

## Effect of Quantity Environmental Reporting Disclosure on Financial Performance of Manufacturing Firms Listed in the Nairobi Securities Exchange

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### ABSTRACT

*Environmental sustainability has become a major pillar of today's business activities. One of the accounting information goals is to help users predict the returns on their investments. The main purpose of the study was to determine the effects of quantity environmental reporting disclosure on the financial performance of manufacturing firms listed on the Nairobi Securities Exchange. This study employed a survey research design to select manufacturing companies listed on the NSE. The study was carried out on manufacturing companies listed on the Nairobi Securities Exchange (NSE). The target population was 64 respondents. The study employed a census survey to select the 64 respondents including the management and finance heads. The study used questionnaires and a secondary data collection schedule to collect data. Questionnaires captured independent variables, while secondary tools captured dependent variables. Descriptive statistics involved frequencies and percentages, while inferential statistics were based on Pearson correlation and simple linear regression analysis. Tables were used to present data. The findings were that quantity environmental reporting disclosure had a significant effect on financial performance among listed manufacturing firms at NSE ( $t = 9.971$ ,  $p < 0.05$ ). The study recommended that manufacturing companies should disclose information to enable trust since accountability would easily be achieved through the quantity of information disclosed.*

**Keywords:** Environmental Reporting Disclosure, Financial Performance, Manufacturing Firms, Nairobi Securities Exchange

### I. INTRODUCTION

According to Kraft and Baraloto (2014), management's financial disclosures have an impact on the stock returns of an investor's portfolio in the stock market. Moreover, investors utilize the financial information in order to assess the rate of return. Investors allocate their investments to various economic entities based on the information available to them (Hasseldine et al., 2016). In order to effectively communicate with investors and enhance their understanding of stocks, management teams must develop strategies and policies that ensure concise and comprehensive disclosure of information to the capital markets. This approach enables investors to leverage their knowledge and make informed decisions regarding their investments.

The inclusion of disclosures holds significant importance in effectively resolving the challenges associated with corporate environmental reporting. The available empirical research indicates that the act of disclosing information contributes to an increased level of knowledge regarding environmental accounting. This heightened awareness serves to reduce risk and provide greater protection for investors (Ji et al., 2022). Additionally, it also results in a decrease in the cost of capital for enterprises. The presence of agency problems in corporate business structures has led to concerns among investors, with environmental accounting being a significant contributing factor. The potential impact of heightened disclosures on stock prices is a subject that may attract attention from the investment community and other stakeholders, including policymakers and regulators. The significance of disclosures extends beyond their level, encompassing their type as well. The management is considered to possess a high level of awareness of the company as a result of their responsibilities in overseeing the operations of the organization. The principal or owners depend on the information that is made available to them in order to assess the performance of the organization, which includes their main goal of maximizing wealth (Epstein, 2018).

Financial performance is the degree to which financial objectives have been attained, as measured by an evaluation of a company's policies and activities from a monetary standpoint (Braam et al., 2016). Financial performance refers to the evaluation of a company's financial well-being and is commonly employed to facilitate comparisons between organizations operating within different industries. Maximizing shareholder returns is an important goal for any company, and financial performance is a good indicator of whether or not this goal is being realized (Belal, 2016). Two primary methods of achieving shareholder objectives are an increase in share price and the payout of dividends. While it is not always the case that a growth in the value of securities is solely attributed to greater performance, empirical research has consistently demonstrated a positive correlation between financial performance and securities (Crowther, 2018). The shift in the market value of securities can be attributed, in part, to the company's consistent performance, which contributes to its positive reputation.

Some people who support reporting (KPMG, 2017) and researchers (Ji et al., 2022; Hasseldine et al., 2016) have come up with a new way to look at corporate social and environmental disclosure: it can be seen as both a result of and a part of procedures for managing reputation risk. Despite the widespread presence of corporate reputation, it has received limited scholarly attention (Fombrun, 2014).

