Effect of Integrated Reporting on Firm's Value: The Nigeria Manufacturing Sector Experience

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ABSTRACT: The main objective of this study was to investigate the effect of integrated reporting on firms' value drawing samples from listed manufacturing firms in Nigeria between the periods of 2011-2020. In this study, human capital disclosure index, manufacturing capital disclosure index, and social and relationship capital disclosure index were the integrated reporting proxies adopted to evaluate the effect on value of Nigeria manufacturing firms. Firms' value was measured in terms of Tobin Q, and year price index was adopted as the control variable. Ex post factor research design was used and the study made use of secondary data sourced from the sampled companies' annual reports and Nigeria Exchange Group Fact book. Data for integrated reporting variables were derived using disclosure checklist developed in accordance with the integrated reporting framework disclosure guidelines. Purposive sampling technique was used to select 51 out of the 59 manufacturing companies listed on the Nigeria Exchange Group. In order to examine the cause-effect relationship between the dependent variable and independent variables as well as to test the formulated hypotheses, the researcher used a robust regression analysis. The results of the analysis showed that the disclosure of human capital information in the annual report of listed manufacturing firms in Nigeria significantly improves the firm's value. Based on this findings, it was concluded that only the variable of human capital disclosure has significant effect on firms' value. Finally, the study recommended that the management of manufacturing firms in Nigeria should capture all disclosure items concerning human capital in their financial statements as this tends to improve the value of the firm and increase shareholders' wealth. It was also recommended that management should develop an inclusive organizational culture for disclosing non-financial information with long term value creating capacity as they can maximise the market value of the firm over the short, medium and long term horizon.

KEYWORDS: Integrated reporting, firms' value, manufactured capital disclosure, social and relationship capital disclosure, human capital disclosure.

INTRODUCTION

Integrated reporting (IR) is a reporting framework that evolves to fill the gap and deficiencies of the traditional reporting systems whose main focus was provision of financial information to the primary owners of the entity. The traditional reporting system that focuses mainly on satisfying the shareholders, is not holistic as it ignores non-financial measures which are now accepted as useful yardsticks for measurement of corporate success and values. IR is considered to be a new corporate reporting system where the short term focus of value creation for the shareholders is shifted toward the long term value creation encompassing all the stakeholders while supporting managers to take decisions prudently (Hsiao & Kelly, 2016; Ahmed & Anifowose, 2017). IR brings together financial and non-financial measure in one piece and also shows the link among these metrics (financial, manufactured, intellectual, human, social and relationship and natural capital) in line with integrated thinking approach (IIRC, 2013). IR is a process based on integrated thinking that results in a periodic integrated report by an organization about value creation over time. Integrated thinking is the active consideration of the relationship between an organization's various operating and functional units and the capital that are used or affected.

According to the Institute of Chartered Accountants of Nigeria (ICAN, 18) integrated reporting improves the quality of information available to providers of financial capital thus enabling a more efficient and productive allocation of capital. It provides a more cohesive and efficient approach to corporate reporting that draws on different reporting strands and communicates the full range of factors that materially affect the ability of an entity to create value over time. IR enhances accountability and stewardship for the broad base of capital and promotes understanding of their interdependencies. It envisages that an integrated report should be prepared primarily for providers of capital in order to support their capital allocation assessment.

The major aim of IR is to improve transparency and accountability by providing concise communication about how an entity's strategy, governance, performance and prospect, in the context of its external environment lead to the creation of value in the short, medium and long term. From the above qualities, it can be deduced that IR represent an innovative approach that supports integrated thinking and value creation. The value creation process is the entity's business model that shows how the resources are utilized during business activities to create beneficial output in form of commodity production or service delivery. Disclosing financial and non-financial information in a complementary manner enables capital providers to evaluate investment opportunities more effectively and to monitor the use of invested capital more intensively. In the light of this Mirza et. al (2019), averred that information plays a vital role in decision making process of business community coupled with the fact that investment decisions rely heavily on financial information at the disposal of investors. Every investor relating with an entity is concerned mostly about the long term value and survival tendencies of such firm and information relating to this is captured in IR which is rather a voluntary disclosure framework.

