Study on Key Empirical Factors of Competitiveness: Case of Textile Industry of Pakistan

Shiraz Khan* and Syed Mohammad Amir Shah**

Abstract

The study was designed to find out the key determinants of the competitiveness of the textile industry of Pakistan and also the impact of these determinants on performance. Survey was designed to conduct the research in the sector by using finance, productivity, supply and demand-side determinants to measure enterprises' competitiveness. 183 Public Limited Textile companies listed at KSE (Karachi Stock Exchange) were taken as sample for the study. Exploratory factor analysis technique was applied to find out the key elements of each major dimension of competitiveness. Findings demonstrate that key elements of each dimension include two from finance, three from productivity, four from supply and two from demand side. This suggests that the improvement in these eleven areas can foster industry performance, and that more resources should be endowed to enhance the domestic business competitiveness of local enterprises.

Keywords: Competitiveness, Textile industry, Karachi Stock Exchange, Exploratory factor analysis technique.

Introduction

Globalization and liberalization of economies are taking place at a very fast speed, and due to an impressive development in the means of transportation and communication the whole world is becoming an accessible market for large as well as medium and small business organizations. But developing countries are at the front of great challenges in order to derive benefits from promising investment and trade opportunities by strengthening their capacity. Especially in the age where international boarder restrictions are reduced for trade liberalization, resulting in more aggressive situation for the underdeveloped and developing countries like Pakistan. So, a country may gain some benefits and suffer some losses due to openness of trade. Openness leading towards more exports and best allocation and

* Shiraz Khan, PhD candidate, NUML Islamabad. Email: shirazkhan@uoh.edu.pk

** Prof. Dr. Amir Shah, Head of Department of Commerce, A.I.O.U Islamabad.

utilization of resources can accelerate growth by attracting foreign investment. Due to inefficiency and poor competition at domestic level, and relying heavily on imports could lead to worse economic conditions for Pakistan (Baber, 2012). Responsibility falls at the management of the organization to adopt a proactive approach in this era of intense competition and to prepare itself for the cut-throat competition at priority basis. The attacks of September 2001 and the collapse of giants such as Enron and World.Com have shaken confidence in business. With Japan passing through a decade long painful transition, two biggest economies of the world are in poor shape, made it to realize that the current century have begun with events indicative of the turbulence, challenges and opportunities ahead (Saeedi et al., 2012). Success and even survival in such turbulent times increasingly depend on competitiveness. Competitiveness has been described as comparative and multidimensional concept. While the time and perspectives have brought various changes in the criteria of competitiveness.

Before the Asian financial crises in 1997-98, western firms were concerned to find out the factors of success in export markets from their Asian competitors (Stiglitz, 1996). East and Southeast Asian counties got double digit annual growth for merchandize exports for more than a decade. The success story of these counties has been linked to a model having three dimensions between government, firms and banks (Stiglitz, 1996). Those competitive firms who lose their competitive edge either struggle for survival or get vanished (Kumar & Chadee, 2002). Several questions could be raised on the failure of this trilateral model of Asian corporations and also about the strengths of this Asian model. What were the sources of competitiveness of these firms that made them so successful in international markets? Was the export success of so many firms based on superficial foundations? Adaptation of rapidly changing domestic and global environment, in which they operate in order to compete, has been highlighted by the financial crises. Internal and external conditions have changed due to reforms taken after crises and also due to the global conditions being changed. In many crises-affected, economies there was a pressure to change the government's role, to make it more transparent and less interventionist (Kumar & Chadee, 2002). Information technologies are more distinctly cutting the lengthy process of production and also the product cycle. For sustaining the lasting competitiveness and to reinstate their vitality above mentioned changes require a suitable comeback from the Asian firms and governments (Kumar & Chadee, 2002).

Porter (1979) while defending the theory of comparative advantage of Ricardo (1951) presented a five forces model, in which he

emphasized on the competitiveness of the factors of production instead of depending upon the abundance of natural resources. Three of Porter's five forces refer to competition from external sources, while the remainders are internal threats. Aim of the current study is to explore the four basic dimensions of the competitiveness of the textile industry of Pakistan. These dimensions of the competitiveness of the textile industry are finance side determinants, productivity side determinants, supply side determinants, and demand side determinants. While Lau et al. (2009) explored the key determinants of the textile and apparel industry of China by using three dimension of productivity, supply and demand side; financial side determinants were ignored by the researchers. Finance side includes the cost of capital, and the financial and capital market efficiency (Kumar & Chadee, 2002). Productivity side was further explored with labor force and amount of capital invested. Supply side contains external economies, joint action and technology up-gradation, whereas demand side includes domestic demand, abroad demand, role of government, role of WTO and impact of ISO certification. Hence, an attempt has been made to find out the antecedents of the competitiveness of the textile industry of Pakistan, and also the impact of these antecedents on the performance of the industry. Organization when perform so accurately and perfectly pushing the competitors out of the ring is called competitive advantage (Porter, 1990). This advantage can be acquired or could be developed by having an unlimited access to natural resources, like economic power sources or high quality of ores, having an easy approach and access to well trained and highly skilled labor etc. It also includes use of new technologies in product process (Lau et al., 2009). Use of information technology has become such an important part of contemporary business world that it is contributing to competitive advantage with regard to internet presence by outperforming the competitors (Porter, 1985; 1990; 1998; 2008).

