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Human Capital Disclosure, Business Model and Firm Value: Empirical Evidence from Kenya and South Africa

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Abstract

High volatility and decline in firm value has been spotted for listed companies in Kenya as revealed by large deviations between market-to-book value ratios. This has prompted organisations to adopt integrated reporting to enhance accounting information disclosures that has long been linked with firm value. However, studies examining this form of reporting and its contribution to the value of the company and its variant stakeholders remain scanty in the context of Africa. The purpose of this research is to investigate and demonstrate the relationship amongst human capital disclosure, business model and value of listed companies in Kenya and South Africa. The study was braced on the Stakeholder and legitimacy theories. The research design was both exploratory and confirmatory. Secondary data was collected from 137 purposefully selected companies for the period 2018-2020. An unweighted disclosure index was used to measure human capital disclosure, whilst, firm value was measured using Tobin's Q ratio. Frequency tables were used for data presentation and descriptive statistics was conducted to summarize and describe the data. Pearson correlation analysis was used in measuring the strength and direction of relationships between variables, while, stepwise regression analysis method was applied in testing for mediation effects. The results depict that human capital disclosure has a statistically significant effect on firm value. However, the effect was negative for Kenya and South Africa revealed a positive effect. Human capital disclosure and business model evinced a positive and significant relationship. Human capital transmitted part of its effect on firm value through the entity business model, with Kenyan listed firms revealing inconsistent mediation, whereas, South African companies reported full/complete mediation. The study recommends mandatory disclosures of human capital and business model aspects of integrated reporting by Kenyan listed companies due to its effect on firm value.

Keywords: Business model, Corporate disclosures, Firm Value, Human capital disclosure, Integrated reporting, Kenya, South Africa, Tobin's Q

1. Introduction

Corporate reporting is aimed at disclosing information relating to the corporation's financial issues with a sole purpose of bringing greater transparency and accountability, which in turn would facilitate future business ventures. This information must be credible and complete so as to build trust in investors and all other stakeholders and make them develop the willingness of

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carrying on business with the entity on a regular basis, thereby minimizing both parties trading costs (Eccles & Serafeim, 2015). Research has established that credible information is attached to quick access to capital at favourable terms, improved customers and suppliers business relationships and greater employee confidence (Mohamed & Faouzi, 2014). Therefore, majorly corporate reporting is affiliated with furnishing of the required facts to all stakeholders in the process of undertaking business events.

Traditional financial reporting system founded on the preparation of annual reports and financial statements aimed at providing information on company financial performance uses historical data. The primary focus is on information needs of providers of financial capital, thus ignoring information needs of other stakeholders. On the other hand, separate sustainability reports published by companies fail to convey the connectivity between the issues relating to society and environment, corporate governance, the strategy of the business and financial performance of the entity (Krzus, 2011). On the basis of the stated limitations of traditional financial reporting the International Integrated Reporting Council (IIRC) in 2013 introduced a new reporting framework named Integrated Reporting <IR>.

Integrated reporting <IR> is described as a procedure which takes into account and combines wholly significant facts about a company's accomplishments, its strategy and resource allocation and corporate governance in such a manner that represents social, environmental and commercial circumstance inside which the entity functions (International Integrated Reporting Council (IIRC), 2011). It is a comprehensive report that combines both financial and non-financial details in a sole report (Abeysekera, 2013; Churet *et al*., 2014; Fernando *et al*., 2017). In respect to views of IIRC, integrated reporting is a move toward accounting change aimed at evolving company reporting which not only subsumes but transcends the kinds of particulars reported in the organization's financial statements at present (IIRC, 2014a). Drawbacks of traditional financial reports have been observed by earlier studies (Dhingra *et al*., 2014) that call for incorporation of adequate and relevant information in relating to society, governance and environment in a single report presented as integrated report. This limitation is addressed by <IR> (Zhou *et al*. ,2017). The framework upon which the thought of <IR> has evolved is on the tenets of multiple capitals whose proposition rests on the presentation of an organization's performance and future expectations on the basis of six capitals (financial, manufactured, intellectual, human, social and relationship and environmental) and an explanation on how the aforementioned capitals are applied as inputs in the entity's business model to create value. This study focuses on Human capital component of <IR>.

2.0 Literature Review and Hypothesis development

2.1 Human capital disclosure

Human capital is regarded as one of the resources that companies value most and now getting recognition by companies in their corporate reports voluntary disclosure. The problem to be addressed is what and how human capital can be displayed in corporate reports. Accordingly, in the integrated reporting framework human capital is viewed as: " …people's competencies, capabilities and experience, and their motivations to innovate, including their alignment with and

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support for an organization's governance framework, risk management approach, and ethical values, ability to understand, develop and implement an organization's strategy, and loyalties and motivations for improving processes, goods and services, including their ability to lead, manage and collaborate" (IIRC, 2013, p.12). Thus, from the integrated reporting structure human capital is regarded as a resource and not as a cost for corporate performance. On this basis, a study by Akindehinde *et al*. (2015) on accounting for human resource and corporate performance of publicly quoted companies in Nigeria's banking sector, observes that human capital accounting affects organizational performance. The study suggests recognition of capitalized human resource expenditures as an intangible asset on the balance sheet. This recommendation blends well with the IIRC perspective of regarding human capital as a resource and not cost.

2.2 Business model concept

In the contexture of IIRC Framework, the system chosen by the organization to aid in the process of organizing inputs, business activities (processes), outputs and outcomes with the aim of creating value in the short, medium and long term comprise the entity's Business Model (BM) (IIRC, 2013). Osterwelder and Pigneur (2010) concur with this statement by adding that the justification relative to which a company creates, conveys and captures value is described by the business model. Accordingly, the IIRC's <IR> framework has positioned the BM at the centre of the six capitals (i.e. Financial, manufactured, intellectual, human, social and relationship and natural capital). These declares the resources of value that underlie the value creation process of companies by elucidating how financial and non-financial elements are connected (IIRC, 2013; Tweedie *et al.*, 2018). By companies reporting on their BM, information sharing about their future non-financial value drivers and plans is enhanced – in comparison to backwards-looking traditional financial reports. In support of this, Roslender and Nielsen (2015) article on probing the contribution made by business models in enhancing financial reporting, characterize the business model as what describes the money earning concept for an organization, which proves the platform that acts as a connection in creating and delivering value between the organization, its stakeholders and customers with the objective of capturing value. Earlier studies by (Melloni *et al.*, 2016; Simoni *et al*., 2022; Szewieczek *et al.*,2021) have focused on BM disclosures in integrated reports. Through the BM interested parties will get the insight on how the firm can generate profit to maintain its going concern. This study intends to unearth the role entity business model plays on the relationship between human capital disclosure and company value.

2.3 Firm Value

The value of the firm is placed on the way the market perceives an entity's performance, and information disclosures related to accounting enacts an indispensable intention in the formation of such perception. It is reflected in the company's share prices. An increase of the price of the share is a demonstration of trust bestowed to the company by its investors and willingness to pay more with anticipation of increased returns. The existing financial reporting practices basically report on financial performance which meets the financial capital providers information needs. Accordingly, Asein *et al*.(2019) opines that to make accounting facts more value relevant, companies should make disclosures in regard to financial and non-financial aspects in their annual reports purposely to meet information requirements of providers of all variants of capital

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that can guide in making informed decisions. In <IR> firm value is a function of the six capitals in contrast to traditional reporting that takes value as a function of financial capital only. Accordingly, the capitals form a major component in the value creation process and accounts for both value created for the organization and other audiences. In line with this assertion a study by Anifowose *et al*. (2020) on integrated reporting capitals and company sustainable value, reveal that <IR> capitals disclosure overly affect a firm's revenue growth positively.

2.4 Theoretical Review

The paper is grounded on the stakeholder theory and legitimacy theory as discussed below.

2.4.1 Stakeholder Theory

The stakeholder theory published in 1984 by Freeman recognizes the various groups or individuals who hold various interests in the company and how they can be dealt with. From the works of Freeman, the term stakeholder means any individual or group who can impact or can be impacted by the organization in the process of attaining its goals. In this context the IIRC (2013) emphasize that stakeholders are individuals who can be anticipated to be reasonably impacted significantly by the entity's business activities, outputs or outcomes or whose operations can be expected to reasonably impact significantly the entity's short, medium and long-term value creation ability. Thus, through <IR> entities are required to report how they affect and are affected by stakeholders (investors, shareholders, society, suppliers relationship, governments, customers etc.) as part of the annual report.

The theory assumes that the organization engages in associations with diverse groups which captivate on or are allured by the company. Further, it assumes equality of interests in the sense that no exclusive overruling category of interests (Bosse & Coughlan, 2016). Thus, the theory's essential tenets are on the accountability of the organization to their stakeholders and that the managements proper objective is to balance the conflicting interests of stakeholders. On this note, Camara *et al.,(*2009) states that the purpose of the stakeholder theory is to provide an explanation on the response of the management to the ever changing demands from the stakeholders'.

