
Effect of Integrated Reporting on Firm Value of Listed Companies in Kenya

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ABSTRACT: *The aim of this paper was to evaluate potential benefits of the Integrated Reporting <IR> on listed firms at NSE. The study draws on stakeholders, legitimacy and agency theories to analyze the effects of <IR> on firm value. The study hypothesizes that there are positive associations between firm value and integrated reporting. The study used content analysis procedures to examine the extent of <IR> in annual reports (2015-2019) of 56 listed firms on NSE. The study developed proxies for Integrated Reporting index based on IIRC framework. The study used panel data regression to establish the association between the <IR> and firm value. The study found that <IR> affect firm value (using TQ measure) and had no significant effect on firm value (using ROA). It also showed that <IR> is positively related to ROA and negatively related to TQ among listed companies in Kenya. The findings also shows that firms that implement <IR> Framework have higher values with respect to ROA. This finding indicate that high value firms tend to embrace <IR> framework that is consistent with the prior studies unlike low value firms. However, the result shows that the most forthcoming companies in terms of <IR> have inferior firm value with respect to TQ compared to firms that had not embraced <IR>. Integrated reporting rate of adoption was low, but grew steadily from 9% (5 out of 56) in 2015 to 41% (23 out of 56) in 2019. This indicates that <IR> is gaining prominent and is the future of corporate disclosure. The study is limited to emerging countries like Kenya on the effect of <IR> on firm value. The finding is helpful to policy maker and prepares of corporate reports to establish the benefits of <IR> and embrace the integrated thinking of all aspect of business.*

KEYWORD: Integrated Reporting, firm value, listed firms on NSE

INTRODUCTION

Rapid changes in the broader business environments have increased concerns over mandatory disclosure continual fulfillment of its objective and necessitated a rethink of corporate reporting (Bananuka, Tumwabaze, & Orobia, 2019; Opanyi 2019). According to Opanyi (2019) these changes includes: Transition towards a knowledge economy, Growth of stakeholder's awareness, Technological evolution, Growth of social responsible investment, corporate scandals, financial crisis, failure of governance system, gradual falling of the professional and personal integrity of

auditing firms and globalization. Therefore, increasing visibility of environmental and social issues exposes businesses to more external pressure to show the performance of non-financial aspects (Herremans and Nazari 2016). According to El Deeb, (2019) traditional financial reports cannot satisfy investors, diversified information needs along with economic development. Particularly, regarding critical success factors, opportunities, risks and management plans in a more integrated perspective.

Many firms have in recent years implemented stand-alone Corporate Social Responsibility (CSR) reports, sustainability reports (SR) and Corporate governance reports (CGR) as a complement to traditional financial reports. These reports are guided by national and global bodies such as the Global Reporting Initiative (GRI-G4) reporting guidelines, Organization of Economic Cooperation and Development (OECD), corporate governance principles (Injeni et al 2019; Drobetz et al., 2014; Bouchez, 2017). The management practices of providing voluntary disclosures in order to encounter the demands of investors are a trade-off among the needs to comply with standards and with investors' demands for extra non-financial information. This trade-off is against the desire of the management for withholding information to preserve confidentiality for organizational existence and development (El Deeb 2019; Gaa, 2010).

As these reports are prepared separately, an attempt to blend the information in one report has been made through integrated reporting (Injeni et al 2019). The International Integrated Reporting Council (IIRC) defines an integrated report as: a concise communication about how an organization's strategy, governance, performance, and prospects, in the context of its external environs, leads to the creation of firm value over the short, medium and long-term (IIRC, 2013). IIRC published a first version of a principle-based framework that strike an appropriate balance between flexibility and prescription that recognizes the wide variation in individual circumstances of different organizations while enabling a sufficient degree of comparability across organizations to meet relevant information needs (Velte 2021; IIRC, 2013). Consistent with an integrated thinking tactic and a focus on the materiality principle, <IR> entails a clear link between financial, human, manufactured, intellectual, social and natural capitals and relationship (IIRC, 2013; Injeni et al 2019). This requires a brief clarification of the connection between the diverse factors influencing how the organization creates value including environmental, social and economic factors, which give rise to consequences on the sustainability of the business model (Sarioğlu et al., 2019).

Integrated reporting framework aims to: improve the quality of information available to providers of financial capital by creating an understanding of how a firm creates value in the short, medium and long term to support the efficient and productive allocation of capital. Martinez (2016) argues that this enhances the quality of existing information provided to capital providers and promotes a more cohesive and efficient approach to corporate reporting that draws on different reporting aspects and communicates a holistic view of the organizational value creation process and enhances accountability and stewardship for the broad base of capitals and promote an understanding of their interdependencies.

Moreover, it supports integrated thinking, decision-making and actions that focus on value creation over time. Indeed Opanyi (2019), argues that a holistic view of organizations' financial and non-financial aspects is essential for business success and support value-creating decisions. According to Eccles and Sarafeim (2013), investors and other stakeholders consider financial performance, environmental, social and governance performance as intertwined and therefore, this provides the rationale for integrated reporting.

The <IR> has gained relevance in business practice, but many resources are needed to adopt it. The <IR> is as a result largely restricted to listed companies. Globally, the adoption of <IR> is still voluntary with the exception of South Africa. Some countries and region are mandating non-financial reporting for listed companies or those above a certain size for example EU countries, Brazil and Japan (Opanyi 2019; IFAC, 2018; Eccles & Saltzman, 2011).

