

Factors Affecting International Marketing of Leather Goods of Bangladesh

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Abstract: *In this study structural equation modeling was used which is a second generation multivariate data analysis method using partial least square approach to find out the determinants and factors affecting international marketing of leather and leather goods of Bangladesh. After conducting this study, it has been found that the structural path or relation between firm and domestic environment is more significant which indicates that in international marketing of LLG the relation between firm and domestic environment is more important than foreign environment. And from the outer weight it can be concluded no individual factor have significant impact on determining the firm characteristics, domestic environment and foreign environment. So international marketing of LLG is highly dependent on the relation between firm and domestic environment of our country.*

Keywords: *Partial least square, Structural equation modeling, PLS-SEM, Smart PLS, International Marketing, LLG.*

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I. Introduction

In March 2018, Bangladesh has recognized as a developing country by United Nations. After being developing country now Bangladesh has a vision to be developed country by 2041. For achieving such economic development, it is imperative to develop in international trade specially in finding export opportunities and export diversification for its export-oriented products. Now Bangladesh has a current export volume \$35 billion and according to export policy 2015-18 Bangladesh wants to raise its export volume \$60 billion by 2021. For achieving such target Bangladesh is focusing on developing its some potential sectors like leather and leather goods, agro business, ICT business, frozen foods etc. Among all those potential sectors leather and leather goods is more important in terms of export earnings after apparel industry. In 2017 “Leather” was declared as the product of the year. Bangladesh earned \$1.2 billion from export of leather and leather goods in 2017 which is equal to 3.54% of the country’s total merchandise exports. In Gross Domestic Product this industry contributed around 0.35% and in total employment this industry’s share rose from .16% to .22% from the year 2000 to 2015. Apart from this if we consider the global market of leather and leather goods (LLG) from 2000 to 2015 increased from \$75 Billion to \$167 billion showing that this market has a growing demand and it is a great opportunity for (LLG) producing and exporting countries. The rising labor cost of china also created an opportunity for other countries which are exporting (LLG). Bangladesh can take the advantage of those international market opportunities as leather exports of this country also increased about 71 times over the last four decades. So the importance of international marketing of LLG increased. This study was conducted to find out those factors which are affecting the international marketing of leather goods of Bangladesh. For doing this study Structural Equation Modeling was applied by using partial least square approach and classified those factors into three broad categories which are firm related factors, factors in domestic environment, and factors in international environment. To determine the effect of firm in international marketing selected factors were product, price, place, distribution and research activities. In domestic environment selected factors were competition, threats of new entrants, suppliers, customers and substitute products. In foreign environment selected factors were economic forces, competitive forces, level of technology, structure of distribution, legal/political forces, and geography and infrastructure. This study was conducted by taking interview through a questioner from employees of marketing department of 30 companies who are exporting LLG from Bangladesh. In this study it has been found that the structural path or relation between firm and domestic environment is more significant which indicates that in international marketing of LLG the relation between firm and domestic environment is more important than foreign environment. And from the outer weight it can be concluded no individual factor have significant impact on determining the firm characteristics, domestic environment and foreign environment. So international marketing of LLG is highly dependent on the relation between firm and domestic environment of our country.

Objective of the study: This study was conducted to find out the determinants and factors which are affecting the international marketing of leather and leather goods from Bangladesh. To find out those factors structural Equation Modeling was used using Partial Least Square approach. Partial Least Square approach was used to find out particularly in firm, domestic, and in foreign environment which factors are affecting the international marketing of leather goods of Bangladesh.

Research Methodology: In marketing research now a day the use of SEM is increasing which is a second-generation multivariate data analysis method. By using this model marketer can identify the relationship that exist among different variables. In Structural Equation Modeling (SEM) there are two sub models called inner model which shows the relationship between dependent and independent variables and outer model which shows the relationship between latent variable and its observed indicators. Among several approaches to SEM in this study Partial Least Square approach was used which is a soft modeling approach with no assumption about data distribution (Vinzi et al, 2010) and it is a good approach when the following situation are found in study (Bacon, 1999; Hwang et al, 2010; Wong, 2010): sample size is small, application have little available theory, predictive accuracy is paramount and correct model specification can't be ensured. Among two measurement model of SEM I used formative measurement model which was first proposed by Curtis and Jackson (1962) who challenged the characteristics of possibility correlated measure as a necessary condition (Diamantopoulou, Riefler, Katharina, 2007). Formative measurement model is used to define the latent variable by the combination of its observed indicators. The formal specification of the formative measurement model which represents the multiple regression equation is given below:

$$\eta = \sum_{i=1}^x \gamma_i x_i + \zeta$$

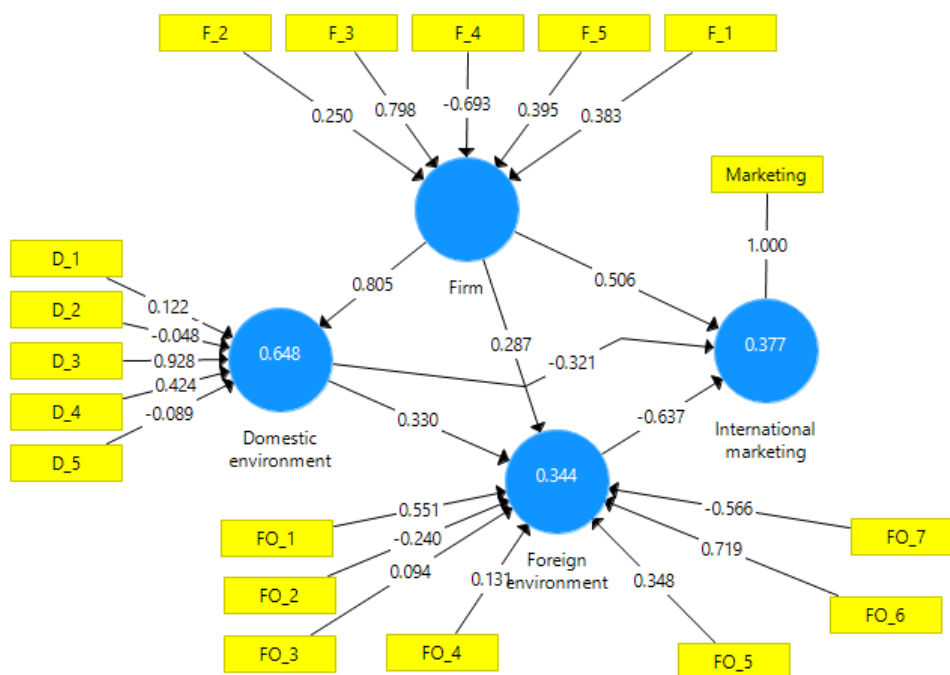
Where γ_i is a coefficient capturing the effect of indicator x_i on the latent variable η , and ζ is a disturbance term. The latter comprises all remaining causes of the construct, which are not represented in the indicators and are not correlated to the latter; thus following the assumption that covariance $(x_i, \zeta) = 0$.

Literature review: Bangladesh's second largest export earner after apparel industry is leather and leather goods (LLG). In fiscal year 2017-18 total export earnings from LLG is \$1.08 billion which is lower than \$1.23 billion in last fiscal year 2016-17 which is showing a huge drop over 12% in export earnings from LLG. The owners of tanneries are saying that the relocation of tanneries from Hazaribagh to Savar is the major cause for less export earnings in this fiscal year. But as the demand of LLG is increasing in global market now Bangladesh need to focus on exporting more leather and leather products. The rising labor cost and shifting from low value-added leather items to high value-added products of china have created a competitive advantage for Bangladesh in global LLG market. Bangladesh captured .7% of the world leather market in 2016 and 21st larger exporter in the world and there is a huge potentiality of expanding its export market. For absorbing these opportunities of international market in this sector competitiveness need to be increased, new market opportunities need to be discovered and effective export assistance program should be implemented. Bangladesh has a current export volume \$35 billion and according to export policy 2015-18 Bangladesh wants to raise its export volume \$60 billion by 2021 of which \$5 billion is expected from LLG. In 2017 "Leather" was declared as the product of the year. Bangladesh earned \$1.2 billion from export of leather and leather goods in 2017 which is equal to 3.54% of the country's total merchandise exports. In Gross Domestic Product this industry contributed around 0.35% and in total employment this industry's share rose from .16% to .22% from the year 2000 to 2015. And leather exports have been increased by about 71 times over the last four decades. From the year 2000 to 2015 the global market for LLG increased from \$75 to \$167 showing an increasing trend for this industry and it's a great opportunity for leather goods producing and exporting countries. Bangladesh is one of the country which can absorb this opportunity because it exports around 44 leather products to 84 destinations. After considering all the above situation, the importance of international marketing can't be denied for this industry. In a study by International Trade Center named "Market promotion for leather goods in developing countries" said that Bangladesh is so weak in case of market promotion especially for leather goods. Though poor reputation, equipment for occupational safety, environmental protection, and unskilled labors are the drawbacks of this industry but if these factors can be addressed and treated effectively then the earning from this sector will be increased. Wahiduzzaman, Ekram, Jamshed in their study found that the existing socio-economic condition of Bangladesh provides an encouraging prospect for leather industry and many economists, environmentalists, and technical persons are doing research work on this sector. They also concluded that now leather, leather goods, and tanneries are fighting for getting international market. This study was conducted to find out some factors which are affecting the international marketing of leather goods of Bangladesh. In this study structural equation model was applied using partial least square approach. After doing extensive search in the 30 top ranked marketing journal it has been identified that 204 PLS-SEM applications published in a 30-year period (Hair, Sarstedt, Mena, 2011). Evaluation of the effectiveness of marketing instruments require the application of PLS.

