

Corporate Governance and the Voluntary Disclosure of Intellectual Capital in a Period of Financial Crisis: Case of Selected Listed Companies in Zimbabwe

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Abstract: *This research paper focused on corporate governance and voluntary disclosure of intellectual capital in a period of financial crisis. It explores the cross-sectional effect of the industry, company size, gearing, listing status and corporate governance mechanisms on the extent of voluntary disclosure of intellectual capital reporting in 64 companies listed at the Zimbabwe Stock Exchange for the period from 2017-2018. The aim was to determine the extent of IC reporting in corporate reports in the context of Zimbabwe in a period of financial crisis and assess if there is a relationship between capital employed, company turnover, multiple listing, gearing, profit before taxation, proportion of non-executive directors and the extent of intellectual capital reporting in corporate reports. The extent of intellectual capital reporting was measured by a disclosure index based on the intellectual capital attributes included in the narratives and illustrations of the annual reports. The results indicate that voluntary disclosure mainly occurs within the confines of Relational Capital attributes. Company turnover, multiple listing, gearing and committee financial expertise are relevant factors in explaining the differences in reporting behavior amongst Zimbabwean companies. This was based on the prediction that the agency costs can be reduced through the voluntary disclosure of intellectual capital which may also mean that the benefits of signaling outweighs the competitive costs that are prevalent in some industries. This research study also involves panel regression analysis with Random and Fixed effect for the years 2016 to 2018 and the empirical findings on the relationship between capital employed, company turnover, multiple listing, gearing, profit before taxation, proportion of non-executive directors and the extent of intellectual capital reporting in corporate reports of Zimbabwe Stock. VDIC is significantly and positively contributing towards the success of the firms under study for about 0.39% in the case of common effect model and 0.13% both in the cases of RE and FE models.*

Keywords: Corporate governance, Financial risk, Industry, Intellectual Capital (IC), Listed Companies, Voluntary disclosure

1. Introduction

Voluntary disclosure has become a ‘buzz’ in recent years. Ebert et al (2019) described voluntary disclosure as the provision of financial reports and other information by a company’s management beyond the requirements such as the generally accepted principles and securities rules.

According to Menon, Rahul. (2019) voluntary disclosure is driven by a series of incentives and just like corporate governance, it is largely concerned by the exercise of power. Fraser, Arron. (2019) heightened corporate governance as the rules, processes and laws by which companies are operated and regulated. Corporate governance attributes namely independent directors, board size, board effectiveness and position of the chairman are significant in explaining the extent and quality of IC voluntary disclosure (Ellis & Seng, 2015). In articulating the extent and quality of IC, financial risk has received greatest attention in many organisations. According to Althof, Michael and Härdle, Wolfgang Karl. (2019), financial risk is any risk encountered by the organisations in processing their finances. Addressing financial risk results in great profit.

This research paper investigated the Voluntary Disclosure of Intellectual Capital in a period of financial crisis from 2017-2018 on the companies listed on the Zimbabwe Stock Exchange (ZSE). In this new knowledge-based economy, intangible assets such as intellectual capital (IC) have been noted to be more important for value creation than physical

assets (Ellis & Seng, 2015). The idea to investigate on Intellectual Capital disclosure came when industry giants such as TongaatHullets had reached a conclusion to restate the March 2018 financial statements following an agreement which rendered reliance on the unaudited interim results for six months to September 2018 to be no longer appropriate (Dlamini, 2019). In such scenarios, it is important to investigate on the disclosure of all the invisible, non-monetary assets held by an organisation that are amassed over time, which are identified and analysed separately and not included in the balance sheet (H, 2008).

This brings the researcher to question on Intellectual Capital (IC) attributes: Why is it important to disclose IC attributes when such disclosure is not mandatory even in a period of financial crisis? It would seem that these kinds of assets are becoming more important to companies (Ellis & Seng, 2015). According to April et al (2003), a considerable number of studies based on country data have been conducted to investigate the extent of the voluntary disclosure of IC. Disclosure of IC is important as it increases demand for companies’ security and enhancing stock market liquidity within financial markets (Majdalany & Henderson, 2010). However, during the period of financial crisis, like in the case of Tongaat Hullets, organisations through their boards do not have the necessary degree of certainty to apportion the restatement across the different financial periods as there is no currently reliable information to update the financial information for the financial period concerned (Head, 2019). This raises question on the

corporate governance mechanisms in place and how this can relate to the voluntary disclosure of IC.

The aim is:-

- To determine the extent of IC reporting in corporate reports in the context of Zimbabwe in a period of financial crisis.
- To assess if there is a relationship between capital employed, company turnover, multiple listing, gearing, profit before taxation, proportion of non-executive directors and the extent of intellectual capital reporting in corporate reports.

