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Environmental Management Systems and Financial Performance: The Case of Listed Companies in Mauritius

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Abstract

The objective of this paper is to examine the relationship between environmental management practices adopted by listed firms on the Stock exchange of Mauritius and their impact, if any, on their financial performance. A content analysis of annual reports of the listed companies over the period 2011 to 2014 to determine the level of environmental management systems (EMS) is implemented by the local firms. For the purpose of this research, the environmental management practices were classified into 6 categories namely pollution control, waste reduction, recycling, cutting use of energy, cutting paper consumption and carbon footprint reduction based on extant literature. The study reveals that there is an insignificant relationship between environmental management practices and financial performance except for cutting use of energy which generated a significant relationship. The results are in line with studies by [1] who found that companies tend to be more environmentally conscious due to compliance rather than a voluntary basis or to reap corporate benefits. In addition, [2] states that since the reduction of waste water, air emission and other pollution cannot be detected and measured, it is difficult to assess the relationship between these two variables.

Keywords

Environmental Management Systems, Financial Performance, Pollution Control, Waste Reduction, Recycling, Cutting Use of Energy, Cutting Paper Consumption, Carbon Footprint Reduction

1. Introduction

Worldwide, there is the consensus that environmental degradation and pollution

have reached alarming levels calling for immediate actions at all levels, individual, organisational and governmental. Economic activity impacts on the environment in diverse ways. Land and water resources are adversely affected and depleted when utilised and wasted for economic activities. In this modern era, the environmental burden impedes on corporate bodies compelling them to reevaluate their strategies and operations [3] [4] [5] [6]. This is supported by the adoption of ISO 14001 on international levels.

Ever since the introduction of the EMS standard ISO 14001 in 1996, the effects of EMS have been evaluated by several researchers [7] [8] [9] [10]. Extant literature by Walls J L *et al*., Jabboor CJC *et al.* and Donnelly K *et al.* [11] [12] [13] highlight the increasing trend investigating the relationship between firms' financial performance and environmental management practices. In parallel to the environmental and the social movement on the international scale, more prominence is being attributed to promote sustainability in Mauritius. Moreover, in the 2008-2009 Budget, there was the introduction of the concept of "Maurice Ile Durable" aiming at making the country a sustainable one among the Small Island Developing States. Evidence from Mauritius Standard Bureau (2016) shows that more sustainability development initiatives are being adopted by local firms whereby the government is invoking much more ISO certification.

In line with above backdrop, the objective of this study is to investigate the environmental management practices among Mauritian firms listed on the Official Market. The Mauritius Standards Bureau (2016) has highlighted the increased awareness among local companies to adopt sustainability practices and strategies. Alongside, the government is encouraging companies to adopt ISO standards to better manage their carbon footprint. Around thirty local businesses have already complied to the ISO 14001 standards (Ministry of Industry, commerce and consumer protection, 2016). Also, Mauritius has also implemented the Kyoto Protocol in 2010 that sets greenhouse emission reduction targets (Observatoire de L'industrie). Furthermore, the Environmental Protection Regulations (2010) has been enacted with respect to regulating the use of renewable sources and biomass, energy efficiency measure and waste management in the country.

As briefly outlined in the aforementioned context, the increase in awareness about environmental matters drives this research. The main objective of this paper is to investigate the environmental management practices commonly existing among Mauritian firms categorised into pollution control, waste reduction, recycling, cutting energy use, cutting paper consumption and carbon footprint and empirically investigate for any association between these components and their respective financial performance.

The structure of this paper is as follows: Section 2 highlights the different EMS practices and empirical evidence of the relationship between EMS and financial performance followed by Section 3 which illustrates the research method used in this paper; In Section 4, we present the findings and finally Section 5 concludes with recommendations and future avenues for research.

2. Literature Review

2.1. Environment Management System

The concept of Environment Management System (EMS) has been defined in many ways. Magali *et al.* [4] defines an EMS in terms of the procedure and processes in an organisation for the training of personnel, monitoring, summarizing and reporting of environmental performance to different stakeholders. In addition, the latter ascertained that the internal information is mainly used for pollution control and waste minimization, design, and training while the external information are used to show sustainability efforts and to strengthen the company's brand. Studies suggest that the environmental responsibility of firms was primarily motivated to reap corporate benefits such as enhancement in brand image, competitive advantage, lower cost of production and lower external costs to the [7] [8]. For example, Cole *et al.* [14] found that businesses can gain competitive advantage internationally by having a pro environmental reputation while Atasu [15] and Kleindorfer [8] highlighted that more environmental responsibility eventually lead to reducing costs and development of quality products. Smith & Pitt (2011) found that investing more in sustainable businesses can lead to employee motivation and therefore better performance.

