

## Does Total Quality Management Affect the Performance of Small and Medium Enterprises? A Case of Manufacturing Smes in Ghana

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**Abstract:** The paper examines the relationship between total quality management (TQM) practices of small and medium enterprises (SMEs) and the performance and profitability of these businesses in Ghana. With the use of a mixed research method consisting of descriptive and inferential statistics the researchers found that differences exist between SMEs in relation to managerial education level, TQM awareness, managerial commitment to TQM principles of continuous improvement, use of new technology, putting the customer first, effective supervision and enforcement of quality practices. The study also shows a statistically significant association between the implementation of TQM and the SMEs' financial and organisational performance. The implication of the findings is that the government of Ghana should pursue policies aimed at encouraging training and improving the managerial skills of SME owner/managers as well as creating the enabling environment for the development of improved modern technologies to transform the business processes of these vital industries. The Ghana Standards Board must also sit up and enforce quality regimes to ensure goods and services produced meet international standards.

**Key words:** Small medium enterprises • Performance • Growth • Profitability • Ghana

### INTRODUCTION

Small and Medium Enterprises (SMEs) are recognized as important engines of growth and development in both developed and developing countries due to the role they play in generating employment, stimulating growth and creating social cohesion. Their flexibility and quick adaptability to change make SMEs essential instruments capable of responding to the increasing globalization of businesses. SMEs are a major part of the industrial economies [1] and play a unique role in most country's industrial development. SMEs have advantages about flexibility, reaction time and innovation capacity that make them central actors in the new economy [2]. Hence, an economy that meets the needs of its SMEs enhances the chances of job growth and consequently a vibrant economy [3].

In Ghana, the SME sector constitutes the vast majority of businesses and over the years, they have evolved to become key suppliers and service providers to large corporations including multinational and transnational corporations. SME's in Ghana contribute

about 70% to Ghana's Gross Domestic Product (GDP) and account for about 92% of all businesses in the country [4]. Principally, they have contributed to "expanding output, providing value-added activities in the manufacturing sector, creating employment opportunities especially in the service sector and contributing to broadening Ghana's export base" [5]. Past and present governments of Ghana have implemented various policies to revamp the private sector with special attention to SMEs seen as the drivers of economic growth and poverty reduction. The National Board for Small Scale Industries (NBSSI), the Business Advisory Centre and the Ministry of Trade and Industry Private Sector development and Presidential Special initiatives (MOTIPS/PSI) were consequently established to provide specialized advice and support to SMEs to enable them identify the growth opportunities available to them and measures they can take to expand their business as well as access international markets [6]. A number of state institutions are charged with the duty of ensuring the quality of goods and services as well as educating manufacturers, entrepreneurs and consumers on quality

standards namely: the Ghana Standards Authority (GSA), The Ghana Export Promotion Council (GEPC) and the Environmental Protection Agency (EPA).

Total Quality Management (TQM) is an approach that seeks to improve quality and performance which will meet or exceed customer expectations. Quality management has been widely practiced both locally and internationally in different sectors and subsectors of different economies. The concept is linked to several international self-assessment models that evaluate the TQM efforts and in line with the International Organization for Standardization (ISO 9000:2000), which represents a system as a common denominator for what business quality entails internationally [7]. According to Rouse, [8], TQM is a comprehensive and structured approach to organisational management that seeks to improve the quality of products and services through ongoing refinements in response to continuous feedback. Key features of TQM include: (a) managerial leadership and commitment to quality [9]; (b) preparation of a quality policy and a quality strategy that sets the overall intentions and direction of the firm with regard to quality (c) pursuit of customer satisfaction and putting the customer first (d) the search for continuous improvement [10]; (e) use of new technology to enhance products, services and processes; and (f) continuous training and development of the workforce [11], (g) involvement of people in decision making and supervision and enforcement of quality standards [7].

**Problem Statement:** Despite the importance of manufacturing SMEs in national economic development and the fact that SMEs in Ghana are now exposed to greater opportunities than ever for expansion into regional and international markets, most of these industries are now collapsing. Ghana's market size is growing and opportunities within Africa are also beginning to look attractive for SMEs in manufacturing sector in particular. Sadly, Ghanaian manufacturing SMEs battle for their goods and services to be accepted on the international markets. Most manufacturing SMEs struggle to produce, manage and improve their businesses efficiently in order to consistently deliver quality products that meet customer demands, gain economies of scale and compete effectively with their internal and external competitors. Some researchers and business executives have attributed the poor performance of manufacturing SMEs in Ghana to inability to access credit [12]; unavailability and high cost of inputs [13]; and unfavourable domestic and