The primary factor driving the adoption of corporate environmental reporting and disclosure, in accordance with the principles set forth by the Global Reporting Initiative (GRI), is the main contributing factor for around 80% of the top corporations in 40 countries worldwide. The G8 and G20 countries are at the forefront of implementing changes aimed at enhancing transparency and disclosure practices (Crowther, 2018). In relation to emerging markets, scholarly research has examined social and environmental practices (Hrebicek *et al.*, 2014).

The research was conducted on manufacturing companies that are listed on the Nairobi Stock Exchange (NSE). It is a prominent stock exchange in Africa, situated in Kenya, a nation experiencing rapid economic growth within the Sub-Saharan African region. NSE, through the process of demutualization, subsequently listed itself on the stock exchange in 2014. The Board and management team of the Exchange include prominent capital markets professionals from Africa who prioritize innovation, diversification, and operational excellence. It plays a crucial role in fostering the expansion of Kenya's economy through its promotion of savings and investment, while also facilitating local and foreign enterprises' acquisition of affordable capital. The Capital Markets Authority (CMA) of Kenya established the regulatory framework within which the security exchange operates.

### 1.1 Statement of the Problem

Environmental sustainability has emerged as a prominent cornerstone of contemporary corporate practices. Nevertheless, traditional accounting methods exhibit limitations as they do not immediately cater to the requirements of corporate environmental reporting and transparency. According to data provided by the Capital Market Authority (CMA) in Kenya, there has been a notable decline in the performance of manufacturing companies listed on the Nairobi Securities Exchange (NSE) in recent times. For instance, Mumias Sugar Company reported a significant loss of Ksh 3.4 billion in 2017 (Gibendi, 2017). Additionally, British American Tobacco released its full-year financial results for the period ending on December 31, 2016, revealing a 15% decrease in profitability, amounting to \$39.8 million. These occurrences persist despite the adherence of listed firms to legislation and the oversight they receive. This thus gives rise to the argument that the underperformance of these entities may be attributed to their incapacity or failure to engage in collaborative environmental reporting, which has implications for stock prices and agency expenses. Previous research has investigated the impact of voluntary disclosure, specifically corporate environmental reporting and disclosure, on business performance. Notable works in this area include Hąbek and Wolniak (2016), Amran, Lee, and Devi (2014), Guthrie and Parker (2015), and Adams (2014). Sierra-García, Zorio-Grima, and García-Benau (2015) have also contributed to the understanding of this topic. These studies yield varying outcomes about the nature of the association between voluntary disclosure and corporate performance. This study therefore sought to assess the effect of the quantity of disclosure of corporate environmental information on the financial performance of manufacturing companies listed on the NSE.

### 1.2 Objectives of the Study

Determine the effect of quantity environmental reporting disclosure on financial performance of manufacturing firms listed in the Nairobi Securities Exchange

### 1.3 Research Hypothesis

*H<sub>01</sub>*: There is no significant effect of quantity environmental reporting disclosure on financial performance of manufacturing firms.

## II. LITERATURE REVIEW

### 2.1 Theoretical Review

The legitimacy theory put forth by Dowling and Pfeffer (2015) informed the research. Legitimacy theory is based on the idea that there is a connection between a group and the society in which it works (Ioannou & Serafeim, 2017). It is common knowledge that organizations use societal resources, and the public evaluates their operations in terms of their usefulness and legitimacy (Epstein, 2018). It has been argued that legitimacy is attained when disclosure by stakeholders, encompassing both internal and external audiences impacted by an organization's outcomes, endorses and provides support for the goals and actions of such an organization. Hence, in order to establish credibility, a company must engage in behaviors or activities that align with widely accepted social norms and values.

The disclosure of environmental information has the potential to showcase an organization's responsible behavior, with the underlying intention of influencing the public or community. In 2017, Ioannou and Serafeim conducted the study. Qiu, Shaukat, and Tharyan (2016) suggest that disclosures can serve the purpose of demonstrating an organization's adherence to community norms, or conversely, they can be employed to modify societal norms. According to the legitimacy hypothesis, managers would adopt methods to secure the ongoing provision of essential resources or knowledge for organizational survival in order to acquire or sustain legitimacy (Siew, 2015).