Significance of the Study

A country should produce the goods for which it has a natural edge and can produce at low cost as compare to others. The theory of comparative advantage was first time introduced by Ricardo (1817), emphasizing on the priority to produce goods in which a country holds comparative advantage in shape of cheap raw material and cheap labor. Porter (1985) was of the view that abundance and cheap resources are not necessary for good economy. He emphasized on the productivity growth, he believes that it's the micro (business unit) level competitiveness that boost the economy not the macro (country) level. Porter was of the view that if the concept of comparative advantage is accepted as it is, it will trap the

countries with low wage economies. Porter (1990) introduced the five forces model that can be applied to any industry with some minor changes to measure the competitiveness of the industry at micro level.

There are lot of strengths and opportunities for textile industry of Pakistan. The industry inherited with cheap raw material, cheap labor and good experience, but the industry also lacks in some dimensions, there is an intense need to address and rectify them as well to improve the performance of the sector. Besides having the natural edge, Pakistan still ranks at very low as compare to its regional competitors-China and India (Global Competitiveness Report 2014-15). The study will explore the key components of the competitiveness of textile industry of Pakistan. The study first identifies the all possible factors of competitiveness of the textile industry of Pakistan, then with the help of factor analysis technique tries to find out the key factors affecting the competitiveness.

The study will provide to the entrepreneurs' prevailing level of competitiveness, along-with the exact and detailed areas to address. It will also enable them to take the steps in right direction to improve the level of competitiveness ultimately to increase the profits. Study will also provide the real position of the industry which will help and enable the policy makers to rectify the shortcomings and chart out the new plans for the betterment of the industry.

The present paper proceeds as follows. Section II reviews the published literature on conceptual and measurement issues of competitiveness, and related empirical studies at the industry and enterprise level. In Section III, we investigate and propose firm-specific determinants of competitiveness for the study of Pakistan's textile and apparel industries. Section IV describes the survey data, methodology, and the empirical results, with extensive discussion on policy implications. Finally, Section V concludes the paper.

Literature Review

It remained the part of human nature from its beginning that he always wanted to be more successful; he always remained interested in how to gain more advantage or profit as compare to his competitors. With the passage of time and developments in the means of life, more research has been made on this human nature, termed as competitiveness. Various aspects of competitiveness were derived like; national level competitiveness, areal competitiveness (global, regional etc), sector competitiveness (primary, secondary), and organizational scope (profit oriented or non-profit organization) (Schmuck, 2008).

Origin of the theory of competitive advantage goes back to more than hundred and fifty years to the Ricardo's (1817) theory of comparative advantage. Focus was placed on the production of goods having comparatively low production and opportunity cost. Countries like Japan, Hong Kong and Korea proved to be the most competitive without having a comparative advantage to produce exportable goods. The critics of theory of comparative advantage were addressed by Michal Porter (1985). Porter (1985) presented the theory of competitive advantage. With the passage of time various researchers defined and computed competitiveness in various ways and with various techniques.

Traditional concept of enterprises' competitiveness focuses on costs (Hu & Michael, 2004). Those enterprises that are able to deliver the lowest product prices to markets are likely the most competitive as compare to the others offering comparatively higher prices. Mostly used approaches for measuring industrial competitiveness apply indices of total factor productivity (TFP), labor productivity (LP), unit labor cost (ULC) and Revealed Comparative Advantage (RCA).TFP growth and technical efficiency in the five sectors that cover the full spectrum of Chinese economy has been analyzed and evaluated. Panel data has been used for 30 Chinese provinces from 1991 to 1997. Strong TFP is recorded in agriculture, transportation, post and telecommunication, while TFP declined in construction, industry, and services (Hu & Michael, 2004).

Using ULC and LP indices to examine the Hong Kong's real output growth, productivity and profitability of industries for the period of 1982-94, Dodswoth (1997) found increase in ULC and falling competitiveness in sample period. While in contrast the reallocation of labor intensive operations to southern China, and upgrading the labor skills, resulted in increase in competitiveness instead. Conventionally, competitiveness is viewed and modeled as being dependent on the possession of abundant natural resources and labor. But this view cannot explain the recent economic performance of the many countries. Switzerland with highest per capita nominal wages but ranked first in the whole globe. So the measurement of ULC alone cannot explain the competitiveness potential. ULC cannot also provide the picture of international competitiveness. Italy's labor cost in the 2007 was more than that of China, India and other developing countries, but the textile and apparel industry of Italy still rank one in the entire world (Lau et al., 2009).

Lawrence and Weinstein (1998) represented the four factor analysis of economic competitiveness of U.S.A. He discussed the relative position of U.S.A in international market by examining the concept in

terms of wage cost, productivity, profit margins, and exchange rates for the recommendation of appropriate policies and to understand the price relatives, in other words for maintaining competitiveness. He showed how the price relatives are determined. To compare the unit cost of US he converted the unit price into the local currency of the other countries. To arrive at the unit price in local currency four factors are used as: Unit Cost (wage cost) x reciprocal of (labor) productivity x profit margin x exchange rate (l/$) = price in local foreign currency, where L stand for "local" currency unit, to be compare with U.S Dollar.

