



Financial Risk in Supply Chain Management: A Case Study on Ready Made Garments Industry in Bangladesh

Md. Ali Marjan^{1*}, Mahamudul Hasan², Md. Rafiew Islam³

¹Research Scholar, Dhaka, Bangladesh.

²Research Scholar, Khulna University, Dhaka, Bangladesh.

³Research Scholar, Ahsanullah University of Science and Technology, Dhaka, Bangladesh.

Email address:

* Corresponding author: alimarjan23@gmail.com (M. A. Marjan)

millatku1998@gmail.com (M. Hasan), rafiew2016@gmail.com (R. Islam)

To cite this article:

Md. Ali Marjan, Mahamudul Hasan, Md. Rafiew Islam. Financial Risk in Supply Chain Management: A Case Study on Ready Made Garments Industry in Bangladesh. *International Journal of Multidisciplinary Informative Research and Review*. Vol. 1, No. 1, 2020, pp. 1-14.

Abstract: *Financial risk is one of the important issues in supply chain management of RGM Industry This study will be performed to find out whether the RMG sectors in Bangladesh are facing the financial risk in supply chain management and whether this sector is considering logistic support and SCM as an integral part of its business. Convenience Sampling is used for this study. The study will have both practical and academic value. It will lead anyone to get a clear idea about the impact on financial risk in supply chain management – A Study on RMG industry in Bangladesh. This study will also focus on the issues of Supply chain risk management (SCRM) is a nascent area emerging from a growing appreciation for supply chain risk by practitioners and by researchers. However, there is diverse perception of research in supply chain risk because these researchers have approached this area from different financial risk.*

Keywords: *RMG sector, SCM, Financial Risk, Challenges and Development.*

1. Introduction

Financial risk is any of various types of risk associated with financing, including financial transactions that include company loans in risk of default. Often it is understood to include only downside risk, meaning the potential for financial loss and uncertainty about its extent. A science has evolved around managing market and financial risk under the general title of modern portfolio theory initiated by Dr. Harry Markowitz in 1952 with his article, "Portfolio Selection". In modern portfolio theory, the variance (or standard deviation) of a portfolio is used as the definition of risk. The different types of financial risk are shown in the business model.

Credit risk, also called default risk, is the risk associated with a borrower going into default (not making payments as promised). Investor losses include lost principal and interest, decreased cash flow, and increased collection costs. An investor can also assume credit risk through direct or indirect use of leverage. For example, an investor may purchase an investment using margin. Or an investment may directly or indirectly use or rely on repo, forward commitment, or derivative instruments. Liquidity risk is a financial risk that for a certain period of time a given financial asset, security or commodity cannot be traded quickly enough in the market without impacting the market price. Market risk is the risk of losses in positions arising from movements in market prices. There is no unique classification as each classification may refer to different aspects of market risk. Operational risk is "the risk of a change in value caused by the fact that actual losses, incurred for inadequate or failed internal processes, people and systems, or from external events (including legal risk), differ from the expected losses". This definition, adopted by the European Union Solvency II Directive for insurers, is a variation from that adopted in the Basel II regulations for banks. In October 2014, the Basel Committee on Banking Supervision proposed a revision to its operational risk capital framework that sets out a new standardized approach to

replace the basic indicator approach and the standardized approach for calculating operational risk capital.

In commerce, supply chain management (SCM), the management of the flow of goods and services, involves the movement and storage of raw materials, of work-in-process inventory, and of finished goods from point of origin to point of consumption. Interconnected or interlinked networks, channels and node businesses combine in the provision of products and services required by end customers in a supply chain. Supply-chain management has been defined as the "design, planning execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand and measuring performance globally." SCM practice draws heavily from the areas of industrial engineering, systems engineering, operations management, logistics, procurement, information technology, and marketing and strives for an integrated approach. Marketing channels play an important role in supply chain management. Current research in supply chain management is concerned with topics related to sustainability and risk management, among others, whereas the "people dimension" of SCM, ethical issues, internal integration, transparency/visibility, and human capital/talent management are topics that have, so far, been underrepresented on the research agenda