In order to establish legitimacy, a corporation needs to ensure that its acts are held accountable to align with societal expectations regarding appropriate conduct. This is because there exists an implicit social contract between the firm and society (Schaltegger & Burritt, 2017). There is contention that in the event that society sees a breach of expectations by a corporation, the firm's survival could be jeopardized due to the failure to fulfill the social contract. Lys, Naughton, and Wang (2015) provided an elucidation of the social contract, which pertains to the reciprocal agreement between corporations, often limited companies, and individual members of society. Society, in its capacity as a collective of persons, confers upon companies their legal status, defining their characteristics and granting them the power to possess and utilize natural resources, as well as employ humans.

Organizations utilize community resources to produce both commodities and services while also generating waste products that are released into the broader ecosystem. The organization does not own intrinsic entitlements to these benefits, and for their continued existence, it is anticipated that the benefits would surpass the societal expenses. The social contract, a fundamental theoretical framework in legitimacy theory, plays a pivotal role. However, the manner in which firms fulfill their social contract is contingent upon the unique characteristics of each firm, as managers possess distinct perspectives regarding societal expectations of firm conduct. Consequently, this discrepancy elucidates the divergence in actions taken by various managers. Trumpp and Guenther (2017) conducted a study on a particular topic. The use of legitimacy theory can be closely associated with the concept of social contract. One of the fundamental tenets of legitimacy theory posits that the viability of firms is contingent upon their ability to align with societal norms and garner support from the community (Guenther, 2017).

Conversely, in the event that society expresses dissatisfaction with the corporation's operations, society will effectively rescind the implicit agreement, allowing the firm to persist in its activities. The emergence of a legitimacy gap occurs when there is a discrepancy between the actions undertaken by a company and societal expectations and views regarding the appropriate nature of these actions (Guenther, 2017). Post, Lai, and Rahma (2014) proposed several factors that contribute to the occurrence of legitimacy gaps. These factors include: firstly, when there is a discrepancy between changes in corporate performance and the unchanged societal expectations of corporate performance; secondly, a misalignment arises when there is a discrepancy between shifts in societal expectations regarding corporate performance and the lack of progress in corporate performance. Thirdly, a situation occurs when both corporate performance and societal expectations undergo changes, but they either move in different directions or move in the same direction with a time delay. To ensure and uphold credibility, organizations must employ suitable legitimating strategies that are designed to address and alleviate the legitimacy gap (Epstein, 2018).

### 2.2 Empirical Review

Qiu et al. (2016) examined the quantity of environmental reporting disclosures by manufacturing firms. The study found quantity environmental reporting disclosure to be significant for the performance of manufacturing firms. The study failed to examine the listed data and also concentrated on secondary data, unlike the current study, which used both primary and secondary data.

Hąbek and Wolniak (2016) examined the quantity of environmental reporting disclosures of textile firms. The study found quantity environmental reporting disclosure to be insignificant on the performance of

textile firms. The study failed to examine manufacturing firms and concentrated on textile firms; the current study examines manufacturing firms.

Guenther (2017) studied the financial disclosure of manufacturing firms in Kenya. The study found financial disclosure to be significant for the financial performance of manufacturing firms. This study examined financial disclosure; hence, it was too general and failed to examine the quantity of environmental reporting disclosure components.

Gibendi (2017) conducted an examination in Kenya to investigate the relationship between corporate environmental reporting (CER) and corporate financial performance (CEP). The findings of this study indicate that it is advantageous for a corporation to adopt environmentally sustainable practices. Therefore, it can be deduced that Kenyan companies that exhibit a higher level of transparency in their Corporate Environmental Reports (CERs) are likely to achieve superior financial performance compared to those that exhibit a lower level of transparency in their CERs. With the implementation of enhanced Corporate Environmental Responsibility (CER) practices, these enterprises will experience a boost in their environmental reputation and gain a positive perception among stakeholders, sometimes referred to as green goodwill.