In Kenya, <IR> is not a requirement under any regulations and is adopted as a best practice voluntarily. Although, <IR> is still a new concept in Kenya, its significance is graduating seizing more attention. Some of the effort made towards adoption of <IR> in Kenya includes; introduction of the Corporate Governance code of Practices for quoted firms in 2015 that recommended the adoption of integrated reporting on voluntarily basis. Also, Kenya is among eight initial members countries selected to provide "strategic thinking" and promote the adoption of integrated reporting in Africa by PAFA and the World Bank group (IFAC, 2018). This has seen some companies like Safaricom, Sameer Africa, Kenya Commercial Bank etc. adopt integrated reporting on voluntarily basis as a best practice.

Research Problem

In recent years, companies have implemented many stand-alone and genuinely long reports to complement traditional financial reports. These aimed to demonstrate firm's financial and non-financial outcomes. Despite, all stakeholders wanting to be informed more in a simplest way, it is insufficient to evaluate these reports separately to see the whole story (Sarioğlu et al., 2019). Thus, stakeholders' interest in connecting these elements-ideally within one (integrated) report is often not realized. Additionally, creating value side of current reports are still debatable. Indeed, Beattie et al., (2000) argues that growth in the bulk of information released has not produced proportional growth in the value of corporate disclosure and that vital information may well be getting lost in a disclosure forest. According to Sarioğlu et al (2019) corporate reporting must move a step forward to express more with less, termed as integrated reporting that combines all pieces of puzzle. It is not only about integrating financial and non-financial knowledge into a single and brief report, but also integrated thinking of all aspects of businesses in terms of creating value over time. Despite the increasing attention on and application of integrated reporting, there is still no common mandatory reporting standard. In Kenya, <IR> is adopted on voluntary basis. Over the recent years, <IR> has gained great significance in accounting research. While some literature reviews have been conducted on <IR> (e.g., de Villiers et al., 2017b; Kannenberg & Schreck, 2019; Velte & Stawinoga, 2017a; Vitolla et al., 2019a; Injeni, et al (2019); Martinez (2016); Bananuka et al (2019); Velte (2021); El-Deeb (2019). There is still lack a conclusive empirical evidence on the

consequences of IR on firm value. This study therefore sort to answer the questions; to what extent are companies providing <IR>, and whether <IR> is value relevance?

Research Objective

The aim of this study was to determine the relations between integrated reporting and firm value of listed companies at NSE.

Theoretical Framework

This section explains the related theories on which the study is based. A number of theories have been hypothesized as explanatory theories endeavoring to explain firms' incentives to adopt integrated reporting. The stakeholder theory, agency theory and legitimacy theory were used to underpin the study.

Stakeholder Theory

Freeman (2004) describes stakeholders as those individuals who are vital to the success and survival of the organization. The theory assumes that all stakeholders have "customer-like" power to engage or not to engage with the company and the contribution of every stakeholder to the firm system of value creation affects the total value created (Ansoff 1965). Firms' sustainability depends on the continuous stakeholders' relations management. For the companies to benefit in long-run it must recognize and engage all stakeholders.

This is achieved by providing corporate disclosure in particular <IR>, is used as instrument to engage with stakeholders. <IR> enables firms to gain attention, backing, endorsement and build trust of all stakeholders. Based on Stakeholder theory, this provides both social and economic values and a consideration of ethics and morality, which is essential for estimating the firm's value (Freeman, 2004). Subsequently, company owner's benefits, as the foremost stakeholders, in the long-term. Also, companies realize resources driven by all the stakeholders.

Companies do not have a homogenous set of stakeholders. Stakeholders' theory suggests that company need to ensure that information needs of diverse set of users are met coupled with complex set demand and supply. Information for stakeholders in economic decision-making is more diverse and dynamic. Stakeholder theory view firms' <IR> as a reaction to the expectations and demands from different interested parties. There are also concerns about the cohesiveness of the report, as firms seeks to meet the information demand from various stakeholders. Accordingly, FEE (2015) argues that the theory emphasizes the disclosure of the information and less attention is given to the total cohesiveness of the report.

Legitimacy Theory

According to Hossain and Taylor, (2007) legitimacy theory is based on the assumption that business operates via a social contract among the organization and the society in which it operates. Through implicit agreement, organisations align their business behaviour with social aspiration so as to get support of its objectives, survival and for greater social benefit (Gray et al. 1995; Guthrie and Parker, 1989). Dowling and Pfeffer (1975), recommends that companies could augment their

legitimacy through symbolic communication. As such, Preston and Post (1975), argue that shifting perceptions of the organisations and fiduciary communities induces accounting disclosures. Consequently, legitimacy theory has also been invoked to explain corporate reporting practices. According to Elliott and Jacobson (1994) corporate disclosure to some extent serve to signal company's accountability obligations to the community, as corporate citizen. Firm's long-term existence is linked to its ability to meet society's sustainability goals. <IR> is viewed as able to generate social value consequently, benefiting the company and the society as well. For example, sustainability disclosures are hypothesized to change perceptions about the legitimacy of the company. Consequently, organizations are obliged to increase information disclosure that would change the society's perception about the firm (Cormier and Gordon, 2001).

However, such corporate disclosure might be due to public pressure and augmented media attention. IR can be used as a simple marketing tool to attract new shareholders and other stakeholders, without any clear change in management control system and reporting behaviour of a company (Velte & Stawinoga, 2017). Thus, <IR> remains to be used as symbolic substantial business strategy. In addition, society consists of diverse groups having different capacity to influence firms and other groups. As such, the concepts of society's values cannot be easily quantified.

Agency theory

The theory expresses the relationships and self-interests in business organisations as results of separation of financiers and control of business. According to Jensen and Meckling (1976), managers have advantage of more information than the owner, resulting in information asymmetry problem. The rationale is dissension in the preferred targets of agent and principal, both acts in their own best interest.