With the practice of IR gaining massive attention, it is imperative to determine whether the adoption of IR in a developing country like Nigeria has any effect on the value of manufacturing firms that are the engine room of the economy. Nigeria is a developing economy attracting foreign agencies to develop the capital market and relying heavily on foreign loans and grants because of economic down turn occasion by persistent inflation, currency devaluation and covid 19 pandemic (Adegbie et.al, 2019; Akpan & Simeon, 2021). Available information from the National Bureau of Statistics (NBS) shows that the aggregate contribution of the manufacturing sector to the Gross Domestic Product (GDP) in real terms over the three-year period (2019-2021) was N19.26 trillion compared to other sectors (Vanguard 9, 2022). Hence, there is need to study this important sector of the economy that seems neglected by other researchers.

Based on the extant literature, most of the researches on integrated reporting are done outside Nigeria (Ahmed, Haji, A. & Anifowose, 2017; Feng, et al, 2017; Nurkumalasar et al, 2019; Soumillion,2018) and in more developed countries with sophisticated institutional and legal background than Nigeria. In addition to this, some of the researches on integrated reporting carried out in Nigeria focused on other sectors of the economy like banking (Adegbie, et al 2019), insurance (Adams et al, 2019; Mirzaet.al 2019), country-level determinants of IR adoption and implementation (Adegboyegen, 2019; Akpan & Nsentip, 2020) etc. The studies conducted by Bilmakers, (2016) and Jeroe (2016) suggested a positive association between integrated reporting and firms' value while similar studies by Nurkumalasari, et al (2019) and Cosma, Soana and Venturelli (2018) indicated that integrated reporting does not affect the value of a firm. On the other hand, studies by Albetairi et al (2018) and Adeboyegun et al (2019) had a mixed result. The mixed and contradictory results have made the growth effect of integrated reporting debate open to further studies. Therefore, in an effort to fill this gap, this study investigated the effect of integrated reporting on value of manufacturing firms in Nigeria.

In order to achieve the above objective, the following hypotheses were formulated for the study;
H_{01}:   Social and relationship capital disclosure have no significant effect on the value of listed manufacturing firms in Nigeria.
H_{02}:   Human capital disclosure have no significant effect on the value of listed manufacturing firms in Nigeria.
H_{03}:   Manufactured capital disclosure has no significant effect on the value of listed manufacturing firms in Nigeria.

REVIEW OF RELATED LITERATURE

The concept of integrated reporting
Integrated reporting is an emerging accounting framework that discloses both financial and non-financial information of a business entity. It is an effective way of communicating the strategy, governance, prospects and performance, in the context of its external environment, that can help in initiating the formation of the firm value over the short, medium and long term horizon within an entity (Adeboyegun et al, 2020; Adegbie, et al, 2019; Hsiao & Kelly, 2018, McNally, et al 2017;

IIRC, 2013). Integrated reporting is a principled-based framework that is based on the principles of strategic focus and future orientation, stakeholder relationships, connectivity of information, materiality, conciseness, reliability and completeness as well as consistency and comparability (Adeboyegun et al, 2020; IIRC, 2015). Ara and Harani (2020) averred that integrating reporting is a method grounded on social world stories that satisfies the proactive actions of various stakeholders. Dumay (2016) in his study also noted that the adoption of an integrated reporting method is expected to enhance the effectiveness of internal control systems and to support the achievement of sustainability of the overall performance, thus boosting the value creation of the corporation.

However, several studies provide results about the purpose of integrated reporting (e.g., Zhou, et al, 2017; Cahan, et al 2017). The primary objective of integrated reporting is to improve on the quality of information available to providers of capital by communicating broader and more relevant information that can assist in decision making (IIRC, 2013). IIRC (2015) suggests that investors apply integrated reporting for purposes of managing investment risk, evaluating industry dynamics, regulatory environment, and assessing a company's forward-looking information.