The validity of Stakeholder theory as a general approach, is criticized on grounds that the clarity of the meaning of the term 'stakeholder' is mixed, following Freeman's seminal conception that it includes everyone who is or was impacted by the organization. A major challenge lies on the recognition of stakeholders and effective management of their interests without the interference of the management (Bello & Abu, 2021). Further, as alluded by Nwanji and Howell (2007) criticism lies on the dynamism of the pool of stakeholders which keep on changing over time as a result of variation of current stakeholders interests and dealing with new interests that may emerge from the new stakeholders.

The relevance of this theory in this evaluation is on the premise that the company's accountability to stakeholders is reflected in the stakeholder theory. Each disclosed form of capital can be attached to a specific stakeholder(s) who will be interested in a particular

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information disclosure in the financial statements, thus, making it appropriate as the main theory complemented by the legitimacy theory.

2.4.2 Legitimacy theory

The propounder of the legitimacy theory is Suchman who started it in 1995 and claimed that the existence of an entity is pegged on its value that is perceived to match with that of the larger society in which it undertakes its operations. According to Suchman, legitimacy theory postulates that an organization's operations thrive within a system that is socially constructed, defined by norms and values meant to maintain organizational legitimacy (Linthicum *et al*. 2010). The theory assumes a social concurrence between the entity and society that it ought to report to, as the organization exerts influence on the society in which it operates and the organization gets influenced socially by the society. Thus, the organizational legitimacy concept, grants an organization the opportunity to undertake its operations in a contract with the interests of the society. Corporations therefore, pursue to function within the aspirations and norms of the respective communities where they are domiciled. The reasoning behind the legitimacy theory is that companies survival is dependent upon them operating within the framework of the society's norms and values (Deegan, 2014). The theory then explains the decision taken by firms to effectively disclose non- financial information so as to gain legitimacy (Dube & Maroun, 2017). Accordingly, Greiling and Grub (2014) on this aspect opine that organizations must be accountable for their actions. The theory's criticism lies on the assumption that organizations perceive the legitimacy status to be under a threat. For this reason, whatever that is disclosed in annual reports and financial statements is all about the perception of the management other than being accountable to the stakeholders and is meant to advance their self-interest or purposefully for survival (Deegan, 2014). The relevance of this theory in this study is on the premise that the annual report has been spotted as a salient source of legitimization. This theory therefore, makes the foundation for disclosures in relation to human capital and other capitals since the concept of legitimacy as discussed emphasize the provision of an explanation of the disclosures with regard to the social and environmental behaviour of organizations.

2.5 Hypothesis development

The following 3 hypotheses were developed in order to achieve the study objectives;

2.5.1 Human capital disclosure and Firm value

Human capital disclosure and its significance on firm value has been given consideration by earlier studies (Kapkiyai & Mugo, 2015; Mustafa *et al*., 2015; Rhoda *et al*., 2018; Suttipun 2017; Adegbie *et al.* 2019; Anifowose *et al*., 2020; Sisodia *et al*., 2021; Hieu *et al.*, 2022; Ogundajo *et al*., 2022). For example, Kapkiyai & Mugo, 2015 post a positive effect of human resource accounting on firm performance. This finding is supported by (Lio *et al*., 2018; Rhoda *et al*., 2018). The study by Hieu *at al.*, (2022), on the association between human accounting disclosure and firm value echo the finding of Sisodia *et al.* (2021) that post positive and significant results. Conversely, Mustafa *et al*.,(2015) study on value relevance of human capital disclosure, overall document a lack of connection between human capital information and share prices of firms selected from the top 100 firms quoted on the main board of Bursa Malaysia. Similarly, a lack of effect result was reported by Suttipun (2017) as Anifowose *et al*., 2020 post a significant positive

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association between human capital disclosure and company sustainable value on the basis of <IR> context. On the same vein, Ogundajo *et al.*, (2022) findings express that while disclosure of information related to human resource accounting positively impacted on firm value, employee training and development disclosure show significant negative impact on firm value in Nigeria. Whereas, Alawi & Belfaqih, (2018) post low human capital disclosure in financial statement. It can therefore come to be understood that though prior studies predict the direct relationship between disclosure of human capital related information and firm value, the results are mixed. Further, the mechanism on which this relationship is established remain unexplored.

Based on this assertion, the present study presupposes that firm value can be influenced by disclosures corresponding to human capital information disclosures contained in integrated reports hypothesized as follows;

H_{01}: Human capital disclosure has no statistically significant effect on value of listed companies between Kenya and South Africa.

2.5.2 Relationship between human capital disclosure and business model

In the integrated reporting framework, the business model deals with the capitals which comprise the resources of value drawn as inputs and converted into outputs (products and services, by-products and waste) by the corporate activities. The outputs lead to outcomes in terms of effects on capitals. Earlier studies by Beattie and Smith (2013) find a relationship between intellectual capital disclosure and business model and recommend disclosure of nonfinancial information around the central business model story through <IR>. The BM provides the means through which companies disclose their value proposition and processes (Giunta, 2013). Human capital disclosure being one of the <IR> capitals considered as one of the inputs it is presumed that the entity business model is influenced by human capital disclosure

H_{02}: Human capital disclosure has no statistically significant effect on business model of listed companies when comparing Kenya and South Africa

2.5.3 Relationship between human capital disclosure, business model and firm value

The BM though regarded as core in the value creation process prior studies have not demonstrated this claim. Studies on this direction remain scanty and partial. For example, studies on BM connectivity with some of the content elements and other variables (Stefan & Branislav, 2016; Sukhari & De Villiers, 2018; Asemokha *et al*., 2019), BM disclosure compliance (Giunta *et al*., 2013; Bagnoli & Redigolo, 2016; Michalak *et al*., 2017) and factors influencing BM disclosure (Melloni *et al*., 2016) and limited studies relating BM with value relevance (Mechelle *et al*., 2016; Tweedie *et al*., 2018), have been researched. Research on the cardinal function on how value is created through the BM is wanting. Specifically, the link between the BM and integrated reporting capitals as stocks of value taken as inputs, then transformed into outputs through the organization's activities that eventually result into outcomes that will either increase or destroy value. Following the already established relationship between human capital disclosure and firm value, this study postulates that firm value is affected by disclosures relating to human capital in <IR> through the entity business model. Thus, the following hypothesis was formulated.

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H_{03}: Business model has no statistically significant mediating effect on the relationship between human capital disclosure and value of listed companies when comparing Kenya and South Africa

2.6 Conceptual Framework

The conceptual framework is as presented.

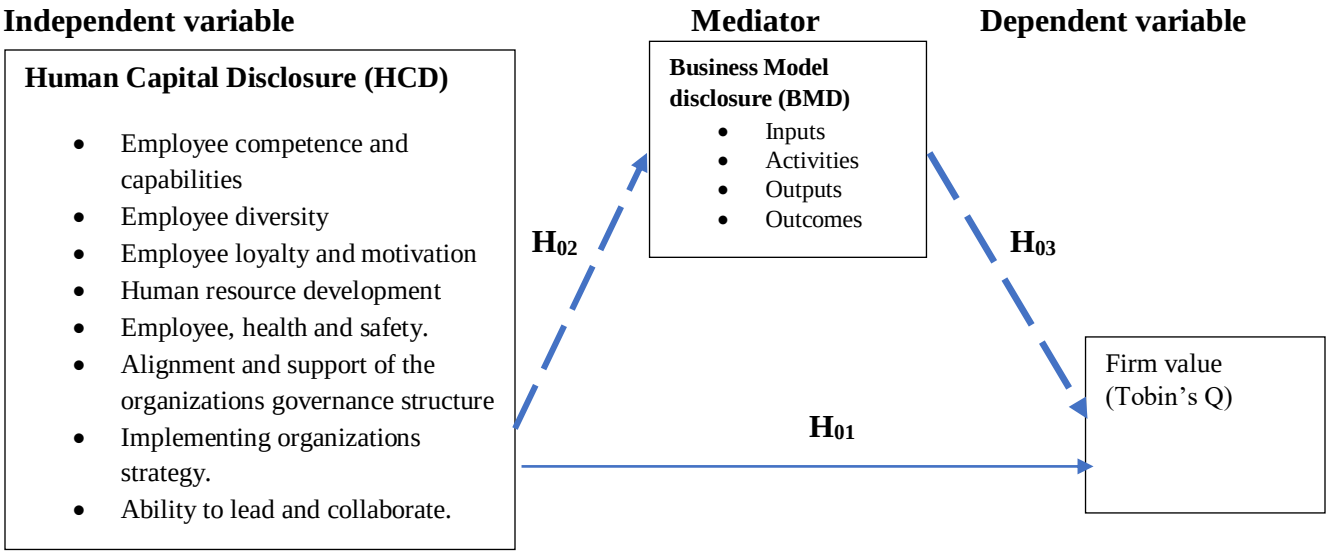

Figure 1: Conceptual Framework
Source Researcher, 2024

3. Methods and Materials

This section explains the methodology applied in this study.