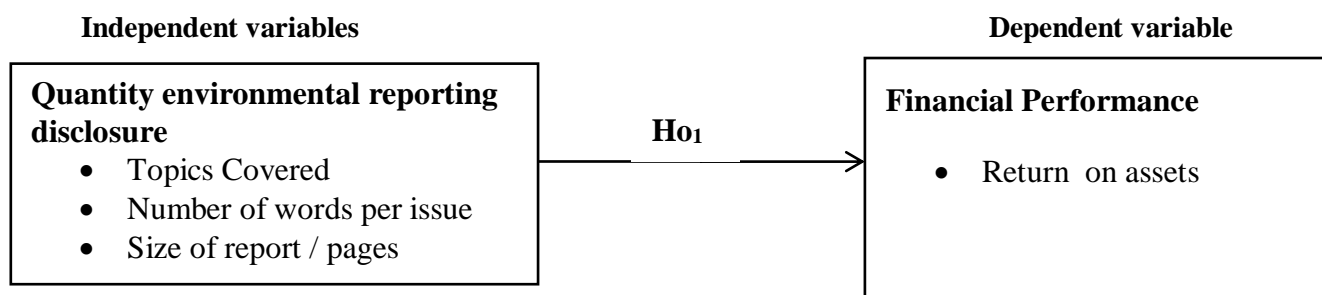
Hasseldine et al. (2015) present the initial empirical findings on the impact of environmental disclosure quality as assessed subjectively. Their study demonstrates that the influence of environmental reputation on executive and investor stakeholder groups is more pronounced when the focus is on the quality rather than the quantity of environmental disclosure. It is suggested that conducting additional research on the influence of environmental disclosure strategies on stock market value would be highly valuable in comprehending the significance of both the quantity and quality of disclosure.

Kuada (2012) examined corporate ownership and environmental issues proactively. The study presented empirical findings indicating that an increase in the quality of environmental disclosures leads to a corresponding increase in investors' perceptions of organizational legitimacy. Consequently, the authors suggest that businesses should prioritize the inclusion of quantitative, consistent, and comparable reporting in their disclosure practices. This suggests that the implementation of voluntary environmental disclosure of high quality can contribute to safeguarding the financial market performance of organizations in the event of an external shock by influencing the perceived legitimacy of the business.

According to Amran et al. (2014), it has been argued that this factor is crucial in guaranteeing the efficacy of environmental reporting. Numerous subsequent studies in the field of corporate environmental disclosure have utilized the Wiseman index as a tool for assessing the degree or caliber of environmental disclosure. In their study, Amran et al. (2014) conducted an analysis of the correlation between the pollution performance of corporations and the disclosure of pollution-related information in their annual reports and 10-K reports submitted to the Securities and Exchange Commission.

### 2.3 Conceptual Review

The conceptual framework of this study is built on the premise that there is a relationship between the extent and quality of environmental reporting by manufacturing firms and their financial performance, as reflected in ROA.



**Figure 1**

*Conceptual Framework*

**Source: Self Conceptualization (2023)**

As conceptualized in this study, quantity environmental reporting disclosure is a quality that can come in various sizes and be compared using more, less, or the same, as well as numerical values (Navas, 2015). Topics addressed, word count, page count per issue, and report size are measures for quantity disclosure. On its part, financial performance is an intangible indicator of a company's ability to exploit its core competencies and produce profits (Fombrun & Van Riel, 2014). Investment returns, equity returns, and asset returns were used to evaluate financial results. The study aims to explore whether more comprehensive and detailed environmental reporting positively impacts a firm's financial performance, as indicated by a higher ROA. By examining the dimensions of environmental reporting, including topics covered, word count, and report size, in conjunction with ROA, the research seeks to identify potential correlations and establish a nuanced understanding of how environmental disclosure practices influence financial outcomes.

### III. METHODOLOGY

#### 3.1 Study Area

The present study was conducted in Kenya, specifically focusing on manufacturing companies that are listed on the Nairobi Securities Exchange. The study excludes companies that were listed, delisted, or suspended during the specified period. The study focused exclusively on the annual reports of the corporations throughout a 10-year period, spanning from 2008 to 2018.