2. Literature Review

A number of authors have analyzed both the bright and the dim aspects of the RMG industry. Yamagata and Yunus (2012) discuss on the role of financial risks, technology transfer, joint ventures promoted by removal of investment ceilings and the support of the Bangladesh government that helped in the rapid growth of this industry. Having said so, Mlachila and Yang (2004) and Haté *et al.* (2005) also explored the potential challenges for this industry in Supply chain management. Although both viewed the end of textile quotas as a significant blow to the competitiveness of the Bangladeshi firms in the global market, Haté *et al.* (2005) also argued that the trade data points post the lift of quota did not show substantial impact on this industry's profitability. Despite a strong growth over the last few decades, the RMG Industry has faced a number of challenges. Financial risk and Safety and security of the workers have become essential in the wake of Rana Plaza incident on April 2013 and Tazreen fire on November 2012 (Islam & Moazzem, 2015). Buyers and international stakeholders have enforced compliance to the safety standards and also measure the supply chain related activities. Additionally National Tripartite Plan of Action on Fire, Electrical Safety and Physical Integrity (NAP) have been set up by the government and facilitated by the ILO to set up safety training and factory inspection (Khatun, 2014). Moazzem (2014) highlighted that owners have commented that on average, it takes approximately 3 (three) crore taka (USD 380,000 approx.) to ensure compliance, which is a significant investment and more than what most RMG factory owners can afford. Khatun (2015), Yamagata and Yunus (2012) and many other authors highlighted on the issue of political instability and its relation to labor unrest which are often deeply rooted to low wage rates and poor working conditions. Mlachila and Yang (2004) argued in favor of low wage rates, credit risk, and operational risk and business risk highlighted it as a competitive advantage for the RMG firms operating in Bangladesh. However, Haider (2007) highlighted that the wages rates are often way too low and can be labeled as exploitation and discrimination. Another concern that has been highlighted by authors is with regards to substandard labor productivity and proper supply chain management which were always an issue among Bangladesh RMG firms that was not addressed adequately. Mlachila and Yang (2004) had compared the value added by majority of RMG manufacturers in country, and found that Bangladeshi workers have the lowest value added, less than one-fifths of Chinese RMG workers. In a more recent study Berg *et al.* (2011) highlight the productivity gap between Bangladesh and its major competitors like China, India, Pakistan and Cambodia, was still substantial. Bangladesh was operating at 77% productivity compared to China's baseline of 100% (as per data on 2009). Berg *et al.* (2011), Eusuf and Razaue (2007) and a number of contemporary scholars have argued that the major problem that is currently hindering the growth prospects of this industry is the lack of trained and skilled workforce. Previous studies provided sufficient insight with regards to the prospects and challenges pertaining to the RMG industry, but very few have identified or established people risk as the primary root cause. Based on this premise, and using the definition of financial risk such as credit risk, market risk, liquidity risk and operational risk, this paper would test the hypothesis that: failed or inadequate people and process in supply chain management is the core to all of the challenges that currently prevail in this industry.

3. Objectives

The main objective of the study is to find out and discuss the financial risk in supply chain management for RMG Industry.

- I. To identify the degree of market risk and impact of financial risk on supply chain management.
- II. To observe the connection among operational risk, liquidity risk and profit growth.

4. Statement of the Problem

Supply chain finance is to provide financial services to all related businesses of both upstream and downstream industries as a whole. As a result, the supply chain-related enterprises receive financing support and grow rapidly, so as to solve the supply chain problem of uneven distribution of funds and upgrade the entire supply chain, even the whole industry's competitiveness. But financial risk is more important for the investors. Every position of supply chain system has some financial risk such as credit risk, market risk, liquidity risk, and operational risk. So to minimize the financial risk in supply chain management the study is more important to the all business entity.