3.1 Research design

On the tenets of positivist research philosophy both exploratory and confirmatory research designs was employed for the study.

3.2 Population and sample selection

The target population was 209 firms inclusive of 64 and 145 firms from Kenya and South Africa respectively by December, 2020. Purposive sampling is used with several criteria, namely; Kenyan, listed firms preparing integrated reports, with complete published annual reports between 2018-2020. South African listed firms which had adopted <IR> and whose reports were contained in the IIRC's website <IR> examples database, as <IR> reporters. Base on the criteria, 137 firms were sampled categorized by industry sector in Table 1 below.

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Table 1: List of sampled <IR> companies for Kenya and South Africa

Industry sector	Kenya	South Africa	Total
Communication services	-	3	3
Consumer discretionary	1	16	17
Consumer staples	2	10	12
Energy	-	3	3
Financials	14	24	38
Health care	-	4	4
Industrials	1	9	10
Information technology	-	9	9
Materials	-	31	31
Real estate investments	-	9	9
Utilities	1	-	1
			137
Total	**19**	**118**	

Source: Researcher, 2024

3.3 Data collection

Secondary sources were the main source of data for this study. Published annual report and financial statements or integrated report and financial statements were obtained from the listed companies' websites or hard copies. The main data collection instrument was a checklist containing indicators of the variables of interest (human capital and business model). The <IR> capital of (human capital) and business model aspects were subdivided into disclosure indicators based on the IIRC's (2013) framework consisting of 43 items of disclosure in relation to human capital and business model categories; human capital (8 items), BM inputs (10 items), BM activities (12 items), BM outputs (3 items) and BM outcomes (10 items). A 4 point likert scale scoring method was applied. A score of 0 meant non-disclosure of an item, meaning no information is provided on the aspect, while, 1 limited disclosure, meaning the item is only mentioned in the report, 2 indicates a mention of the aspect with brief explanation of specific information, and a score of 3 as a reflection of full disclosure involving detailed discussions incorporating the actions of the company and quantification of the aspect in monetary terms. Prior studies by (Zhou *et al*., 2017; Dyduch, 2017; Smit *et al*., 2018) applied the same instrument for the purpose of data collection.

3.4 Measurement of variables

The disclosure level for Integrated reporting capitals and business model components was computed according to the following un-weighted disclosure index.

$$DI_{IR} = \frac{\sum d_i \text{ effectively disclosed}}{n}$$

Where;

DI_{IR} *=Disclosure index of respective <IR> variable*

d_i *= Disclosure score for various indicators of disclosure in respect to <IR> variable*

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n = Number of indicators that characterize the variable of disclosure based on the IIRC's (2013) framework and CIMA; IFAC; PwC (2013) business model background paper for <IR>

Same method has been applied in prior studies (Bhuyan *et al.*, 2017; Smit *et al*.,2018; Hieu *et al.*, 2022; Simoni *et al*, 2022) to establish disclosure index for corporate social disclosure, <IR> guidelines application, human resource accounting disclosure and business model disclosure respectively. The range of disclosure index values for individual <IR> variables and overall were between 0 and 3. The average disclosure indices computed on the various variables were then linked to firm value measured by Tobin's Q.

Tobin's Q a market based performance measure was used as a proxy for firm value (Lee & Yeo, 2016; Nofianti *et al.*,2018), computed as;

$$\text{Tobin's Q} = \frac{\text{Market value of equity + Book value of total liabilities}}{\text{Book value of total assets.}}$$

Where, Market value of equity (market capitalization= market price per share*shares outstanding at the balance sheet date) was determined by establishing the market value per share taken as an average value 5 months after the financial year end multiplied by shares outstanding at the financial position date. The 5-month period is within the period applied by prior studies Verbeeten (2014) and (Baboukardos & Rimmel, 2016; Simoni *et al.*, 2022) which considered the impact of disclosures on market value at 3 and 6 months after the fiscal year respectively, to allow for the time-lag effect between disclosure and use of information by investors. This is for assurance that the investors have assessed the published information as organizations' are legally obligated to publish their financial statement reports 3 months after financial year end.

3.5 Data analysis methods

Both descriptive and inferential statistics were employed for data analysis

3.5.1 Descriptive statistics

The profile of the studied companies was presented using frequency tables. The actual disclosure of the various items was summarized using the mean. Standard deviations were employed to inform on data variability. Minimum and maximum scores were also used. The descriptive analysis provided the degree or extent to which <IR> practices relating to human capital and business model had been adopted in corporate reports. This methodology has been employed by previous researchers involved in similar studies (Soni & Bhanawat, 2016).

3.5.2. Inferential statistics

Pearson's correlation coefficient was used to assess the association among integrated reporting capitals of human capital disclosure, business model and firm value. The effect-size of the correlation coefficients was assessed using Cohen's *q* and Fisher's *r* to *Z* transformation methods.

Direct relationship of the effect of <IR> aspect of human capitals disclosure on firm value as hypothesized in **H_{01}**, simple linear regression analysis was conducted and the effect-size of regression models estimated using Cohen's f^2 .
Further, mediation analysis as hypothesized in hypotheses **H_{01-2}** was conducted using stepwise regression analysis proposed by Judd and Kenny (1981), as presented in equations (1)-(3) below;

$$Y = i_1 + cX + \varepsilon_1 \quad (1)$$
$$M = i_2 + aX + \varepsilon_2 \quad (2)$$
$$Y = i_3 + c^1X + bM + \varepsilon_3 \quad (3)$$

Where

In equation (1*), 'c' represents the total (unmediated) effect of the exposure variable X on the outcome variable Y.*

In equation (2*), 'a' represents the effect of the exposure variable X on the mediator variable M.*

In equation (3), *'c^1' represents the direct effect of the exposure variable X on the outcome variable Y, and b represents the effect of the mediator variable M on the outcome variable Y.*

In all three equations, *i represents the intercept and ε represents the error term.*

3.5.3. Mediation Testing Steps
The existence of mediation effect was tested by sequentially verifying four conditions as proposed by Baron & Kenny (1986) for the determination of the total effect and indirect effects.

Step 1: Testing for the total (unmediated) effect *'c'*
Condition 1 of mediation analysis assumes that the independent variable (human capital) and the dependent variable (firm value) must be related without the mediator. Simple linear regression analysis was applied to approximate the regression weight *'c'* an estimation of the total effect.
This was verified using equation (1) linear regression model to show the causal effect of human capital disclosure on firm value. Hypothesized as;

$Y = i + cX + e$.....*(1)*

Where;

i =constant term

c= regression coefficient relating X to Y

e= random errors (the part of Y that isn't explained by X)

To test for the total effect *'c'* for **H_{01}** the following models were used.

$FV_{it} = i_1 + cHCD_{it} + e_1$.....*(i)*

Where; *FV_{it} is the dependent variable Firm value measured by Tobin's Q, i is the Intercept, c is the Coefficient of the independent variables comprising, HCD_{it} (Human capital disclosure), and e_{it} is the error term.*

To test for the direct and indirect effects that are critical for determining mediation, Baron and Kenny (1986) proposed satisfaction of two conditions;

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Step 2: Testing for the indirect path *'a'*

Condition 2 of mediation analysis provides that the independent variable (human capitals) and mediator variable (business model) must be related. The following linear regression analysis of M over X to test for the indirect path '*a'*, was applied;

$M = i_2 + aX + e_2$.....(2)

Where;

i = constant term

a=regression coefficient relating X to M

e=random errors(the part of M that isn't explained by X)

Step 3: Testing for the indirect effect path *'b'* and direct effect 'c^1'

Condition 3 of mediation analysis supposes that the mediating variable (Business model) and the dependent variable (Firm Value) must be related on controlling the effect of X. Multiple linear regression analysis of Y over X and M was used to determine the indirect effect path '*b'* and direct effect '$c^{1'}$.

Thus; $Y = i_3 + c^1X + bM + e_3$.....(3)

Where;

i = constant term

c^1*= regression coefficient relating X to Y on controlling for M.*

b= regression coefficient relating M to Y on controlling for X.

e= random errors (the part of Y that isn't explained by X and M)

Step 4: Determining the existence and nature of mediation

Condition 4 of mediation analysis provide that the relationship between the independent variable (human capital) and dependent variable (firm value) must be reduced significantly when controlling for the effect of the mediating variable (business model). The coefficient c^1 (direct effect) must be smaller than coefficient *c* (total effect). Baron & Kenny (1986) point out explicitly that "the strongest mediation demonstration is when c^1 is zero". For this purpose the unstandardized beta coefficients c^1 (direct effect) and *c* (total effect) were compared to establish existence of mediation.

