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Impact of ISO Standards, a Tool of Total Quality Management, on Financial Performance

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ABSTRACT

In the recent globalized market competition, Quality has become an important competitive edge of the business. This paper reviews the evolution of Total Quality Management and implication of one of its tool: ISO 9001. There are many tools in practice that ensure consistent quality. One of such tools is Implementation of ISO Standards. In theory no direct financial benefit is attached with ISO. All the benefits are in-direct. Moreover adherence to ISO Standards requires considerable efforts. Thus a strong motivation is needed for the managers to adopt ISO standardization. In order to better understand the relationship between ISO certification and financial performance to provide to managers empirical evidence about true effects of certification, this paper studies the relationship between ISO certification and financial performance of the firm. The firms in the sample were listed on Karachi Stock Exchange and belonged to Textile Sector of Pakistan. The firms in the sample were divided into two groups: one that has obtained ISO certification and one that does not have ISO certification. The financial performance of those two groups was then compared. The results show that firms that are ISO certified has better financial performance than the firms that are not ISO certified. On the basis of this finding the paper concludes on the advice that for better financial performance implementation of ISO certification must be pursued.
KEYWORDS: Competitive edge, Gross Profit Margin, Net Profit Margin

INTRODUCTION

The subject of Quality in business is continuously gaining importance with time. In the past it was thought that price is the only competitive edge in the business. However, lately superior quality has emerged as one of the major competitive edge.

Since the inception, mankind has passed through various phases. Civilization, which is still in the process of never ending improvement, started form simple wheel invention and is still quenching its technological thirst. When industrialization started in early 19th century, Ford introduced the word quality. Quality, at that time was a very vague concept and its scope was limited only to production processes. Later on in 1920s it was Western Electric who noted that quality was not only confined to production but it has to do something with management as well. However, at that time, this concept did not get much fame. After Second World War, US Defence Department refused to accept the ammunitions as it did not meet the department's quality requirements [1] . This gave the industry a huge blow, as such sort of refusal was first of its kind. After this incident, the concept of quality engineering and quality assurance gained more importance. For next for 20 years, Philip B. Crosby, W. Edward Deming, Armand V. Feigenbaum, Kaoru Ishikawa, Joseph M. Juran, Genichi Taguchi and others accelerated quality beyond statistical control to the broader realm and included reliability engineering and quality assurance in it [2] [3]. Later on, in 1970s, many firms tried to diverge from the TQM but sooner or later realized that TQM and its contents affect the firms' performance and its abilities to compete [4].

TQM and its Importance

If we look for the definition of TQM, we come to know that there is no single definition on which all the authorities agree [2]. It can be said that the TQM is the business level strategy and like any other prevailing strategy; its components of process and content are necessary but not sufficient for success of any organization [4]. TQM is very important with respect to customer orientation and product orientation, as these are the key elements to accelerate the revenues and reducing the costs. Studies show that the customer orientation has a positive relationship with the firm's profitability [5]. Here it is to be noted that all these measurements came from customers and not from

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managers [4]. The next is the marketing advantage, which means that the firm is enjoying supernormal profits and this is done by attaining more and more customers than the rivals [4]. Attaining customers and then retaining them is an integral part of any organizations policy. The customers only get retained if their needs are being catered according to their desires and wishes. Deming [6], and Juran [7] also stressed upon the importance of serving customers by improving product quality. George [8], Haavind [9], Hart [10] and other pointed out the fact that the customer's requirements, expectations and satisfaction are the key requirements for Baldrige award which is given on the basis of better quality. Juran's [11] handbook on quality control was the main accelerator which accelerated the quality management beyond the manufacturing process and included almost all the operations of the firm. Afterwards continuous improvements led to the Kaizen process, which reduced the effort and time it took to carry out operations [12]. Later on it was found that the product quality and efficiency can be improved by paying attention to the processes which improves the product reliability [1].