2.2. Environment Management Practices

Environmental management practices are those environmental friendly operations that help to protect the natural environment and to reduce damages that can be caused upon it due to human and firms activities. Environmental practices include environmental practices like recycling, eco design, clean production and reuse with the aim of minimizing expenses regarding the manufacturing, distribution, use and disposal of products [16] [17] [18].

The following section will cover some of the common environmental management practices implemented by firms.

2.2.1. Pollution Control

Pollution control forms an important part of EMS. Much concern has been given to pollution control internationally such as the integrated pollution prevention and control regime implemented in 2000 which encourages European firms to invest in sustainable practices, waste treatment and pollution protection [19]. Klassen and Mclaughlin [20] stated that initiatives to reduce pollution by firms can help improve revenue as this appeals to those customers who are environmentally conscious and who prefer deal with products that have lower negative impacts on the environment.

2.2.2. Waste Reduction

Waste reduction is defined as the reduction of the amount of wastes or the reduction of toxicity generated by the wastes (Solid Waste Management Act, RCW 70.95). Waste control and management is one of the main areas which require corporate environmental initiatives to be undertaken and waste management

can be achieved by establishing policies concerning waste disposal, internal and external reporting of policies and environmental audit among others. Elmas and Erdogmus [5] stress on the importance of waste reduction as positive environmental impact, legal compliance, competitiveness advancement and improved customer service.

2.2.3. Recycling

Recycling is a process whereby used products are turned into raw materials to be used to make new ones with the aim to preserve natural resources and also to decrease pollution [14]. One advantage of recycling is that it helps enhancing the reputation of firms.

Recycling practices helped firms to earn customers' compliments and positive publicity [2]. Moreover, recycling helps reducing the risk of using polluting materials therefore helps avoiding legal penalties and bad public image [21]. Authors like Hindo and Arndt [22] stated that recycling and eco-design may help save costs up to more than 30%. Using reusable parts and components which have been extracted from return products help firms to save costs as they need not buy new ones [2].

2.2.4. Cutting Use of Energy

Companies learned a lot from the 1970s energy crisis and hence they installed, developed and continued to refine their energy efficiency project and for instance companies like the IBM have adopted energy efficient investment. Savings in energy leads to savings in other areas, for example, it helps reduce toxic wastes and emissions to air and water hence reducing treatment and consent costs [19].

2.2.5. Cutting Paper Consumption

Every year, above 300 million tons of paper is produced by the world and during the past 20 years, there has been an increase in the usage of paper which accounts for about 92 million to 208 million tons, in US about 68 million trees are used for paper production every year and in landfills in US, it is found that solid wastes comprises of a large amount of paper (Paperless Project, 2013). Moreover, it is also noted that loss of forest each year is estimated to be about 18 million acres and about 60% of timber collected is used in paper production. These figures are quite alarming and represent a big threat to our natural environment if ever the usage of paper continues to grow in near future.

Ben Harack [23] argued that reducing paper usage helps to save money in the long run and this can be achieved by using electronic documentation, storage, emails and by reducing the amount of printings among others.

2.2.6. Carbon Footprint Reduction

Carbon footprint is a measure in units of carbon dioxide (in tons) that human produce [24]. Moreover, Walser. M [24] stated that carbon footprint is the sum of greenhouse gas emissions when fossil fuels are burned for transportation and

energy and those emitted during products' lifecycles. In a study carried out by Smale *et al.* [25] on UK firms to investigate the effect of European carbon dioxide emissions on profits, it was found that there was profit potential for some firms engaged in carbon reduction. Similarly, Collins C. Ngwakwe and Pumela Msweli [26] also found a significant relationship between carbon emission reduction and firm performance of a company named 3M Company and it was found that this initiative helped to significantly improve the company's dividend per share. However, in a study carried out by Busch and Hoffman [27], a negative relationship was found between carbon reduction and firm performance.

2.3. EMS and Financial Performance

Evidence from recent studies shows that adopting an environmental management system may help organizations to benefit financially [28]. Similarly, Nishitani *et al.* [12] examined the effect of reducing pollution emission on firm performance and it was found that it helped to increase sales due to an increase in demand hence productivity. Konar and Cohen [29] found a positive effect of environmental management, measured by toxic emissions, on firms' assets' value.