Step 2 and 3 were then conducted in order to establish the direct effect 'c^1' and indirect effects *'a'* and *'b'* using the following models to test hypothesis $\mathbf{H_{02}}$ and $\mathbf{H_{03}}$.

To test the mediation role of the business model disclosure on the relationship between human capital disclosure and firm value the two equations applied were restated as;

$BMD_{it} = i_2 + aHCD_{it} + e_2$.....*(ii)*

$FV_{it} = i_3 + c^1HCD_{it} + bBMD_{it} + e_3$.....*(iii)*

On the basis of the above relationships Baron and Kenny (1986) specified a statistical mediation path diagram as presented in Figure 2 below, which satisfies the stepwise regression process to test mediation effect.

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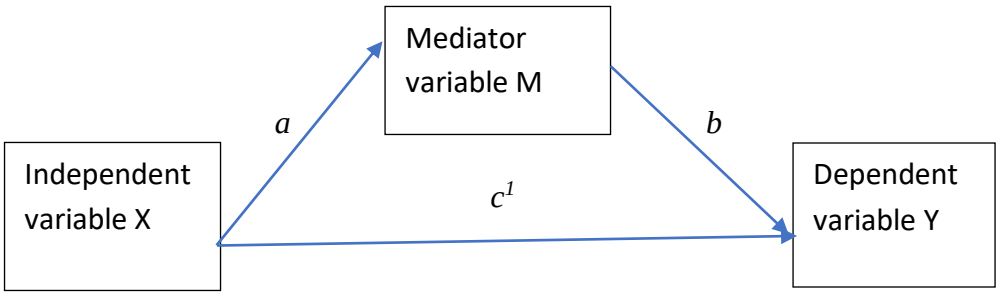

Figure 2: Mediation analysis model
Source: Adopted from Baron and Kenny (1986)

Where;

ab = *indirect effect of the mediator M on Y*

c^1 = *the effect of X on Y with the effect of the mediator controlled*

The total effect of X on Y 'c' can be calculated as the sum of indirect effects 'ab' and the direct effect 'c^1' as ($c = ab + c^1$)

Total mediation was claimed if the relationship between independent variable (human capital) and dependent variable (firm value) completely disappears when controlling for the mediator (the coefficient c^1 is zero), while, the data was to be compatible with the partial mediation hypothesis when the association between independent variable (human capital) and dependent variable (firm value) is significantly decreased when mediator is controlled but does not completely disappear (i.e. when the absolute value of coefficient c^1 is small than *c* and greater than zero at the same time). The direct effect is ascertained as $c\text{-}ab = c^1$ (the coefficients of *c* total effect already established in equation 1 minus the product of coefficient *a* and *b* established in equations 2 & 3).

However, Kenny *et al*. (2003) post an argument that not all the conditions must be satisfied in order to claim mediation. Accordingly, MacKinnon *et al*. (2007) referred to this context as inconsistent mediation. Inconsistent mediation is said to occur if the coefficient of the direct effect *'c^1'* were opposite in sign to indirect effects *'ab'*. In this scenario the mediator is considered as a suppressor variable. This explains why some conditions may fail to be met yet mediation is still reported. Further, Kenny *et al*.(1998) expound that with inconsistent mediation, sometimes the direct effect 'c^1' is even larger than the total effect '*c*' and the mediated effect '*ab*' may explain more than 100% of the total effect.

Further, to assess the variance accounted for in the mediation models identified above the study adopted R^2 effect-size measures of mediation analysis proposed by Fairchild *et al.* (2009) stated as;

$$R^2_{med} = r^2_{YM} - (R^2_{Y,MX} - r^2_{YX})$$

Where;

R^2_{med} = *Portion of variance explained by the mediated effect*

r^2_{MY} = *The squared correlation of Y and M*

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r^2_{XY} = *The squared correlation of Y and X*
$R^2_{Y, MX}$ = *The squared multiple correlation of Y jointly explained by M and X*

This measure was considered appropriate to complement other regularly applied effect-size measures such as proportion mediated and mediation ratio that are considered unstable in cases where several parameters are combined and are predominantly biased to small sample sizes as the methods tend to perform better with samples > 500 (MacKinnon *et al.*, 2007). While, partial r^2 and standardized regression coefficients focus on the relation between two variables in the mediation model. R^2 effect-size measures offers a means to carry out an evaluation of both component paths and the overall mediated effect in mediation models (Fairchild *et al.*, 2009).

3.5.4 Bootstrapping

This was useful to confirm mediation in cases where the assumptions of large sample size and multivariate normality were found not to hold. Using the sampling distribution, the total effect and indirect effect between constructs was estimated by taking a sample size n from the dataset. A number of resampling taken between 1000 and 5000 times (Preacher & Hayes, 2008). The mean and standard error was computed for every sample that led to the development of a resampling distribution for the estimates. At the 95% confidence interval, values for the total effects, direct effects and indirect effects were tabulated. Thus, the bootstrapping results were then compared with the conventional mediation test results for confirmation. The results most often are expected to be the same. However, if a variation occurs, then bootstrapping results prevail. Process Macro procedure for SPSS Version 4.2 Model 4 developed by Hayes (2013) was utilized in SPSS version 21.0.

3.5.5 Mediation Testing Assumptions

In testing for mediation it is assumed that; the Mediator lies on the causal pathway between the exposure and the outcome such that the predictor causes the mediator and the mediator causes the outcome. There is a possibility to manipulate the exposure and mediator theoretically, as a minimal condition for claiming causal mediation. There should be no confounding if causal mediation is to be claimed in the sense that there is no third variable influencing the independent and mediator, independent and outcome and mediator and outcome variables relationships. No interaction is expected between variables. Usual model assumptions for linear or logistic regression apply.

4. Results

A single mediator analysis using panel data set of n = 54 for Kenya, and n = 318 for South Africa listed companies data was considered. The analysis is as discussed below.

4.1 Descriptive statistics of study variable indicators

In this section, the study variables processed were described in terms of; minimum, maximum, mean and standard deviation.

4.1.1 Descriptive statistics of human capital disclosure indicators by country

Descriptive statistics of the various indicators is as shown in Table 2 below.

Table 2: Descriptive statistics of human capital disclosure indicators

COUNTRY		N	Min.	Max.	Mean	Std. Dev.
Kenya	D1-Employee Competence & capability	54	.00	3.00	1.7407	.91497
	D2-Employee diversity & gender equality	54	.00	3.00	2.6111	.76273
	D3-Employee loyalty & motivation	54	.00	3.00	2.2222	.71814
	D4-Human resource development	54	1.00	3.00	2.6296	.59229
	D5-Employee, health & safety	54	.00	3.00	2.3704	.78419
	D6-Support of governance structure	54	.00	3.00	2.0000	.64428
	D7-Implementation of strategy	54	1.00	3.00	2.1667	.54079
	D8-Ability to lead & collaborate	54	1.00	3.00	2.2778	.62696
	Valid N (listwise)	54				
South Africa	D1-Employee Competence & capability	318	.00	3.00	1.9874	.58893
	D2-Employee diversity & gender equality	318	.00	3.00	2.6006	.69309
	D3-Employee loyalty & motivation	318	.00	3.00	1.6541	.65004
	D4-Human resource development	318	.00	3.00	2.6855	.56878
	D5-Employee, health & safety	318	.00	3.00	2.3459	.72353
	D6-Support of governance structure	318	.00	3.00	1.8616	.52662
	D7-Implementation of strategy	318	.00	3.00	1.9403	.46269
	D8-Ability to lead & collaborate	318	.00	3.00	2.0818	.64008
	Valid N (listwise)	318				

Source: Research data, 2024

Table 2 indicates high disclosures of human resource development aspect of human capital variable by Kenya and South Africa (N = 54, M = 2.6296, SD = .59229) and (N=318, M = 2.6855, SD = .56878) respectively. While, least disclosure was reported in relation to employee competencies and capabilities (N = 54, M = 1.7407, SD = .91497) for Kenya, whereas, least disclosures of (N =318, M = 1.6541, SD = .65004) relate to employee loyalty and motivation aspect of human capital for South Africa. This result corresponds to that of Ogundajo *et al.* (2022) in which employee training and development attained the most disclosure score. However, it contradicts Mustafa *et al*. (2015) in which employee involvement in the community and employee thanked (motivation) was most disclosed item.

4.1.2 Descriptive statistics of business model disclosure indicators by country

Table 3 provides the comparative summary statistics in respect to Kenya and South Africa respectively.