international trade restriction [14]. However, quality management issues have been overlooked by governments and other stakeholders over the years. The lack of SME owner/managers' ability to practice quality management has been identified as one of the major causes of SME failure [15]. According to Hodgetts *et al.*, [16], firms that implement quality practices are better performers as implementation of quality management practices is crucial in reducing the high direct cost associated with poor quality and this in turn will lead to increase in productivity and profitability. Deming [10], the father of Quality also noted that: "The pursuit of quality is the key to higher productivity, bigger profit, more jobs and a richer society" The purpose of this study is to investigate the extent to which SME's in Ghana adopt and implement quality management practices in their business and how quality management impacts their profitability, efficiency and customer loyalty.

#### **Research Hypotheses:**

**H1:** Effective implementation of quality Management initiatives has positive effect on efficiency and profitability.

**H2:** Managers educational level has effect on the level of quality management

**H3:** Effective Quality Management has positive effect on customer satisfaction and loyalty.

#### **An Overview of the Manufacturing Sme Sector in Ghana:**

Small and Medium Enterprises in Ghana are said to be a characteristic feature of the industrial landscape and have been noted to provide about 85% of manufacturing employment in Ghana [17]. Industry in Ghana accounts for about 25.3% of total GDP. According to the Ghana Country Study Guide [18], Ghana's industrial production is rising at a 7.8% rate, giving it the 38<sup>th</sup> fastest growing industrial production in the world. However the industry growth was largely driven by the oil and mining sector. The manufacturing sector which is local based and provides support for indigenous business as well as employment to a large portion of the growing workforce has been declining rapidly. Indeed the contribution of the manufacturing sector to the country's GDP was 10.2% in 2006; fell to 6.8% in 2010 and to 6.7% of GDP in 2011 recording a dismal sub sector growth of only 1.9% in 2011 [19].

Ghana's most important manufacturing industries include light manufacturing, aluminum smelting, food processing, cement and small commercial ship building, a relatively small glass-making industry, textiles and clothing, chemicals and pharmaceuticals, processing of metals, furniture and wood products; and leather and footwear. Regrettably, the 2012 budget reveals the nation's manufacturing sector is dying and gradually becoming unnoticeable in the country's economic fortunes. Most factories have not witnessed growth in technology and failed to invest in new and modernised equipment leading to higher electricity consumption [6]. Poor quality of locally manufactured goods, operational inefficiencies, increasing high cost of doing business and distress financial conditions have crowded out local firms to the advantage of foreign competitors. As a result, a third of local manufacturing firms are shutting down their operations annually [20].

## MATERIALS AND METHODS

For this study, owners and managers of manufacturing SMEs in the Accra, Tema and Kumasi metropolis were selected from five main industries. These cities were chosen because they have the highest concentration of manufacturing companies in Ghana [21]. The five main industries examined are the garment and clothing; furniture and carvings; leather and footwear; simple household consumer goods; and beads and jewelry industries. The main reason for targeting these industries is because most of the thriving manufacturing SMEs in Ghana fall under these five industries and "have been the fountain head of several innovations in manufacturing" [22]. Due to the proliferation of micro and small businesses, only SMEs that strictly fall within the classification of the Regional Project on Enterprise Development Ghana Manufacturing Survey Paper [23] are included in the study. The survey classified manufacturing SMEs with between 5 – 29 employees as "small enterprises" and SMEs with 30 – 99 SMEs as "medium enterprises". Hence, only manufacturing SMEs with 5 – 99 employees were included in the study. The samples were drawn from a list of companies registered with the Association of Ghana Industries (AGI). Using the AGI compilation of registered members for 2012, 200 manufacturing companies were randomly selected using a sample frame and given questionnaires delivered by hand to owner/managers at their respective manufacturing sites. However, only 151 completed questionnaires were eventually retrieved six of which were incomplete.

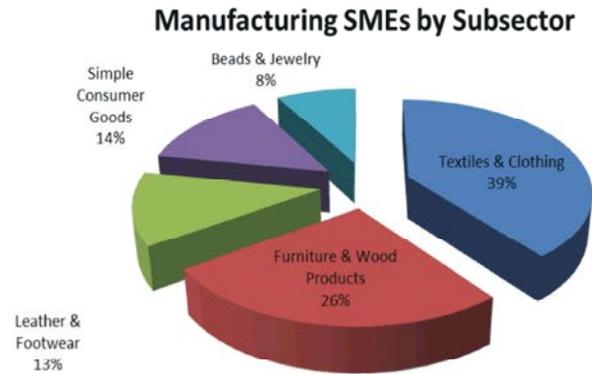


Fig. 1: Subsector Distribution of Manufacturing SMEs in Ghana

Source: Survey data

Ultimately, the study consisted of a sample of 145 manufacturing SMEs in Ghana. With a response rate of 72.5%, the data is consistent with hand delivered self administered questionnaires that score over 70% response rate [24]. The data were analyzed by Statistical Package for Social Science (SPSS) and presented in tables and charts. Chi square and correlation tests were also used to test three hypotheses and to establish relationship between the variables studied.