Agency theory, posit that <IR> is a tool to alleviate the agency problem, by managing agency cost, monitoring cost and lowering information asymmetry (Gray, Kouhy, & Lavers, 1995; Watson, Shives, & Marston, 2002). <IR> enable better transparency that provides holistic view of firm ability to generate shareholders value over long term. Watson et al., (2008) argues that management consider <IR> with a view to convince investors that they are acting shareholders best interest to avoid shareholders controlling their decision behavior through monitoring activities.

Empirical Review

<IR> through focus on value creation, provides insights about; the external environment that affects an organization; the resources and relationships (or capitals);- including financial, intellectual, human, manufacturing, social and relationship, and natural used and affected by the organization and; how the organization interacts with the external environment and the capitals to create value over the short, medium and long term. Prior studies have followed different stream of research in exploring the benefits of corporate reporting. The first research stream suggest that disclosure increases company value through exploring the link among the constituents of company value through reduced cost of capital and/or increased cash flows that accrues to shareholders (see IIRC 2017, Martinez 2016, Lambert 2001, Greenwood 2007, Porter and Kramer 2011, Teece 2007, Rikanovic 2005, Hassan et al., 2009; Plumlee et al., 2008; Rikanovic, 2005).

First, a greater transparency and connectivity of information could improve the shareholder's monitoring abilities, encouraging the manager to adopt a long-term decision making approach in the benefit of investors (Barth *et al.* 2016; Lambert, 2001). Firms use <IR> to identify and attract loyal and dedicated stakeholders such as institutional investors with capital because of long-term stable ownership. Institutional investors are also sophisticated and provide essential firm monitoring (Leuz and Wysocki, 2015). Thus, enable better long-term decision making that increases firm's cash flows and further contribute to firm value.

Second, <IR> leads to better transparency by releasing informative information to less informed stakeholders thus levelling the "playing field" on security market (Opanyi 2022; Rikanovic 2005; Leuz and Wysocki 2015). This reduces information asymmetries and adverse selection thus prevent volatile share prices on the market, higher volume of trading and reduces the cost of equity (Opanyi 2022).

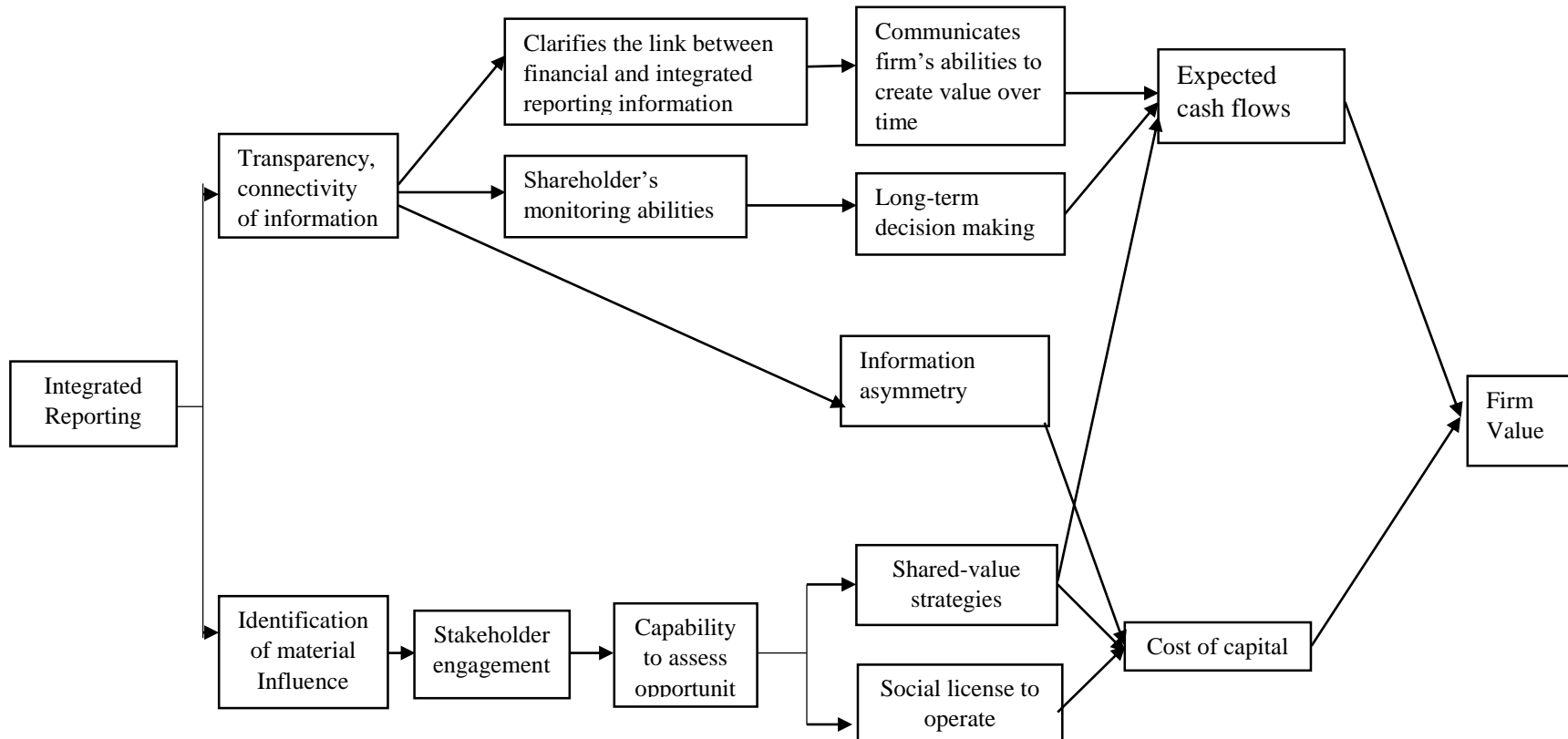
Third, <IR> enables linking of non-financial to financial results that led to better depiction of firm's ability to generate value over long-term. The <IR> promotes a more cohesive and efficient tactic to corporate disclosure that draws on different disclosure aspects and communicates a holistic view of the firms value creation process. According to IFAC (2018), <IR> leads to better transparency that enable provision of fuller and better depiction of company's ability to generate value over long-term. Therefore <IR> can be a communication tool that clarifies firm's value creation process to investors by connecting financial and integrated reporting information categories, which could enhance the expected FCF.