Evolution of TQM Techniques

Followers and advocates of TQM point out the fact that there are several frameworks available which gives us an idea about the quality initiatives. They include Deming's 14 points, Crobby's 14 steps and Juran's breakthrough strategy. Dean [15] have examined the TQM literature and suggested that there are three core principles that are inherited in various TQM frameworks and they are: customer focus, continuous improvement, and teamwork. Stahl [16] and Fisher [17] admitted the above three frameworks and presented some additional and somewhat different principles. They said that there is difference between means (i.e. beliefs and practices consistent with TQM) and ends (fewer defects, less scrap, more satisfaction). Flynn [18] talked about the major difference by referring to TQM implementation and organization's work practices. Traditionally TQM contributed to the technological, operational and production sides [19]. Lately Flynn [18] focused on the management or 'people' side of TQM. Saraph [20], identified 8 critical factors of quality management: "(1) the role of management leadership and quality policy; (2) the role of the quality department; (3) training; (4) product/service design; (5) supplier quality management; (6) process management; (7) quality data and reporting (feedback); and (8) employee relations" [20]. Morrow [21] recommended the involvement of all organizational employees in adoption, monitoring and improving the quality system and approaches [21].

Benefits of TQM

TQM provides a paradigm shift in management philosophy for improving the organizational effectiveness [13]. TQM focuses the efforts of all the members of any organization that contributes one way or the other to improve the condition of the company. The organizational climate is another important and understood characteristic of an organization that is reflected in the attitudes and policies of the company [14]. Literature proves that the implementation of TQM not only increases the revenues of the firm but also results in cost reduction bringing down the firm to an optimal level where it enjoys more benefits out of its process [2]. According to research and surveys there are many methods and techniques through which new customers can be attained, however retaining the attained customers is the very significant and important task for the organization. Customers can only be retained if the organization delivers quality products and meet their requirements and expectations consistently.

ISO as a tool of TQM

The basic Theme of the ISO standards is documentation of the processes and procedures. ISO 9001 is a generalized quality system that is applicable to any type of product or service [22]. ISO standards require for every organization to develop and maintain their own processes according to their own requirements, thus guaranteeing only conformance with the standards not the higher quality itself [23]. ISO standards were made when the strong need was felt to standardize the products and reduce the variability. ISO does so by mandating routines and standardized procedures. ISO implementation benefits the customers by ensuring that they continuously get the same quality throughout the product life [22]. Before the introduction of ISO 9001 standards the customers had to risk inferior quality or had to take hassle to perform the inspections themselves. With the introduction of ISO standards, the customers get assurance of consistent quality with the certification status [22]. The customers can rely on the auditors as auditors are always external to the organization [24]. The ISO standards require that standard procedures may be adopted to minimize defective outputs [22]. In this manner adoption of ISO standardization promote a culture of quality consciousness in the organization [25].

Benefits of ISO Certification

The largest effect of ISO certification is perceived to be on sales. ISO certification helps in reducing the trade barriers facilitating the export sales [29]. On the other hand the home nation also gets ensured of consistent quality which has a positive effect on the local sales too. For many organizations the major motivation for the certification is that it retains or opens new customers' doors [30] Positive impact of the ISO certification on the operational performance of the firm was also confirmed in Australia and New Zealand in 2008 [31]. However, in 2005, Corbett et al., demonstrated that ISO certification helps in better financial performance. [24]. According to Simmons and White the link between improved quality and business performance cannot be denied [23]. Before the introduction of ISO standards the sale-purchase business for huge orders was a difficult one as on-site audits or inspections were required to make sure that the products are of at least a standard quality. This difficulty was particular higher in case of international sale purchase. The introduction of ISO standards solved this problem as now the buyer can look into the documented procedures and then can rely on ISO certification. Independent audit agency confirms the implementation of those standards.

Ebrahim, Whiter and Hikmet proposed the three dimensions of benefits of ISO which are: "increase in market share, meeting the customer requirements and improving process efficiency" [27]. It is the requirement of ISO standards that all the procedures must be well-defined so that they can be properly documented [28]. These requirements also helps in identifying the outdated procedures and help in updating them according to latest requirements [24].

Apart from all the above discussed benefits associated with ISO 9001 Certification, one of the key benefit associated with certification is organizational learning, which comprises of series of experiences and stages of growth. The learning of the organization in the form of experiences gets documented. This documented learning can then be transferred to new employees without any effort. Hence the organizational learning becomes channelized. In this way new employees can be aligned more effectively and the firm will stop relying on implicit or unspoken knowledge [28]. However, In-order to get this benefit of ISO 9001 Certification the organization's aim should not be confined only to market shares. It should also be towards corporate learning. The ISO 9001 Certification in its true sense is to learn from past and to do better quality work. However, to attain this benefit the objective of the company to attain the certification must not be limited to external factors (sales etc.) but should also encompass the internal factors, like continuous improvement by the way of learning. [31].