Bangladesh, which was once termed by Henry Kissinger (1923-2009) a “bottomless basket”, has now become a “basket full of wonders.” Garrett Hardin (1915-2003) the writer of the renowned article ‘Tragedy of the commons’ said during its inception that Bangladesh would not be a viable state. But the country with its limited resources has been sustaining 6% annual average GDP growth rate for decades and has brought about noteworthy social and human development. It is really a matter of great curiosity to many – how the economy of Bangladesh maintains to grow at a sturdy pace, sometimes even when paddling against the wave. It has already attained lower middle income country status on 01 July, 2015. Now it is predicted that Bangladesh is achieving the middle income country status by 2021.

The economy of Bangladesh is largely dependent on agriculture. However, the Ready Made Garments (RMG) Industry has emerged as the biggest earner of foreign currency. In 1972, the World Bank approximated the gross domestic product (GDP) of Bangladesh at USD 6.29 billion, in 2014, the GDP stood at USD 173.82 billion, growing by almost 27 times in a matter of four decades. Bangladesh's exports industry alone comprised USD 31.2 billion in FY 2014-15, 81.69% of which was made up by ready-made garments. On its own, the knitwear Industry encompasses 39.83% of total exports—a staggering USD 12.43 billion. The RMG Industry has experienced an exponential growth since the 1980s. The Industry contributes significantly to the GDP. It also provides employment to around 4.2 million Bangladeshis, mainly women from low income families.

5. Methodology of the Study

Methodology is a system of explicit rules and procedures upon which research is based and against which claims for knowledge are evaluated. As methodology is generally concerned with data generation data presentation, data analysis following rules and methods are followed to ease the data collection procedure.

Sampling technique: Convenience Sampling is used for this study. The method of convenience sampling is also called chunk. A chunk is a fraction of one population taken for investigation because of its convenient availability.

Sample Size: The sample respondents are selected from the different company in different locations, and different level of the respondents are interviewed for collecting information from 38 garments factory as a sample from the total population size 4222 company.

Sources of Data: The study is involved in collection of data both from the primary and secondary sources. Different types of data and their sources are discussed under the following heads:

Primary Data: is collected by the face to face interview of various factories management with the structured questionnaire with 1 to 5 points Likert scale where 1 is strongly disagree and 5 is strongly agree with 28 questions.

Secondary Data: The secondary sources include govt. publications; annual reports on groundnut cultivation, seminar papers, journals, published and unpublished thesis, and topic reelected various books, BBS, web site etc.

Processing and analysis of data: After collecting necessary data it needs to process this data. All data are processed through proper editing, classification and tabulation. Then Data are analyzed and presented by percentage, graphical presentation techniques and different types of charts through SPSS (Statistical Package for the Social Sciences) version 23. Descriptive analysis with frequency distribution, correlation and liner regression is used for measuring the performance of the industry

6. Results and Discussion

Frequency distribution is a table or graph that displays the frequency of various outcomes in a sample. Each entry in the table contains the frequency or count of the occurrences of values within a particular group or interval, and in this way, the table summarizes the distribution of values in the sample.

In this research shows several types of variables for frequency distribution. Now gradually the variables are shown in frequency distribution with the tables and charts by the description.

6.1 Frequency distribution

<i>Table 1: Number of Employees</i>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 to 1500	4	10.5	10.5	10.5
	0 to 2500	23	60.5	60.5	71.1
	0 to 3500	9	23.7	23.7	94.7
	above 3500	2	5.3	5.3	100.0
	Total	38	100.0	100.0	

Source: Field survey

Table 1: Shows that In my research shows that 60.53% garments have number of employees is above 3500 and 23.68% garments have number of employees is not more than 3500 and rest of all have number of employees is below 2500.

<i>Table 2: Operational age of Organization</i>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 to 5	1	2.6	2.6	2.6
	6 to 10	9	23.7	23.7	26.3
	11 to 15	15	39.5	39.5	65.8
	16 to 20	7	18.4	18.4	84.2
	above 20	6	15.8	15.8	100.0
	Total	38	100.0	100.0	

Source: Field survey

Table 2 : Shows that In this distribution research shows that operational age of organization above 20 years is 39.47% and between 16 to 20 years is 23.68% garments. The rest of all is operated by below 15 years.