**Major Findings:** Figure 1 presents the subsector shares of the manufacturing SMEs in Ghana. Out of the 145 firms surveyed, 57 firms (39%) are from textiles and clothing, 38 firms (26%) are from furniture and wood products, 18 firms or 12% belong to the leather and footwear subsector while 20 firms (14%) are from the household consumer goods subsector and the final 12 firms come from the beads and jewelry subsector. SMEs from the textiles & clothing and furniture & wood products subsectors are apparently more accessible and more willing to participate in the study. Leather and footwear firms are however more prevalent in the Kumasi metropolis than in Accra and Tema.

**Manufacturing SMEs Subsector Total Quality Management Practices:** The level of quality management within each of the subsectors in the manufacturing industry was studied. Important quality management practices investigated include: (a) awareness of total quality management, (b) availability of quality management policy (c) leadership commitment to quality (d) use of new technology and continuous improvement on quality (e) enforcement of quality standards and (f) putting the customer first and meeting customer needs.

**Awareness of TQM by Subsector:** Sixty-nine or 48% of manufacturing SMEs are aware of the concept of total quality management. Majority of SMEs that are aware of TQM are from the textile and clothing industry. This is probably because, the textile and clothing industry is one of the most developed and enduring manufacturing industries in Ghana and therefore has developed quality standards that members voluntarily adopt to stay competitive. The beads and jewelry industry also records 50% of SME awareness of TQM principles. This can be traced to the renewed interest in the subsector and especially the Swiss Import Promotion Programme (SIPPO) export development initiative that supports bead jewellers in Ghana to gain access to the Swiss and European market as well as various schemes by the Ghana Export Promotion Council at promoting value adding activities in the sector. The study also found a direct correlation between awareness of TQM and products meeting international quality standards. Of the sixty-nine SMEs who are aware of TQM, fifty-seven or 83% also reported that their products meet international quality standards. Whereas, only thirty (39%) of SMEs who lack knowledge of TQM agree their products meet international standards. Also, majority of SMEs who export their products (75%) are aware of TQM.

**Availability of Quality Policy by Subsector:** Although 48% of manufacturing SMEs are aware of TQM principles, our data shows that only very few SMEs actually has written policies on TQM in their businesses. Deming [10] proposed that one of the key practices of TQM is the preparation of a quality policy by the business organisation. A quality policy is overall intentions and direction of an organization with regard to quality, as formally expressed by top management (ISO 8402, 1994). Unfortunately only 20% of SMEs studied has written quality policies. Majority of companies with written quality policies are in the Beads and Jewellery industry, followed by textile and clothing industry. Only one firm from the leather and footwear industry has a quality policy which describes how the firm wants to be seen regarding its quality and a clear vision of quality.

**Manufacturing SMEs Use of Modern Technology:** Information technology (IT) available today is being leveraged in customer acquisitions, driving automation and process efficiency, delivering ease and efficiency to customers [25]. On the whole, forty one percent of SMEs use new modern technology in their businesses to improve the quality of their products and services.

Majority of those who use modern technology are from the textile and clothing industry representing 54% of businesses in the subsector. Only 29% and 28% of SMEs in the furniture and wood products; and leather and footwear industries respectively admit using modern technology to enhance the quality of their products and services. For SMEs producing wood carvings, dolls and artifacts, since their products are mostly handmade, most still rely solely on traditional implements like wood carving knives and chisels. The few who reported using modern technology use automatic power carvers and shaft carvers. Unfortunately, majority of them lack the modern technology required for proper finishing and packaging of their products to enhance their competitiveness in the international market. Although Ghana is a major producer of timber, the timber is exported without much value adding. Ghanaian furniture is still limited to the domestic market and mostly unknown in the international market due to poor quality of furniture produced and export development in the sector. The leather and footwear subsector records the least in the use of modern technology as only 28% of SMEs in the sector report using some modern technology in their business. This supports Boahin's [26] assertion that inadequate expertise in processing and inferior technology limits the competitiveness of the leather industry in Ghana.