Ambiguity about Financial effects of ISO Standards

As no direct monetary benefit is attached with certification many experts and managers are of the view that the pursuit of ISO 9001 Certification may be futile. Many of the managers and organization heads consider ISO 9001 Certification as financial burden as it requires proper documentation, audit and written evidence for their processes. Managers are not ready to document their procedures as for some managers it is costly and for others it is time consuming [24]. In nut shell the main hurdle in ISO 9001 Certification is lack of motivation because of absence of direct financial benefit. Moreover, Implementation of the ISO standards requires discipline from the company. They have to document their processes in such a way that it can easily be understood by employees, auditors and other related parties. This will move process of auditing in a smooth fashion. For this purpose special care is needed. ISO 9001 Certification will draw a clear picture about the grey and white areas of organization; hence identification of out dated procedures becomes trouble-free. For those organizations that don't pursue ISO certification, the process to identify the change and to align some plan for their correction is very difficult and long. On the other hand, it improves the process and maintain quality of the product, thus organization is rewarded in form of cost reduction, process consistency, customer orientation and market retention. Thus reduction in internal costs and market retention are major benefits that are associated with ISO 9001 Certification. Consistent delivery of quality products will increase sales volume for the business. Researchers have proved that financial performance of company is linked with ISO 9001 Certification. Now organizations have new markets open to compete. ISO 9001 Certification enables a company to have sound footing in international market by having an external party audit of standard procedures and practices [22]. For many organizations ISO 9001 Certification is one of an important tool in acceleration of export sales.

As evident from review of literature, out of the above mentioned three-fold benefits of ISO certification, least empirical evidence exist about financial effect of ISO certification. Thus in an effort to fill this gap, this paper will try to find the empirical evidence of any such relationship.

RESEARCH METHODOLOGY

In order to find out the impact of ISO Certification this research analyses the financial performance of certified firms and compares it with the financial performance of the non-certified firms. To avoid any biasness, firms of both groups (i.e. Certified and Non-Certified) belongs to same sector. This allowed to us to control for extraneous, macroeconomic variables which has indirect impact on the financial performance of firms.

Sample

The research is carried out in Pakistan and all the firms in the sample were listed in Karachi Stock Exchange. Data were gathered for the listed firms in Pakistan as they are required to maintain their financial data by law. This data is thus an authentic source of financial information of firms.

In performance of this research the data for the listed firms were taken from "Financial Statements Analysis of Companies (Non-Financial) Listed at Karachi Stock Exchange". This report is published by State Bank of Pakistan after every financial year. The "Financial Statements Analysis of Companies (Non-Financial) Listed at Karachi Stock exchange" is an authentic source of secondary data in Pakistan and many researchers [32] [33] [34] [35] [36] [37] [38] [39] have used this data source in their respective researches.

The spread of data for this research is of 13 years. That is from 1999 to 2011. A wide period was considered so that different macro-economic conditions such as overall economic peak and overall economic recessions may be covered and the chances of short term effect due to external variables may not affect the analysis.

The data were gathered from the textile sector of Pakistan. This sector was chosen as it is the largest industrial sector of Pakistan and contributes highly to the industrial revenue of Pakistan. Initially there were total of 144 firms included in the data set. However, all the firms did not have complete data for the entire 13 year period ranging from 1999-2011. Therefore, the firms for which the data was not available for the complete period were excluded.

In the next phase the ISO 9001 certification status was to be confirmed. Certification Status was initially seen from websites of the respective companies. However, a significant number of firms either did not have a website or there was no information regarding certification status. Therefore, in order to cope up with the problem the Certification status was then confirmed through phone calls to all firms included in the sample. For some firms certification could not be confirmed as either the resource person could not be traced or the firm did not want to be part of the research. All such firms were excluded from the sample.

Table 1 Number of Certified and Non-Certified Firms

Years	Certified	Non-Certified	Grand Total
1999	5	42	47
2000	5	42	47
2001	7	40	47
2002	8	39	47
2003	15	32	47
2004	15	32	47
2005	20	27	47
2006	21	26	47
2007	22	25	47
2008	23	24	47
2009	26	21	47
2010	27	20	47
2011	27	20	47

Additionally, there existed variability even among the firms for which certification could be confirmed. Some of the firms had recently acquired the ISO 9001 certification for the first time, whereas others have been certified for very long time. Thus number of certified firms in any year varied. This poses a problem for the graphical analysis of the data. To help solve the problem the graphs were plotted taking average value of the financial variables for both certified and non-certified group.