Klassen [20] argued that adopting proactive environmental practices help organizations to benefit from an increase in sales and a premium in prices. Moreover, they benefit from a greater social approval [30] [31]. Firms that are environmentally conscious usually sell their products by marketing their management procedures which act as a differentiation between a firm's products to that of its competitors [7] [10].

Klassen and McLaughlin [20] stated that revenues of a firm can be increased by selling green products. This is because customers are now more willing to buy environmentally friendly products [32]. Darnall [28] found that firms that implement EMS can qualify themselves to be part of EMS programs sponsored by government and they gain more access to regulators therefore this acts as a competitive advantage for the firms. Some studies concentrated on the components of EMS and found variant results. For instance, Rob Gray and Jan Bebbington [19] have found a positive impact of waste reduction and cutting use of energy on firms' financial performance. Porter and Van der linde [3] proved that there is a positive relationship between pollution control and financial performance of firms. Researchers like Buttel, Hindo and Ardt and C.W.Y. *et al.* [2] [21] [22] found a positive relationship between recycling and firms' performance while Ben Harack and Snale *et al.* [23] [25] found a positive impact of cutting paper consumption and carbon footprint reduction respectively on firms' performance.

Some studies showed a negative or insignificant relationship between environmental management and firm performance. For instance, in his study, Telle [33] found an insignificant relationship between the two variables by using random effects estimator. Salama [34] also found no relationship between firm performance and environmental performance. Expenditures on environmental

management are simply a drain of firms' resources [35] [36]. Firms are spending billions of dollars when they apply for environmental permits or when they report about their environmental impacts [29] [37]. Dietrich Earnhart [32] argued that in the attempt of achieving good environmental performance, firms are lowering their revenues.

3. Research Methodology

The main objective of this research is to determine whether environmental management practices have a positive or negative relationship on firms' performance for listed companies on the Official Market of the Stock Exchange of Mauritius.

For the purpose of this study, environmental management practices were gauged using six environmental categories listed below. These components have been extracted from extant literature [2] [3] [19] [22] [23] [25] and represent the mostly commonly used categories namely:

- Pollution Control
- Waste reduction
- Recycling
- Cutting use of energy
- Cutting paper consumption
- Carbon footprint reduction

For more in depth analysis, the aforementioned six environmental management practices were divided into sub components based on extant literature as tabulated in Table 1.

Table 1. Environmental management practices.

Environmental Management Practices	Authors	Results	Subcomponents
Pollution Control	Porter and Van der Linde [3]	Positive	1) Waste Treatment 2) Waste Disposal 3) Waste minimization 4) Product Stewardship
Waste Reduction	Rob Gray and Jan Bebbington [19]	Positive	1) Waste Control 2) Waste Management
Recycling	C.W. Y. *et al.*, Hindo and, Buttel [2] [21] [22]	Positive	Recyling
Cutting use of energy	Rob Gray and Jan Bebbington [19]	Positive	1) Energy saving 2) Energy efficiency
Cutting consumption of paper	Ben Harack [23]	Positive	1) Reduce paper usage 2) Electronic documentation 3) Reducing amount of prints 4) Emails
Carbon Footprint Reduction	Walser, Snale *et al.* [24] [25]	Positive	1) Global warming 2) Climate change 3) Greenhouse emissions 4) Carbon reductions

3.1. Data Collection

Annual reports of the 42 companies listed on the Official market of the Stock Exchange of Mauritius for the period 2011 to 2014 were utilised. Campbell [38], annual reports represent the communication arte fact through which a company's financial information and social reporting are reported and are the primary corporate widely distributed and accepted by stakeholders. The rationale justifying for the chosen sample was the availability and accessibility of the annual reports of the listed companies required to disclose about their corporate social activities. Furthermore, the list of companies is representative of the wide range of sectors dominating the Mauritian business landscape and therefore providing a more holistic view of the status of environmental management practices among Mauritian firms.

Annual reports of listed firms on Stock exchange of Mauritius have been used to assess the disclosure levels of EMS since according to Income Tax Act Section 50 and the Code of Corporate Governance Practice, companies are to report their social and environmental engagements in the reports. A total of 104 annual reports were analysed over the four years using content analysis [18].