Finally, <IR> increases publically available information to the public domain that reduces the perceived investors' uncertainty about the company's future prospects, reducing the estimation risk and leads to lower required returns on investment (Lambert, Leuz and Verrecchia, 2007). Investor's doubt about company prospects suggests an increased expected cost of capital. Consequently, lower firm value.

The second research stream demonstrates that corporate reporting increases company value through exploring the effect of enhanced stakeholder engagement that boost firm's reputation. The

in-depth stakeholder engagement could impact a firm's financial bottom line by fostering a shared-value strategy. This will induce a reduction in agency problem by changing the management perception on the stakeholder's power and legitimacy (Mitchell *et al.*, 1997), and a consequent upsurge in engagement with strategic stakeholders (Greenwood, 2007). The shift would result in an engagement focused on addressing the strategic stakeholders' material issues, generating insights that could be used in the firm's strategic planning. From these insights, managers could define shared-value strategies that not only address the needs of the strategic stakeholders, but also increase the expected future cash flows (Porter & Kramer, 2011).

The company's long- term survival is related to its ability to meet community's sustainability goals. Accordingly <IR> promises to improve certainty of expected future cash flows (FCF) by mitigating reputational risk that could undermine the firm's social license to operate, ensuring the continuing supply of resources (Pfeffer & Salancik, 2003). The expected FCF of companies depends on the viability of their future projects. Firms enhance the certainty of the expected FCF by increasing the probability that the future projects new operations will occur as planned. <IR> is viewed as able to generate social value as a consequence, this would benefit the company and the society as well. Martinez (2016) presents a summarized graphical representation of how <IR> might affect firm value as shown in figure 2.1



Source: Martinez (2016)

The research hypothesis tested in this study was:

H₁: Integrated Reporting has no significant effect on ROA of listed companies at the NSE.

H₂: Integrated Reporting has no significant effect on Tobin Q of listed companies at the NSE.

RESEARCH METHODOLOGY

This study employed positivist paradigm. The study was based on existing body of knowledge, review of literature from previous related studies, setting of hypotheses based on the existing pertinent theories, from which observations was deduced so as to be confirmed or refuted by quantitative and statistical methods. In term of research design, the study adopted longitudinal research design. Longitudinal studies follows the same sample over an extended period of time and makes multiple observations (Ployhart & Vandenberg, 2010). It enables exploration of changes over-time and relates them to variables that clarifies why the changes occurs.

Census method was selected because listed companies at NSE represent a small population and is possible to study the whole population (Kothari, 2004). Also the results based on this method are less biased as each and every unit of population is considered. There were 66 listed companies on NSE as of December 2019 (CMA, 2019). Out of the 66 firms that were targeted, 56 companies whose stocks were actively traded over the period of study were analysed. The study used secondary data (annual reports) because it is economical, easy to access and is much reliable because annual reports are audited. The financial data from published financial reports were compared with data from NSE Hand book, this assisted in the verification of consistency and accuracy.

This study choose firm value rather than going through the various routes to which <IR> affects firm value. According to Opanyi (2022), company value is a comprehensive summary variable that possess all costs and benefits, whether directly or indirectly. The most generally used proxies for measuring firm value by prior research were adopted in this research (Tobin Q ratio and return on asset). In addition, the researchers constructed an index for the <IR> implementation level through scanning the <IR> framework issued by the IIRC. IIRC framework provides seven elements of an integrated report. The content elements of <IR> are fundamentally linked to each other and are not mutually exclusive.

These includes: Organizational overview and external environment (An <IR> should answer the question: What does the organization do and what are the circumstances under which it operates?); Governance (An <IR> should answer the question: How does the organization's governance structure support its ability to create value in the short, medium and long term?); Business model (An <IR> should answer the question: What is the organization's business model?); Risks and opportunities (An <IR> should answer the question: What are the specific risks and opportunities that affect the company's ability to create firm value over the short, medium and long term, and how is the company dealing with them?).

Strategy and resource allocation (An <IR> should answer the question: Where does the organization want to go and how does it intend to get there?); Performance (An <IR> should answer the question: To what extent has the company achieved its strategic objectives for the period and what are its results in terms of effects on the capitals?); Outlook (An <IR> should answer the question: What challenges and uncertainties is the company likely to encounter in pursuing its strategy, and what are the possible implications for its business model and future performance?) and Basis of preparation and presentation (An <IR> should answer the question: How does the organization determine what matters to include in the integrated report and how are such matters quantified or evaluated?).

This study operationalized the study variables as detailed in the table 3.2.