Revealed Comparative Advantage (RCA) is another indicator that is widely used to identify competitiveness in external markets. Balassa's RCA is the share of a country's exports of a specific product category to its total exports as compared to the share of total world exports of the specific category in world exports of all goods (Balassa, 1965). Hanif (2008) constructed RCA index for textile sector of Pakistan. Using ratio of credit extended to the textile sector to the total non-government credit of the banking system (Textile Credit Share [TCS]) as proxy for external finance, estimating long-run relationship and Error Correction Mechanisms (ECM) between RCA index and TCS while controlling for other determinants of the international trade competitiveness of textile sector of Pakistan. Their results suggest that resources to external finance has a strong positive impact on the country's textile sector competitiveness both in the short and the long run, even when the other traditional determinants of competitiveness were controlled.

There are also some other researchers who studied the competitiveness of the industry by dividing the determinants in various groups. Various aspects have been taken as the factors to determine the competitiveness level.

Markus (2008) used the theoretical framework of Porter's Diamond Model to measure the company level competitiveness with 8 variables but by ignoring the larger business organizations. He used varimax rotation resulting in four factors. The variables which he selected were, (i) knowledge base, (ii) financial prospects, (iii) lack of qualified experts, (iv) cooperation with other organizations, (v) Demand Index, (vi) Past tendencies of sales revenue growth and expected future tendency (sales revenue trend), (vii) Past tendencies of headcount growth and expected future tendency(headcount trend) and (viii) Innovation activities. He selected his variables according to the Porter's Diamond model factors: (a) Factor Conditions, (b) Related and Supporting industries Clusters, (c) Demand Conditions, (d) Firm strategy, structure

and rivalry, and also added one additional factor i.e., (e) Innovation (Márkus, 2008).

Kumar and Chadee (2002) divided the competitiveness into three internal and two external variables (Internal Variables: Firms H.R orientation, Extent of Technical Innovation, Organizational Structure. External Variables: Govt. Industrial Policy, Capital and Financial Markets). Government's role in stimulating markets, and building a strong national innovation system and attention towards qualitative aspects like relations with outside agents and institutional setting in which they operate are suggested by Kumar and Chadee (2002).

Woo (2003) tried to find out the industrial competitiveness of the Korean Industries with special attention to supply chain and value chain, the study analyzes the factors pertaining to competitiveness at three stages; trade and financial performances as the final outcome variable of competitiveness, productivity as intermediate outcome variable and R & D and FDI as structural determinants of competitiveness (Woo, 2003).

Reiljan et al. (2000) made the classification of factors that influence competitiveness as controllable and uncontrollable factors. Economic entities can influence the controllable factors and so can have an impact on its competitiveness, whereas entities cannot have influence on uncontrollable factors and these make the difference between the competitiveness levels of different entities. Uncontrollability of factors doesn't mean that they always remain uncontrollable, but it depends from entity to entity. Uncontrollable factors can be permanent uncontrollable, short term uncontrollable or in between. A short-term uncontrollable factor can become a controllable factor in long-term. Uncontrollable factors can change their nature with a change in economic policy by the government. Similarly WTO, IMF, EU etc. can change and influence the factors of competitiveness of nations.

Lau et al. (2009) divided the same controllable and uncontrollable factors into two stages of competitiveness: first stage depends on the abundance of natural resources and labor force; and second stage is about the competitive process. In essence, Reiljhan (2000) and Lau et al. (2009) are presenting the same concept of "controllable" and "uncontrollable". For Reiljan et al. (2000) controllable and uncontrollable factors are same as "technical process" and "abundant natural resources" for Lau et al. (2009). Lau et al. (2009) divided the determinants of competitiveness of an economic entity into three groups: productivity, supply side determinants and demand side determinants.

Hu et al. (2002) studied the Chinese industries and examined the contributions of internal R&D, technology transfers and FDI to their productivity. They find that the internal R&D of an enterprise could

significantly replace the effect of a technology transfer of FDI using enterprise data for 29 two-digit manufacturing industries and over 400 four-digit industries over the period of 1995–1999 (Hu & Jefferson,, 2002). A working paper by USAID was published in 2009 *"Cost Competitiveness of Pakistan's Textiles and Apparel Industry".* Product benchmark data suggest that Pakistan remains competitive in two key product subsectors primarily because of its ability to self-source cotton fabric. Production input cost data place Pakistan consistently near the median of the comparator countries.

For the statistical analysis competitiveness can be treated as a dependent or independent variable, depending on the perspectives from which one approaches the issue varying from case to case and size to size. Three folded framework has been suggested by Buckley (1991), the competitiveness performance, competitiveness potential, and the management processes. World Competitive Yearbook (WCY, 2002) is also presenting the similar framework. According to WCY formula, "world competitiveness" is a combination of assets that are inherent and created as well as processes that transfer assets into economic results within a country or firm (Man, 1998).

Macro or micro level competitiveness involves a combination of assets and processes. Natural resources available to the organization or inherited are defined as assets. Sometimes if the assets are not available to the organization then these could be created with the help of better infrastructure. Lastly these assets are converted to saleable products or services by processes to have economic gain (Dwyer, 2001). Through competitiveness, potential outcomes can be achieved with the competitiveness process Buckley (1991), similar to the Asset-Process-Performance (APP) framework (Ajitabh, 2002).