<i>Table 3: Age of Respondent</i>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	36 to 45	3	7.9	7.9	7.9
	45 to 60	28	73.7	73.7	81.6
	above 60	7	18.4	18.4	100.0
	Total	38	100.0	100.0	

Source: Field survey.

Table 3: Shows that Here research shows that age of respondent between 45 to 60 ages is 73.68% and above 60 age is 18.42% and rest of all is 7.89%.

6.2 Descriptive Analysis

Descriptive Statistics are used to present quantitative descriptions in a manageable form. In a research study we may have lots of measures. Or we may measure a large number of people on any measure. Descriptive statistics help us to simplify large amounts of data in sensible way. Each descriptive statistic reduces lots of data a simpler summary.

Table 4: Descriptive Statistics of market risk

	N	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Would you regret deciding not to take a risky investment opportunity if it then performed well?	38	3.4737	.79651	.634	-1.434	.383	1.369	.750
Is missing an investment opportunity concerns you more than making a loss?	38	3.1053	.68928	.475	.384	.383	.539	.750
Would you generally avoid investments whose values rise and fall over time?	38	3.4737	.86170	.743	-.583	.383	-.614	.750
If the value of your investment fell, even for a short time, it would concern you?	38	3.5526	.82846	.686	-.477	.383	-.293	.750
Valid N (list wise)	38							

Source: Field survey.

In this table: 4 research shows that the highest mean is 3.5526 in case of if the value of the investment fell, even for a short time, it would concern and the lowest variance is .475 in case of is missing an investment opportunity concerns more than making loss.

6.3 The degree of credit risk in supply chain management

Table 5: Descriptive Statistics of credit risk

	N	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
To achieve financial success, would you take credit risks?	38	3.7632	.97077	.942	-.428	.383	-.677	.750
Do you face any credit risk due to supply chain policy?	38	3.4737	.72548	.526	.320	.383	-.076	.750
Is any settlement risk form for Supply chain management?	38	3.4737	.82975	.688	-.212	.383	-.455	.750
For any investment do you consider any sovereign risk?	38	2.5526	1.24548	1.551	.316	.383	-1.081	.750
Valid N (listwise)	38							

Source: Field survey.

In this table, Research shows that the highest mean is 3.7632 in case of achieving financial success to take credit risk and the lowest variance is .82975 in case of any settlement risk form supply chain management.

6.4 The degree of liquidity risk in supply chain management

<i>Table 6: Descriptive Statistics of liquidity risk</i>								
	N	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Rises and falls in the value of liquidity would not worry you	38	3.1579	.82286	.677	-.615	.383	-.360	.750
You care more about avoiding losses than making money	38	3.4737	.64669	.418	-.214	.383	-.152	.750
Do you find liquidity crises in case of supply chain management?	38	3.6842	.73907	.546	-.258	.383	.034	.750
Is there difference between budget planning initiatives and actual activities?	38	3.7368	1.03151	1.064	-.838	.383	.209	.750
Valid N (list wise)	38							

Source: Field survey.

In this table, Research shows that the highest mean is 3.7368 in case of difference between budget planning initiatives and actual activities and the lowest variance is .418 in case of more concern about avoiding losses than making money.

6.5 The degree of operational risk in supply chain management

<i>Table 7: Descriptive Statistics of operational risk</i>								
	N	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Is taking operational risks causes you a lot of stress?	38	3.0263	1.17374	1.378	-.053	.383	-.796	.750
Do you observe any major time delays related to distributors?	38	3.1842	.86541	.749	.416	.383	-.292	.750
Are you fulfilling customers' requirements?	38	3.6053	.78978	.624	-.193	.383	-.217	.750
Are you fulfilling customers' quality requirements?	38	3.9211	.81809	.669	-.788	.383	.665	.750
Valid N (list wise)	38							

Source: Field survey.

In this table, research shows that the highest mean is 3.9211 in fulfilling customer's quality requirements and lowest variance is .624 in fulfilling customer's requirements.

6.6 Measuring organizational performance through financial measures

	N	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Market share of my organization in the past 3 years have...	38	2.2895	.92730	.860	.231	.383	-.711	.750
The net profit of my organization in the past 3 years has...	38	1.9211	.88169	.777	.409	.383	-.996	.750
The growth in the sales of my organization in the past 3 years has...	38	2.2368	.91339	.834	.171	.383	-.786	.750
Valid N (list wise)	38							

Source: Field survey.