Social relationship capital disclosure
Social and relationship capital refers to social networks and the associated norms of reciprocity (Kulic & Kuzey, 2016), people's ability to work together for common purposes individually or in groups within organizations as well as between organizations and their external stakeholders including the community and shareholders (Nurkumala et al, 2019). Social and relationship capital include, the strength/ efficacy of supply chain relationships, community acceptance, shared norms, government relations, relationships with competitors and customer loyalty etc. It is only by building relationships that an organisation can retain its social license to operate. Interrelationships of social and relationship capital and other capitals are clearly linked in a kind of virtuous circle, with social and relationship capital tending to increase other capital and at the same time other capital interconnecting to increase firms value. Therefore, social and relationship capital is very crucial in firm value creation and the disclosure of this element as given by Integrated reporting framework may boost the image of the company, engender stakeholders' inclusiveness and thus enhance the value of the firm.

Human capital disclosure
Human capital involves people's competencies, capabilities, knowledge, skills, experiences, and their motivations to innovate, including their alignment with and support for an organization's governance framework, risk management approach, and ethical values (Cosma et al., 2018). Human capital is now seen as a key driver of organizational success, with increasing importance being placed on understanding its role. It is often the most significant asset an organization has as business models become centred on people, intellectual capital and technology. The Securities and Exchange Commission (SEC, 2021), introduced new disclosure requirements to provide stakeholders insight into human capital – from the operating model, to talent planning, learning and innovation, employee experience and work environment. The disclosure of human capital may

help stakeholders evaluate whether a business has the right work force to meet immediate and emerging business challenges and the nature and magnitude of related investment in human capital. According to CIPD (2020), human capital clearly matters given that it is directly linked to value creation, and there is increased scrutiny on the way organizations are manage and operated. It noted that toxic organizational culture, poor management and inadequate training are now widely recognized as having significant roles in the numerous corporate failures over the years.

Manufactured capital disclosure
Manufactured capital refers to material goods and infrastructure owned, leased or controlled by an organisation that contribute to production or service provision, but do not become embodied in its output. It is seen as human created, production oriented equipment and tools. Examples include:tools, technology, machines, buildings and all forms of infrastructure. Manufactured capital is important for the sustainable development of an organisation in two ways. Firstly, the efficient use of manufactured capital enables an organisation to be flexible, responsive to market or societal needs. Secondly, manufactured capital and technology can reduce resource use and focus more on human creativity, thus enhancing both efficiency and sustainable development for more value creation in the company (IIRC, 2015). Hence the disclosure of this component as given by Integrated reporting framework may enhance the value of the reporting firms.

Integrated reporting and firms' value
 There are several interpretations given to the concept of value. Adegbie (2019) and Olusanjo, et al (2019) stated that value can be explained from the concept of fair market value, fair value, investment value, liquidation value and intrinsic value. Theoretically, it is the amount that one needs to pay in order to buy a business entity. The value of a firm is influenced by several fundamental factors such as liquidity (Ahmed et al, 2019; Soumillion, 2018; Chen, et al 2016; Adams et al, 2016), debt policy (Feng et al, 2017); investment decisions (Albetairi et al, 2018; Jeroe, 2016); sustainability and disclosure policy etc. Companies can share their value creation and risk as a good signal by increasing company reporting content (Lee & Yeo,2016). The same opinion is stated by Lang & Adegbie, et al (2019) that maintaining a level of corporate disclosure can consistently reduce information asymmetry and have significant impact on market price as well as boost the company's image. So, through integrated reporting companies can suppress information asymmetry between management and investors because the company can tell investors about value creation over time.

