

# Influence of Legal Requirements on Environmental Concern and sustainability Practices in Small and Medium-size Manufacturing Enterprises in Nairobi, Kenya.

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## Abstract

Until recently it has been too easy to overlook Small and Medium-size Enterprises in the analysis of environmental impact of particularly the manufacturing sector (ibid 2003). SMEs continue to grow, so do their environmental impacts. SMEs are faced by such challenges as difficulty in raising capital, limited managerial skills, regulatory constraints, limited extension services and difficulty in getting access to technology. The study found out that SMEs where copies of environment related laws existed and staffs were aware of the laws, respondents indicated involvement in environmental management practices. It is thus concluded that legal provisions influenced adoption of good environmental management practices by Small and Medium-size Manufacturing enterprises.

**Key words:** Legal Requirements. Environmental Concern. Sustainability Practices

## 1.0 Introduction

There is an increasing appreciation that there still exists a need to advance general and specific knowledge on how and why SMEs engage in environmental management practices (Bansal and Roth, 2000; Geiser and Crul, 1996; Gladwin, 1993; Marshall, Cordano, & Silverman, 2005). It is on the basis of this appreciation that this study advances. According to UNEP (2003) large companies tend to occupy the centre stage with respect to economic news and discussions of corporate environmental and social responsibility. Until recently it has been too easy to overlook Small and Medium-size Enterprises in the analysis of environmental impact of particularly the manufacturing sector (ibid 2003). However, this is changing based on the fact that Small and Medium-size Manufacturing Enterprises have emerged as a crucial link in the social and economic system of many countries (Hillary 1995). Beck and Demircuc-Kunt (2005) indicate that successful economies around the world are characterized by a large number of SMEs especially in manufacturing. While their share in total economic activity varies across countries, it is universally agreed that they play a significant role and represent a large segment of the private sector (Qimiao et al 2005).

In Africa, SMEs are reportedly flourishing in such countries as South Africa and Mauritius due to good financing policies and support for the private sector. Senegal and Kenya have also created conditions for private-sector growth (Kauffmann, 2005) leading to, as NEMA (2006) reports, Small and Medium-size Enterprises becoming the fastest growing part of the Kenyan economy. The Authority specifically observes that there were over 1.3 million SMEs in Kenya, employing over 3.7 million people and accounting for over 43% of the country's total export earnings in 2002 and by 2007 the number had risen to 2.2 million (Strategic Business Advisors, 2007). In particular, the rapid growth of SMEs has been associated with the fact that these enterprises usually constitute an important source of local supply and service provision to large corporations. They tend to occupy specialized market "niches" that might include re-engineering products or services to meet market demands, exploring innovative distribution or sales techniques, or developing new and untapped markets, and also tend to follow competitive strategies that set them apart from other companies (WBCSD, 2004). SMEs have thus continued to receive much attention globally because of their invaluable role in the economic development of many countries (Hillary, 2000; Qimiao, 2005; Blackman, 2006).

However, UNEP (2003) cautions that as the economic significance of SMEs continues to grow, so do their environmental impacts. In India for instance, it is estimated that SMEs were producing over 65% of industrial waste while in Canada and the United States toxic emissions from small industrial facilities increased by 32% between 1998 and 2000. The estimate among EU countries by year 2002 suggested that SMEs were responsible for 50% of pollution and waste (European Commission, 2002).

In Kenya, NEMA (2006) noted that, SMEs were by 2006 producing 60% of all industrial waste since they were involved in emission intensive industries such as metal finishing, leather tanning, dry cleaning, printing, dyeing,

brewing, food processing, fishing, textile making, chemical works, and mining. The Authority (NEMA) in fact hypothesises that the cumulative and collective negative environmental impact of the SMEs may well surpass that of large industries given that these (large firms) are by law subject to environmental impact assessments and annual environmental audits. KIPPRA (2007) corroborates NEMA's observation by stating that the informal sector and SMEs have a bigger environmental impact than larger industries. It is in the context of these observations that environmental studies focusing on the activities of SMEs are necessary more so with regard to adoption of environmental management practices. Fay (in Hillary 2000; 9), observes that "many small businesses do not perceive their own environmental impacts as significant when set against those of larger operators. But, collectively, they are". This is augmented by Maria's (2011) conclusion that even though the SMEs individual environmental impact may appear minor, collectively it is significant. As such, the two authors counsel on the need to encourage these firms to embrace environmental management.