SEM has been increasingly utilized in marketing and management areas. And with the help of literature it has been found that applying LISREL has been miss specified and had better made use of the PLS approach. SEM has become a quasi-standard in marketing and management research when it comes to analyzing the cause-effect relation between latent constructs (Hair, Ringle, Sarstedt, 2014). They also found that if PLS_SEM can be applied appropriately is indeed a “Silver bullet” for estimating casual models in many theoretical models and empirical data situation. PLS has been used by a growing number of researchers from various discipline like management, marketing, Management Information System, Organizational Behavior (Henseler, Ringle, Sinkovics, 2009). They also found that more than 30 academic articles in the domain of international marketing used PLS path modeling as means of statistical analysis. The powerful feature of PLS path modeling is that it is suitable for prediction-oriented research which act as motivation for researchers to use this model.

Data and Model specification: To find out the determinants and factors which are affecting the international marketing of leather goods of Bangladesh a second generation multivariate data analysis method was used called structural equation modeling and among two measurement model I used formative measurement model where a latent variable is explained by combination of its observed indicators. In this model selected 4 latent variables are firm characteristics, domestic environment, foreign environment and international marketing. Firm characteristics describe the controllable factors that constitute marketer’s decision area. Domestic environment encompasses those environmental factors that have some impact of foreign operation decisions. And foreign environment consists of those factors for each foreign market within which the marketer operates. To determine the effect of firm in international marketing selected factors were product, price, place, distribution and research activities. In domestic environment my selected factors were competition, threats of new entrants, suppliers, customers and substitute products. In foreign environment selected factors were economic forces, competitive forces, level of technology, structure of distribution, legal/political forces, and geography and infrastructure. This study was conducted by taking interview through a questioner from employees of marketing department of 30 companies who are exporting LLG from Bangladesh.

Explaining the result of SEM-PLS path model: In a formative measurement model it is necessary to explain some basic elements like target endogenous variable variance, inner model path coefficient sizes and significance, outer model weight and significance and collinearity among indicators for assessing PLS-SEM model output. In this marketing research formative measurement model was used so the explanation of the following elements is necessary for assessing the output of this SEM-PLS path model. In figure: 1 it can be seen that there are some numbers in the circle which showing how much the variance of one latent variable is explained by other latent variables. The number on the arrows is called path coefficients which are used to explain how strong the effect of one variable is on another variable.



Explanation of target endogenous variable variance: $R^2 = .648$ for domestic environment showing that the latent variable (firm) moderately explain 64.8% of the variance of domestic environment and $R^2 = .344$ for foreign environment showing that firm explain 34.4% of foreign environment. Where firm, domestic environment and foreign environment together explain 37.7% of variance of international marketing.

Inner model coefficient sizes and significance: The inner model suggest that firm characteristics having a positive coefficient size .506 have a strong effect on international marketing. The hypothesized path relationship between firm domestic environments is statistically significant because it is greater than standardized path coefficient (.1). The hypothesized path relationships between firm and foreign environments (.287), between firm and international marketing (.506), domestic and foreign environment (.330) are also significant. But the hypothesized path between domestic environment and international marketing, between foreign environment and international marketing are not statistically significant.

Outer model weight and significance: In a formative measurement model it is necessary to measure indicator weight. In this study it has been found that no indicator has strong effect on latent variable or is statistically significant for explaining latent variable like firm, domestic environment, and international environment. From table: 1 we can see the outer weights of indicators from which we can see the relative importance of those indicators. And it can be seen that for latent variable firm, place for domestic environment, power of customer and for foreign environment culture has strong impact than other indicators.