Table 3: Summary descriptive statistics of business model disclosure indicators

COUNTRY		N	Min.	Max.	Mean	Std. Dev.	Skewness		Kurtosis	
		Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Kenya	BMInputs	54	.00	3.00	1.9444	.70247	-.635	.325	-.310	.639
	BMActivity	54	1.17	2.83	2.1188	.41227	-.117	.325	-.722	.639
	BMOutputs	54	.67	3.00	1.7901	.75596	-.026	.325	-1.381	.639

	BMOutcomes	54	1.30	3.00	2.2889	.47011	-.503	.325	-.743	.639
	Valid N (listwise)	54								
South Africa	BMInputs	318	.00	3.00	2.1358	.70086	-1.362	.137	1.576	.273
	BMActivity	318	1.08	2.75	1.8483	.32145	.311	.137	-.250	.273
	BMOutputs	318	.67	3.00	2.1960	.65901	-.670	.137	-.421	.273
	BMOutcomes	318	.70	3.00	2.2899	.36911	-.925	.137	1.578	.273
	Valid N (listwise)	318								

Source: Research data, 2024

On the basis of Table 3, Kenyan listed companies data business model outcomes component was most disclosed with (*N*=54, *M* = 2.2889, *SD* = .47011). On the other hand, disclosures in relation to business model inputs was least (*N* =54, *M* =1.7901, *SD* = .75596). This finding partly contradicts that of Simoni *et al*.(2022) which reported average disclosure of business model inputs.

Comparably, for South Africa, business model outcome component received most disclosure with (*N*=318, *M*=2.2899, *SD*= .36911). Whereas, disclosures in relation to business model activities was given least consideration of (*N* =318, *M* =1.8483, *SD* = .32145) by JSE listed companies. This result corroborates the finding of (Melloni *et al.,* 2016; Simoni *et al*., 2022) in which business model outcome components were dominantly disclosed as less business model inputs, activities and outputs related components exhibited least disclosures. In addition, the overall business model disclosure was greater for South Africa (*N* =318, *M* =2.1175, *SD* = .38516) compared to Kenya (*N* =54, *M* =2.0356, *SD* = .49603. Nevertheless, the variation in business model disclosure among the studied companies was greater for Kenya compared to South Africa as indicated by the difference in the standard deviation. The finding uphold the results of the study by Szewieczek *et al.(*2021) in which same degree disclosures of overall business model components by integrated reporting firms and non-integrated report preparers was found.

Both countries business model outcomes is the most disclosed component of the business model. This can be ascribed to the fact that investors as major users of the information contained in integrated reports are mainly interested on the entities performance in terms of shareholders return, profit/(loss) generated, the entity's contribution to the economy in terms of improving the standard of living and customer satisfaction. This information is contained in the outcomes section of the entity's business model. Thus, managers tend to disclosure more of that information to meet the investor needs.

4.1.3 Descriptive Statistics of study variables

The study variables were described as per Table 4 below;

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Table 4: Summary descriptive statistics of study variables

COUNTRY		N	Min.	Max.	Mean	Std. Deviation	Skewness		Kurtosis	
		Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Kenya	HCD	54	.88	3.00	2.3171	.45990	-.706	.325	.900	.639
	BMD	54	.81	2.85	2.0356	.49603	-.370	.325	-.846	.639
	Valid N (listwise)	54								
South Africa	HCD	318	.75	3.00	2.1506	.36343	-.909	.137	.985	.273
	BMD	318	1.03	2.92	2.1175	.38516	-.420	.137	-.270	.273
	Valid N (listwise)	318								

Source: Research data, 2024

According to Table 4, Kenya listed companies had higher human capital disclosures (*N*= 54, *M* = 2.3171, *SD* = .45990) compared to South Africa (*N*= 318, *M* = 2.1506, *SD* = .36343. However, in terms of variation in human capital among the studied organisations, a higher variation was observed for Kenyan listed companies as suggested by a higher standard deviation. Overall, business model disclosures were higher in South Africa ((*N* =318, *M* = 2.1175, *SD* = .38516) compared to Kenya (*N* =54, *M* = 2.0356, *SD* = .49603).

Besides, conveyed results of Skewness and Kurtosis reflect an indication of a relatively normal distribution. Thus, the absolute value for Kurtosis is within a range of 3 proofing a platykurtic distribution. The absolute value for skewness is around 1 which is less than 2 recommended for large samples. Further, Hair *et al.*, (2010) and Byrne (2010) post that data is considered to be normally distributed if skewness is between -2 to +2 and Kurtosis is between -3 to +3. The results of skewness and Kurtosis for this study were well within the stated confines. Hence, simple linear regression was applied for parameter estimation for hypothesis testing in this research.

4.1.4 Firm value

The research also established the descriptive statistics of firm value in respect of firms listed in the NSE and JSE. The results are as presented in Table 5 below.

Table 5: Descriptive statistics of firm value

COUNTRY		N	Minimum	Maximum	Mean	Std. Deviation
Kenya	FV-Firm value	54	.42	2.98	1.3653	.58422
	Valid N (listwise)	54				
South Africa	FV-Firm value	318	.24	3.38	1.1044	.48269
	Valid N (listwise)	318				

Source: Research data, 2024

Table 5 the description indicates average firm value of (*N*=54, *M* = 1.3653, *SD* = .58422) for listed NSE companies. Whereas, average firm value of (*N*=318, *M* = 1.1044, *SD* = .48269) is revealed for JSE listed companies. This suggest that the market price is greater than the book value, since average value is > 1. Furthermore, the study uncovers that, the mean of firm values as proxied by Tobin's Q, Kenyan listed firms recorded on average value of 1.3653 with a standard deviation of 0.58422, unlike South Africa with an average value of 1.1044 with a standard deviation of 0.48269. This implies that, South African companies are more appropriately valued than Kenyan listed companies supported by firm value revolving around 1. The study finding agree with that of prior studies by Hieu *et al*., (2022) that reported an average firm value of (*M* = 1.6545, *SD* = 1.3788; *M*=1.567, *SD* = .924; and *M* = 1.6579, *SD* = 1.1601) respectively. This is an indication of overvaluation of the studied firms value in both cases. In contrast (Fernando *et al*., 2024) study reported a mean firm value of < 1 indicating undervaluation.

4.2 Diagnostic Tests

Diagnostic tests were carried out to ensure the suitability of the data for analysis using regression techniques. Linearity was checked using scatter plots. Kenya listed companies data exhibited a negative linear relationship of human capital disclosure and firm value, whereas South Africa the relationship was positive and linear. Multicollinearity test using variance inflation factor (VIF) and Tolerance statistic met the required threshold of VIF below 10 and Tolerance statistic above 0.2. Autocorrelation test using Durbin Watson statistic was 1.823. Relative normality was established on the basis of the calculated skewness and Kurtosis that was within the recommended threshold of -2 to +2 and -3 to +3 respectively (refer Table 3 above). Homoscedasticity check utilized the probability plots (P-P plot). No specific pattern was attached to the scatter plots.

4.3 Correlation analysis

The association of human capital disclosure, business model and firm value is as shown in Table 6 below;

Table 6: Correlation Matrix

COUNTRY			HCD	BMD	FV
Kenya	HCD	Pearson Correlation	1		
		Sig. (2-tailed)			
		N	54		
	BMD	Pearson Correlation	.686**	1	
		Sig. (2-tailed)	.000		
		N	54	54	
	FV	Pearson Correlation	-.457**	-.026	1
		Sig. (2-tailed)	.001	.850	
		N	54	54	54
South Africa	HCD	Pearson Correlation	1		
		Sig. (2-tailed)			

	N	318		
	Pearson Correlation	.480**	1	
BMD	Sig. (2-tailed)	.000		
	N	318	318	
	Pearson Correlation	.189**	.212**	1
FV	Sig. (2-tailed)	.001	.000	
	N	318	318	318

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Research data, 2024

As portrayed in Table 6 human capital disclosure and business model are correlated to firm value. Human capital disclosure negatively and significantly correlates to firm value (*N*=54, *r* = -.457, *P* = .001). This contradicts prior studies (Sisodia *et al*., 2021; Hieu *et al*., 2022). Conversely, south Africa posted a positive and significant relationship ((*N*=318, *r* = .189, *P* = .001). Likewise, the mediator variable business model disclosure bonded positively and significantly with firm value (*N*=318, *r* =.212, *P* =.000). Business model associated negatively with firm value for Kenya (*N*=54, *r* =-.026, *P* =.000).. This opposes the finding of Simoni *et al.(*2022) in which a positive but insignificant association of the business model disclosure on firm value was exposed.

Pearson correlation analysis as contained in Table 6 in relation to Kenya and South Africa respectively, similarities and differences were noted. Using Hopkin's (2002) criteria for interpretation of correlations stated as ($r < .1$, trivial; $.1 \leq r < .3$, small; $.3 \leq r < .5$, moderate; $.5 \leq r < .7$, large; $.7 \leq r < .9$, very large and $.9 \leq r < .1$, nearly perfect) the resultant correlations were compared. Kenyan NSE listed companies exhibited a moderate negative and significant association between <IR> capitals of Human capital disclosures and firm value, whereas, South Africa, JSE listed firms recorded a small positive and statistically significant association.