In this table, research shows that the highest mean is 2.2895 in market share and the lowest variance is .777 in case of net profit in past 3 years.

6.7 Regression analysis of measuring organizational market share through financial risk

Regression analysis is a set of statistical processes for estimating the relationships among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables (or 'predictors'). More specifically, regression analysis helps one understand how the typical value of the dependent variable (or 'criterion variable') changes when any one of the independent variables is varied, while the other independent variables are held fixed.

6.7.1 Measuring organizational market share through financial risk

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.716 ^a	.512	.140	.85975

Source: Field survey

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	16.293	16	1.018	1.378	.243 ^b
	Residual	15.523	21	.739		
	Total	31.816	37			

Source: Field survey

Table 11: Coefficients of Market share

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
		1	(Constant)	6.792		
	Would you regret deciding not to take a risky investment opportunity if it then performed well?	-.149	.231	-.128	-.648	.524
	Is missing an investment opportunity concerns you more than making a loss?	-.043	.252	-.032	-.170	.866
	Would you generally avoid investments whose values rise and fall over time?	.155	.214	.144	.724	.477
	If the value of your investment fell, even for a short time, it would concern you?	.234	.308	.209	.758	.457
	To achieve financial success, would you take credit risks?	-.223	.260	-.234	-.857	.401
	Do you face any credit risk due to supply chain policy?	.263	.309	.205	.850	.405
	Is any settlement risk form for Supply chain management?	-.231	.231	-.207	-	.327
	For any investment do you consider any sovereign risk?	-	.148	-.372	-	.076
	Rises and falls in the value of liquidity would not worry you	.277			1.868	
	You care more about avoiding losses than making money	-.184	.255	-.163	-.720	.479
	Do you find liquidity crises in case of supply chain management?	.041	.335	.028	.122	.904
	Do you observe any major time delays related to distributors?	-	.244	-.098	-.505	.619
	Is there difference between budget planning initiatives and actual activities?	.123				
	Is taking operational risks causes you a lot of stress?	.161	.181	.179	.893	.382
	Do you observe any major time delays related to distributors?	.134	.165	.170	.814	.425
	Are you fulfilling customers' requirements?	-.452	.221	-.422	-	.053
	Are you fulfilling customers' quality requirements?	-.098	.285	-.083	-.343	.735
		-.537	.241	-.473	-	.037
					2.229	

Source: Field survey

Here the R^2 is .512 which means that almost 51% financial risk effect on supply chain management. But the significant value is .243 which is too much higher than .05. Here I also found that fulfilling customer's quality requirements is significant with .037 and the major time delays related to distributors is significant with .053.

6.7.2 Measuring organizational net profit growth through financial risk

Table 12: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.546^a	.298	-.237	.98047

Source: Field survey

Table 13: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.575	16	.536	.558	.882 ^b
	Residual	20.188	21	.961		
	Total	28.763	37			

Source: Field survey

Table 14 :Coefficients of Net profit

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.012	3.358		.897	.380
	Would you regret deciding not to take a risky investment opportunity if it then performed well?	.186	.263	.168	.707	.487
	Is missing an investment opportunity concerns you more than making a loss?	-.063	.287	-.049	-.218	.830
	Would you generally avoid investments whose values rise and fall over time?	-.090	.244	-.088	-.371	.715
	If the value of your investment fell, even for a short time, it would concern you?	.355	.352	.334	1.009	.324
	To achieve financial success, would you take credit risks?	-.297	.297	-.327	-1.001	.328
	Do you face any credit risk due to supply chain policy?	.422	.352	.347	1.198	.244
	Is any settlement risk form for Supply chain management?	-.220	.263	-.207	-.838	.411
	For any investment do you consider any sovereign risk?	-.161	.169	-.228	-.953	.352
	Rises and falls in the value of liquidity would not worry you	.029	.291	.027	.101	.920
	You care more about avoiding losses than making money	.475	.381	.348	1.245	.227
	Do you find liquidity crises in case of supply chain management?	-.090	.278	-.075	-.323	.750
	Is there difference between budget planning initiatives and actual activities?	.031	.206	.037	.153	.880
	Is taking operational risks causes you a lot of stress?	.020	.188	.027	.107	.916
	Do you observe any major time delays related to distributors?	-.382	.252	-.375	-1.518	.144
Are you fulfilling customers' requirements?	-.316	.325	-.283	-.973	.342	
Are you fulfilling customers' quality	-.228	.275	-.212	-.830	.416	