#### 3.2 Research Design

A research design refers to the systematic plan that outlines the methods and procedures employed to gather the necessary information. The operational pattern or framework of a project determines the specific procedures and sources from which information is to be collected (Kuada, 2012). The following is the proposed methodology for conducting the research study. According to Kombo and Tromp (2006), a research design is the glue that connects all the components together as the scheme, outline, or strategy utilized to produce solutions to the research challenges. The present study utilized an explanatory research approach to investigate the cause-and-effect relationship between dependent and independent variables.

#### 3.3 Target Population

The target population is the entire collection of units for which the survey data are intended to be used to derive conclusions. According to Kothari (2006), the term eligible population alludes to the participants in research studies. According to Kombo and Tromp (2006), the target population is defined as the complete set of individuals or elements that a researcher is specifically interested in studying. It is the group for which the researcher aims to make inferences and draw conclusions. The target population refers to the specific group of individuals for whom researchers seek to obtain information. According to Ngechu (2004), a population refers to a well-defined collection of individuals, services, entities, occurrences, or groups of entities or households that are the subject of investigation. A study population refers to a cohort of persons selected from the broader community who possess a shared trait, such as age, gender, or health status. The research focused on individuals in senior management positions and staff in the finance department inside eight manufacturing companies that are listed on the NSE. These companies consisted of a total of 64 participants, with four participants selected from each organization.

**Table 1**

*Target Population*

Target Group	Top Management employees	Finance Department employees
Flame Tree Group Holdings	4	4
BOC Kenya Limited	4	4
British American Tobacco Limited	4	4
Carbacid Investments Limited	4	4
East African Breweries	4	4
Kenya Orchards Limited	4	4
Mumias Sugar Company Limited	4	4
Unga Group	4	4
<b>Total</b>	<b>32</b>	<b>32</b>

The study employed census since the target population size is small at  $N=n=64$

### 3.4 Data Collection Instruments

The data collection process included questionnaires as the study instruments. According to Kombo and Trump (2006), a questionnaire is a collection of printed or written questions with a choice of response options intended to facilitate a survey or statistical investigation. According to Kombo and Trump (2006), a questionnaire can be defined as a document that consists of a series of questions, often distributed to a statistically significant sample of individuals, with the purpose of collecting data for a survey. Cooper (2008) defines a questionnaire as a research tool that includes a sequence of inquiries and supplementary prompts designed to collect data from participants. Structured, closed-ended questionnaires were employed in order to elicit standardized replies from the participants. The closed questionnaire was designed using a Likert scale format, with a value of 5 assigned to the response option "strongly agree" (SA) as the highest rating on the scale and a value of 1 assigned to the response option "strongly disagree" (SD) as the lowest rating. One notable benefit associated with the utilization of this particular instrument is the convenience it provides to the researcher during the analysis process. Additionally, questionnaires are characterized by their ease of administration and cost-effectiveness in terms of both time and financial resources. According to Cooper (2008), closed-ended questions offer a higher level of consistency and are more readily comprehensible. The utilization of structured questionnaires necessitates the provision of a comprehensive list encompassing all potential possibilities. Respondents are therefore able to indicate their circumstances by simply marking the appropriate answer (Kombo & Trump, 2006).

### 3.5 Validity and Reliability of research Instruments

#### 3.5.1 Validity

The validity of the questionnaire was assessed by seeking expert advice. The supervisor assisted the researcher in evaluating whether the questionnaire effectively addressed all the study objectives, with the goal of ensuring the collection of pertinent data. The viewpoint of the experts, specifically the supervisors, who played a crucial role in assessing the validity and reliability of research tools, is of great importance (Kombo & Tromp, 2006). In order to establish the validity of the questionnaire, the researcher sought the input of experts and individuals with relevant experience to provide critique and offer suggestions on the structure and design of the survey instruments. The participants' comments were included in the questionnaires prior to the final administration of the instruments in the study. Furthermore, in the pilot study that was planned and executed, the researcher engaged in open and unrestricted communication with the participants. The amicable environment facilitated the researcher's identification of limitations in the research equipment, leading to further modifications prior to their use in the actual study. The researcher gained insights from the piloting process regarding the adequacy of variable representation for the purpose of obtaining relevant data. Furthermore, appropriate modifications were implemented in accordance with the circumstances.