In the first year of analysis i.e. 1999 there were only 5 certified firms and 42 non-certified firms. While in the final year of analysis i.e. in 2011 there were 27 certified firms and 20 non-certified firms. The table 1 shows the number of certified firms in each year of analysis while the figure 1 shows the same values in the form of graph.

RESULTS AND DISCUSSION

Graphical Analysis

The most prominent effect of ISO 9001 Certification is on sales revenue. In the fig. 1, average total sales revenue of the ISO certified firms is plotted against the total sales revenue of non-certified firms. For the entire period the sales revenue of the non-certified firms has remained below than that of certified firms. In the year 2004 and 2006 the average sales revenue of two groups were close to each other at almost Rs. 2bn. However, even in those two years the average sales revenue of certified firms was a little more than that of Non-certified firms. Other than those two years there is considerable difference between the two said groups. In 2011 both groups reached their highest point which is almost Rs. 4bn for Non-Certified and a little over Rs.6bn for Certified firms.

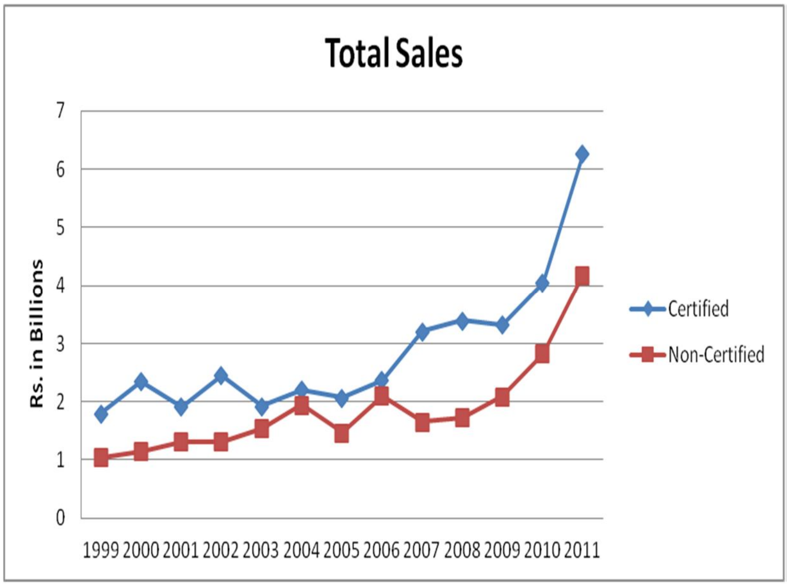

Figure 1 Comparison of Average Total Sales

Figure 2 shows the comparison of local sales revenue (that is the revenue of sales inside Pakistan) of ISO 9001 Certified and non-certified firms. It is evident that local sales revenue of the ISO certified firms is greater than that of non-certified firms. The average local sales revenue for the two groups came closer to each other in 2004 and 2011 at almost Rs.1.2bn and Rs.2.4bn respectively. However, for most of time the average local sales revenue for certified firms has remained higher. This finding is in corroboration with findings of Clougherty and Grajek [29] and employs that the surety of consistent quality does enhance the sales revenue for the local customers.