Content analysis has been extensively utilised in corporate social disclosures scholarship [39] [40] [41] [42] [43]. Content analysis can be described as a method for conducting research where there is the qualification of the content under study. Abbot and Monsen [41], p.504 stated that in CSR, content analysis is said to be a technique which gathers data by codifying information that are qualitative. Content analysis can also be used for quantifying and for the purpose of this study; content analysis has been used to count the number of times the environmental management practices terms under study have been mentioned in the annual reports. These terms are therefore being treated as units to measure environmental management of firms. Krippendorff [44] stated that units used for content analysis are considered as wholes which can be distinguished and treated as independent elements. Firstly, since data gathered from annual reports to measure the environmental management practices were in the form of numbers, they were converted into dummy variables. S. Skrivanek [45] stated that a dummy variable, also known as indicator variable, is artificial and created so that it can represent two or sometimes more distinct levels or categories. While collecting data, the frequency of the terms falling within the 6 categories from the annual reports ranged from 0 to 37. Therefore, the results were converted into categorical dummy variables as follows:

- 0 to 10 were attributed the number 1
- 11 to 20 were given the number 2
- And any number beyond the two ranges mentioned above were assigned the number 3

3.2. Measuring Financial Performance of Firms under Study

In this study, return on equity (ROE) of the listed companies was used as a

measure of their financial performance [45] [46] [47]. The returns on equity have been calculated from data from financial statements of the companies being investigated and return on equity as a percentage. ROE is an important tool for measuring firms' performance and is defined as profits over shareholders' [46]. Vigario (2005) [46] defined return on equity as the share of profits of shareholders. Artiach *et al.* [48] defines ROE as a measure of firms' profitability by showing the amount of profit generated from shareholders' money hence it can be defined as net profit divided by shareholders' equity. The return on equity of firms can easily be obtained from annual reports of companies.

3.3. Regression Equation

In order to test for any association/relationship between the financial performance of the listed firms (gauged by ROE) and environmental management practices, a regression analysis was carried out using the software SPSS version 20.0. ROE was the dependent variable in the regression equation while the independent variables constituted the six environmental management practices under study.

The regression equation may be stated as follows:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e$$

where,

Y = return on equity (ROE),

a = Constant

X_1 = Pollution control

X_2 = Waste reduction

X_3 = Recycling

X_4 = Cutting use of energy

X_5 = Cutting paper consumption

X_6 = Carbon footprint reduction

e = Error term

The null hypothesis may be stated as: H_0 = environmental management practices have a significant relationship with firm performance.

4. Analysis and Discussions

4.1. Testing the Relationship between the Six Environmental Management Practices and ROE: Multiple Regression Analysis

After running the multiple regression analysis on SPSS statistics, the following results were obtained:

From the above Table 2, the findings indicate a value of 0.071 for R Square which the multiple coefficient of determination. R^2 is a value which measures

Table 2. Model summary.

Model	R	R square	Adjusted R Square	Std Error of estimate
1	0.266	0.71	0.12	5.7898014

how well data fits a model. A value of 0.071 for R^2 therefore indicates that the regression line fits the data by only 7.10%. However, since there are six independent variables, the value of adjusted R^2, is also considered. A value of 0.012 for the adjusted R^2 shows that only 1.20% of the independent variables confirm the validity of ROE which is the dependent variable. It is therefore concluded that there exists no significant relationship between environmental management practices and firms' return on equity.

In order to test the significance of the relationship of the variables and ROE, a confidence level of 95% was adopted. A p-value below 0.05 indicates that the coefficient of each independent value is significant, that is whether each of the six environmental management practices under study has any effect on the return on equity of firms. The p-value is located under the Sig column as shown below in Table 3.

As can be noted from the results obtained, no significant relationship was found between the environmental management practices and the firm performance. From the above table, the findings indicate a value of 0.071 for *R* Square which the multiple coefficient of determination. R^2 is a value which measures how well data fits a model. A value of 0.071 for R^2 therefore indicates that the regression line fits the data by only 7.10%. However, since there are six independent variables, the value of adjusted R^2, is also considered. A value of 0.012 for the adjusted R^2 shows that only 1.20% of the independent variables confirm the validity of ROE which is the dependent variable. It can therefore be concluded that there exists no significant relationship between environmental management practices and the firms' return on equity.

Also, the p-values was calculated for each independent variable. The p-value of 0.869 showed that there is no significant relationship between pollution control and return on equity. Similarly, large p-values were obtained for four other independent variables. For waste reduction, a *p*-value of 0.054 was obtained, for that of recycling, a value of 0.122 was obtained, a *p*-value of 0.236 was obtained for cutting paper consumption while for carbon footprint reduction a value of

Table 3. Results of the relationship between independent variables and ROE.