A few researchers view competitiveness also with the competency approach. Internal competencies of the firm hold central position in this approach. Internal competencies include structures, strategy, competencies, capabilities to innovate, and other tangible and intangible resources for their success and competitive advantage (Bartlett & Ghoshal, 1989; Doz & Prahalad, 1987; Hamel & Prahalad, 1989, 1990). The approach is found particularly among the resource-based approach towards competitiveness (Prahalad and Hamel, 1990; Grant, 1991; Barney, 2001, 1986; Peteraf, 1983; Ulrich, 1993). If an organization is able to develop the capabilities and then to utilize the developed capabilities properly and efficiently as compare to other competitors, this could enable an enterprise to achieve the competitiveness at international level (Smith, 1995).

Methodology

In this study, a survey to explore the key determining factors conducive to competitiveness was conducted. In the process, exploratory factor analysis (EFA) was applied. The surveyed enterprises are listed companies at Karachi Stock Exchange (KSE). Most of the enterprises are export-oriented and possess competitiveness in worldwide marketplaces. The questionnaire is designed to measure financial, productivity, supply and demand side determinants' effecting on competitiveness as shown in Table 1.

Table 1: Determinants of Competitiveness in Textile Enterprises

Constructs/Variables of the Study
Financial Side Determinants
Money and Capital Markets
Cost of Capital
Cost of Debt
Cost of Preferred Capital
Cost of Equity Capital
Productivity Side Determinants
Capital Intensity
Quality of Labor and Capital inputs
Education & Training
Learning Organization
Industrial restructuring
Technical Progress/developmental work
Infrastructure
Supply Side Determinants
External Economies
Specialized Labor market.
Local availability of inputs
Easy access to information
Foreign market availability of inputs
Joint action and technology upgrading
Backward and forward vertical linkages
Horizontal bilateral and multilateral linkages
Product process
Product quality
Supply Chain Management
R & D innovation
Cluster and market management

Preferential policies
Demand Side Determinants.
Product Quality
Domestic Demand
Abroad Demand
Foreign competition
Product differentiation
ISO helping to increase demand
WTO role for increasing business

Source: Author's calculation.

Note: This table presents an extended framework of determinants affecting competitiveness in textile and clothing enterprises. For factor analysis, the responses collected across sampled companies are designed in a 5-point Likert measurement scale.

After going through the research literature in chapter 2, in various researches (Porter, 1985, 1990, 1995, 2000; Lau et al., 2009; M.R. Narayana, 2004, Reiljan et al., 2000, Ahsan, 2008, Akhtar, 2009), it can be concluded that competitiveness of the textile industry of Pakistan is depending upon the four dimensions of competitiveness i.e. financial side, productivity side, supply side, and demand side. If an enterprise at micro level within the industry is competitive towards these four dimensions can be declared as competitive as a whole and if not, then it can be declared as less competitive or not competitive.

Questionnaire

To see all these empirically, a questionnaire has been designed covering all the four dimensions. Each dimension has been further elaborated by elements, asked through various questions each question representing its own separate elements, to evaluate the dimensions. Respondents were asked to rank their responses at five point Likert scale. Reliability or reproducibility, indicates whether the questionnaire performs consistently and shows the same results if tested at different intervals of time. Reliability can be examined in three ways. First is to examine that same responses are received at different occasions if asked from the same person. Higher the correlation between results higher is the reliability. Secondly, it can be checked by examining by two different observers using the same questionnaire. Sekaran (2003) is of the view that reliability can also be achieved if the respondents attach the same meaning to each of the item while measuring the same concept and that the items should "hang together as a set" (Akhtar, 2009).

Cronbach's alpha is the mostly used reliability coefficient which has been applied to each dimension to ensure inter-item consistency reliability (Sekaran, 2003). Alpha coefficients ranging from 0.5 to 0.60 are sufficient for exploratory studies (Nunnally, 1967 cited in Dimovski, 1994), and ranging between 0.70 and above 0.80 are good (Sekaran, 2003). Cronbach's alpha values closer to 1 ensure the higher internal consistency reliability of the instrument.

Cronbach's alpha has been computed in the study for the pilot test, to check the reliability of questionnaire asked from the smaller sample and then to use the questionnaire for the main study. Items causing a low value for reliability were excluded from the study.

Factor analysis technique was employed to extract the key determinants of the competitiveness. Key sub-dimensions extracted by factor analysis form the average of the main dimension. In this way four main dimensions have been computed; financial side, productivity side, supply side and demand side respectively. The main dimensions which are representing the highest mean values represent the key components. These key components make the competitive construct, and are the antecedents of the competitiveness of textile industry of Pakistan. Furthermore the antecedents are regressed with the net profit to find out their impact on performance.

Factor Analysis

Criteria set for choosing the factors includes; selection of factor with Eigen values equal to one, extracted factors account for 60 % of variance, and also with the help of the screen test which indicates the point from where the curve begins to straighten out (Dimovski, 1994).

According to Harrington (2009) "…loadings above 0.71 are excellent, 0.63 are very good, 0.55 good, 0.45 fair, and 0.32 poor" (Hariington, 2009, p. 23). The minimum factor loading criteria was set 0.50 which is considered higher (Leech et al., 2005).

Dependent Variable

Firm performance is the dependent variable of the study for the regression analysis. The four dimensions (independent variables) of the firm competitiveness, recomputed after data reduction techniques, are regressed with firm performance to know the impact of the variables on performance. Net Profit Margin has been taken as indicators of firm performance. Susan (2010) used the secondary data of customers' reviews available online as dependent variable while finding out the customers reviews on amazon.com for deciding regarding what makes helpful online review. Net Profit Margin represents the book values,

variable of performance have been selected to have a comprehensive and true picture of performance with the independent variable (Momaya, 1998).