#### 3.5.2 Reliability

Reliability can be defined as the degree to which the outcomes of a test exhibit consistency. The study employed the test-retest procedure. The research methodology employed in this study entailed the distribution of questionnaires to distinct groups of respondents at separate points in time. The methodology entails the selection of a cohort of participants for the initial examination and the subsequent administration of identical questionnaires to a different cohort. The two outcomes are subsequently examined for correlation, and any discrepancies are identified if present (Kombo & Tromp, 2006). This approach guarantees that surveys accurately assess the intended constructs. The research utilized the Pearson Product Moment Correlation (PPMC) as a statistical method to assess the internal consistency of the questionnaire. In general, a threshold of  $\alpha > 0.7$  was established as indicative of sufficient reliability for each of the respective data sets, where  $\alpha$  represents the variable under examination for reliability.

### 3.6 Data Collection Procedures

The researcher acquired a letter of recommendation from the University of Science and got approval from the management of the chosen manufacturing companies. In addition, the researchers requested a permit from the National Council for Science, Technology, and Innovation (NACOSTI) in order to conduct the study. Subsequently, the researcher proceeded to visit the designated manufacturing enterprises and directly administer the questionnaires to employees in managerial and financial roles. The participants were provided with instructions on how to reply and were then guaranteed secrecy. Following this, they were administered the questionnaires for completion.



### 3.7 Data Analysis

Kombo and Tromp (2006) described data analysis as the procedure through which a huge amount of acquired data is arranged, structured, and interpreted. Both descriptive and inferential statistics were used in the investigation. Frequencies and percentages were used in the analysis to paint a whole picture. Inferential statistical methods like the Pearson correlation and simple linear regression analysis were used in this investigation. Descriptive statistical analyses, such as frequency and percentage calculations, were conducted using SPSS version 18 by the researchers. This made it possible to offer numerical information pertinent to the studies. Quantitative and qualitative data were collected using open-ended questions, with the latter being organized thematically and presented in a narrative style. Multiple regression analysis was used to test the study's hypotheses. Once the relationship has been estimated, it becomes feasible to utilize the equation:

$$Y = \alpha + \beta_1 X_1 + \varepsilon$$

Where: Y= the dependent variable (Financial Performance); X = the independent variables (Quantity environmental reporting disclosure);  $\beta_1$ , is independent variable coefficient;  $\alpha$ = the constant;  $\varepsilon$ = is the error term assumed to have zero mean and independent across time period.

## IV. RESULTS & DISCUSSIONS

### 4.1 Reliability Test

Reliability of the test questionnaire was undertaken as shown in the table below. Value of 0.806 was above 0.7 satisfying Cronbach alpha statistical requirement.

**Table 2**  
*Reliability Test*

Variable	Cronbach alpha
Quantity environmental reporting disclosure	0.806

### 4.2 Descriptive Statistics

Table 3 presented below examines the potential impact of the extent of corporate environmental reporting on the financial performance of manufacturing firms listed at the Nairobi Securities Exchange.

**Table 3**  
*Quantity Environmental Reporting Disclosure and Financial Performance*

Quantity of Disclosure	SA	A	UD	D	SD
The annual reports of corporations encompass a comprehensive range of both financial and non-financial data.	14(22.6%)	10(16.1%)	10(16.1%)	16(25.8%)	12(19.4%)
Use of financial ratios makes it easy to understand financial information, while a study tool can be used to understand non-financial information.	28 (45.2%)	4(6.5%)	6(9.7%)	10(16.1%)	14(22.6%)
The analysis of social information disclosure sources includes annual reports, stand-alone reports, social responsibility reports, and the company's website.	28 (45.2%)	4(6.5%)	6(9.7%)	4(6.5%)	16(25.8%)
Topics covered are adequate	26(41.9%)	28(45.2%)	4(6.5%)	0(0%)	4(6.5%)
Size of the report is satisfactory	30(48.4%)	16(25.8%)	4(6.5%)	12(19.4%)	0(0%)