**SMEs' Leadership Commitment to Quality and Enforcement of Quality Standards:** Respondents were asked whether leadership of their businesses were committed to maintaining quality of their products and services. The results show that 68% of owner/managers expressed commitment to ensuring they produced high quality products. 61% also agree to strictly enforcing quality standards. Majority of those who declare commitment to quality and enforcement of quality standards also report that their products meet international quality standards although most of them do not know what those standards were. The textile and clothing subsector records the highest number of leadership commitment to quality followed by the beads and jewellery and the furniture and wood products subsector, i.e. 73%, 67% and 53% respectively. The quality of Ghanaian textiles and clothing has long been recognised by the international community. However, textile exports which generated \$179.7 million in 1994 declined consistently and by 1998 had fallen to US\$ 3.173 million due to a multiplicity of factors including high cost of inputs, cheap imports, imitation, smuggling and other trade barriers [27, 28]. In 2000, Ghana qualified for AGOA,

the African Growth and Opportunity Act (2000) granting exports of Ghanaian textile and apparel to the US market and by 2004 Ghana's textile and clothing exports to the US amounted to \$7.4 million and continue to grow [29]. The high level of leadership commitment to quality reported in the textile and clothing industry may well explain the subsector's high quality performance supporting Garvin's [9] assertion that high levels of quality performance were always associated with strong top management commitment.

The table below shows a positive relationship between quality management and customer loyalty and organisational efficiency. This is reflected in the fact that majority of owner/managers i.e. 52% and 54% respectively agree to the relevant statements. However, only 60 SMEs (41%) and 62 SMEs (43%) agree that quality management positively impact their profitability and sales respectively. There are however, significant differences between owner/managers with TQM awareness and those who lack TQM awareness. For example, all the sixty SMEs (100%) who have employed modern technology report increase in efficiency and productivity, whereas only 22% of those who lack TQM awareness report increased efficiency and productivity. Majority of SMEs will export their products if they can meet international standards. Hence the desire for export development is very high among manufacturing SMEs in Ghana.

### Hypothesis One

**Ho:** Effective implementation of quality management initiatives does not have positive effect on efficiency and profitability.

**Ha:** Effective implementation of quality Management initiatives has positive effect on efficiency and profitability.

The p-value of 0.000 is an indication that the null hypothesis must be rejected. This would lead to a conclusion that effective implementation of quality management initiatives have a positive effect on efficiency and profitability. The correlation coefficient of 0.736 also shows a positive and strong relationship between quality management and efficiency and profitability. The findings support the numerous researches which show that effective implementation of TQM ensures that organisations eliminate inefficiency by reducing scrap, mistakes and rework as well as improve customer satisfaction and command premium prices which enables firms to enjoy high profit margins [30, 31]. There was however differences between the SMEs

regarding the impact of TQM on efficiency and profitability. While majority (72%) of SMEs which show awareness of TQM, use new technology and enforce quality standards in their businesses mostly report increased efficiency and profitability, only 32% of those who do not apply these TQM practices report increased efficiency and profitability.

### Hypothesis Two:

**Ho:** Managers educational level does not have effect on the level of quality management

**Ha:** Managers educational level has effect on the level of quality management

The above table is constructed to test hypothesis two. A p-value of 0.000 is enough to reject the null hypothesis at a significant level of 0.05 and accept the alternative hypothesis, hence the conclusion that, managers educational level has effect on the level of quality management. This hypothesis is further strengthened by a correlation coefficient of 0.542. This is an indication that the relationship between managers' education and quality management is positive and strong. This confirms Pidani *et al.*'s [32] finding that educational level of owner managers determines performance and export orientation of manufacturing SME in Indonesia.

Our data also indicates that sixty-three out of the one hundred and forty-five SMEs 43% are managed by graduates from tertiary institutions. Only two SMEs have managers with no formal education. This contradicts earlier studies which point to the fact that the SME sector is dominated by people with low levels of education [33, 34]. This new development is most probably due to unavailability of jobs and the high level of unemployment especially youth unemployment which stand at 25.6% in 2012 (GSS, 2012), leading to high numbers of unemployed graduates becoming entrepreneurs setting up their own businesses or becoming managers of SMEs set up by others. The government's private sector development initiatives also contribute immensely towards getting the educated youth into business.

