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THE EFFECT OF SUPPLY CHAIN INTEGRATION ON RETURN OF INVESTMENT AND FINANCIAL LIQUIDITY

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ABSTRACT:
This study was conducted to examine supply chain integration and its influence on financial liquidity and return on investment in Saudi Arabia. This study was conducted using a quantitative method. Survey method was used to collect data. The number of samples for this work was 52. The survey was distributed to a few companies that have a supply chain function in it. The data were analyzed using SPSS software. The variables of this study was Supply Chain Practical Capability (SCPC), Supply Chain Integration (SCI), Competitive Capability (CC),Financial Liquidity (FL) and Return on Investment (ROI). Thus 8 hypotheses were deduced for this work. The statistical analysis showed that there is a significant positive correlation between all variables. However, the regression analysis showed that there is no direct effect on ROI and FL for the SCPC and CC. Nevertheless, they have an effect on them through supply chain integration. As a result, four of the hypotheses were rejected and four of them were accepted. This study will help managers make supply chain decisions that will increase their firms ' profitability.

INTRODUCTION:

The supply chain is a concept of great importance and scope in the business world. This concept encompasses the entire flow of information and actions from the supplier of a product or service to the final consumer [1]. In this chain, a large number of companies come into play that somehow or other

intervenes in the process necessary for the product to reach the final customer in the best conditions [2].
However, in conjunction with this entire supplier cycle, the wholesale chain, the retailer and the final customer, there is an economic flow among the participants that gives rise to the concept of Supply Chain Finance (SCF) [3]. Proper management of these financial flows will be essential to the proper functioning of the supply chain and the organization. In this way, problems of lack of liquidity are avoided and relationships between all chain members are improved. Good supply chain management can lead to significant benefits for companies [4].

Flexibility in management, which is currently the competition between companies, does not take place so much in relation to the final product, but with the efficiency of its supply chain. Therefore, having a fully integrated supply chain facilitates greater flexibility in the process and makes its operation much more optimal [5].

Genovese et al [6] stated that optimized inventory management and a well-integrated supply chain are required to ensure that the quantity of raw materials and product available in the chain is sufficient to be delivered to the customer. Furthermore, optimization of collections and payment cycles is a fundamental aspect of any supply chain. This is done to precisely find a fair balance between financial flows that make liquidity profitable in supply chains as stated by Wang et al. [7]. Furthermore, Dubey et al. [8] stated that in this phase, the SCF plays a fundamental role, where the existence of a well-consolidated supplier network can facilitate the flow of information and thus it is possible to anticipate unexpected situations in the chain cycle. In this way, a financing system can be generated in the chain itself, which facilitates relationships between its members and improves communication and data flow.Kshetri [9] reported that companies use supply chain management software to check these processes, enabling them to bring changes to their policies if needed. Software reporting helps them identify the weak points in their approach and helps them to update their policies. Information coming from stakeholders such as business partners, sellers, retailers, distributors and operating line is very important in overall management [10]. With the entire stakeholders updating and checking the data from one application, it will be easy for everyone to make sure the business process works perfectly.Integration with return on investment (ROI) and financial liquidity is very crucial for any company as these two processes are directly linked to the company's cash flow and finance [11]. In any case, better expertise and planning must be dealt with in these two processes. Critical problems can arise if the ROI and financial liquidity are mishandled in any business venture. The stabilization factor in any business is due to these two main features and it needs to be overseen and managed. Furthermore, Meixell and Luoma [12] stated that the use of supply chain brings an option to link these two factors with it and give a better control over ROI and financial liquidity. Supply chain links these two processes so that the management can have a full report about the cash coming in and going out of the company.Integrating the supply chain

with financial liquidity and ROI is known as supply chain finance [13]. It is a set of tools like supply chain management software where buyer and seller often work with each other and keep records of everything. It basically provides the buyer and seller with a credit on certain terms that is very beneficial to both parties. This phenomenon lowers finance costs, improves business and efficiency. The supplier or distributor can take advantage of this system and the business process can continue to work in this situation. Integration helps to remove these barriers that can hinder the business operation and cash flow [14]. Thus, this study was done to analyze of supply chain integration and its effect on financial liquidity and return on investment in Saudi Arabia.