Table 3.2: Operationalization and Measurement of Study Variables

Variable	Operation Definition	Indicators	measurement	Researchers
Value of Firm	Objectives of shareholders interest	Firm value	TQ = $\frac{\text{Market Capitalization}}{\text{Book Value Total assets.}}$ ROA = $\frac{\text{Profit after Tax (Net Income)}}{\text{Book value Total Assets.}}$	Waweru, 2018; Hamrouni et al., 2015; Rikanovic 2005; Drobetz et al., 2004 Barth (2016)
Integrated Reporting	<IR> framework	<IR> Attributes	<IR> Score = $\sum_{i=1}^n \frac{X_{ij}}{n_{ij}}$ <IR> will be measured using 5 point likert scale ranging from “no disclosure” to “very extensive disclosure”.	Injieni et al 2019; Zhou et al.(2016)

The effect of <IR> on firm value was established using multiple regression models.

$$FV = \beta_0 + \beta_1 <IR> + \varepsilon \quad \dots\dots\dots (1)$$

Where: FV= Firm Value

<IR>= Integrated Reporting index

β_0 = Constant or intercept

β = Regression model co-efficient (parameters)

ε = Error term

Empirical results

The empirical results comprise the results of descriptive statistical analysis, correlation analysis and panel data regression analysis. Fitness of the variables to a normal distribution was tested. The study used Shapiro-Francia statistics to test the fit of the variables to a normal distribution. As presented in table 4.1 Shapiro-Francia statistics for Integrated reporting (0.0001, $p < 0.05$),

Return on Assets (0.0001, $p < 0.05$) and Tobin Q (0.0001, $p < 0.05$). These statistics are an indication that generally, the data collected for the study variables was not normally distributed.

Table 4.1: Shapiro-Francia W' test for normal data

Variable	Obs	W'	V'	Z	Prob>z
<IR>	280	0.97336	5.792	3.712	0.0001
ROA	273	0.69826	64.183	8.781	0.0001
TQ	273	0.1671	177.165	10.923	0.0001

Descriptive Statistical

Descriptive statistics was used to provide preliminary analysis of the data and guide the rest of the data analysis process. Descriptive statistics are univariate tests which represents the total sample distribution of one variable at a time, which are divided into statistics that measure central tendency and statistics that measure dispersion (Cooper & Schindler, 2008; Bryman and Cramer, 2005).

The <IR> index considered 28 checklist statements relating to <IR>, categorized into seven broad dimensions. The 5 point likert scale ranging from “no disclosure” to “very extensive disclosure” was used in scoring <IR>. The <IR> scores that a firm could score when summed-up, was established to be 112 out of 140 maximum value in any year.

The results in Table 4.2 indicates the <IR> score by year. The results indicates that the year 2015 had the lowest scores (mean= 57.8571) and the year 2019 had the highest score (mean= 70.6101). The results shows that extend of <IR> was average, but increased gradually from 2015 to 2019 among listed companies at NSE. The findings shows that extend of disclosure of <IR> elements was average but steadily increased from 57.85% in 2015 to 70.61% in 2019 respectively. The finding may be indication of the stage of corporate reporting maturity in Kenya. Generally, none adoption of <IR> by some of the listed companies may indicate some level of challenges in adoption. The effort by CMA to encourage adoption of integrated reporting assume annual reports contain sufficient financial and non-financial information categories that can then be integrated.

Table 4.2 presents the results of seven main elements of <IR> and firm value by year. The results of elements of <IR> levels. Each <IR> element had a maximum score of 20. The RO, CG and OE scored above average of 18.0893, 12.5298 and 10.075 respectively. Whereas, SR, BM, PM and OL scored below average of 8.2143, 7.1429, 6.6857 and 3.1429 respectively. Each <IR> information category shows a steady improvement. With RO, and CG information being most disclosed with the score of from 18.0893 and 12.5298 respectively. With the OL being least disclosed information category at 3.1429. Overall, <IR> mean score was 65.88 indicating that disclosure of integrated reporting information categories is slightly above average in Kenya.

Table 4.2: Integrated Reporting score by year

YEAR	2015	2016	2017	2018	2019	Total
OE	9.6250	9.9286	10.1429	10.3036	10.3750	10.0750
CG	10.5000	12.2262	13.0298	13.3363	13.5566	12.5298
BM	5.5714	6.5714	7.6429	7.7857	8.1429	7.1429
RO	17.8571	18.0357	18.1250	18.2143	18.2143	18.0893
SR	6.5357	7.6786	8.8571	8.8571	9.1429	8.2143
PM	5.4464	6.2321	7.0714	7.2500	7.4286	6.6857
OL	2.3214	2.8214	3.2143	3.6071	3.7500	3.1429
<IR>	57.8571	63.4941	68.0833	69.3542	70.6101	65.8798
ROA	3.5068	2.9979	1.6565	0.9095	-1.4699	1.5707
TQ	1.6717	1.1221	0.6698	0.6537	0.5790	0.9477

Univariate Analysis

The selected variables for this study are represented by FV and <IR> representing firm value, integrated reporting score of listed companies. The variables when subjected to normality testing the results showed that the variables were not drawn from a normal population. Therefore, non-parametric correlation test (spearman rank correlation) was conducted to establish extent of association among the variables. The results in table 4.3 shows dependent variable (ROA and TQ) had no higher degree of correlation with independent variables <IR>. The dependent variables FV (ROA) was positively correlated with <IR> with values of 0.1082. In term of dependent variables FV (TQ) exhibited a negative correction of 0.1054 with <IR>.