The above approach is the traditional view of value creation which focuses on the purely financial issues, implying that value is measured in monetary terms only. Integrated reporting value has a much broader meaning. According to IIRC (2013) Framework, value is created by an organization from a wide range of interactions, activities and relationships and connectivity.

Stakeholders theory Freeman (1984)
Stakeholders are groups or individual who are influenced or can influence corporate activities. The long run survival of the organization depends on its stakeholders' support and approval. The more

power the stakeholders possess, the better the organizations ability to meet their demand. According to Freeman (1984) the theory provides a means of connecting ethics and strategy which can help organizations who have the intention of serving the interests of all the stakeholders. Integrated reporting engenders the need for transparency and accountability, raising a growing interest in understanding how the economic system, ethics, and sustainability can serve all organization stakeholders, whether they are primary (capital providers) or not. The importance of the stakeholder engagement is essential when considering informational asymmetry, given that external stakeholders have limited means to monitor the agent's behavior. For Schaltegger (2012), stakeholder trust in organizations occurs not only through the issuance of standardized financial statements, but also in the face of diverse activities and interactions. Establishing relationships of trust and developing organizational communication refers to the idea of integrated thinking (IIRC, 2015), which involves stakeholders in a mutually beneficial interaction. Therefore, the institutional relationship with stakeholders will lead the process of incorporating relationship management (Freeman et al., 2010; Schaltegger, 2012).

Empirical review
Jeroe (2016) investigated the effect of integrated reporting and non-financial information on performance of 44 firms across the world for 2012 and 2013. The study used return on asset and earnings per share as dependent variables and also used integrated reporting index, non-financial information disclosure index, firm size, risk as well as the market to book value of the firm as independent variables with the use of descriptive statistics and pooled regression analysis technique. The study suggested that integrated reporting and non-financial information reporting negatively influence the performance of firms.

Suttipun (2017) investigated integrated reporting and financial performance of 150 firms between 2012 and 2015 in Thailand. The study employed tobin q as the dependent variable and also used financial capital reporting index, manufactured capital reporting index, intellectual capital reporting index, human capital reporting index, social capital reporting index, environmental capital reporting index as well as size of firm as independent variables coupled with the use of correlation and multiple Least Square regression analysis. The study showed that reporting of corporate social reporting issues as well as capital positively influences performance while environmental reporting negatively affects performance.

Albetairi, et al (2018) examined integrated reporting and financial performance of five insurance firms in Bahrain between 2012 and 2015. Their study employed business model index, risk and opportunities index, strategy and resource allocation index as well as performance disclosure index as indices of integrated reporting forming the independent variables while Return on Assets was employed as the dependent variable while the pooled ordinary least square regression technique, was the analytical tool employed. The study revealed that integrated reporting indices have mixed influence on firm performance to the end that risk and opportunities index as well as performance index negatively affects performance.

Cosma, et al (2018) studied integrated reporting and firm value in South Africa between 2013 and 2016. The study employed firm value proxied by stock returns as dependent variable while integrated reporting as proxied by the national market index return, which is the response of the public to integrated reporting was used as the independent variable while the ordinary least square regression techniques was employed for data analysis. Their findings showed that integrated reporting positively influences firm performance.

Soumillon (2018) analyzed the value relevance of integrated reporting of 63 firms in South Africa in 2017. The investigation employed the adjusted market value of equity as the dependent variable and also utilized integrated reporting quality, corporate social responsibility performance, corporate governance as well as environmentally and socially sensitive index as independent variables. The study employed descriptive statistics as well as pooled ordinary least square regression analysis and the findings showed that integrated reporting do not significantly influence firm value. Bijlmakers (2018) investigated the influence of integrated reporting on firm value of 56 banking firms in Europe between 2010 and 2016. The study utilized Tobin q as the dependent variable and also employed integrated reporting index, size, growth, discretionary accruals, return on equity as well as earning quality as the independent variables. The study also used descriptive statistics and the POLS regression technique, and the findings showed that integrated reporting has no significant effects on firm value.