The correlation differences between the two data sets was further evaluated on the basis of Cohen's *q* and Fisher's *r* to *Z* transformation methods. The estimated effect-sizes and Z_{obs} statistic between the two correlations is as portrayed in table 7 below.

Table 7: Cohen's q effect-size and Fisher's Z_{obs} statistic of difference in correlations of integrated reporting capitals disclosure and firm value between Kenya and South Africa

Variable	Correlation (r_1) Kenya N=54	Correlation (r_2) South Africa N=318	Cohen's *q* (effect size)	Effect size interpretation	Fisher's $Z_{obs\ Statistic}$	*P*-value
HCD	-.457	.189	.685	Large effect	-4.54	.0000
BMD	-.026	.212	.241	Small effect	-1.59	.1096

Source: Researcher calculation, 2024

The interpretation of the different effect-sizes, followed the criteria provided by Cohen (1988) guidelines for social sciences; $q < .1$, no effect; $.1 \leq q < .3$, small effect; $.3 \leq q < .5$, medium

effect; q > .5, large effect. As indicated in Table 7 the effect sizes ranged from small to large evidencing respective differences in the correlations reported between the two data sets.
Using Fisher's *r* to *Z*-score transformation, the study tested whether the reported correlations differences between Kenya and South Africa were significantly different. Observed Z-score values (Z_{obs}) with *P* -values <.05 confirmed that the correlation of Human capital and firm value was significantly different between Kenya and South Africa. The computed Z-score values (Z_{obs}) for business model disclosures were within the critical *Z*-score values of -1.96 and +1.96 and associated *P*-values >.05, evidencing that the correlation were not significantly different between Kenya and South Africa.

4.4 Mediation analysis (Hypotheses Testing)
The hypothesized associations are tested on the basis of the stepwise regression models

4.4.1 Step 1: Testing for the total (unmediated) effect 'c'
H_{01}: Human capital disclosure has no statistically significant effect on value of listed companies between Kenya and South Africa.(Total effect '*c*')

The total (unmediated) effect *'c'* was estimated on the basis of equation 1 regression model. The summary, ANOVA and coefficients between Kenya and South African listed companies data is as revealed in Table 8 below.

Table 8: Comparative summary of regression analysis of human capital disclosure and firm value

COUNTRY	Variable	*B* Coefficient/ values	Cohen's f^2
Kenya			
	(Constant)	2.727	
	HCD	-.581*	.26
	R Square	.209	
	F Value	13.738	
South Africa			
	(Constant)	.564	
	HCD	.251*	.04
	R Square	.036	
	F Value	11.721	

(Note: HCD =Human capital disclosure; n_k = 54, n_s = 318, *P <.05, **P < .01, ***P<.001)
Source: Research data, 2024

In Table 8 human capital disclosure was entered as independent variable, as firm value was considered dependent variable. Human capital disclosure explains the variation in firm value of Kenyan listed firms to the extent of 20.9% (R^2 = .209), and therefore, 79.1% of the variation can be explained by other factors not contained in the model. The model is significant (F(1,52) = 13.738, P<.05). Rather, in respect to South Africa, human capital disclosure annotates the change in firm value of JSE listed firms to the extent of 3.6% (R^2 = .036), thus, 96.4% of the variation is

associated with other factors outside this model. The model is significant ($F(1,316) = 11.721$, $P<.05$).

On the basis of the unstandardized coefficient value of Kenya listed companies is (B = -.581, $P<.05$) and f^2 is .26 (moderate) implies that changing human capital disclosure by one unit will cause a moderate negative and significant change on firm value. Alternatively, the unstandardized coefficient value of JSE listed firms is (B = .251, P = <.05) and f^2 is .04 (small) , suggesting that a unit deviation in human capital disclosure has a small positive significant and effect on firm value. The settled at models are;

$$Y_k = 2.727 – .581HCD_k + \alpha$$
$$Y_s = .564 + 251HCD_s + \alpha$$

Thus, the study findings reject the null hypothesis that human capital disclosure has no statistically significant effect on value of listed companies between Kenya and South Africa.
The finding in relation to South Africa correspond to the findings of (Rhoda *et al.*, 2018;; Salvi *et al.*, 2020; Sisodia *et al.*, 2021, Hieu *et al.*, 2022), that found a positive and significant relationship between human capital resources reporting and firm performance. While, results in relation to Kenya appear to be contradictory.

4.4.2 Step2: Testing for the indirect effect (a)

H_{02}: Human capital disclosure has no statistically significant effect on business model of listed companies when comparing Kenya and South Africa

The comparative regression analysis model summary, ANOVA and coefficients between Kenya and South African listed companies data were as summarized in Table 9 below.

Table 9: Comparative summary of regression analysis of human capital disclosure and business model

COUNTRY	Variable	*B* Coefficient/ values	Cohen's f^2
Kenya			
	(Constant)	1.002	
	HCD	.734***	1.10
	R Square	.523	
	F Value	57.102	
South Africa			
	(Constant)	.389	
	HCD	.504***	.34
	R Square	.253	
	F Value	106.915	

(Note: HCD =Human capital disclosure; n_k = 54, n_s = 318, *P <.05, **P < .01, ***P<.001)
Source: Research data, 2024

From Table 9 the variation in business model of Kenyan listed firms explained by human capital disclosure is 52.3% (R^2 = .523) and therefore, 47.7% of the variation can be explained by other

factors outside the model. The model is significant as ($F(1,52) = 57.102$, $P < .001$). 25.3% ($R^2 = .253$) of the variation in business model is explained in the of case South African, as 74.7% results from factors not included in the model. The model exhibits a significant fit of ($F(1,316) = 106.915$, $P < .001$).

Using the unstandardized coefficients, Kenyan listed companies post ($B = .734$, $P < .001$) and f^2 is 1.10 (large) implying that a change in human capital disclosure by one unit causes a large positive and significant effect on business model of NSE listed firms. Still, for the case of South Africa a change in human capital disclosure by one unit causes a medium positive and statistically significant effect on business model of listed companies in JSE ($B = .504$, $P < .001$) and f^2 is .34 (moderate). Thus, the arrived models are stated as;

$BMD_k = .389 + .734HCD_k + \alpha$

$BMD_s = 1.002 + .504HCD_s + \alpha$

4.4.3 Step 3: Testing for the indirect effect path 'b' and direct effect 'c[1]'

H_{03}: Business model has no statistically significant mediating effect on the relationship between human capital disclosure and value of listed companies when comparing Kenya and South Africa

Multiple regression analysis was conducted taking human capital disclosure and business model as predictors of firm value. This determined the direct effect path '$c^{1'}$ and the indirect effect path *'b'*, to accomplish condition 3 of mediation analysis. The comparative regression analysis are summarised in Table 10 below.

Table 10: Comparative summary of regression analysis of human capital disclosure, business model and firm value

COUNTRY	Variable	*B* Coefficient/ values	Cohen's f^2
Kenya			
	(Constant)	2.438	
	HCD	-1.095***	.56
	BMD	.701*	.23
	R Square	.358	
	F Value	14.249	
South Africa			
	(Constant)	.376	.053
	HCD	.157	
	BMD	.188*	.02
	R Square	.051	
	F Value	8.426	

Note: HCD =Human capital disclosure; BMD = Business model disclosure $n_k = 54$, $n_s = 318$, *P <.05, **P < .01, ***P<.001

Source: Research data, 2024

From Table 10 human capital disclosure and business model considered as predictors explain the variation in value of NSE listed firms to the extent of 35.8% (R^2 = .358) and therefore, 64.2% of the variation can be explicated by other factors not contained in the model. The model is significant as shown by (F(2,51) = 14.249, <.001). Yet, human capital disclosure and business model as predictors explain the variation in value of JSE listed firms to the extent of 5.1% (R^2 = .051), leaving 94.9% as a result of other factors. This is significant (F(2,315) = 8.426, P <.001). The direct effect *'c^1'* signify that a change in human capital disclosure by one unit caused a large negative and significant change in the value of the firm (B = -1.095, P <.001). On the other hand, the indirect effect *'b'* indicate that a change in business model disclosure by one unit positively and significantly affect firm value (B=.701, P <.05). The multiple regression Cohen's f^2 value 0.56 (large) was determined of which f^2 value of .232 (moderate) was attributable to the mediated effect, proposing that business model has a moderate mediating effect on the relationship between human capital disclosure and value of listed companies in Kenya. Inversely, the direct effect 'c^1' signify that a change in human capital disclosure by one unit caused a positive and insignificant change in the value of the firm (B = .157, P >.05). While, varying business model disclosure by one unit positively and significantly influence the value of the firm (B=.188, P = .026). The multiple regression Cohen's f^2 value is .053 (small) of which f^2 value of .02 (small) was assignable to the mediated effect. This implies that the relationship between human capital disclosure and value of listed companies in South Africa is mediated by the business model to a small extent. This represents the indirect path *'b'*. The established models are;

$FV_k = 2.438 - 1.095HCD_k + .701BMD_k + e$
$FV_s = .376 + .157HCD_s + .188BMD_s + e$

4.4.4 Step 4: Determination of existence and nature of mediation

Unstandardized beta coefficients of direct effect 'c^1' and total effect *'c'* were evaluated to detect the presence of mediation. While, the significance of the direct and indirect effects was evaluated to determine the nature of mediation if any.