	requirements?					
--	---------------	--	--	--	--	--

Source: Field survey

Here the R^2 is .546 which means that almost 54% financial risk effect on supply chain management. But the significant value is .882 which is too much higher than .05. In coefficient table the variables are not significant with .05 or below .05.

6.7.3 Measuring organizational sales growth through financial risk

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.691 ^a	.477	.078	.87683

Source: Field survey

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.723	16	.920	1.197	.344 ^b
	Residual	16.145	21	.769		
	Total	30.868	37			

Source: Field survey

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.852	3.003		2.282	.033
	Would you regret deciding not to take a risky investment opportunity if it then performed well?	-.117	.235	-.102	-.499	.623
	Is missing an investment opportunity concerns you more than making a loss?	-.234	.257	-.176	-.910	.373
	Would you generally avoid investments whose values rise and fall over time?	.148	.218	.140	.680	.504
	If the value of your investment fell, even for a short time, it would concern you?	.244	.315	.221	.776	.447
	To achieve financial success, would you take credit risks?	-.250	.266	-.266	-.941	.357
	Do you face any credit risk due to supply chain policy?	.289	.315	.229	.917	.370
	Is any settlement risk form for Supply chain management?	-.249	.235	-.226	-1.060	.301
	For any investment do you consider any sovereign risk?	-.228	.151	-.311	-1.508	.147
	Rises and falls in the value of liquidity would not worry you	-.217	.260	-.196	-.835	.413

You care more about avoiding losses than making money	.072	.341	.051	.211	.835
Do you find liquidity crises in case of supply chain management?	-.133	.248	-.107	-.534	.599
Is there difference between budget planning initiatives and actual activities?	.136	.184	.154	.739	.468
Is taking operational risks causes you a lot of stress?	.172	.168	.221	1.021	.319
Do you observe any major time delays related to distributors?	-.422	.225	-.400	-1.875	.075
Are you fulfilling customers' requirements?	-.164	.291	-.142	-.563	.579
Are you fulfilling customers' quality requirements?	-.420	.246	-.376	-1.711	.102

Source: Field survey

Here the R^2 is .691 which means that almost 69% financial risk effect on supply chain management. But the significant value is .344 which is too much higher than .05. In the coefficient table the major time delays related to distributors is significant with .075 and any other variables value is not near to significant value .05.

Table 18: Correlations of Credit Risk

	To achieve financial success, would you take credit risks?	Do you face any credit risk due to supply chain policy?	Is any settlement risk form for Supply chain management?	For any investment do you consider any sovereign risk?
To achieve financial success, would you take credit risks?	1	.125	-.327*	.022
Do you face any credit risk due to supply chain policy?	.125	1	-.293	-.208
Is any settlement risk form for Supply chain management?	-.327*	-.293	1	.184
For any investment do you consider any sovereign risk?	.022	-.208	.184	1

Source: Field survey

The research shows that the significant value 1 to 3 is low relationship and 4 to 6 is moderate relationship and lastly 7 to above is high relationship. In this table maximum relation is low and moderate.

Table 19: Correlations of Liquidity Risk

	Rises and falls in the value of liquidity would not worry you	You care more about avoiding losses than making money	Do you find liquidity crises in case of supply chain management?	Is there difference between budget planning initiatives and actual activities?
Rises and falls in the value of liquidity would not worry you	1	-.144	.173	-.077
You care more about avoiding losses than making money	-.144	1	-.131	.111
Do you find liquidity crises in case of supply chain management?	.173	-.131	1	-.112
Is there difference between budget planning initiatives and actual	-.077	.111	-.112	1

activities?				
-------------	--	--	--	--

Source: Field survey

The research shows that the significant value 1 to 3 is low relationship and 4 to 6 is moderate relationship and lastly 7 to above is highly relationship. In this table maximum relation is low and moderate.