Dulipovici (2001) basically believes that dissemination of information on standards and ways to improve business operations should be widespread and particularly targeted towards SMEs. Education on environmental issues for all players in the manufacturing sector should start early and be updated continuously. This will raise the level of awareness and knowledge leading to amenable practices being adopted by businesses. However, Fay (ibid) cautions that raising the awareness and stimulating appropriate action among SMEs may not be an easy matter. Research focused on SMEs is therefore necessary to provide a basis upon which crucial steps of capacity building may be anchored. It has particularly been noted that small and medium size enterprises often lack the know-how or financial resources to keep abreast with cutting edge technologies (UNIDO, 2002). Referring to small firms in developing countries, Hillary (2000) kind of concurs with UNIDO by observing that these firms are characterized by use of old technologies, lack of awareness of legislation and of their own impact on the environment, and have less structured management of environmental issues. Whether or not this is true of SMEs in Kenya is a matter that requires investigation. Blackman (2006) joins the discourse by premising that typically the firms receive little or no appropriate technical assistance aimed at improving their capacity for environmental management. As such, their environmental impact tends to be more potent (Hillary, 2000; Blackman, 2006).

## **2.0 Literature Review**

In a study carried out in London, Merritt (1998) found that SMEs had little knowledge in the field of environmental management and that they had not introduced formal practices to manage environmental performance of their businesses. On the other hand, Smith and Kemp (1998) in their study on small firms and environment established that SMEs' awareness of environmental legislation directly affecting their companies was poor and that there was a general perception among them that legislative compliance would be costly. Smith and Kemp's (1998) observation is corroborated by Domingo's (1998) account that most SMEs perceive environmental improvement as a costly burden because their primary concern is short-term economic survival, and that they are not motivated to ask for, or use environmental information or support. In Kenya, it was noted as early as 1986 that SMEs are faced by such challenges as difficulty in raising capital, limited managerial skills, regulatory constraints, limited extension services and difficulty in getting access to technology (GOK, 1986). These kinds of constraints are likely to translate into major shortcomings in terms of environmental performance of these enterprises. This paper attempts to discuss legal requirements that could be associated with environmental concern and sustainability practices in Small and Medium-size Manufacturing Enterprises in Nairobi, Kenya.

## **3.0 Results and Discussion**

To assess the influence of the legal requirements the respondents were required to state whether they were aware of the existence of any environmental laws related to the operations of and confirm whether a number of pre-determined statements were true with regard to their firms. The statements included whether: The firms had copies of relevant environmental management legislation; Legislation covering environmental management had been brought to the attention of workers; Decisions were always guided by the various pieces of environmental legislation; Audits were regularly done to ensure compliance with the environmental law; and The firm in compliance to the environmental law regularly prepared and submitted reports on environmental issues. The result is presented in the following section.

### **3.1: Awareness of environmental management legislation**

When staff of the studied firms were asked to indicate whether they were aware of any government environmental management legislation that governed the operation of their firms, their responses were as presented in Table 1

**Table 1: Awareness of any government environmental laws that governed operations of SMEs**

Response category	No. of respondents	Percentage
Yes	161	40.2
No	172	43.0
No response	67	16.8
Total	400	100.0

The result indicates that slightly less than half of the respondents were aware of the existence in their firms of government laws on environment. This finding concurs with the observation by Hillary (2000) that SMEs are characterized by lack of awareness of legislation. This is supported by Smith and Kemp (1998) who state that SMEs' awareness of environmental legislation directly affecting their companies was poor and that there was a general perception among them that legislative compliance was costly.

OECD's (2007) position also concurs with the result given its observation that SMEs are often ignorant about the legislation that governs their activities or do not understand what is required of them. It further argues that the proliferation of laws or multiple amendments to improve them does create confusion and make it difficult for SMEs to understand what compliance involves.

When awareness of environmental legislation was associated with concern for the environment, material recycling and participation in environmental rehabilitation exercises, the outcome was as presented in the following sections.