Net Profit Margin

Log-natural of net profit margins are taken as the variable of performance. Data regarding the 113 sample companies collected through the annual reports of 2012-13.

NPM = Net Profit (after tax)

Analysis

Demographics of the Sample

Population of this study consists of all textile (spinning, composite and weaving) units listed at Karachi stock exchange in the year 2012. A population size of 183 (all listed textile units at Karachi stock exchange) has been selected for analysis. Out of 183 textiles listed companies only 142 companies are functioning or operative. Questionnaires were sent to all these 142industries, only67 were returned, which represents the 47% of the sample. Among those returned, 57 were deemed valid and allowable for statistical analysis, representing 40% of the sample.

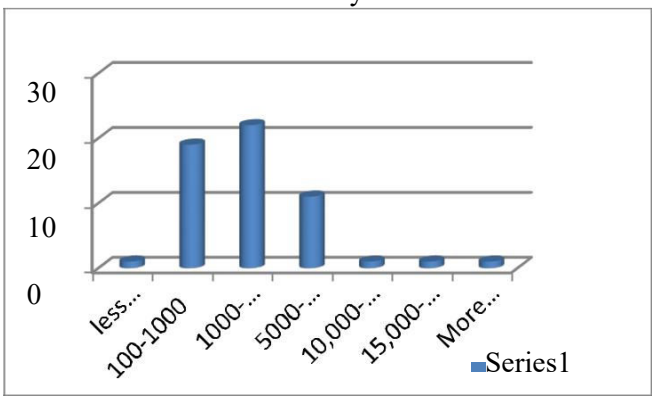
Out of the total sample of 113 companies 90 organizations are ISO (International Standard Organization) certified while 23 are not listed with the registration authority. All enterprises has been established before 2002 while only 3 after 2002. Survey indicates that growth rate of the new establishments in textile industry is also at declining trend, as the political insatiability is the most problematic factor which is affecting negatively on the industrial development of Pakistan (Global Competitiveness Repot 2009-2010).

Political/government instability was ranked at number 13 for India and China in the report, while Pakistan's instable governments were put at the number 1 of the 15 most problematic factors for doing business in Pakistan (Global Competitiveness Report 2012-2013). In Pakistan we can observe the change of governments from the end of Zia-ul-Haq regime, has taken place approximately 5 times till 2002.

Out of total 113 respondents 99 enterprises were public ltd. Companies which account for 88%, while 14 were private ltd listed companies comprising 12%of the sample. In terms of workforce most of the concerns surveyed have been engaging employees ranging 1000 to 5000, while number of units having employees less than 100 was very small. Textile sector of Pakistan engaging 38% of the industrial labor is the biggest source of employment. Out of the selected sample, 44 units

engaging worker between 1000-5000, while 45 units engaging employees between 100-1000, and number of units engaging, collectively, more than 5000 but less than 10,000 are 22, and unit engaging less than 100 are only 2. The detail is provided through figure 14.

Figure 1: Work Force in the Industry Work Force

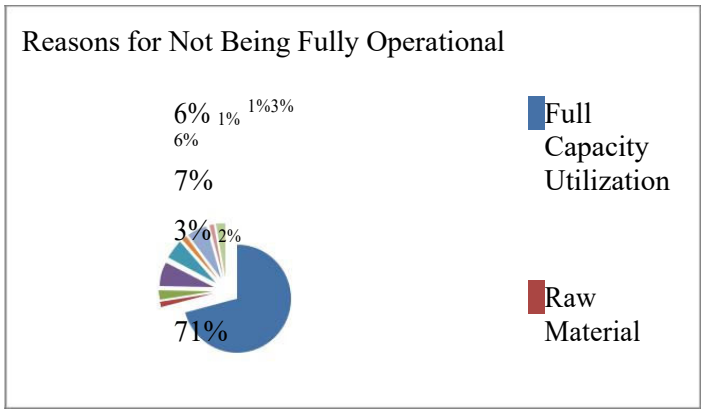


The surveyed units are engaged in various activities like spinning, weaving and in manufacturing like yarn, cloth, garments and some are making only household thing like towel etc. Out of the total sample 63 are spinning, 42 are composite and 8 weaving. It will not be out of place to mention here that textile sector contains a major portion of yarn export. What Pakistan's international trade is lacking is the export of value added goods. In the previous two to three years government took few measures to stop the extraordinary export of yarn, because of the shortage for domestic industries. Despite the shortage, it is surprising that even then most of the surveyed spinning units having more than 90% business, for exporting yarn. This trend shows a great rise in the total exports of the textile sector which is encouraging but on the other hand damaging the domestic industry.

Of the total companies 95% are engaged in mass production. Only 5% of the sample engaged in producing specialized goods for specialized/targeted customers Out of total 113 surveyed units 97 were fully operational. The rest have been facing certain hurdles that prevent them from full operationalization. These hurdles include weak market for their products, government rules, unavailability of raw material, unavailability of spare parts and machinery breakage. See figure 16 below. Two companies termed electricity shortage as a major reason for being not utilizing the 100% capacity. While on the whole in response to

another question 100% of the sample pointed out the shortage of Gas and Power for the basic infrastructure deficiency. And this is causing a shift of approach in power generation by the textile firms of their own to generate what they need. And it can be seen from the fact that most of the big textile units have shifted towards the business of power generation.