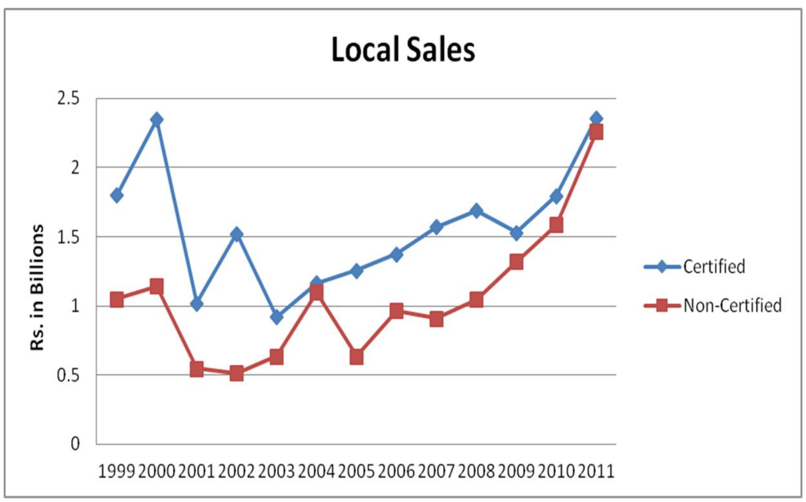

Figure 2 Comparison of Average Local Sales

Figure 3 shows the comparison of average export sales of non-certified firms with the average export sales revenue of certified firms. Average revenues from export sales have reached around Rs.2bn for non-certified firms, whereas the average revenue from exports for certified firms has reached to almost Rs.4bn in 2011. This finding is also in corroboration with the findings of Clougherty and Grajek [29] implying that ISO certification is one of the guarantee of consistent quality and least chance of non-conformity. Hence the confidence of international customers is retained, resulting in enhancement of sales revenue. However, the graph also shows that significant difference appeared between the two groups after 2006. Prior to 2006 the average export sales revenue for both groups was almost equal without any significant difference. It is also worth noticing that after 2006 the average export sales of non certified group declined first, while in the same period the average export revenue for the certified group was increasing. The certified group follows the same trend throughout while the same revenue for the non-certified firm showed increasing trend after a decreasing trend. It shows that where non-certified firms show some fluctuations the certified firms depict a consistent increasing trend.

Figure 3 Comparison of Average Export Sales

The gross profit comparison shown in Figure 4 also shows much difference in performance between ISO certified and non-certified firms. In the initial years the difference was much less, however after 2006 the difference has consistently been increased. Up till the year 2006, Gross profit for the both groups was very near to each other. Additionally it is also worth noting that average gross profit for certified firms came equal to non-certified firms in 1999, 2001, 2003 and 2006, however it never fell below than that of non-certified firms. On the other hand average gross profit for non-certifies firms never rose above than that of certified firms. After year 2006 the difference between the two groups increased significantly with certified groups leading non-certified firms. The non-certified firms' average gross profit has remained very low for the entire time period whereas the overall trend of certified firms is that of increasing gross profit which has taken the difference between the two to a big distance on the graph. Initially both of the firms started their journey from a single point but due to ISO certification, certified firms lead the market.

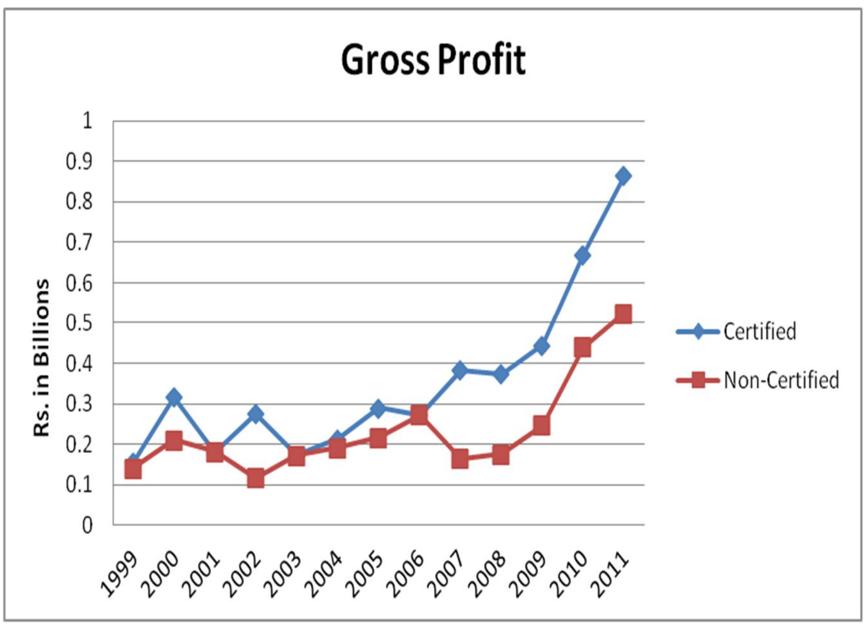

Figure 4 Comparison of Average Gross Profit

The figure 5 shows the difference of Average Gross Profit Margin between ISO Certified and Non-Certified firms. The average for the two groups was almost same for the initial years of 1999-2001. The average gross profit margin for certified firms decreased significantly after 2001 and came down to a negative figure. On the other hand the same value for the certified group shows consistency over the years and remained close to 1.0. In 2005, average gross profit margin for the non-certified firms came closer to that of certified firms', however it still remained below than that of certified firms'. The overall trend of the two groups also depicts large fluctuations in non-certified group while there is consistency in performance of certified firms.