Nurkumalasari et al. (2019) carried out a study on integrated reporting disclosure on firm value of 14 firms in Asia between 2015 and 2017. The study utilized Tobin q as the dependent variable and also employed the integrated disclosure index, number of subsidiaries, long-term debt ratio, return on asset, total debt ratio as well as return on assets as the independent variables. The data was analyzed with descriptive statistics and POLS regression techniques and the result showed that integrated reporting has no effect on firm value especially in cases of high leverage. El Deeb (2019) analyzed integrated reporting on firm value and performance of firms listed in EGX30 index in the Egyptian stock exchange market between 2012 and 2017. The data for the study were obtained from the annual reports of the sampled companies and the data collected were analyzed using descriptive analysis, Pearson correlation and regression analysis. The findings of the study revealed that integrated reporting index positively affects firm performance and value and the leverage level of the companies.

Adegbie, et al (2019) examined integrated reporting and the value of 38 consumer goods and industrial goods manufacturing companies listed on the Nigerian Stock Exchange for the period 2012 to 2016. Their study employed ex-post facto research design and purposive sampling technique. The data were obtained from the published financial statements of the sampled firms and the data collected were analyzed with descriptive and inferential statistics using regression analysis. The results of their research found that integrated reporting significantly affects firm's value measured by Tobin's Q (TQ); disclosure of financial capital (DFC) negatively and significantly influence Tobin's Q; disclosure of manufactured capital (DMC) positively and insignificantly affects Tobin's Q; disclosure of intellectual and human capital (DIHC) negatively

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and insignificantly influences Tobin's Q; and disclosure of natural capital (DNC) negatively and insignificantly influences Tobin's Q. Firms' size (SIZE) and leverage (FLEV) had significantly controlled the influence of integrated reporting on Tobin's Q.

Olusanjo et al (2019) examined integrated reporting practices on shareholders' relationships with manufacturing companies quoted on the Nigerian Stock Exchange as at 31 December, 2018. The study employed survey research design with a sample size of 45 and questionnaire method of data collection from 675 respondents using purposive sampling technique. The data were collected from a well validated questionnaire with Cronbach's alpha reliability coefficients of 0.73 to 0.85. The data obtained were analyzed using descriptive and inferential statistics. The study revealed that integrated reporting practices jointly and significantly improved stakeholders' relationships.

Adeboyegun et al, (2020) investigated integrated reporting and performance of 13 banks in Nigeria for the period 2009 to 2018. The study employed cross sectional and ex post facto research design with data obtained from the annual reports of the sampled banks. The study employed profit after tax as dependent variable and also used integrated reporting index, debt to equity ratio and total assets as independent variables and the data were analyzed with the use of classical ordinary least square and panel co-integration techniques. The data analysis showed that integrated reporting does not significantly influence corporate performance of banks in the short run, but significantly affects firm performance in the long run.

METHODOLOGY

This study employed an ex-post facto research design because the data used was historical. The population is made up of firms that engage in manufacturing activities and are listed on the floor of the Nigerian Exchange Group from 2011 to 2020. As of 31st December 2020, the total number of firms that are engaged in manufacturing activities and listed at the Nigeria Exchange Group was 59 from 6 different sector. Purposive sampling technique was employed to select 51 companies based on availability of data required for analysis throughout the study period. The secondary data used in this study were gotten from Nigerian Exchange Group Fact Books and linked companies' Annual Financial Reports for the time period covered by the study (2011-2020). To obtain data for the integrated reporting metrics, a disclosure checklist developed in accordance with IIRC (2013) Framework checklist was developed, and dummy of '1' was assign to integrated reporting items disclosed and '0'for otherwise. The ordinary least square regression technique was used in the data analysis.