Table: 1 (Outer Weights of Indicators)

Firm Characteristics		Domestic Environment		Foreign Environment	
Product (F-1)	.709	Competition(D-1)	.227	Economic forces (FO-1)	1.476
Price(F-2)	.526	Threat of new entrants (D-2)	.079	Competitive forces(FO-2)	.575
Place(F-3)	1.849	Power of supplier (D-3)	1.463	Level of technology (FO-3)	.222
Distribution(F-4)	1.15	Power of customer (D-4)	1.179	Structure of distribution (FO-4)	.358
Research(F-5)	.834	Power of substitute product (D-5)	.236	Political/legal forces (FO-5)	.846
				Cultural forces (FO-6)	1.737
				Geography and infrastructure (FO-7)	1.031

Collinearity among indicators: Formative measurement model explains unique variance in the construct so there will be a problem in the result of the model if the indicators are highly correlated. For this reason, multicollinearity among indicators or VIF (Variance Inflation Factor) must be assessed in formative measurement model. For evaluating variance inflation factor different standards are followed like 3.33(Diamantopoulos and Siguaw 2006) or 10.00 (Hair et al. 1998, Mathieson et al.). Table: 2 shows the inner VIF values for the indicators used in the study and in table: 3 the outer VIF values for latent variable are reported and from those table it can be seen that there are no collinearity problems among the selected indicators.

Table: 2 (Inner VIF values)

Firm Characteristics		Domestic Environment		Foreign Environment	
Product (F-1)	2.702	Competition(D-1)	1.928	Economic forces (FO-1)	1.311
Price(F-2)	2.597	Threat of new entrants (D-2)	2.099	Competitive forces(FO-2)	1.352
Place(F-3)	1.124	Power of supplier (D-3)	1.064	Level of technology (FO-3)	2.532
Distribution(F-4)	1.174	Power of customer (D-4)	1.234	Structure of distribution (FO-4)	1.741
Research(F-5)	1.065	Power of substitute product (D-5)	1.242	Political/legal forces (FO-5)	1.800
				Cultural forces (FO-6)	1.564
				Geography and infrastructure (FO-7)	2.250

Table:3 (Outer VIF values)

Name of the latent variable	Domestic Environment	Firm characteristics	Foreign Environment	International marketing
Domestic Environment			2.842	3.007
Firm characteristics	1.00		2.872	2.968
Foreign Environment				1.524

Checking the significance of structural path by Bootstrapping: In SEM-PLS bootstrapping is used to generate T-statistics which for testing the significance of both inner and outer model. A structural path having T- value greater than 1.96 is called statistically significant. From table: 4 and table: 5 it can be found that in inner model the structural path between firm and domestic environments is statistically significant with having a T-value 3.635. In outer model there is no significant indicator except economic forces of foreign environment with a T-value 2.089.

T- Statistics of Path Coefficients

Domestic environment → Foreign environment	.589
Domestic environment → International Marketing	.689
Firm → Domestic environment	3.635
Firm → Foreign environment	.535
Firm → International marketing	.826
Foreign environment → International Marketing	1.119

T- Statistics of Outer Loading

Firm Characteristics		Domestic Environment		Foreign Environment	
Product (F-1)	1.11	Competition(D-1)	.363	Economic forces (FO-1)	2.089
Price(F-2)	1.37	Threat of new entrants (D-2)	.105	Competitive forces(FO-2)	.110
Place(F-3)	1.525	Power of supplier (D-3)	1.468	Level of technology (FO-3)	.927
Distribution(F-4)	.712	Power of customer (D-4)	.974	Structure of distribution (FO-4)	.060
Research(F-5)	.742	Power of substitute product (D-5)	.436	Political/legal forces (FO-5)	.485
				Cultural forces (FO-6)	1.785
				Geography and infrastructure (FO-7)	.880

Findings of the SEM-PLS path model: In this study the whole environment of international marketing was considered by dividing into 3 broad categories named firm, domestic environment, and foreign environment and tried to show how these elements of international marketing are correlated with each other. It also included other factors which determine those elements. In this study it has been found that the structural path or relation between firm and domestic environment is more significant which indicates that in international marketing of LLG the relation between firm and domestic environment is more important than foreign environment. And from the outer weight it can be concluded no individual factor have significant impact on determining the firm characteristics, domestic environment and foreign environment. So international marketing of LLG is highly dependent on the relation between firm and domestic environment of our country.

II. Conclusion

Leather and leather goods are our second biggest source of exports earning. In recent fiscal year it is showing a lower growth rate than the previous year. To flourish this potential sector, it is compulsory to focus on international marketing of LLG. After doing this study it can be concluded that no particular factors are affecting the international marketing of LLG. The relation between firm and domestic environment is more significant in international marketing of LLG. If the domestic environment factors like competition, threats of new entrants, suppliers, customers and substitute products are favorable then it will be easy for firm to expand its international market. And in firm level place is a major factor which increasing the cost for firm in producing leather goods and at some extent affecting the international marketing of LLG.

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