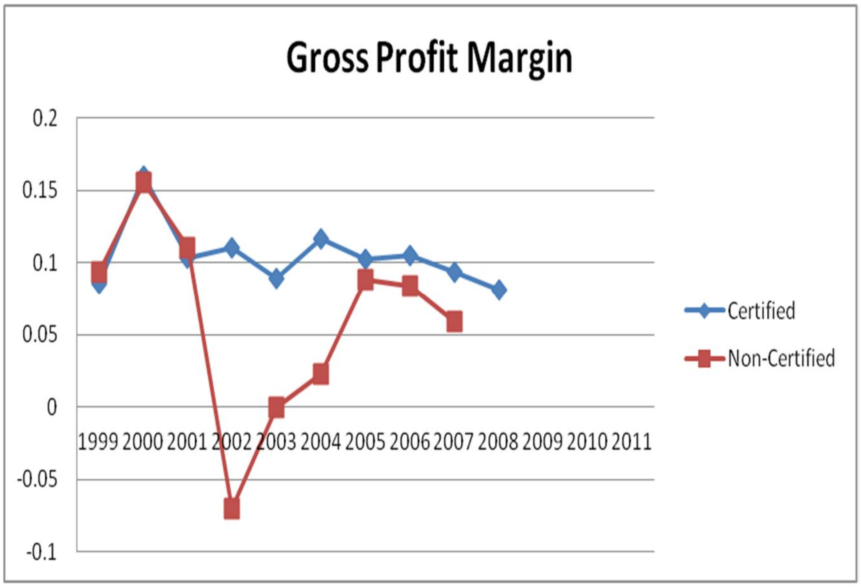

Figure 5 Comparison of Average Gross Profit Margin

The net profit margin trend shown in the Figure 6 also shows consistent higher performance of ISO 9001 certified firms as compared to non-certified firms. For Non - Certified firms, the average NPM has gone as high as 0.2 (20%) in 2005, and as low as -0.4 (-40%) in 2002. However, for most of the time the NPM for Non-Certified firms' has remained below than that of certified firms. Another important point here is that NPM for certified firms not only shows a consistent behaviour but also remains positive for the entire time period under study. On the other hand NPM for Non-Certified firms shows many fluctuations and has remained negative for almost 3 years. The least fluctuation shown by certified groups is the most important feature in the graph. In 2002, when the net profit margin of non-certified firms falls down to – 40%, the same value for certified firms was a positive one.