The researcher modified the models of Adegbie et al (2019) to specify the model of this study as;
$$TOBQ_{it} = \partial_0 + \partial_1 RECE_{it} + \partial_2 HCDS_{it} + \partial_3 MANC_{it} + \partial_4 DECP_{it} + e_{it}$$

Where:
TOBQ   =   Tobin Q
RECE   =   Social and relationship Capital disclosure

HCDS	=	Human capital disclosure
MANC	=	Manufactured Capital disclosure
DECP	=	Year end Share price (Control Variable)
"{i}"	=	Cross Section (Sample Firms)
"t"	=	Time Frame (2011 to 2020)
e_{it}	=	Stochastic error Term

ANALYSIS AND RESULTS

In testing for the effect of the above variables on value of listed manufacturing firms in Nigeria, the researcher conducted panel least square regression before proceeding to check for inconsistencies with the basic assumptions of the OLS regression.

Descriptive Analysis

Table 1: Descriptive statistics of the effect of integrating reporting on firms' value

VARIABLES	MEAN	SD	MIN	MAX	NO OBS
TOBQ	1.69	1.61	-0.51	11.30	445
RECE	0.53	1.90	-20.53	18.68	448
HCDS	0.97	0.17	0	1	447
MANC	0.26	0.33	-1.03	5.85	449
DECP	46.47	174.24	0.20	1555.99	449

Source: Authors' data (2022)

The mean of firm value as proxied by Tobin Q (TOBQ) was 1.69 with a standard deviation of 1.61. Tobin Q had a minimum and maximum values of -0.51 and 11.30 respectively. In the case of the independent variable of social and relationship capital disclosure (RECE), the table shows that it has a mean of 0.53 and a standard deviation of 1.90. On the minimum, social and relationship capital disclosure was -20.53 with a maximum of 18.68. The table also shows that the mean of human capital disclosure (HCDS) was 0.97 with a standard deviation of 0.17. The minimum value of human capital disclosure was 0 with a maximum of 1. Manufacturing capital disclosure (MANC) had a mean of 0.26 with a standard deviation of 0.33. Manufacturing capital disclosure had a minimum of -1.03 and a maximum of 5.85. In the case of the control variable, yearend share price was 46.47 on the average with a standard deviation of 174.24.

Correlation analysis

Table 3: Correlation analysis of the effect of integrating reporting on firms' value

	TOBQ	RECE	HCDS	MANC	DECP
TOBQ	1.00				
RECE	0.13	1.00			
HCDS	0.03	0.13	1.00		
MANC	0.33	0.03	0.40	1.00	
DECP	0.52	0.43	0.01	0.05	1.00

Source: Author's computation (2022)

In the case of the correlation between integrating reporting and firm value, the above results show that there exists a positive and weak association between social and relationship capital disclosure and firm value as proxied with Tobin Q (0.13). There exists a positive and weak association between human capital disclosure and firm value as proxied with Tobin Q (0.03). There also exists a positive and moderate association between manufacturing capital disclosure and firm value as proxied with Tobin Q (0.33). The control variable of yearend share price has a positive and high association with firm value as proxied with Tobin Q (0.52).

Regression analyses

Table 3: Regression result for the effect of integrated reporting on firms' value

	TOBQ Model (Pooled OLS)	TOBQ Model (Robust Regression)
C	0.95 {0.006} **	0.95 {0.000} ***
RECE	-0.03 {0.354}	-0.03 {0.193}
HCDS	0.31 {0.369}	0.31 {0.023} **
MANC	0.76 {0.000} ***	0.76 {0.224}
DECP	0.00 {0.000} ***	0.00 {0.000} ***
F-statistics Wald Statistics	63.04 (0.00) ***	27.82 (0.00) ***
R- Squared	0.37	0.37
VIF Test	1.02	
Heteroscedasticity Test	69.37 (0.000) ***	

Note: (1) bracket {} are p-values

(2) **, *, implies statistical significance at 5% and 1% levels respectively**

From table 4.3 above it is observed that the R-squared value of 0.37 indicate that about 37% of the systematic variations in firm value as measured by Tobin Q in the pooled manufacturing firms