Figure 2: Showing Reasons for not being Fully Operational



Assumptions for factor analysis: Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy; and Bartlett's Test of Sphericity were tested. KMO values should be > 0.70, and is inadequate if < 0.5. The Bartlett test should be significant at < 0.05 (Leech et al., 2005).Table 2 provides results of the tests which are above the threshold values.

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.712
Bartlett's Test of	Approx. Chi-Square	4178.619
Sphericity	Df	435
	Sig.	.000

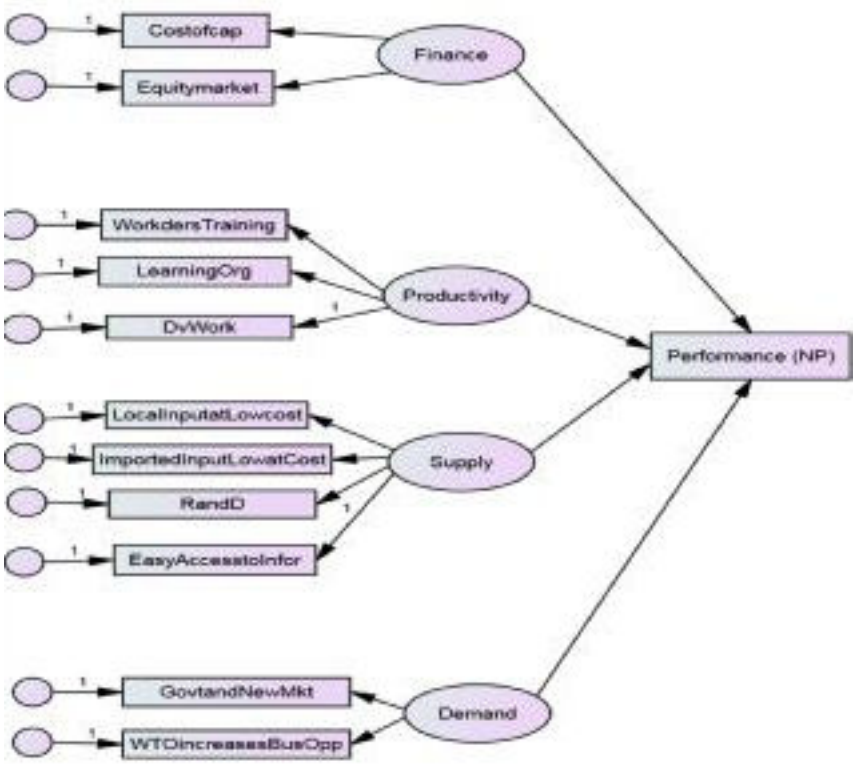
Factor analysis technique explored the two dimensions of financial side (i) cost of capital; and (ii) efficient equity and financial market, three from productivity side (i) training of the workers; (ii) developing work attitude; and (iii) learning organization. Four dimensions of supply side (i) local inputs low at cost; (ii) imported inputs low cost; (iii) research and innovation in supply chain management; and (iv) access to information. Two dimensions of the demand side (i) role of government policies; and (ii) WTO role for international business. These

variables could be stated as the key determinants of the competitiveness of the textile industry of Pakistan.

Table 3: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.933	23.11	23.11	6.933	23.11	23.11	5.839	19.462	19.462
2	4.404	14.68	37.791	4.404	14.68	37.791	4.461	14.871	34.334
3	3.175	10.584	48.375	3.175	10.584	48.375	2.947	9.823	44.157
4	2.57	8.567	56.942	2.57	8.567	56.942	2.18	7.268	51.425
5	2.251	7.503	64.444	2.251	7.503	64.444	2.091	6.97	58.395
6	1.55	5.166	69.61	1.55	5.166	69.61	2.019	6.731	65.125
7	1.402	4.673	74.284	1.402	4.673	74.284	1.817	6.057	71.183
8	1.099	3.663	77.946	1.099	3.663	77.946	1.625	5.416	76.599
9	1.064	3.545	81.492	1.064	3.545	81.492	1.468	4.893	81.492
10	0.864	2.882	84.373						

Figure 3: Diagram for Competitiveness Construct for Regression



(Method 1)
Table 4 below showing competitiveness construct. This can be presented as:

Table 4: Comparative Competitiveness Construct

Financial Side	Productivity	Supply Side	Demand Side
3.8421	3.208	3.18	2.42

Nine factors are hence identified as "competitiveness constructs". Ratings of the competitiveness constructs are calculated by aggregating the rating of the survey items that constitute the competitiveness construct, for example, factor 1 consists of nine items, so its rating is just the simple arithmetic mean of the all variables included in factor 1. By doing this we generate thirteen individual ratings, with the Workers training and Input Variables (Fact 1) 3.1286, the Clusters (Factor 2) as 2.2280 Restructuring (Factor 3) as 2.3567, Debt (Factor 4) as 2.7280, Horizontal Linkages (Factor 5) as 1.4035, Cost of Capital and Funds at fair cost (Factor 6) as 3.83333, and Capital Intensity (Factor 7) as 1.59649 and so on.

The explored dimensions by factor analysis then regressed with the net profit. Regression analysis shows the level of the impact of the variable on the dependent variable.