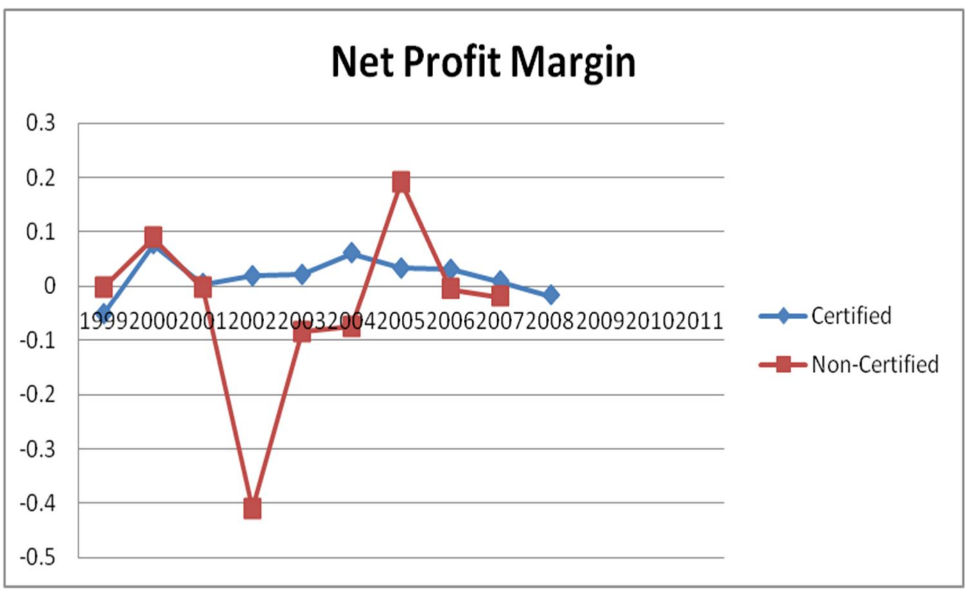

Figure 6 Comparison of Average Net Profit Margin

Tax payment is one of the very important factors for the economy of the country. Figure 7 shows that the certified firms pay more tax than the non-certified firms. Here too, the graph shows that on average the certified firms pay more tax than non-certified firms. The tax paid by the two groups of firms remained closed till 2003. In 2004 certified firms paid a lot more than the tax paid by non-certified firms. After 2006, the difference between the taxes paid by two groups remained significant in favour of certified firms. Thus it can be concluded that it will be in the interest of the government to promote ISO certification as it will contribute more towards the government earnings through taxation.

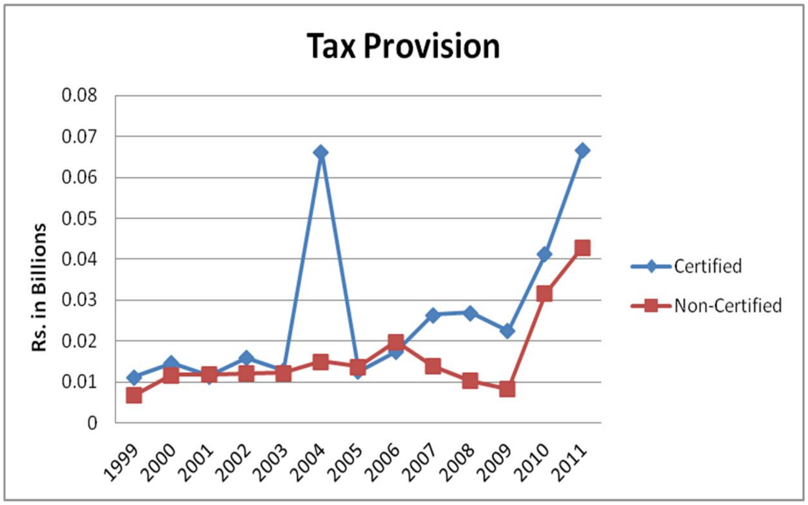

Figure 7 Comparison of Average Tax Paid

Table 2 shows average of 13 years that is from 1999-2011 of the mentioned variables. This table also shows that performance of certified firms has been better than performance of non-certified firms. Not only sales (both local and foreign) of certified firms are far greater than non-certified but the gross profit and gross profit margin are also far greater depicting that certified firms considerably reduce their cost too and earn greater profits.

Table 2 Average of 13 years (1999 – 2011), Rs. In Millions GPM and NPM are ratios thus has no units.

	Total sales	Local sales	Export sales	Gross profit	Gross Profit Margin	Net Profit Margin	Tax provision
Certified	3,319	1,616	1,703	429	0.101	0.017	31
Non-Certified	1,731	994	736	217	0.070	-.023	14

Certified firms also exceed non-certified firms in payment of tax, thus it is also in favour of government to promote certification.

CONCLUSION AND RECOMMENDATIONS

ISO 9001 certification plays an important role in improving the financial performance of the firm. ISO certification demands documentation of each and every processes and procedure of the firm. This reduces the variability in the operations and products and ensures consistent quality. This gives surety of consistent quality to customers and hence attracts new customers. However most important feature is that through the same surety of consistent standards ISO certification helps in retaining old customers. This enhances the both local and foreign sales revenues of the firm. Additionally, because of documentation learning of organization is channelized and thus helps the organization in reducing the error and thus re-work time significantly reducing the overhead cost and thus helps in enhancing profitability of the firm as depicted by Gross Profit Margin and Net Profit Margin of firms.

In the nut shell, it can be inferred that ISO certification plays a very important role in improving the financial performance of the firms and thus be preferably pursued by the firms.

SCOPE FOR FUTURE RESEARCH

The research analysed the financial data of the firm that belong to textile sector of Pakistan which is largely privately owned. While the results of this research may justifiably be generalized to the said sector, its generalization on public sectors may not be justified as the structures of public sector differ significantly. In future the research may be performed on public sectors where the impact of ISO certification may be looked for.

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The authors declare that they have no conflicts of interest in this research.

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