4.4.4.1 Summary of unstandardized coefficients of the total, direct and indirect effects for Kenya

The summary of unstandardized coefficients of the total, direct and indirect effects for Kenya based on the 3 regression models is as contained in Figure 3 and Table 11 below.

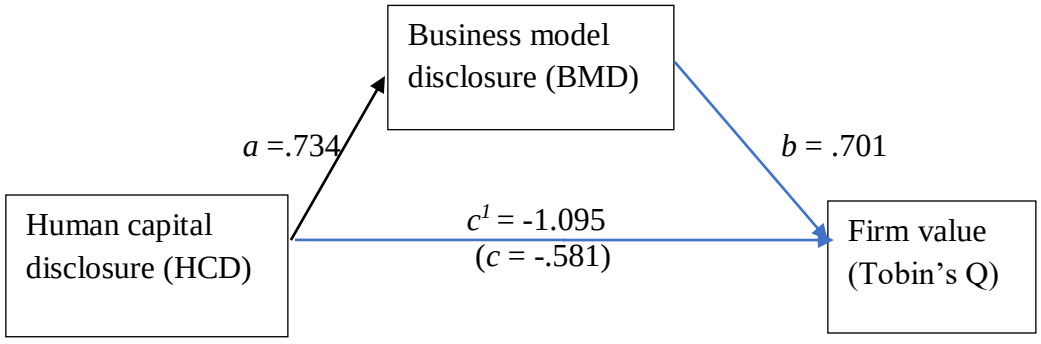

Figure 3: Mediation effect of business model in the relationship between human capital disclosure and firm value for Kenya

Source: Research data, 2024

Table 11: The path unstandardized regression coefficient and its significance - Kenya

Construct	Path	Construct	Unstandardized Estimate	*P*-Value	Result
Total Effects					
Firm Value	←	Human capital disclosure	-.581	.001	Significant
Direct and Indirect effects					
Firm Value	←	Human capital disclosure	-1.095	.000	Significant
Business model disclosure	←	Human capital disclosure	.734	.000	Significant
Firm Value	←	Business model disclosure	.701	.001	Significant

Source: Research data, 2024

From Figure 3 and Table 11 it is revealed that the total effect *'c'* of human capital disclosure on firm value was negative and significant (B = -.581, P <.05). With the inclusion of the mediating variable, the direct effect 'c^1' of human capital disclosure on firm value increased and was significant (B = -1.095, P = <.001). The indirect effect path *'a'* explained a positive and significant association (B = .734, P<.001). The indirect effect of business model path *'b'* recorded a positive and significant relation with firm value (B = .701, P <.05). The computed indirect effects '*ab'* was .5145 ($a*b$ = .734*.701) accounting for 89% (ab/c = .5145/-.581) proportion mediated. The direct versus indirect paths (c^1 = -1.095 and ab =.5145) compared advocate that $c^1 > ab$ in absolute value. The ratio mediated was established as 0.469 (ab/c^1=.5145/-1.095). Considering that the direct effect remained significant on controlling for the mediator and the indirect effect paths *'a'* and '*b'* were both significant, it can be construed that business model mediates the association between human capital disclosure and value of firms listed in the NSE. Since $c^1 > c$ and c^1 is opposite in sign compared to '*ab'*, inconsistent mediation is assumed.

The effect-size of mediation calculated resulted to R^2_{med} value of -.149. This is a case of suppression. The overall R^2_{med} value of -.149 insinuate that relatively 15% of the variance in the value of the firm is attributable to the indirect effects of human capital disclosure through the business model. Considering that about 36% of the total variance in firm value is explained ($R^2_{multiple}$ = .358), out of this around 42% (-.149/.358) of the explained variance in the model was assignable to the mediated effect.

Testing the significance of the indirect effect *'ab'* mediation analysis for Kenya

On account of Hayes (2013) PROCESS Macro bootstrapping method, the presence and significance of mediation if any, was confirmed. The bootstrap was set at 5000 samples, with a bias corrected confidence level of 95%. The results are as arrayed in Table 12 below.

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Table 12: Bootstrapping mediation analysis summary-Kenya

Relationship	Direct Effect	Indirect Effect	Confidence Interval		P-value	Conclusion
			Lower Bound	Upper Bound		
Human capital disclosure → Business model→Firm value	-1.0954 (.0000)	.5147	.2575	.8792	<.05	Inconsistent Mediation

Source: Research data, 2024

As demonstrated in Table 12, the bootstrap results reflect that the direct effect is negative and statistically significant (*B* = -1.0954, *P* = .0000). Further, the lower bound and upper bound confidence intervals did not contain a zero (*LLCI* = .2575, *ULCI* = .8792). This asserts a positive and statistically significant indirect effect. On account of the fact that the indirect effect is significant, and the direct effect remained statistically significant after introducing the mediator into the model, the study confirms existence of mediation. This evidences inconsistent mediation because the sign of the direct and indirect effects is opposite.

4.4.4.2 Summary of unstandardized coefficients of the total, direct and indirect effects for South Africa

The summary of the unstandardized coefficients of the total, direct and indirect effects from the 3 regression models above is as presented in Figure 4 and Table 13 below.

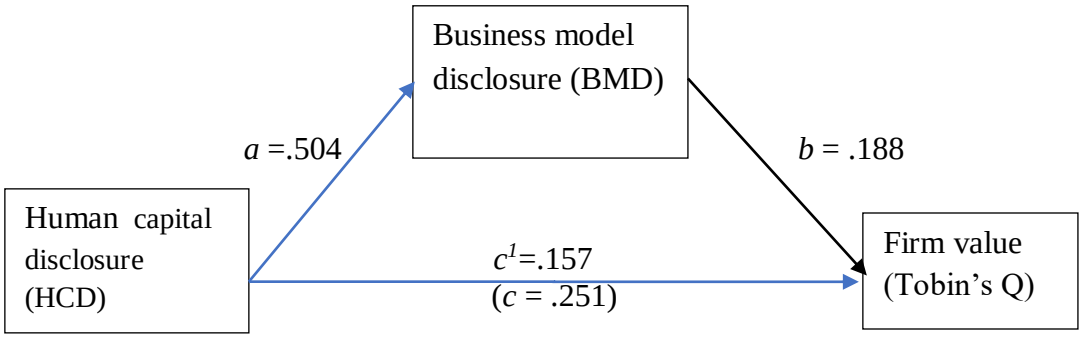

Figure 4: Mediation effect of business model on the association between human capital disclosure and firm value for South Africa

Source: Research data, 2024

Table 13: The path unstandardized regression coefficients and its significance -South Africa

Construct	Path	Construct	Unstandardized Estimate	P-Value	Result
Total Effects					
Firm Value	←	Human capital disclosure	.251	.001	Significant
Direct and Indirect effects					
Firm Value	←	Human capital disclosure	.157	.064	Not Significant
Business model disclosure	←	Human capital disclosure	.504	.000	Significant
Firm Value	←	Business model disclosure	.188	.026	Significant

Source: Research data, 2024

The findings in Table 13 tell that the total effect '*c'* of human capital disclosure on firm value was positive and significant (*B* = .251, *P* <.05). With the inclusion of the mediating variable business model, the direct effect 'c^1'of human capital disclosure on firm value decreased and was insignificant (*B* = .157, *P* = >.05). The indirect effect path *'a'* of human capital disclosure and business model was found to be positive and significant (*B*= .504, *P* <.05) and a significant indirect effect path *'b'* (*B* = .188, *P* <.05). The calculated indirect effects '*ab*' was .0947 (*ab* = .504*.188). The proportion mediated was roughly 38 % (*ab/c* = .0947/.251). On comparing the direct versus indirect paths (c^1 = .157 and *ab* = .0947) inferring that $c^1 > ab$, resulting into a mediation ratio of .603 (ab/c^1 = .0947/.157). The direct effect was not significant on controlling for the mediator and the indirect effect paths *'a'* and '*b'* were both significant implying that the business model mediates the relationship between human capital disclosure and value of firms listed in the JSE. This affirms complete/full mediation.