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over the period of interest was jointly explained by the independent variables and the control variable in the model. This implies that firm value when measured in terms of Tobin Q in Nigeria cannot be 100 percent explained by integrated reporting and our control variables. The unexplained change in firm value can be attributed to the exclusion of other independent variables that can impact on firm value but were excluded because they are outside the scope of this study. However, they have been captured in the error term. The F-statistic value of 27.82 and its associated P-value of 0.00 shows that the Robust OLS regression model on the overall analysis is statistically significant at 1% level, this means that the regression model is valid and can be used for statistical inference.

In this study like in most other related studies, the researcher employs the variance inflation factor (VIF) technique to diagnose the presence or absence of multicollinearity. A cut-off means VIF value of 10 is given for regarding a VIF as high. This is consistent with the recommendation of Gujarati (2004) which allows the mean VIF to be less than 10. The table above shows a mean VIF value of 1.02 for the model of firm value which is less than the benchmark value of 10 indicating the absence of multicollinearity in the specified models.

Test of hypotheses
Hypothesis one
H_0: Social and relationship capital disclosure have no significant effect on the value of listed manufacturing firms in Nigeria
The results obtained from the Robust OLS regression in table 4.3 reveals that social and relationship capital disclosure {-0.03 (0.193) has a negative insignificant effect on firm's value. This therefore means that the null hypothesis should be accepted while the alternate hypothesis is rejected. Hence, social and relationship capital disclosure has no significant effect on the value of listed manufacturing firms in Nigeria.

Hypothesis two:
H_0: *Human capital disclosure has no significant effect on value of listed manufacturing firms in Nigeria*
The results obtained from the Robust OLS regression on table 4.3 above reveals that human capital disclosure {0.31 (0.023)} has a positive significant effect on firm's value. This implies that the disclosure of human capital information in the annual report of listed manufacturing firms in Nigeria significantly improves their firm value. This therefore means that the null hypothesis should be rejected while the alternate hypothesis is accepted.

Hypothesis Three
H_0: *Manufactured capital* disclosure *has no significant effect on value of listed manufacturing firms in Nigeria*
The results obtained from the Robust OLS regression above reveals that manufactured capital disclosure {0.76 (0.224)} has a positive insignificant effect on firm value. This therefore means that the null hypothesis should be accepted while the alternate hypothesis is rejected. Hence,

manufactured capital disclosure has no significant effect on the value of listed manufacturing firms in Nigeria.

DISCUSSIONS OF RESULTS

The results show that the disclosure of human capital information in the annual report of listed manufacturing firms in Nigeria significantly improves their firm value. This finding is consistent with the findings of Suttutin (2017; Cosma et al (2016) and Adegbie et al, (2019) who all found a significant relationship between integrated reporting and firms value. However, this study found that manufactured capital disclosure and social and relationship capital disclosure have no significant effect on the value of listed manufacturing firms in Nigeria. This finding also support the works of Bimakers (2016) and Jeroe (2016) but negates the findings of Albetairi et al (2018) and Adeboyegun et al (2020) who could not establish a significant relationship between IR and firm's value.

CONCLUSION AND RECOMMENDATIONS

The need for accountability and transparency by various stakeholders has led to the establishment of integrated reporting framework which provides a concise communication about how organization's strategy in the context of its external environment lead to the creation of value in the short, medium and long term. Based on the outcome of the analysis, it was concluded that only the variable of human capital disclosure has the tendency to improve the value of the firm. It was therefore recommended that that the management of manufacturing firms in Nigeria should capture all disclosure items concerning human capital in their financial statements as this tends to improve the value of the firm and increase shareholders' wealth. It was also recommended that management should develop an inclusive organizational culture for disclosing non-financial information with long term value creating capacity as they can maximise the market value of the firm over the short, medium and long term horizon.