METHODOLOGY

This work was carried out using a quantitative method. The aim of this research is to examine these following hypotheses. H1: There's a positive effect for Supply Chain Practical Capability (SCPC) on Supply Chain Integration (SCI). H2: There's a positive effect for Competitive Capability (CC) on SCI. H3: There's a positive effect for SCI on Financial Liquidity (FL). H4: There's a positive effect for SCI on Return on Investment (ROI). H5: There's a positive effect for SCPC on FL. H6: There's a positive effect for SCPC on ROI. H7: There's a positive effect for CC on FL. H8: There's a positive effect for CC on ROI. Figure 1 shows the connection of the hypotheses.

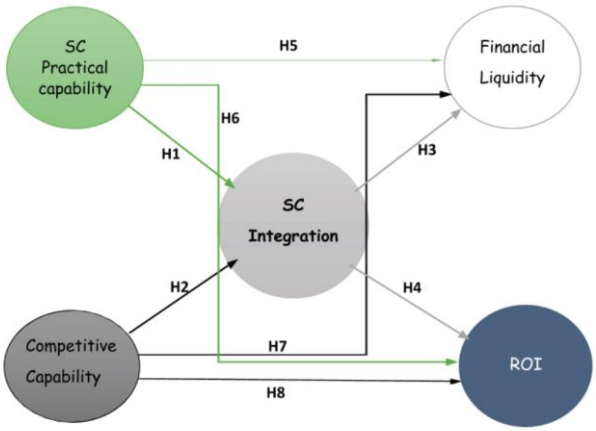

Figure 1: Hypotheses connection

Data was collected using survey method in this work. The survey was distributed to a couple of companies that have supply chain function in it. The number of samples used for this work was 52. The data was analyzed using the Social Sciences Statistical Package (SPSS) software.

RESULT AND DISCUSSION

Reliability Analysis

Reliability refers to the consistency of the respondents' answers. Cronbach's alpha is used through internal consistency to test the reliability of the study. Alpha coefficient ranges from 0 to 1. It was indicated that 0.65 is an

acceptable reliability coefficient. Table 1 shows the result of Cronbach's alpha. Based on Table 1, the Cronbach's alpha values are 0.949 for SCI, 0.909 for SCPC, 0.943 for CC, 0.798 for ROI and 0.798 for FL. Thus, since all Cronbach's alpha value is above 0.65, the reliability coefficient is accepted.

Table 1: Cronbach alpha results

Variable	Cronbach's Alpha
Supply Chain Integration (SCI)	0.949
Supply Chain Practical Capability (SCPC)	0.909
Competitive Capability (CC)	0.943
Return on Investment (ROI)	0.798
Financial Liquidity (FL)	0.798

Correlation Matrix

Correlation matrix was used to analyzed if the variables are related and the strength of the relationship between the variables. Table 2 shows the results of the correlation matrix. Based on Table 2, all pearson correlation value for each variable is higher than 0.5. Thus, there is relationship between all variables, and its strength of association is considered large as all the values are within the range of 0.5 to 1. In addition, the strength of the association increases as the value approaches the value of 1.

Table 2: Correlation matrix results

Variable	Items	SCI	CC	ROI	FL	SCPC
SCI	Pearson correlation	1	0.772	0.692	0.517	0.808
	Significance (2-tailed)		0.000	0.000	0.000	0.000
	N	52	52	52	52	52
CC	Pearson correlation	0.772	1	0.671	0.672	0.857
	Significance (2-tailed)	0.000		0.000	0.000	0.000
	N	52	52	52	52	52
ROI	Pearson correlation	0.692	0.671	1	0.552	0.625
	Significance (2-tailed)	0.000	0.000		0.000	0.000
	N	52	52	52	52	52
FL	Pearson correlation	0.517	0.672	0.552	1	0.578
	Significance (2-tailed)	0.000	0.000	0.000		0.000
	N	52	52	52	52	52

SCPC	Pearson correlation	0.808	0.857	0.652	0.578	1
	Significance (2-tailed)	0.000	0.000	0.000	0.000	
	N	52	52	52	52	52

Regression Analysis

Regression statistical method was used to identify the relationship nature between variables whether it is positive or negative, linear or nonlinear. Table 3 shows the result of the regression analysis for hypothesis H1. The dependent variable is SCI and constant variable is SCPC. Based on Table 3, the R-squared value is 0.635, which is greater than 0.5. Thus, there is a positive effect for SCPC on SCI. Hence, hypothesis H1 is accepted.

Table 3: Model summary for hypothesis, H1

Model	R	R-squared
1	0.808	0.653

Table 4 shows the result of the regression analysis for hypothesis, H2. The dependent variable is SCI and constant variable is CC. Based on Table 4, the R-squared value is 0.696, which is greater than 0.5. Thus, there is a positive effect for CC on SCI. Hence, hypothesis H2 is accepted.