Table 4.3: Spearman Rank Correlation Matrix

	<IR>	ROA	TQ
<IR>	1.0000		
ROA	0.1082	1.0000	
	0.0742		
TQ	-0.1054	0.3735*	1.0000
	0.0821	0.0000	

Multivariate Statistical Analysis

First, fixed effect model of panel regression was carried out to examine the effect of <IR> on Firm Value. In the second step, random effect model of panel regression using GLS was conducted to establish the effect of <IR> on Firm value across time period. In the third step, hausman test was conducted to recognize the applicability of the random effect and the fixed effect model in the data set. If statistically significant P-value is found then, fixed effect model is applicable, otherwise random effect model.

Effect of integrated reporting on Firms Value (ROA)

The fixed-effect model of panel regression was conducted to examine the effect of <IR> on ROA. The results in table 4.4 indicates that <IR> (p value of 0.332) on an average at an individual level does not significantly influence ROA of listed companies.

Table 4.4: Effect of integrated reporting on Firms Value (ROA)

Fixed-effects (within) regression				Number of obs = 273		
Group variable: ID				Number of groups = 56		
R-sq:				Obs per group:		
within = 0.0044				min = 3		
between = 0.0355				avg = 4.9		
overall = 0.0119				max = 5		
corr(u_i, Xb) = -0.2835				F(1,216) = 0.94		
				Prob > F = 0.3323		
ROA	Coef.	Std. Err.	T	P> t	[95% Conf. Interval]	
<IR>	-0.0894	0.091995	-0.97	0.332	-0.27072	0.091925
_cons	7.491484	6.130007	1.22	0.223	-4.59081	19.57377
sigma_u	13.64219					
sigma_e	11.13226					
rho	.60028196	(fraction of variance due to u_i)				
F test that all u_i=0: F(55, 216) = 5.78				Prob > F = 0.0000		

The random effect model of panel regression using GLS technique of estimation was conducted to understand the effect of <IR> on ROA. The results in table 4.5 indicates that <IR> (p value of 0.774) on an average at an individual level does not significantly influence ROA of listed companies.

Table 4.5: Effect of integrated reporting on Firms Value (ROA)

Random-effects GLS regression				Number of obs	=	273
Group variable: ID				Number of groups	=	56
R-sq:				Obs per group:		
within = 0.0044				min = 3		
between = 0.0355				avg = 4.9		
overall = 0.0119				max = 5		
				Wald chi2(1) = 0.08		
corr(u_i, X) = 0 (assumed)				Prob > chi2 = 0.7739		
ROA	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
<IR>	0.01858	0.064667	0.29	0.774	-0.10817	0.145325
_cons	-0.02045	4.607224	0.00	0.996	-9.05044	9.009542
sigma_u	12.06703					
sigma_e	11.13226					
rho	.54022763	(fraction of variance due to u_i)				

To decide between fixed or random effects the Hausman test was run, where the null hypothesis is that the preferred model is random effect vice versa the alternative the fixed effect. If the p-value < 0.05 (significant) the fixed effect is applicable. The result of Hausman test in table 4.6 shows that the null hypothesis be accepted in this case and hence random effect model is suited for the data set to ascertain the impact of <IR> on ROA. The p-value of the Chi-square being 0.0989 and the chi-square statistic been 2.72 shows that the null hypothesis of applicability of random effect model be accepted and hence random effect is applicable in this data set to understand the impact of <IR> on ROA.

Table 4.6: Hausman test

---- Coefficients ----				
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
<IR>	-0.0894	0.01858	-0.10798	0.065431

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\begin{aligned}\text{chi2}(1) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= 2.72\end{aligned}$$

$$\text{Prob}>\text{chi2} = 0.0989$$

When ROA was regressed with the independent variables <IR> using random effect panel regression the probability value of <IR> is 0.774 which was insignificant at 5% level of significance as shown in table 4.5. The coefficient sign of <IR> is positive indicates that an increase in <IR> will result in increase of ROA. The coefficient value of <IR> is 0.01858 indicating that an increase in 1 percentage of <IR> will result in an increase in ROA by 0.019 percentage points. The coefficient of determination (R^2) of was 0.0119 implies that <IR> explained 0.12 percentage of ROA variation. The remaining 99.88 percentage was explained by other variables not considered in this study.

The overall test of significant using F-value statistics was 0.08 which was statistically insignificant because P. value (0.7739) was greater than 0.05 significance level and the study fails to reject the null hypothesis that <IR> has no effect on firm value with respect to ROA at 0.05 level of significant.

Effect of integrated reporting on Firms Value (TQ)

The fixed-effect model of panel regression was conducted to examine the effect of <IR> on ROA. The results in table 4.7 indicates that <IR> (p value of 0.09) on an average at an individual level does not significantly influence TQ ratio of listed companies.

Table 4.7: Effect of integrated reporting on Firms Value (TQ)

Fixed-effects (within) regression				Number of obs	=	273
Group variable: ID				Number of groups	=	56
R-sq:				Obs per group:		
within = 0.0133				min = 3		
between = 0.0357				avg = 4.9		
overall = 0.0235				max = 5		
corr(u_i, Xb) = -0.1285				F(1,216)	=	2.91
				Prob > F	=	0.0897
TQ	Coef.	Std. Err.	T	P> t	[95% Conf. Interval]	
<IR>	-0.04523	0.026536	-1.7	0.09	-0.09753	0.007071
_cons	3.94342	1.76821	2.23	0.027	0.458264	7.428576
sigma_u	2.610162					
sigma_e	3.211118					
rho	.39785436	(fraction of variance due to u_i)				
F test that all u_i=0: F(55, 216) = 3.23 Prob > F = 0.0000						

The random effect model of panel regression using GLS technique of estimation was conducted to understand the effect of <IR> on TQ. The results in table 4.8 indicates that <IR> (p value of 0.032) on an average at an individual level significantly influence TQ ratio of listed companies.