Table 20: Correlations of Operational risk

	Is taking operational risks causes you a lot of stress?	Do you observe any major time delays related to distributors?	Are you fulfilling customers' requirements?	Are you fulfilling customers' quality requirements?
Is taking operational risks causes you a lot of stress?	1	-.085	.274	-.082
Do you observe any major time delays related to distributors?	-.085	1	-.247	-.246
Are you fulfilling customers' requirements?	.274	-.247	1	.201
Are you fulfilling customers' quality requirements?	-.082	-.246	.201	1

Source: Field survey

The research shows that the significant value 1 to 3 is low relationship and 4 to 6 is moderate relationship and lastly 7 to above is highly relationship. In this table maximum relation is low and moderate.

Table 21: Measuring Organizational Financial Performance

	Market share of my organization in the past 3 years have...	The net profit of my organization in the past 3 years has...	The growth in the sales of my organization in the past 3 years has...
Market share of my organization in the past 3 years have...	1	.723**	.970**
The net profit of my organization in the past 3 years has...	.723**	1	.729**
The growth in the sales of my organization in the past 3 years has...	.970**	.729**	1

Source: Field survey

The research shows that the significant value 1 to 3 is low relationship and 4 to 6 is moderate relationship and lastly 7 to above is highly relationship. In this table maximum relation is low and moderate.

7. Findings

1. In this case, Research shows that not to take a risky investment opportunity 63.16% is agree and 23.68% is neither agree nor disagree.
2. Research shows that missing an investment concern a loss is 60.53% of the respondents are neither agree nor disagree and 21.05% is agree about it.
3. The 55.26% respondents are agree to avoid investment whose values rise and fall over time.
4. Research shows that 42.11% is agree to take credit for financial success and strongly agree 23.68%.
5. The 52.63% is found liquidity crises in case of supply chain management.
6. Research shows that 47.37% is agree on the fulfilling the customers' requirements.
7. It is shown that 57.89% is agree on fulfilling the customer's quality and 21.05% is strongly agree on this.

8. Research shows that 39.47% is not improved the net profit past 3 years and 26.32% is improved some extent by 3%-5%.
9. Research shows that the sales growth 36.84% is improved to a moderate extent.
10. The highest mean is 3.5526 in case of if the value of the investment fell, even for a short time, it would concern and the lowest variance is .475 in case of is missing an investment opportunity concerns more than making loss.
11. Research shows that the highest mean is 3.7632 in case of achieving financial success to take credit risk and the lowest variance is .82975 in case of any settlement risk form supply chain management.
12. The highest mean is 3.7368 in case of difference between budget planning initiatives and actual activities and the lowest variance is .418 in case of more concern about avoiding losses than making money.
13. Research shows that the highest mean is 2.2895 in market share and the lowest variance is .777 in case of net profit in past 3 years.
14. Research shows that fulfilling customer's quality requirements is significant with .037 and the major time delays related to distributors is significant with .053.
15. The research shows that the significant value 1 to 3 is low relationship and 4 to 6 is moderate relationship and lastly 7 to above is highly relationship. In this table maximum relation is low and moderate.

8. Recommendations

1. The organizations should be more concern about market risk for an investment opportunity.
2. Try to avoid an investment whose values are gradually rising and falling.
3. The organizations should concern about credit risk for making profit and better performance.
4. For any long term decision RMG Industry must be consider the settlement risk and sovereign risk.
5. Foe minimize the liquidity crises try to avoid supply chain related delay.
6. Try to make a balance between budget planning initiative and actual activities.
7. To focus on operational risk and sales growth of the organizations.
8. The organization should try to increase the market share as well as profit growth in the world wide.
9. Time management related activities are more important for the top management to continue better performance.
10. Try making a balance among the financial risk and profit maximizing tools in supply chain management.