### 3.2 Awareness of environmental management laws governing SMEs on concern for environment

An assessment of the relationship between awareness of environmental legislation governing the operations of SMEs and concern for the environment by SME staff was done generating different outcomes. The finding was as presented in Table 2

**Table 2. Awareness of environmental laws, by concern for the environment**

		Level of concern for the environment			Total
		Very concerned	Concerned	Sometimes	
State of awareness	Aware	91 27.3%	66 19.8%	4 1.2%	161 48.3%
	Not aware	59 17.7%	104 31.2%	9 2.7%	172 51.7%
Total		150 45.0%	170 51.1%	13 3.9%	333 100.0%

**Chi-square=16.6, Df=2, N=333, p<0.05**

The result indicates that a little less than half (47.1%) of the respondents who were aware of government environmental management laws admitted showing concern for the environment. The relationship was however significant with a calculated chi-square value of 16.6 against a 5.99 table value at 0.05 significance level. Consequently, the study holds that awareness of environmental laws influenced concern for the environment among staff of the studied SMEs.

Awareness of environmental laws was then associated with adoption of material recycling. Varied results were realized from the analysis as presented in the subsequent section.

### 3.3 Awareness of environmental laws on adoption of material recycling

An examination of how awareness of environmental management laws influenced adoption of material recycling by staff of the studied SMEs was undertaken and the finding was as presented in Table 2.3.

**Table 3: Awareness of environmental management laws, by adoption of material recycling**

		Frequency of material recycling			Total
		Very frequently	Frequently	Rarely	
State of awareness regarding existence of Environmental Laws	Aware	31 9.3%	101 30.4%	29 8.7%	161 48.5%
	Not aware	21 6.3%	91 27.4%	59 17.8%	171 51.5%
Total		52 15.7%	192 57.8%	88 26.5%	332 100.0%

**Chi-square=12.4, Df=2, N=332, p<0.05**

The result shows that a little more than one third (39.7%) of respondents who reported that awareness of environmental management laws govern the operations of their firms acknowledged that they had adopted material recycling. The relationship between the two variables was significant with a calculated Chi-square value of 12.4 against a 5.99 table value at 0.05 significance level. Essentially therefore, awareness of environmental laws influenced adoption of material recycling in the studied firms.

The third relationship which was assessed was how awareness of environmental management laws influenced participation in environmental rehabilitation exercises by the staff of SMEs. The finding of the analysis was as presented in the following section.

### 3.4 Awareness of environmental management laws on participation in environmental rehabilitation exercises

Upon examining how awareness of environmental management laws by SME staff influenced their participation in environmental rehabilitation exercises, the study arrived at the finding presented in Table 4.

**Table 4: Awareness of environmental management laws, by participation in environmental rehabilitation exercises**

		Rate of participation in environmental rehabilitation exercises			Total
		Very frequently	Frequently	Rarely	
State of awareness regarding existence of Environmental Laws	Aware	31 9.4%	102 31.0%	25 7.6%	158 48.0%
	Not aware	25 7.6%	95 28.9%	51 15.5%	171 52.0%
Total		56 17.0%	197 59.9%	76 23.1%	329 100.0%

**Chi-square=9.3, Df=2, N=329, p<0.05**

The result indicates that a little more than one third (40.4%) of the respondents who acknowledged awareness of the existence of environmental management laws that governed the operations of their firms were participating in environmental rehabilitation exercises. The relationship was significant with a calculated Chi-square value of 9.3 against 5.99 table value at 0.05 significance level.

### 3.5 SME staff indication of whether pre-determined statements attributed to their firms with regard to legal issues were true.

The outcome on the investigation of the opinion of staff of SMEs regarding their firms' position on a number of legislation related issues is presented in Table 2.5. The staff were required to state whether the statements proposed were true or not true with regard to their firms.