Model	Unstandardized B	Coefficients Std Error	Standardized coefficients Beta	*t*	sig
(constant)	3.018	0.703		4.293	0.000
Pollution control	0.071	0.431	0.037	0.165	0.869
Waste Reduction	−0.429	0.460	−0.224	−9.32	0.354
Recycling	0.611	0.391	0.488	1.562	0.122
Cutting use of energy	0.490	0.228	−0.307	2.151	0.034
Cutting paper consumption	−0.386	0.324	−0.260	−1.193	0.236
Carbon footprint reduction	−0.272	0.164	−0.325	−1.657	0.101

0.101 was obtained. As it can be noted, the p-values are all above 0.05 and therefore it can be concluded that there is no significant relationship between the five mentioned environmental practices and ROE. However, the value obtained for the independent variable cutting use of energy was statistically significant. The *p*-value of 0.034 which is below 0.05 indicates that there is a significant relationship between firm financial performance and cutting use of energy.

4.2. Discussion

The growing concern of the negative impact of the economic operations of businesses on the environment has also been felt in Mauritius. Many businesses have adopted environmental manement systems as part of their operations. In line with this context, the objective of this study is to gauge the impact if any of the environmental management practices implemented by local firms on their financial performance measured by their return on equity. The indicators used were pollution control, waste reduction, recycling, cutting use of energy, cutting paper consumption and carbon footprint reduction.

While testing for the relationship between ROE and the environmental management practices, a value of 0.071 was obtained for the R square indicating that the environmental practices account for only 7.1% of the return of equity hence demonstrating no significant relationship between them. Furthermore, the P-values at the 95% confidence level for the variables pollution control, waste reduction, cutting paper consumption and carbon footprint reduction which were 0.869, 0.354, 0.122, 0.236 and 0.101 respectively reveal that they have no significant association with return on equity of the firms under study.

However, in the correlation test between the independent variables and the independent variable, a weak correlation was found between the independent variable, cutting use of energy and ROE. Similarly, a significant relationship was found between them as a p-value of 0.034 was obtained in t-test carried out. Therefore, it can be concluded that reducing firms energy uses positively impact on the firm's ROE. Generally, firms' daily energy uses are very high as compared to households. This due to the fact there are many machines being used, many lightings, computers, equipment being used among others. Some manufacturing firms like Vivo Energy Mauritius Limited, Gamma Civic Limited, United Basalts Products Ltd and Mauritius Chemical and Fertiliser Industry ltd's energy use are very high as their equipment and machineries require very large amount of energy to operate. At Air Mauritius Ltd, they operate on a 24/7 hours basis and a lot of energy is required for example for lightening purposes and to fuel operations of airplanes. Hence, reducing the use of energy will definitely help firms save money. Similarly, the MCB building has been entitled the green star with its eco building and extensive energy saving strategy with solar integration, rain water recovery and a thermal building mass production. This is supported by the argument of Rob Gray and Jan Bebbington [19] that cutting energy use leads to financial savings. Using renewable sources of energy like solar energy, saving energy by turning off lights or computers when not being used or using energy

efficient equipments help to decrease energy use hence costs associated. The savings can therefore be invested elsewhere and hence increase ROE.

Findings for the other five environmental management practices namely pollution control, waste reduction, recycling, cutting paper consumption and carbon footprint reduction showed that no significant relationship exist between them and return on equity as their P-values obtained were all above 0.05 at the 95% confidence level. This result is inconsistent to what has been discussed in the literature review and each result will be discussed in details below:

4.2.1. Pollution Control

The cost of pollution control to businesses have been highlighted by different studies [29] [36] [37]. Palmer *et al*., Filbeck and Gorman [35] [36] argued that traditional perspective views on firms' expenditures related to prevent pollution is considered as a drain of resources. Billions of dollars are spent annually by firms when they apply for the installation of mandatory technologies or those needed to comply with pollution limits [29] [37]. Moreover, using complex devices or processes designed to reduce pollution may in some ways or other productive efficiency and consequently increase costs of production [27]. While for the case of Mauritius, firms need to comply with the legislations of the Pollution Prevention and Control Division and its associated protocols (Ministry of Environment, Sustainable Development, and Disasters and Beach Management). This fact can therefore be used to explain the insignificant relationship found between firm performance and pollution control as Mauritian firms are mostly driven by regulatory pressures to adopt pollution control measures rather than to increase returns.