### Hypothesis Three:

**Ho:** Effective Quality Management does not have positive effect on customer satisfaction.

**Ha:** Effective Quality Management has positive effect on customer satisfaction and loyalty.

Table 1: Impact of Quality Management on SME Performance

Statements	Agree	Neutral	Disagree
1 We have increased sales because of the improvement in the quality of our products and services	62	60	23
2 Our customers are satisfied with our products and loyal to us because of the quality of our products and services	75	43	27
3 Our business is more efficient because of continuous improvement in technology and strict enforcement of quality standards	79	35	31
4 Our business is more profitable because of our attention to quality and strict enforcement of quality standards	60	65	20
5 We have increased productivity and sales due to our reliance on modern technology	60	40	45
6 We will export our products if we meet the international quality standards	94	32	19

Source: Survey data

Table 2: Relationship between efficiency/profitability and Effective QM

			Effective QM			
N = 145			Low	Moderate	High	Total
Efficiency and Profitability	Low	Count	15	11	4	30
		Expected Count	3.9	7.4	18.6	30.0
	Moderate	Count	0	25	4	29
		Expected Count	3.8	7.2	18.0	29.0
	High	Count	4	0	82	86
		Expected Count	11.3	21.4	53.4	86.0
Total	Count	19	36	90	145	
	Expected Count	19.0	36.0	90.0	145.0	

N = 145 Chi-Square = 44.422 df = 4, p-value = 0.000 COV = 0.736

Table 3: Relationship between Educational Level and Levels of Quality Management

		Levels of QM					Total
N = 145		Tech	Leader	Awareness	Q Policy	Cus	Total
Educational Level	No Formal Education	5	0	0	0	0	5
		2.4	.9	.5	.5	.7	5.0
	Basic	11	10	0	6	0	27
		13.0	4.7	2.8	2.8	3.7	27.0
	Secondary / Technical	23	5	8	8	6	50
		24.1	8.6	5.2	5.2	6.9	50.0
	Tertiary	31	10	7	1	14	63
		30.4	10.9	6.5	6.5	8.7	63.0
Total		70	25	15	15	20	145
		70.0	25.0	15.0	15.0	20.0	145.0

N = 145 Chi-Square = 34.824, df = 12 p-value = 0.000, COV = 0.542

Table 4: Relationship between Customer Satisfaction and Effective QM

			Effective QM			
N = 145			Low	Moderate	High	Total
Customer Satisfaction	Yes	Count	14	1	75	90
		Expected Count	18.6	18.0	53.4	90.0
	No	Count	16	28	11	55
		Expected Count	11.4	11.0	32.6	55.0
Total	Count	30	29	86	145	
	Expected Count	30.0	29.0	86.0	145.0	

N = 145 Chi-Square = 68.438, df = 2, p-value = 0.000, COV = 0.2.25

The third hypothesis is also accepted because the p-value is less than the significant level of 0.05. Therefore, effective Quality Management has positive effect on customer satisfaction and customer loyalty. The relationship is positive but weak. Omachonu and Ross

[35] noted that the effective implementation of TQM by firms will increase customer satisfaction and consequently customer loyalty. Effective quality management allows firms to provide quality goods and services in order to meet customer demands, exceed customer expectation and

achieve customers' satisfaction and loyalty. Our study reveals that there are variations between subsectors as far as customer satisfaction and customer loyalty are concerned. For example, with the textile and clothing subsector, although majority of respondents (73%) agree that their customers are satisfied with the quality of their products, customers are not loyal to them as most prefer cheaper imported substitutes; a situation which has resulted in the drastic decline of the textile and clothing industry in the last decade. The crisis facing the textile and garments subsector has reflected significantly on output and employment levels. Employment within the sector declined from a high of 25,000 in 1977 to 5,000 in 2000 [36]. On the other hand, majority of respondents from the leather and footwear subsector reported customers express dissatisfaction with their products due to the inferior quality of their manufactured products. This supports Boahin [26] observation that the appalling state of manufactured leather products in Ghana renders artifacts made with the local leather a limited competitive ability impairing their capabilities to penetrate the global market economically. Yet the few footwear manufacturers who produce high quality shoes, target only the upper class and the international market and therefore sell their products at very prices out of reach of the ordinary Ghanaian.

### **CONCLUSIONS**

The study examines the total quality management practices of manufacturing SMEs in Ghana. By using cross sectional data collected via questionnaires. The results indicate that managers with tertiary education who are aware of TQM are more likely to employ new technology, develop a quality policy and show leadership commitment to implementation of TQM. Effective implementation is also shown to have direct positive relationship with customer satisfaction and customer loyalty. Government must provide the enabling environment for technology development in the country and provide support for businesses to acquire the necessary equipments required for enhancing productivity and quality of goods and services. This will encourage innovation and product development for both the domestic and export market. Improving manufacturing SMEs' quality management capabilities will enhance their competitiveness domestically against imported goods.

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