**Table 5: SME staff's opinion on legal issues attributable to their firms**

Statement	SME staff opinion				
	Very true	True	Somewhat true	Not true	No response
The firms have got copies of relevant environmental management legislation	54 (13.5) <sup>a</sup>	204 (51.0)	73 (18.3)	35 (8.8)	34 (8.5)
Legislation covering environmental management has been brought to the attention of workers	44 (11.0)	199 (49.8)	81 (20.3)	42 (10.5)	34 (8.5)
Decisions are always guided by the various pieces of legislation	38 (8.8)	138 (34.5)	144 (36.0)	43 (10.8)	40 (10.0)
Audits are regularly done to ensure compliance with the environmental law	33 (8.3)	131 (32.8)	100 (25.0)	94 (23.5)	42 (10.5)
The firm in compliance to the law regularly prepares and submits reports on environmental issues	49 (12.3)	114 (28.5)	96 (24.0)	98 (24.5)	43 (10.8)

<sup>a</sup>Figures in parentheses are percentages

The result indicate that more than three quarters (82.8%) of the respondents acknowledged that copies of relevant environmental management legislation were available in their firms, 81.1% admitted that environmental legislation had been brought to the attention of the workers while 79.3% agreed that decisions in their firms were guided by environmental legislation. Slightly more than two thirds (66.1%) of the respondents admitted that audits were regularly conducted in their firms to ensure compliance with environmental laws while 64.8% stated that their firms regularly prepared and submitted reports on environmental issues.

The influence of each of these issues on concern for the environment, adoption of material recycling and participation in environmental rehabilitation exercises by the staff of SMEs was analyzed. The finding is presented in Table 2.6.

**Table 6: Association between Legal Issues and Concern for environment, recycling of materials and participation in environmental rehabilitation (Gamma Statistics)**

Issues on legislation	Environmental Practice Adopted		
	Concern for environment at work	Recycling of materials by the staff	Participation in environmental rehabilitation exercises
Availability of relevant environmental management legislation	0.51 <sup>a</sup> (366)*	0.44 (365)	0.57 (361)
Staff sensitized on the availability of environmental legislation	0.61 (366)	0.42 (365)	0.68 (361)
Environmental legislation guides decisions in the firm	0.40 (360)	0.35 (359)	0.53 (355)
Environmental compliance audits regularly undertaken	0.37 (358)	0.30 (357)	0.49 (353)
The firm regularly prepares and submits reports on environmental issues	0.39 (357)	0.32 (356)	0.50 (352)

\*Numbers in parantheses are sample sizes

<sup>a</sup>All the gamma statistics reported here are significant at 0.001 level

The finding show that all the five issues examined associated moderately with recycling of materials by the staff. Availability of relevant environmental management legislation and Staff sensitization on the availability of environmental legislation in the firms significantly influenced both concern for the environment by staff and participation in environmental rehabilitation exercises. The issue of whether environmental legislation guides decisions in the firms and whether the firms regularly prepared and submitted reports on environmental issues associated moderately with concern for the environment same as undertaking regular environmental compliance audits which moderately influenced both material recycling and participation in environmental rehabilitation exercises. The gamma values indicate that a real positive association exists between the various issues examined in the study. Generally, the findings indicate that environmental management legislation significantly influenced the firms in adopting environmental management practices.

Netregs (2003) and Nutek (2005) agree with the findings of this study given their position that legislation is a driver of environmental action. Moorthy et al (2012) also indicates that Legislation may have a greater effect on behavior change than other strategies for environmental management. They note that changes in legislation can increase SMEs efforts to reduce the environmental impact of their operations. Dawson (2006) also concurs with the findings through his finding that compliance with legislation was the second most important driver for adoption of Environmental Management System by the SMEs. Other researches which came up with similar findings include Gerstenfield and Roberts (2000), Hillary (2004), Lynch-wood and Williamson (2005) and Shujing Lu (2006) Bonnie and Su-chun (2001) support the finding on environmental audits through their recommendation that organizations should establish and maintain programs for purposes of carrying out periodic audits to determine whether the firm's Environment Management System conforms to international standards and whether proper implementation of practices is taking place as intended.

#### 4. Conclusion

The existence of a legal framework that defines the dos and don'ts and a wide awareness of the same by the affected parties fundamentally determines peoples disposition towards the phenomenon to which the laws apply. The study found out that SMEs where copies of environment related laws existed and staffs were aware of the laws, respondents indicated involvement in environmental management practices. It is thus concluded that legal provisions influenced adoption of good environmental management practices by Small and Medium-size Manufacturing enterprises.

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