Regression for the factors computed.
Regression of the model using Net Profit as Dependent Variable

Model: NP= $\alpha + \beta LE + \beta SG + \beta AT + \beta FACT1 + \beta FACT2 + \beta FACT3 + \beta FACT4 + e$…… *(i)*
it
Where NP is the variable of performance i.e. Net Profit
i.= Particular industry t= Particular time
α = constant
βLE = Change in the value of firm Leverage Ratio. βSG= Value of firm Sales Growth
βAT= Change in the value of Assets Turnover. βFACT1 = Change in Financial Side determinants
βFACT2 = Change in Productivity Side determinants βFACT3 = Change in Supply Side determinants βFACT4 = Change in Demand Side determinants.

Table 5: Model Summary[b] Method 1with Net Profit

Model		R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
dimension0	1	.698[a]	0.487	0.453	142.3067	1.756

a. Predictors: (Constant), FACTOR4, Assets turnover, FACTOR2, Sales growth, Leverage, FACTOR1, FACTOR3

b. Dependent Variable: Net Profit Original

Table 5 shows adjusted R square 0.453, means that independent variables collectively explaining the dependent variable by 45.3%, and Durbin Watson test also near to 2 which represent the independence of data. Coefficients at table 33 clearly depict that the net profit margin of the company having a greater impact of 0.01 by FACT4 (representing the Demand Side Determinants) insignificant, having t value .133, while FACT3 (representing supply side) having an impact of .272 significant at 5% with t value at 2.612, while FACT1 (financial side) is showing a 5% significant relation with net profit Beta value at .194, with t value at 2.039, while FACT2 (productivity side) are showing a significant impact at 5% with t value 2.773, also having Beta value 0.262. So the highest impact is shown by the Supply and Productivity side followed by the Financial Side Determinants over the Net Profit Margin, but the regression analysis of the Demand side is insignificant.

Table 6: ANOVA[b] Table for Regression Model

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2018494.065	7	288356.295	14.239	.000[a]
Residual	2126375.293	105	20251.193		
Total	4144869.358	112			

Predictors: (Constant), Sales growth, Supply Side Determinants, Assets turnover, Demand Side Determinants, Leverage, Productivity Side Determinants, Financial Side Determinants

a. Dependent Variable: Net Profit Original

Table 7: Regression Coefficient Model 1 with Net Profit

	Unstandardized Coefficients		Standardized Coefficients			95.% Confidence Interval for B	
	B.	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
Model							
(Constant)	17.351	84.335		0.206	0.837	-149.87	184.572
Financial Side	23.506	11.529	0.194	2.039	0.044	0.646	46.367

	Productivity Side	12.071	4.352	0.262	2.773	0.007	3.441	20.701
	Supply Side	19.496	7.463	0.272	2.612	0.01	4.697	34.294
1	Demand Side	0.883	6.631	0.01	0.133	0.894	-12.264	14.031
	Leverage	-103.188	47.974	-0.161	-2.151	0.034	-198.312	-8.065
	Sales growth	0.379	0.527	0.053	0.72	0.473	-0.665	1.424
	Assets turnover	-4.175	21.951	-0.014	-0.19	0.85	-47.699	39.349

a. Dependent Variable: Net Profit Original

Conclusion

This study consists of two parts. In part I common factors of the competitiveness of the textile sector of Pakistan have been find out. In 2nd part relationship between the four dimensions of competitiveness and the indicators of performance has been investigated. Principal component analysis technique has been used to find out the key factors by using the varimax rotation. Regression analysis has been used to find out the relationship between the determinants of competitiveness and indicators of performance. Net profit selected as the indicator of performance.

Four determinants of the competitiveness have been included here in the study for analyzing the competitiveness of the textile industry of Pakistan. The four determinants: financial side, productivity side, supply side, and demand side aspects, having total fifteen sub dimensions, were asked through thirty six questions. Key dimensions of each determinant have been pointed out by the factor analysis technique as critical determinants of the competitiveness of the textile industry of Pakistan. These dimensions are from all the four determinants of the competitiveness. The mean of each determinant reflects which side is more competitive and which one is less. The importance of each determinant then confirmed through regressing them with the Net profit. The results show that all the four determinants having impact on the performance indicator, but with different level of relation. The highest impacting determinant on the performance is financial Side, followed by Supply and Productivity and demand side.

In current study eleven key determinants of the competitiveness of the textile sector of Pakistan have been extracted. These include Cost of capital, financial markets, Training facilities, work attitude, learning organization, Low cost of local inputs, low cost of imported inputs, easy access to information, government role, and WTO support in enhancing the demand, are found to play the most significant role in enhancing industry competitiveness. The current study further suggests that government policies should be implemented to strengthen inter-enterprise cooperation and to improve local government services for the

textile and clothing industries. This should be combined with a set of fiscal and monetary policies to improve the business environment. A stable financial market with stable interest rates provides incentives for investors to save and invest. Also, low profit tax encourages enterprises to invest in R&D, which leads to rising productivity and competitiveness. After the Asian financial crisis in 1998, proactive fiscal and monetary policies and prudent monetary policy were adopted to counteract the destructive impacts of prospective financial turmoil.

Reference List

Akhtar, N. (2009) *The Relationship of Organizational learning and Competitive Advantage: A Case Study of Petroleum Companies of Pakistan.* PhD Thesis, National University of Modern Languages, Islamabad.

