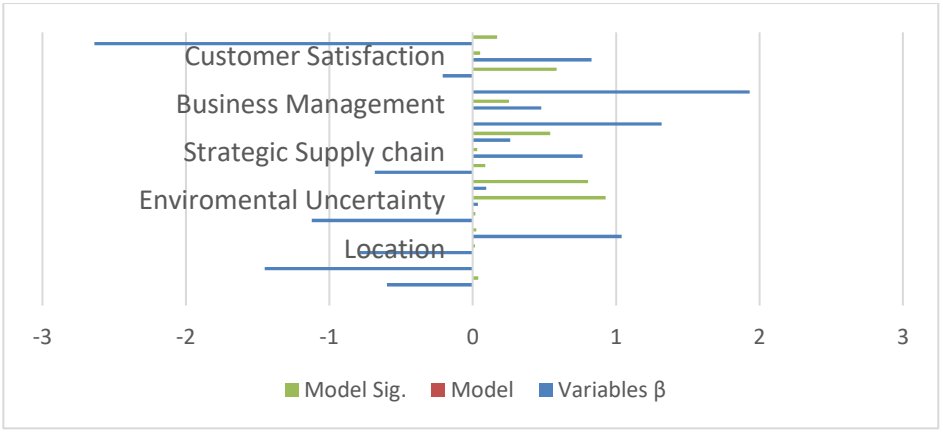

Fig. 1: Binary Logistic Regression Results

Other factors are excluded from the model because of lack of credibility. Table 2 further shows the factors of Top Management Support, Collaborative and Transportation that have a strong impact on retail supply chains. The values of β are 1,931, 1,318 and 1,039, respectively. Meanwhile, the role of the Manufacturing factor has the weakest influence. This can be explained by the fact that in the retail supply chain, especially in retail businesses, the focus is on commodity distribution and chain co-operation, Manufacturing are less interested because they are not directly involved in production.

4. Conclusion

This study has identified eight critical success factors that affect the success of a retail supply chain in Vietnam: Inventory, Manufacturing, Location, Transportation, Information, Strategic Supply Chain, Collaborative and Top Management Support. Managers need to pay more attention to these factors to ensure the success of the supply chain, thereby ensuring the growth of the business. However, due to the limitations on human and financial resources, this study was conducted only in Ho Chi Minh City, the largest economic center in Vietnam. Therefore, more research is needed on this field at other locations in Vietnam to gain a better overview of critical success factors that influence the success of Retail supply chain in Vietnam. In addition, the main survey subjects of this study are retail enterprises with 100% Vietnamese capital. More research on joint-venture businesses or on full foreign-owned businesses in Vietnam is needed to finalize the theory of supply chain development in Vietnam.

Another limitation of this study was that part of the survey sample was conducted through the email interview. This reduces the reliability of the sample.

In later studies, data should be collected by other methods with higher reliability. Another issue, this study considers only 15 critical success factors believed to affect the success of the retail supply chain.

The results of the study also show that there are three factors that have the greatest impact on the success of supply chain development. Firstly, senior managers need to pay much attention and support to the activities of the supply chain, enabling subordinates to carry out their assigned tasks smoothly, As well as coping effectively with changes in the business environment (AbTalib and Abdul 2014). Second, there is a need to enhance collaboration among supply chain actors to increase productivity, increase readiness and minimize the risk of non-compliance with commitments (Stevens and Johnson 2016). In the end, increasing the capacity of transportation and circulation of goods is a vital issue for retail businesses. Businesses are always faced with the question of either sacrificing service levels or increasing transport costs (Stadtler 2015). Therefore, the ability to transport at a lower cost than the competition will help the company increase its service while maintaining the profit target.

References

AbTalib, M. S. & Abdul Hamid, A. B. (2014). Application of critical success factors in supply chain management. International Journal of Supply Chain Management, 3(1), 21-33.

Christian Leyh& Julia Thomschke (2015). Critical Success Factors for Implementing Supply Chain Management Systems – The Perspective of Selected German Enterprises. Computer Science and Information System, 5, 1403-1413.

De Sousa Mendes, G. H.& Miller Devós Ganga, G. (2013). Predicting success in product development: The application of principal component analysis to categorical data and binomial logistic regression. Journal of technology management & innovation, 8(3), 83-97.

Henry, Q., Rado, G.& Scarlett, S. (2012). Critical Factors Affecting Supply Chain Management: A Case Study in the US Pallet Industry, Pathways to Supply Chain Excellence. Dr. ISBN, 978, 953-51.

Huam, A. C. T. H. T., Yusoff, R. M., Rasli, A. M.& Hamid, A. B. A. (2011). Supply chain management: success factors from the Malaysian manufacturer's perspective. African Journal of Business Management, 5(17), 7240 - 7247.

Lee, H.L. (2000). Creating value through supply chain integration. Supply Chain Management Review, 4(4), 30-6.

Lin, C., Kuei, C. H. & Chai, K. W. (2013). Identifying Critical Enablers and Pathways to High Performance Supply Chain Quality Management. International Journal of Operations & Production Management, 33(3), 347-370.

Michael Hugos (2003). Essentials of Supply Chain Management. John Wiley & Sons, Inc.

Pettit, S. & Beresford, A. (2009). Critical Success Factors in the Context of Humanitarian Aid Supply Chains. International Journal of Physical Distribution &Logistics Management, 39(6), 450-468.

Phan Thu Giang & Nguyen Thuy Duong (2014). Enhancing the competitiveness of domestic distributors. Economics and forecasting, 6, 22 - 24.

Ravinder Kumar, Rajesh K. Singh & Ravi Shankar (2015). Critical success factors for implementation of supply chain management in Indian small and medium enterprises and their impact on performance. IIMB Management Review, 27, 92-104.

Stadtler, H. (2015). Supply chain management: An overview. In Supply chain management and advanced planning (pp. 3-28). Springer Berlin Heidelberg.

Stevens, G. C. & Johnson, M. (2016). Integrating the Supply Chain… 25 years on. International Journal of Physical Distribution & Logistics Management, 46(1), 19-42.

Tabachnick, B. G. & Fidell, L. S. (1996).Using multivariate statistics (3rd ed.). New York: Harper Collins.

Thakkar, J., Kanda, A. & Deshmukh, S. G, (2013). Supply Chain Issues in SMEs: Select Insights from Cases of Indian Origin. Production Planning & Control, 24(1), 47-71.

WERC (2008). Four critical elements of retail supply chain success. Retrieved from http://www.werc.org/assets/1/workflow_staging/Publications/813.PDF

Gunasekaran, A., Patel, C., & McGaughey, R. E. (2004). A framework for supply chain performance measurement. International journal of production economics, 87(3), 333-347.