The effect-size of mediation calculated resulted to R^2_{med} value of .029. The overall R^2_{med} value of .029 evince that about 3% of the variance in the value of the firm is attributable to the indirect effects of human capital disclosure through the business model. Considering that about 5% of the total variance in firm value is explained ($R^2_{multiple}$ = .051), out of this relatively 57% (.029/.051) of the explained variance was on account of the mediated effect.

Testing the significance of the indirect effect *'ab'* mediation analysis for South Africa

Following Hayes (2013) Macro process via bootstrapping method, the presence and significance of mediation if any, was tested. The bootstrap was set at 5000 samples, with a bias corrected confidence level of 95%. The results are as provided in Table 14 below.

Table 14: Bootstrapping mediation analysis summary – South Africa

Relationship	Direct Effect	Indirect Effect	Confidence Interval		*P*-value	Conclusion
			Lower Bound	Upper Bound		
Human capital disclosure → Business model→Firm value	.1565 (.0644)	.0947	.0236	.1781	<.05	Complete/full Mediation

Source: Research data, 2024

As demonstrated in Table 14, the bootstrap conducted indicates that the direct effect is not statistically significant (*B* =.1565, *P* = .0644). The indirect effect was statistically significant as the confidence intervals of lower bound and upper bound excluded zero (*LLCI* = .0236, *ULCI* = .1781). Since the indirect effect is significant and the direct effect is not statistically significant after considering the mediator into the relationship, complete/full mediation is confirmed.

4.5 Summary of the tested hypothesis

The study findings rejected the null hypothesis if *P*-value <0.05, while, *P*-value >0.05 led to the acceptance of the null hypothesis. The results summary of the tested research hypotheses is as presented in Table 15 below.

Table 15: Results summary on hypotheses testing based on unstandardized coefficients

Hypothesized relationship	**Country**	**Unmediated effect**		**Mediated effect**				**Mediated effect-size**		**Nature of mediation**
		Total effect		Direct effect		Indirect effect		Effect-size	$R^2_{med}/R^2_{Multiple}$	
		'c'	*P*-value	*'c'*	*P*-value	*'ab'*	*P*-value	R^2_{med}	Percentage	
HCD→BMD→FV	Kenya	-.581	.001	-1.095	.000	.5145	<.05	-.149(15%)	42%	Inconsistent mediation
	South Africa	.251	.001	.157	.064	.0947	<.05	.029 (3%)	57%	Complete mediation

Source: Researcher compilation, 2024

From Table 15, the relationship between <IR> of human capital disclosure and firm value was statistically significant (unmediated effect *'c')* for both countries. On considering the mediator business model into the relationships, the total effect *'c'* was decomposed into the direct effect '$c^{1'}$ and indirect effect '*ab'*. This is a confirmation that the effect of human capital disclosure on firm value is partly transmitted through the business model. The effect-size was greater for Kenya, as the explained variance due to the mediated effect ($R^2_{med}/R^2_{Multiple}$) was greater for South Africa where <IR> is mandatory compared to Kenya where <IR> is voluntary.

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5.0 Discussion

The research was purposed to explore the effect of human capital disclosure on value of listed companies in Kenya and South Africa, and to assess whether business model disclosure mediated this relationship. The summary of the findings per objective is as follows.

5.1 Summary of study findings

The first objective of the study was to evaluate the effect of human capital disclosure on value of listed companies between Kenya and South Africa. Kenyan listed companies results show a negative and significant effect of human capital disclosure on firm value, while, the relationship was positive and statistically significant in the case of South African listed companies data. The hypothesized relationship between human capital disclosure and business model was found positive and statistically significant for both countries data. Human capitals as a stock of value gets increased, decreased or transformed through the activities and outputs of the organization. For example, the quality of an entities human capital is improved when employees become better trained. The finding in relation to South Africa align well with that of (Rhoda *et al*., 2018; Salvi *et al*.,2020; Sisodia *et al*.,2021) that documented a positive and significant relationship between human capital resources reporting and firm value, and performance. This contradicts the findings of Mustafa *et al*.(2015) who found a lack of association between human capital disclosure and share prices.

An evaluation of the role of business model on the relationship between human capital disclosure and value of listed companies when comparing Kenya and South Africa, statistically significant mediating results were reported in respect of the data sets from both countries. However, inconsistent mediation was expressed by NSE listed firms, as JSE listed companies exhibited complete mediation.

5.2 Conclusions

Subsequent to advocating the importance of <IR> in changing the reporting landscape of corporate entities, it is paramount to be conscious of how disclosures of different forms of capital affect the value of listed companies and the role played by the business model on this relationship from a voluntary and mandatory setup. It was hypothesized that the effect of human capital disclosure on firm value was not statistically significant. The study findings surmise statistically significant association. Kenya reporting a negative effect and South Africa posting a positive effect. The study also hypothesized that business model does not mediate the association between human capital disclosure and firm value. Based on the findings the hypothesis was rejected by a confirmation of statistically significant mediating role of the business model on this relationship.

To the best knowledge of the researcher, this is one of the most comprehensive studies to date that has empirically linked <IR> capital components of human capital, business model and firm value in a single model. This research therefore, adds to what is already known by offering a novel conceptualization on the mechanism through which the <IR> aspect of human capital transmits its effect on firm value from a developing country context, Kenya where <IR> is voluntary, compared to South Africa where <IR> is mandatory.

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By enunciating that human capital disclosure and value of listed companies relationship is partly attained through the business model, the study provides a reasonable exposition as to why there exist mixed results reported by prior studies focusing on human capital disclosure and firm value. Additionally, this study provides evidence that business model which has been stressed by the IIRC in the <IR> framework mediates the relationship between <IR> human capital and value of firms from diverse industries. On this notion, this research paper has the potential of providing more insight into research on business model disclosure. Through the results of this work the mediational role of business model on the relationship between human capital disclosure and firm value is hereby demonstrated hence bridging the research knowledge gap.

5.3 Implications and recommendations of the study

The research implications to theory and practice are discussed as follows.

5.3.1 Implication for Theory

The finding of human capital disclosure and firm value is consistent with the precepts of stakeholder theory. While, a company is bound by fulfilling the shareholders need of increasing the value of the firm by maximizing wealth which is their fiduciary obligation, the stakeholder theory opines that the needs of other interested parties have to be considered. Such requirement is partially fulfilled by making disclosures on human capital. Further, entities uphold their image and differentiate themselves through disclosure of human capital information in the annual reports in support of the legitimacy theory.

5.3.2 Implications for Management Policy and Practice.

Human capital disclosure and firm value indicated a negative and statistically significant effect on value of listed companies in Kenya, while for South Africa, positive and significant effect was revealed. This can be ascribed to the fact that information disclosures in relation to human capital is a strategic asset that earn a company a competitive advantage due to its ability to enhance the image of the company positively. However, for Kenya, human capital disclosure by firms may be as a result of poor disclosures of information that does not contain strategic communication, hence causing a fall in firm value. Rather, South African firms human capital disclosures entail strategic communication that enhances the value of the firm. On this conception, the study recommends that managers of firms listed in the NSE, Kenya should review their <IR> disclosures of human capital and restructure costs related to human capital in a manner that communicates positive benefits, portray the information strategically so as to elevate firm value.

5.4 Limitations of the Study

Notwithstanding the achievement of the study objectives, this study finding should be interpreted with the following identified limitations in mind that may also provide direction to future research.

Though information sought was extracted from the studied organisations, the study sample was small and the period covered was short given the number of companies that had adopted <IR> in

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Kenya by the year 2020. While, for the case of South Africa the focus was on listed firms whose reports were contained in the IIRC, <IR> Examples data base. Therefore, generalizations of the study findings is restricted.

Only one variable was analysed as mediator in this study. However, from the study findings other possible mediators may exist, since human capital disclosure was found not to exert all its influence on firm value through the business model. Thus, the mechanisms through which the <IR> capital in form of human capital disclosure affect firm value might have not been explored exhaustively.

5.5 Recommendations for Future Studies

The study specifically examined <IR> firms that are listed in the NSE, Kenya and <IR> firms contained in the IIRC, <IR> examples data base as integrated reporters, and listed in JSE, South Africa. Future research to consider an increased sample size covering many years and extend the study to firms that are not listed in the stock exchange but have adopted <IR> to compare the results.

By virtue of the current study accounting for only one variable (i.e business model) as a mediator, future researchers are encouraged to explore other possible mediators by investigating the role played by other <IR> content elements (organizational overview and external environment, risks and opportunities, strategy and resource allocation, governance, performance, outlook and, basis of preparation and presentation) and extend the study by conducting a multiple or moderated mediation analysis to gain more insight into how or why <IR> capitals disclosure influence firm value.

Abbreviations

<IR> Integrated Reporting
IIRC International Integrated Reporting Council
BM Business Model
BMD Business Model Disclosure
HCD Human Capital Disclosure
NSE Nairobi Securities Exchange
JSE Johannesburg Securities Exchange

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