Table 4.8: Effect of integrated reporting on Firms Value (TQ)

Random-effects GLS regression				Number of obs	=	273
Group variable: ID				Number of groups	=	56
R-sq:				Obs per group:		
within = 0.0133				min = 3		
between = 0.0357				avg = 4.9		
overall = 0.0235				max = 5		
				Wald chi2(1) = 4.62		
corr(u_i, X) = 0 (assumed)				Prob > chi2 = 0.0315		
TQ	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
<IR>	-0.0321	0.014929	-2.15	0.032	-0.0613589	-0.00284
_cons	3.058349	1.044748	2.93	0.003	1.010681	5.106017
sigma_u	2.155436					
sigma_e	3.211118					
rho	.31061369	(fraction of variance due to u_i)				

To decide between fixed or random effects the Hausman test was run, where the null hypothesis is that the preferred model is random effect vice versa the alternative the fixed effect. If the p-value < 0.05 (significant) the fixed effect is applicable. The result of Hausman test in table 4.9 shows that the null hypothesis be accepted in this case and hence random effect model is suited for the data set to ascertain the impact of <IR> on TQ. The p-value of the Chi-square being 0.05494 and the chi-square statistic been 0.36 shows that the null hypothesis of applicability of random effect model be accepted and hence random effect is applicable in this data set to understand the impact of <IR> on TQ.

Table 4.9: Hausman test

---- Coefficients ----				
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b- V_B)) S.E.
<IR>	0.04523	0.0321	-0.01313	0.021938

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\begin{aligned}\text{chi2}(1) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= 0.36\end{aligned}$$

$$\text{Prob}>\chi^2 = 0.5494$$

When TQ was regressed with the independent variables <IR> using random effect panel regression the probability value of <IR> is 0.032 which was significant at 5% level of significance as shown in table 4.8. The coefficient sign of <IR> is negative indicates that an increase in <IR> will result in decrease of TQ. The coefficient value of <IR> is 0.0321 indicating that an increase in 1 percentage of <IR> will result in a decrease in TQ by 0.32 percentage points. The coefficient of determination (R^2) of was 0.0235 implies that <IR> explained 0.23 percentage of TQ variation. The remaining 99.77 percentage was explained by other variables not considered in this study.

The overall test of significant using F-value statistics was 4.62 which was statistically significant because P. value (0.0315) was lesser than 0.05 significance level and the null hypothesis that <IR> has no effect on firm value with respect to TQ at 0.05 level of significant was rejected.

Firm Value by <IR> Adopters Ranking

The study, split the sample into two, firms which adopted <IR> and firms which had not embraced <IR>. The firms which adopted IR (Rank 1) and (Rank 0) for firms which had not embraced <IR>.

Table 4.10 shows the mean for the variable by rankings. The firms which adopted <IR> (Rank 1) had <IR> mean score of (score 83.59565) and (Rank 0) for firms which had not embraced <IR> had a mean score of (score 53.5977). Firms which had embraced <IR> had mean score greater than the mean of the overall target population (score 65.8798) unlike firms which had not adopted <IR>.

Table 4.10: Mean Score by Ranking

Mean estimation Number of obs = 273

0: RANK = Non-<IR> Adopter

1: RANK = <IR> Adopter

Over	Mean	Std Err.	[95% Conf. Interval]	
<IR>				
0	53.59177	1.0577	51.50945	55.67409
1	83.59565	1.478472	80.68495	86.50636
ROA				
0	-0.68231	1.429755	-3.4971	2.132485
1	4.666089	1.045415	2.607956	6.724222
TQ				
0	1.019035	0.397877	0.235725	1.802345
1	0.84964	0.131743	0.590274	1.109006

The null hypothesis (H_0); that mean firm value (with respect to ROA) are same was tested ($\mu_1 = \mu_2$). Table 4.11 shows the difference in mean in terms of ROA. The critical values reject H_0 at 0.05 level if $t < 0.9974$ or $t > 0.0026$. The results indicate that $t = -2.8166$. Reject H_0 and conclude that the data shows difference in the means of ROA. The result shows that the companies which had embraced <IR> have superior firm value with respect to ROA with mean scored of 5.3484 more compared to those companies that had not embraced <IR>.

Table 4.11: Difference in Mean ($\mu_1 = \mu_2$). (ROA).

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	158	-0.68231	1.429755	17.97174	-3.50635	2.141728
1	115	4.666089	1.045415	11.21082	2.59513	6.737047
Combined	273	1.570679	0.949462	15.68768	-0.29855	3.439907
Diff		-5.3484	1.898877		-9.08682	-1.60997

diff= mean (0) -mean(1)

$t = -2.8166$

H_0 : diff = 0

degrees of freedom= 271

H_a : diff < 0

H_a : diff! = 0

H_a : diff > 0

Pr($T < t$) = 0.0026

Pr($|T| > |t|$) = 0.0052

Pr($T > t$) = 0.9974

The null hypothesis (H_0); that mean firm value (with respect to TQ) are same was tested ($\mu_1 = \mu_2$). Table 4.12 shows the difference in mean in terms of TQ. The critical values reject H_0 at 0.05 level if $t < 0.3622$ or $t > 0.6378$. The results indicate that $t = 0.3530$. Reject H_0 and conclude that the data shows difference in the means of TQ. The result shows that the companies which had embraced <IR> have inferior firm value with respect to TQ with mean scored of 0.169395 less compared to those companies that had not embraced <IR>.

Table 4.12: Difference in Mean ($\mu_1 = \mu_2$). (TQ).