9. Conclusion

This study has identified a set of detrimental financial risk exist in supply chain management of the organizations of RMG Industry in Bangladesh. It has also identified the significant causal factors causing the disturbances. Finally, it has identified the consequential effects of the disturbances. Based on the frequency of variables and with financial risk factors, four major financial risk in supply chain management have been identified. We would like to conclude that the identified financial risk in supply chain, their causes and consequences can be very useful for the practitioners and the researchers in the field of RMG Industry and in other manufacturing Industry as well. Further study can be performed to figure out the exact monetary loss, asset loss and the overall business loss and the organizational performance because of the financial risk. The associated study may be performed to study the sources of causal factors and develop specific measures to minimize the financial risk in supply chain management.

Copyright

The authors' publications in IJMIRR are distributed under Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>). The license was created for the purpose of promoting open access, i.e. free immediate access and unlimited reuse of all forms of original works.

References

- [1] Yamagata and Yunus (2012). Co-opetition and investment for supply-chain resilience. *Prod. Oper. Manag.* 18(6): 583–603.
- [2] Mlachila and Yang (2004) and Haté et al. (2005) Supply Chain Execs Share Disaster-Planning Techniques. *Computer World*. *disaster_planning_techniques* (accessed date February 19, 2011)
- [3] Islam & Moazzem, 2015. An empirically derived agenda of critical research issues for managing supply-chain disruptions. *Int. J. Prod. Res.* 43(19): 4067–4081.
- [4] Bogataj, D., M. Bogataj. 2007. Measuring the supply chain risk and vulnerability in frequency space. *Int. J. Prod. Econ.* 108(1–2): 291–301.
- [5] Braunscheidel, M. J., N. C. Suresh. 2009. The organizational antecedents of a firm's supply chain agility for risk mitigation and response. *J. Oper. Manage.* 27(2): 119–140.
- [6] Mlachila and Yang (2004). *Supply Chain Risks*. Ashgate Publishing, Burlington, US. Brun, A., M. Caridi, F. K. Salama, I. Ravelli.

2006. Value and risk assessment of supply chain management improvement projects. *Int. J. Prod. Econ.* 99(1–2): 186–201.
- [7] Burgess, R. G. 1984. *In the Field: An Introduction to Field Research*. Allen and Unwin Publishers, London, UK. Cao, D., O. Tang, K. Nakashima. 2009. Call for Papers: Special Issue on “Supply Chain Risk Management.” *International Journal of Production Economics*. (accessed February 19, 2011)
- [8] Cavinato, J. L. 2004. Supply chain logistics risks: From the back room to the board room. *Int. J. Phys. Distrib. Logist. Manage.* 34(5): 383–387
- [9] Ibrahim, “RMG Industry problems need focused attention”, *The Financial Express*, Nov. 10, 2009. Published by the Editor for International Publications Limited from Tropicana Tower (4th floor), Dhaka
- [10] S. S. Absar, “Problems surrounding wages: the ready made garments Industry in Bangladesh, *Journal of Labor and Management in Development*, 2 (7), Asia Pacific Press 2001.
- [11] H, Fazlul, “Prospects of RMG Industry in Bangladesh”, *Policy Dialogue Series*, No. 20, 21 Aug. 2007.
- [12] S. Kalpakjian and R. S. Schmid, *Manufacturing Engineering and Technology* , Fifth edition, Prentice Hall. 2006
- [13] Mitala, and A. Pennathurb, “Advanced technologies and humans in manufacturing workplaces: an interdependent relationship,” *International Journal of Industrial Ergonomic*, Vol. 33, pp. 295–313, 2004.
- [14] L. Monostori, E. Szelke, and B. Kadar, “Management of changes and disturbances in manufacturing systems,” *Annual Reviews in Control*, Vol. 22, pp. 85-97, 1998.
- [15] G. Toulouse, “Accident Risks in Disturbance Recovery in an Automated Batch-Production System,” *Human Factors and Ergonomics in Manufacturing*, Vol. 12 (4), pp. 383-406, 2002.