The majority of participants expressed a high level of agreement regarding the impact of disclosure quantity. The inquiry pertains to the inclusion of both financial and non-financial data inside the corporate annual reports of companies. 14 (22.6%) highly agreed, 10 (16.1%) agreed, 16 (25.8%) disagreed, and 12 (19.4%) severely disagreed, while 10 (16.1%) were indecisive. The question at hand pertains to the ease of interpreting financial information through the utilization of financial ratios, as opposed to the interpretation of non-financial information through the application of a research instrument. 28 (45.2%) strongly agreed, 4 (6.5%) agreed, 10 (16.1%) disapproved, and 6 (9.7%) were unsure as to whether they agreed or disagreed strongly.

On whether annual reports, stand-alone reports, social responsibility reports, or the company's website were analyzed as sources of social information disclosure 28 (45.2%) strongly agreed, 4 (6.5%) agreed, 6 (9.7%) were undecided, 8 (6.5%) disagreed, and 8 (25.6%) strongly disagreed. On whether topics covered were adequate for disclosure 26 (41.9%) strongly agreed, 14 (45.2%) agreed, 4 (6.5%) were undecided, none disagreed, and 2 (6.5%)

strongly disagreed. On whether the size of the report was satisfactory in terms of disclosure approach, 30 (48.4%) strongly agreed, 16 (25.8%) agreed, 4 (6.5%) were undecided, 12 (19.4%) disagreed, and none strongly disagreed or was undecided. This study agrees with Lu and Abeysekera (2017), who found the quantity of disclosure to be a significant predictor of the financial performance of NSE firms. It, however, disagrees with Hąbek and Wolniak (2016), who found quantity disclosure insignificant while studying agricultural firms, which could be as a result of a different scope of study.

Table 4 below shows whether the content and quality of corporate environmental reporting and disclosure affected the financial performance of manufacturing firms listed on the Nairobi Securities Exchange.

**Table 4**  
*Financial Performance*

<b>Financial Performance</b>	<b>SA</b>	<b>A</b>	<b>UD</b>	<b>D</b>	<b>SD</b>
The quality of environmental disclosure is often difficult to measure and it remains an area of controversy on financial performance	32(51.6%)	24(38.7%)	0(0%)	6(9.7%)	0(0%)
The major difficulty lies in the fact that there is no generally accepted measurement of disclosure quality on financial performance.	30(48.4%)	16(25.8%)	8(6.5%)	12(19.4%)	0(0%)
Many corporate environmental disclosures relies on the Wiseman index in order to measure the extent or quality of environmental disclosure on financial performance	32(51.6%)	8(12.9%)	14(22.6%)	8(12.9%)	0(0%)
Number of economic factors covered is adequate on financial performance	32(51.6%)	8(12.9%)	14(22.6%)	0(0%)	4(12.9%)
Environmental litigation scope is well covered on financial performance	36(58.1%)	22(35.5%)	4(6.5%)	0(0%)	0(0%)
Pollution abatement scope is well covered on financial performance	40(64.5%)	18(29.0%)	0(0%)	4(6.5%)	0(0%)

The quality of environmental disclosure is often difficult to measure, and it remains an area of controversy, as 32 (51.6%) strongly agreed, 24 (38.7%) agreed, none disagreed, and 6 (9.7%) strongly disagreed. On whether the major difficulty lies in the fact that there is no generally accepted measurement of disclosure quality, 30 (48.4%) strongly agreed, 16 (25.8%) agreed, 4 (6.5%) were undecided, and 12 (19.4%) disagreed.

On whether many corporate environmental disclosures rely on the Wiseman index in order to measure the extent or quality of environmental disclosure 32 (51.6%) strongly agreed, 8 (12.9%) agreed, 14 (22.6%) were undecided, 8 (12.9%) disagreed, and none strongly disagreed. On whether the number of economic factors covered is adequate 16 (51.6%) strongly agreed, 8 (12.9%) agreed, and 14 (22.6%) were undecided, as 8 (12.9%) disagreed. On whether environmental litigation scope was well covered 36 (58.1%) strongly agreed, 22 (35.5%) agreed, 4 (6.5%) were undecided, and none disagreed or strongly disagreed. On whether the pollution abatement scope was well covered 20 (64.5%) strongly agreed, 18 (29.0%) agreed, 16 (14.0%) were undecided, and 4 (6.5%) disagreed.