4.2.2. Waste Reduction

Waste reduction (p-value = 0.354) has no significant relationship with return on equity of firms. Gray and Bebbington [19] stated that reducing wastes helps firms to save financially. This is supported by the fact that waste reduction programs help firms to gain public trust hence attract more customers as their reputation is boosted. However, it should not be ignored that there are certain costs associated with the waste minimizations programs. For example, to avoid dumping of harmful wastes in the environment, there are processes like waste sorting for which the firms need to pay people to accomplish this task. To dispose wastes in landfills, there are costs associated as there need to be trucks or containers to transport the wastes. Waste reduction strategies usually require lot of efforts and resources. For instance, firms need to train their employees about waste reduction programs and seek experts' help to gain knowledge about wastes' composition. Moreover, the insignificant relationship obtained between environmental practices and return on equity of the firms under study can be supported using the fact that in Mauritius, there is an industrial waste auditing program which forms part of the Environment Protection Regulations 2008 and firms adopt waste reduction measures mainly because of this regulation than to

increase ROE.

4.2.3. Recycling

A *p*-value of 0.122 indicates that recycling has no effect on return on equity of firms. This finding is contrary to that of Ochiri George *et al.* [49] which indicated that recycling had a positive influence on Kenya's publishing firms' performances. Generally, recycling is of great advantage to firms as it leads to a reduction of wastes being disposed to landfills, helps in saving energy and in the conservation of natural resources [50]. However, the insignificant relationship found between recycling and return on equity can be explained using the arguments of C.W.Y. Wong *et al.* [2]. The latter argued that recycling is desirable but not sufficient to reduce costs and improve financial performance of firms. Recycle makes firms incur costs as there are costs associated to design new products out of the wastes to be recycled and redesigning of new packaging for new products [2]. Additionally, the insignificant relationship can be accounted due to costs associated during transportation of wastes to recycling centers and the recycling process itself as this process require expertise, technologies and sophisticated machineries.

4.2.4. Cutting Paper Consumption

Reducing the use of paper in firms is found to have an insignificant effect on firms' financial performance as the p-value obtained is 0.236. In his study Ben Harack [23] mentioned that electronic documentation and storage, emails and reducing the amount of printings help firms to save financially. However, these savings seem to be insufficient to increase firms' return on equity. To achieve the goal to use electronic documentation and use emails in the place of letters, or using fax, firms need to train all employees to be IT literate so that they can make use of these methods but there are costs associated in this endeavour. Therefore, in the attempt of reducing paper use at work, firms incur costs hence accounting for the insignificant relationship of firms' performance and cutting paper consumption.

4.2.5. Carbon Footprint Reduction

Carbon footprint reduction is also found to have no effect on firms' return on equity (p value = 0.101). This finding is consistent to that of Busch and Hoffman [27] who also found a negative relationship.

Mauritian firms need to abide to the Montreal Protocol which was implemented by the National Ozone Unit aiming at monitoring the Phase-Out of greenhouse emissions. The insignificant effect of carbon footprint reduction can be explained by the fact that the firms adopt such measures to abide to the protocol and not to increase financial performance.

Empirical researches like that of Hart and Ahuja [51] revealed that there is a positive relationship between emission reduction and firm performance however this positive outcome was possible after one to two years of implementation. Contrary to what Hart and Ahuja [51] found, researchers like Thorbun and

Fisher-Vandan [52] found that voluntary engagement of firms to decrease the emission of greenhouse gases may help to weaken firm's value. However, this weakening of the firms' value is within a short-term basis and this is possibly because resources that have been invested in carbon reduction strategies and programs which may be irrevocable within the first or second year of implementation.

5. Conclusions

This study examined the relationship between environmental management practices and firm performance of Mauritian companies listed on the Official Market. We used regression analysis and return on equity of the firms was regressed on six environmental management practices namely pollution control, waste reduction, recycling, cutting use of energy, cutting paper consumption and carbon footprint reduction. Previous studies indicated mixed findings about this relationship [17] [22] [25]. However, while previous studies showed a positive relationship between environmental practices and firm performance [28] [32] [36] [51], this research showed an insignificant relationship between the two. This has therefore led to a conjecture that the need to increase return on equity of firms is not what motivates them to implement environmental management practices but instead there are other factors that motivate them to do so.

Mauritian companies implement environmental management practices as they feel morally obliged to mitigate the negative impacts of climate change and their operations towards the natural environment. Moreover, they are also spurred by the desire to abide to and meet the growing environmental regulations being implemented by the government and other regulatory bodies.

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