Baber, C. M. A, (2012) Impact of trade openness on exports growth, imports growth and trade balance of Pakistan *Forman Journal of Economic Studies* 8. pp. 63-81.

Balassa, B. (1965) Trade liberalization and revealed comparative advantage. *Manchester School of Economic and Social Studies* 33(2). pp. 99-124.

Bartlett, A., & Ghoshal, S. (1989) *Managing across borders*. Boston, MA: Harvard Business School Press.

Barney, J. 1986 Strategic Factor markets: Expectations, luck and business strategy. *Management Science* 21. pp. 1231- 1241.

Buckley, P. J. et al., 1991 Foreign Market Servicing Strategies and Competitiveness. *Journal of General Management* 17(2). pp. 34–46.

Dimovski, V. 1994. *Organizational learning and competitive advantage.* PhD Thesis, Cleveland.

Dodswoth, J. D., M. (1997). Hong Kong, China: Growth, structural change, and economic stability during transition. *IMF Occasional Paper International Monetary Fund, Washington, DC.* p. 152.

Doz, Y. L. & Prahalad, C. K. (1987) *The multinational mission.* New York, NY: The Free Press.

Grant, R. M. (1991) *Contemporary strategy analysis: Concepts, techniques and applications.* Ambridge, MA: Blackwell Ltd.

Hamel, G. (1991) Competition for competence and inter-partner learning within international strategic alliances. *Strategic Management Journal* 12. pp. 83-103.

Hanif, N. M., & Jafri, S. K. 2008. Financial development and textile sector competitiveness: A case study of Pakistan. *South Asia Economic Journal* 9(1). pp. 141-158.

Harrington, D. 2009. *Confirmatory factor analysis.* New York, NY: Oxford University Press.

Hu, A. G. Z., & Gary, Jefferson, H. (2002) FDI impact and spillover: evidence from China's electronic and textile industries. *World Economy* 25(8). pp. 1063-1076.

Hu, B., & Michael. M. 2004. Input output structure and growth in China. *Mathematics and Computers in Simulation* 64(1). pp. 193-202.

Kumar, R. & Chadee, D. D., (2002) *International competitiveness of Asian firms: An analytical framework*. Manila: Asian Development Bank.

Lau, C. K., To, K. M., Zhang, Z., & Chen, J. (2009) Determinants of competitiveness: Observations in China's textile and apparel industries. *China & World Economy* 17(2). pp. 45-64.

Lawrence, R., & Weinstein, D. 1999. Trade and Growth: Import-led or Export-led? Evidence from Japan and Korea, *NBER Working Paper No.7264.*

Leech, N., Barrett, K. C., & Morgan, G. (Ed.). (2005) *SPSS for intermediate statistics: Use and interpretation*: Mahwah, NJ: Erlbaum.

Markus, G. (2008). Measuring company level competitiveness in Porter's Diamond model framework. In *FIKUSZ 2008 Business Sciences-Symposium for Young Researchers: Proceedings*. pp. 149-158.

Momaya, K. (1998) Evaluating international competitiveness at the industry level. *Vikalpa* 23(2). pp. 39-46.

Peteraf, M. A. (1983) The Cornerstones of Competitive Advantage: A Resource-based View. *Strategic Management Journal* 14. pp. 179–191.

Porter, M., E. (1985) *The competitive advantage of nations*. New York: Free Press, 1990.

Porter, M. E. (1990) The competitive advantage of notions. *Harvard Business Review* 68(2). pp. 73-93.

Porter, M.E., 1998. Clusters and the new economics of competition. Harvard Business Review 76(6). pp. 77-90

Porter, M. E. (2008) *Competitive strategy: Techniques for analyzing industries and competitors*. Simon and Schuster.

Reiljan, J., Eiljan, Hinrikus, M. & Tartu, A. (2000) *Key issues in defining and analysing the competitiveness of a country*. Tartu University Press.

Ricardo, D. (1973) *The Works and Correspondence of David Ricardo.* Edited by Piero Sraffa and M. Dobbs. Vols. I-XI. Cambridge: Cambridge University Press

Saeedi, N., Azari, T. and Maleki, T., (2012) Influence of world trade organization on Iran's carpet industry compatibility. *African Journal of Business Management* 6(4). p.1483.

Sekaran, U. (Ed.). (2003) *Research methods for business* (4th ed.): Hoboken, NJ: John Wiley & Sons.

Schmuck, R. 2008. Measuring company competitiveness. *University of Pecs Faculty of Business and Economics Working Paper*. pp. 199-208.

Smith, S. (1995) World Class Competitiveness. Managing Service Quality 5(5). pp. 36–42.

Stiglitz, J. E., & Uy, M. (1996) Financial Markets, Public Policy and the East Asian Miracle. *The World Bank Research Observer* 11(2). pp. 249-276.

Susan, M. M. (2010) What makes a helpful online review? A study of customer reviews on amazon.com. *MIS Quarterly* 34(1). pp. 185-200.

Ulrich, D. (1993) Profiling organizational competitiveness: cultivating capabilities. *Human Resource Planning* 16(3). pp. 1- 17.

Woo, C. (2003) *Industrial competitiveness of Korea: Methodology and findings of KDI's 2003 study.* Seoul: Korea Development Institute.