Table 4: Model summary for hypothesis, H2

Model	R	R-squared
1	0.772	0.696

Table 5 shows the result of the regression analysis for hypothesis, H3. The dependent variable is FL and constant variable is SCI. Based on Table 4, the R-squared value is 0.668, which is greater than 0.5. Thus, there is a positive effect for SCI on FL. Hence, hypothesis H3 is accepted.

Table 5: Model summary for hypothesis, H3

Model	R	R-squared
1	0.817	0.668

Table 6 shows the result of the regression analysis for hypothesis, H4. The dependent variable is ROI and constant variable is SCI. Based on Table 6, the R-squared value is 0.679, which is greater than 0.5. Thus, there is a positive effect for SCI on ROI. Hence, hypothesis H4 is accepted.

Table 6: Model summary for hypothesis, H4

Model	R	R-squared

1	0.892	0.679

Table 7 shows the result of the regression analysis for hypothesis, H5. The dependent variable is FL and constant variable is SCPC. Based on Table 7, the R-squared value is 0.334, which is smaller than 0.5. Thus, there is a negative effect for SCPC on FL. Hence, hypothesis H5 is rejected.

Table 7: Model summary for hypothesis, H5

Model	R	R-squared
1	0.578	0.334

Table 8 shows the result of the regression analysis for hypothesis, H6. The dependent variable is ROI and constant variable is SCPC. Based on Table 8, the R-squared value is 0.425, which is smaller than 0.5. Thus, there is a negative effect for SCPC on ROI. Hence, hypothesis H6 is rejected.

Table 8: Model summary for hypothesis, H6

Model	R	R-squared
1	0.625	0.425

Table 9 shows the result of the regression analysis for hypothesis, H7. The dependent variable is FL and constant variable is CC. Based on Table 9, the R-squared value is 0.452, which is smaller than 0.5. Thus, there is a negative effect for CC on FL. Hence, hypothesis H7 is rejected.

Table 9: Model summary for hypothesis, H7

Model	R	R-squared
1	0.672	0.452

Table 10 shows the result of the regression analysis for hypothesis, H8. The dependent variable is ROI and constant variable is CC. Based on Table 9, the R-squared value is 0.451, which is smaller than 0.5. Thus, there is a negative effect for CC on ROI. Hence, hypothesis H8 is rejected.

Table 10: Model summary for hypothesis, H8

Model	R	R-squared
1	0.671	0.451

Overall Discussion

In this work, the reliability analysis results have shown that the Cronbach's alpha value for all the variables were above 0.65. Hence, the entire reliability coefficient was accepted. Furthermore, correlation matrix analysis was carried out and the results showed that Pearson correlation value for each variable was

greater than 0.5. Thus, there is relationship between all variables. Likewise, regression analysis was done for all the hypotheses. Based on the regression analysis results, hypothesis H1, H2, H3 and H4 were accepted. On the other hand, hypotheses H5, H6, H7, and H8 were rejected. Therefore, based on the results, it is deduced that that supply chain practical capability and competitive capability does not have a direct effect on return on investment and financial liquidity, yet they do have an effect on them through supply chain integration. This is agreed by Steinrücke and Albrecht [15] where it was stated that integration of the supply chain is a vital process for any management that seeks to improve and better manage its return on investment and financial liquidity. Likewise, Jin et al. [16]'s work has stated that supply chain integration is important for enhanced financial management as a specific general supply chain model is not efficient in delivering the expected financial outcome. In addition, Gandhi et al. [17] stated that supply chain integration has a positive effect on investment return and financial liquidity and improves the company's overall performance.

CONCLUSION

This work analyzed the integration of the supply chain and its impact on financial liquidity and return on investment in Saudi Arabia. The key outcomes of this work have shown that there’s a positive effect for supply chain practical capability (SCPC) on supply chain integration (SCI). Likewise, the result showed that There’s a positive effect for competitive capability (CC) on SCI. In addition, there is a positive effect for SCI on financial liquidity (FL). Finally, there’s a positive effect for SCI on return on investment (ROI). From this analysis it is concluded that Supply Chain Practical Capability (SCPC) and Competitive Capability (CC) have no direct effect on Return on investment (ROI) and Financial Liquidity (FL). It has an effect on them, however, through supply chain integration (SCI).

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