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APPENDICES
APPENDIX A: STATA'14 RESULTS

```
  ___  ____  ____  ____  ____ (R)
 /__    /   ____/   /   ____/
___/   /   /___/   /   /___/   14.0   Copyright 1985-2015 StataCorp LP
  Statistics/Data Analysis        StataCorp
                          4905 Lakeway Drive
    MP - Parallel Edition        College Station, Texas 77845 USA
                          800-STATA-PC      http://www.stata.com
                          979-696-4600      stata@stata.com
                          979-696-4601 (fax)
```

Single-user 8-core Stata perpetual license:
      Serial number: 10699393
        Licensed to: Idorenyin Okon
                IdRatios Nigeria

Notes:
      1. **Unicode is supported; see help unicode_advice.**
      2. **Maximum number of variables is set to 5000; see help set_maxvar.**

Variable	Obs	Mean	Std. Dev.	Min	Max
tobq	445	1.687271	1.608389	-.508	11.2986
rece	448	.5317884	1.899036	-20.5332	18.6774
hcds	447	.9709172	.1682269	0	1
manc	449	.2609849	.3323733	-1.0313	5.8538
decp	449	46.47265	174.2436	.2	1555.99

Variable	Obs	W	V	z	Prob>z
tobq	445	0.65226	105.336	11.136	0.00000
rece	448	0.28217	218.757	12.887	0.00000
hcds	447	0.85837	43.075	9.000	0.00000
manc	449	0.46576	163.136	12.187	0.00000
decp	449	0.24581	230.300	13.012	0.00000

	tobq	rece	hcds	manc	decp
tobq	1.0000				
rece	0.1336	1.0000			
hcds	0.0318	-0.0474	1.0000		
manc	0.3344	0.2731	-0.0412	1.0000	
decp	0.5176	0.1113	0.1770	0.3298	1.0000

Source	SS	df	MS		
Model	386.333844	4	96.5834609		
Residual	667.966021	436	1.53203216		
Total	1054.29986	440	2.39613606		

Number of obs = 441
$F(4, 436)$ = 63.04
Prob > F = 0.0000
R-squared = 0.3664
Adj R-squared = 0.3606
Root MSE = 1.2378

tobq	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
rece	-.028671	.0309138	-0.93	0.354	-.0894295	.0320876
hcds	.3138859	.3488715	0.90	0.369	-.371793	.9995649
manc	.7644906	.1790596	4.27	0.000	.4125632	1.116418
decp	.0048784	.0003408	14.31	0.000	.0042085	.0055483

```
    _cons |  .9540527  .3470582   2.75  0.006   .2719377  1.636168
-----------------------------------------------------------------------
```

```
   Variable |     VIF     1/VIF
-------------+----------------------
       manc |    1.03   0.968868
       decp |    1.03   0.970543
       rece |    1.01   0.994843
       hcds |    1.00   0.997673
-------------+----------------------
   Mean VIF |    1.02
```

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
    Ho: Constant variance
    Variables: fitted values of tobq

    $\text{chi2}(1) = 69.37$
    $\text{Prob} > \text{chi2} = 0.0000$

```
Linear regression                    Number of obs   =      441
                                     F(4, 436)    =    27.82
                                     Prob > F     =   0.0000
                                     R-squared    =   0.3664
                                     Root MSE     =   1.2378
```

```
-----------------------------------------------------------------------
           |           Robust
      tobq |   Coef.  Std. Err.    t   P>|t|   [95% Conf. Interval]
-------------+---------------------------------------------------------
      rece | -.028671  .0220117  -1.30  0.193  -.0719333   .0145913
      hcds | .3138859  .1379508   2.28  0.023   .0427547   .5850171
      manc | .7644906  .6275332   1.22  0.224  -.4688756  1.997857
      decp | .0048784  .0005611   8.69  0.000   .0037757   .0059811
     _cons | .9540527  .2044199   4.67  0.000   .5522818  1.355824
-----------------------------------------------------------------------
```