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	158	1.019035	0.397877	5.001236	0.233153	1.804917
1	115	0.84964	0.131743	1.412789	0.588658	1.110622
Combined	273	0.947678	0.236588	3.909073	0.481902	1.413454
Diff		0.169395	0.47993		-0.77547	1.11426

diff= mean (0) -mean(1)

$t = 0.3530$

H_0 : diff = 0

degrees of freedom= 271

H_a : diff < 0

H_a : diff! = 0

H_a : diff > 0

Pr($T < t$) = 0.6378

Pr($|T| > |t|$) = 0.7244

Pr($T > t$) = 0.3622

CONCLUSIONS

The objective of study was to establish the effect of <IR> on firm value of listed companies at the NSE. This study presented a comprehensive examination of how quoted companies embraced <IR>. The rate of adoption of integrated reporting was low, but grew steadily from 9% (5 out of 56) in 2015 to 41% (23 out of 56) in 2019. This indicates that <IR> is gaining prominent and is the future of corporate disclosure. The findings were consistent with Injeni et al., 2019 who found that there was very low adoption of integrated reporting in Kenya.

With regards to seven elements of <IR>. The findings showed integrated reporting score by elements, ranked from the top as; risk and opportunities; corporate governance; organizational overview and external environment; strategy and resource allocation; business model; performance and lastly outlook respectively. Risk and opportunities and corporate governance had a higher score. The finding is in line with Injen et al (2019) that noted that the concept like risk disclosure are usually provided by accounting standards. Corporate governance are also provided by CMA 2015 code of governance guideline for listed companies. This may be the reasons for high score in risk and opportunities and corporate governance.

Outlook, business model, strategy and resource allocation and organizational overview and external environment are the notable areas of non-compliance which had a low score. The organizational overview and external environment together with outlook are strategic and hence it exposes firms to competitive harm. Consequently, the low score in these elements of <IR>. The findings is in line with Achoki et al., (2016) that corporate disclosure of strategic information may represent cost to the company, as it can particularly reveal proprietary information. This may affect firm's competitive advantages in the market.

The study also sort to examine the effect of <IR> on firm value. The findings shows that <IR> disclosure was average but steadily increased from 57.85% in 2015 to 70.61% in 2019 respectively. Overall, the study finding shows that <IR> affect firm value (using TQ measure) and has no effect on firm value (using ROA measure). The findings also, indicates that <IR> are positively related to ROA and negatively related to TQ among listed companies in Kenya. The findings with respect to TQ measures are consistent with El Deeb (2019) and Adegbie, et al (2019) studies which found that <IR> significantly affects firm's value.

The study also, split the sample into firms that had adopted <IR> and those that had not embraced <IR>. The findings showed that the most forthcoming companies in terms of <IR> have superior firm value with respect to ROA with mean scored of 5.3484 more compared to less forthcoming companies in term of <IR>. The findings is in line with stakeholder theory. The theory can supply the basis for an approach that can integrate and balance the need and requirement of information needs of wider stakeholders. <IR> provides greater transparency, stewardship obligation and effective decision making process. It is used to serve the company's interest to engage stakeholders and overcome information asymmetries.

However, the result shows that firms which had adopted <IR> have inferior firm value with respect to TQ with mean scored of 0.169395 less compared to firms which had not embraced <IR>. The inconsistency results of the effect of <IR> on ROA and TQ ratio as measure of firm value, may be due to the fact that theoretical each measures express different meanings. Moreover, market-based measure incorporate intangible assets information unlike accounting-based measure. However, future researchers may explore the possible causes of differences and how to deal with inconsistency in results with respect to ROA and TQ.

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APPENDIX I: INTEGRATED REPORTING CHECKLIST INDEX

Measurement Scale

1. = No disclosure 2. = Limited Disclosure 3. = Apart subsection

4. = Very much disclosure 5. = Very extensive disclosure

Note: These checklist is based on established index and on prior studied

PART II: INTEGRATED REPORTING

This section intends to establish whether firms adopted Integrated Reporting to their stakeholders.

Scale Elements	1	2	3	4	5
<ul style="list-style-type: none"> ▪ Strategy <ul style="list-style-type: none"> ➤ Strategic objective: short, medium and long term ➤ Strategies to achieve strategic objectives ➤ Resource allocation plans to implement strategy ➤ Method of measuring achievement and target outcomes 					
<ul style="list-style-type: none"> ▪ Business model <ul style="list-style-type: none"> ➤ Key Inputs ➤ Business Activities ➤ Outputs (key products and services) 					

➤ Outcomes (positive and negative)					
<ul style="list-style-type: none"> ▪ Risks and opportunities ➤ Specific source of risks and opportunities ➤ Assessment of likelihood and magnitude of risk ➤ Specific steps taken to mitigate key risks ➤ Materiality 					
<ul style="list-style-type: none"> ▪ Performance ➤ Analysis of performance and position ➤ Key performance indicators (KPI) ➤ Linkage between past, current performance and future outlook including explanation of deviation if any ➤ Indirect economic impacts 					
<ul style="list-style-type: none"> ▪ Corporate Governance ➤ Board operation and Control ➤ Rights of shareholders and stakeholders relations ➤ Accountability, risk management and internal control ➤ Transparency and disclosure 					
<ul style="list-style-type: none"> ▪ Outlook ➤ Trends and factors ➤ Industry competition, inflation etc. ➤ Critical stakeholders and other dependencies ➤ Future Business Plans along with factors critical for plans success 					
<ul style="list-style-type: none"> ▪ Organizational overview and external environment ➤ Organization culture and philosophies ➤ Principal activities and markets ➤ Environmental Preparedness & Performance ➤ Human rights, Diversity, Equal opportunity & Outreach programmes 					