#### 4.2 Correlation analysis

The bivariate correlation, which quantifies the relationship between two variables, was calculated for the observed data using the Pearson product-moment correlation coefficient ( $r$ ). The values of  $r$  fall between the range of 0 and +1, representing the lower and upper bounds of no correlation and perfect correlation, respectively. This coefficient quantifies the degree to which a linear relationship is present between two variables. The findings of the correlation study are displayed in Table 4.





**Table 4 Pearson Correlation Matrix of the study variables**

		Quantity Environmental Disclosure	Financial Performance
Quantity Environmental Disclosure	Pearson Correlation	1	.751*
	Sig. (2-tailed)		.012
	N	31	10
Financial performance	Pearson Correlation	.751*	1
	Sig. (2-tailed)	.012	
	N	10	10
**. Correlation is significant at the 0.01 level (2-tailed).			
*. Correlation is significant at the 0.05 level (2-tailed).			

The results confirm that at the 0.05 level of significance, quantity environmental disclosure was a significant predictor of financial performance among listed manufacturing companies in Kenya ( $r = 0.751$ ,  $p\text{-value} = 0.005 < 0.012$ ). Therefore, quantity-based environmental disclosure has a significant effect on financial performance.

**4.3 Regression Analysis**

The data in Table 6 above indicate that the R-square was 0.564, indicating that the amount of disclosure explained 56.4% of the variation in financial performance among listed manufacturing firms. The ANOVA test showed that the amount of information disclosed was important in predicting the financial performance of NSE-listed manufacturing firms. The significance value of 0.012, which was less than the 0.05 level of significance ( $p < 0.05$ ), demonstrated this. Thus, quantity of disclosure had a significant influence on financial performance among listed manufacturing firms at NSE ( $t = 9.971$ ,  $p < 0.05$ ). The null hypothesis that there was no significant effect of quantity environmental reporting disclosure on the financial performance of manufacturing firms was therefore rejected. The quantity of disclosure increased financial performance among listed manufacturing firms at the NSE by 0.357. The regression model equation was:

$$Y = 2.930 + 0.357 \text{Quantity Environmental Disclosure}$$

**Table 5**

*Effect of Quantity Environmental Disclosure on Financial Performance of NSE Listed Manufacturing Firms*

Model Summary <sup>b</sup>											
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson	
					R Square Change	F Change	df1	df2	Sig. F Change		
1	.751 <sup>a</sup>	.564	.509	.22087	.564	10.331	1	8	.012	1.549	
a. Predictors: (Constant), quantity disclosure, b. Dependent Variable: performance											
ANOVA <sup>b</sup>											
Model			Sum of Squares	Df	Mean Square	F	Sig.				
1	Regression		.504	1	.504	10.331	.012 <sup>a</sup>				
	Residual		.390	8	.049						
	Total		.894	9							
Coefficients <sup>a</sup>											
Model	Unstandardized Coefficients			Standardized Coefficients		t	Sig.				
	B	Std. Error		Beta							
1	(Constant)			2.930	.294	9.971	.000				
	Quantity disclosure			.357	.111	.751	.012				
a. Dependent Variable: performance											

## V. CONCLUSIONS & RECOMMENDATIONS

### 5.1 Conclusions

Quantity of disclosure corporate environmental reporting disclosure had a significant effect on financial performance for listed manufacturing firms at NSE. Quantity disclosure elements were assessed through topics covered, including the number of words per issue and the size of the report.

### 5.2 Recommendations

Based on the findings and conclusions, the following recommendations were formulated: Manufacturing companies should disclose information to enable trust since accountability is easily achieved through the quantity of information disclosed. Manufacturing companies should report information objectively by capturing the content of the information and displaying it in the best quality form as much as possible.

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