While future conscious companies have noticed that it is also possible to achieve value through intangibles that are not recorded in the annual reports companies listed on the Zimbabwe Stock Exchange are facing liquidation without investigating the importance of IC on sustaining their success. It has become a prevalent phenomenon in the corporate world that in addition to resources such as machinery and plants, innovation, creativity, enhanced technology and procedures, expertise and abilities of staff are also essential components for achievement and competitiveness. It is known as IC (intellectual capital) and such intangible assets create wealth of the business. Thus it is imperative that the researcher sought to elucidate on the importance of IC as a panacea to the coherent liquidity crunch faced by companies.

2. Literature Review

Several studies around the world have examined the impact of listed companies' characteristics on both voluntary and mandatory disclosure of Intellectual Capital while others have been limited to either voluntary or mandatory disclosure (White, Lee, & Tower, 2007). Although this study on the Zimbabwe Stock Exchange listed companies is restricted to voluntary disclosure of Intellectual Capital, the literature review will address the factors that have been used to elucidate the extent or magnitude of both mandatory and voluntary disclosure in a period of financial crisis.

2.1 Voluntary disclosure of IC

There has been no prescribed Accounting Standard that defines the disclosure of Intellectual Capital (Mkumbuzi, 2014). "For such a quite long time most of the Intellectual Capital data has not been mandatorily required by the accounting standards and rules, they were primarily disclosed on a voluntary basis (Williams, 2001). Eventually this leaves the bulk of the Intellectual Capital resources being unutilised out of the financial statements. Larger firms with high ownership dispersion, lower leverage and with high technological equipment in the US provide more voluntary disclosures of intangibles using the disclosure index that was developed by Oliveira et al. (2006). In a study carried out in Malaysia by Haji and Ghazali (2013) on the relationship between Intellectual Capital disclosure and corporate governance attributes, the proponents found out that corporate governance attributes such as board effectiveness, board size, position of the chairman independent directors are significant contributors in explaining the extent and quality of Voluntary Intellectual Capital Disclosure. In

another study by Abhayawansa and Azim (2014), the proponents examined Intellectual Capital reporting practices of the Bangladesh pharmaceutical industry. They found out that firms were aware of the significance of Intellectual Capital in corporate value creation and a commitment to communicate Intellectual Capital publicly. Moreover they found out that most companies do not have a consistent framework for Intellectual Capital reporting."

Voluntary disclosure of Intellectual capital in a period of financial crisis is found to be relatively low worldwide (Whiting and Miller, 2008). Due to the wide increase in awareness of the importance Intellectual Capital, this literature serves to support the extent of IC reporting in corporate reports in the context of Zimbabwe. Evidence has shown relational capital is the most frequently reported which is followed by structural capital while human capital is the last (Whiting and Miller, 2008). The results are constant with Guthrie and Petty (2000) who posits that relational capital is the most frequently reported.

2.2 Intellectual Capital

The concept of Intellectual Capital has gained importance in recent years. It has been seen as an integral part of creating value on the market. Accordingly there has been a rapid realization of the disclosure of intellectual capital as a whole on companies listed on the stock exchange. Considering a knowledge intensive economy, the firms' intellectual capital contribute significantly to a company's success and its ultimate value regardless of the fact that it is derived from customer database, brand or its employees. The critical role of Intellectual Capital in creating value has become lucid in achieving competitive advantage in the market place (Usoff, 2002). Knowledge has become the key economic resource and perhaps the most dominant source of competitive advantage. The Swedish firm Skandia's first Annual Intellectual Capital Report defines Intellectual Capital as the possession of knowledge, applied experience, customer relationships, professional skills and organizational technology (Olsson, 2001). These are human capital, structural capital and relational capital. A universal definition of Intellectual Capital is elusive (Zambon, 2004).

Human Capital refers to the skills, training and education, value characteristics and experience of an organisation's workforce. Structural Capital (SC) relates to capital that provides the tools and architecture for packaging, returning, reinforcing and transforming knowledge along the business activity (Mkumbuzi, 2014). SC denotes the degree of knowledge embedded within an organisation's structures and processes which also includes patents, systems, technology and research and development (Mkumbuzi, 2014). It also points to what remains in the company when the employees leave work such as patents, brands, organisational structure and concept. Relational capital (RC) on the other hand refers to the relationships that exists between the organisation and its main agents such as suppliers, customers and allies. This also includes other social agents working with the organisation such as the community. Using these classifications, the major thrust is to look at Intellectual Capital and how its disclosure is important to

define and understand what is meant by the term and explore its components in the context of Zimbabwe.

3. Methodology

The data for the control and dependent variables was extracted from the Zimbabwe Statistical Agency (ZIMSTATS) database. The deductive method was used in this research study so as to facilitate the full implementation of the theoretical framework as well as the developed hypotheses which enabled the conclusions to be drawn from the research findings. A major advantage of quantitative research in IC studies is that it focuses particularly on the attempts to create an integrated framework for examining the links between all components of IC (Majdalany & Henderson, 2010). The methodology seeks to find the right testable data that can produce results with minimum degree of bias as well as facilitating statistical analysis of the data using the correct model since measurement of IC disclosure is problematic (Ellis & Seng, 2015). There were 64 public companies quoted on the Zimbabwe Stock Exchange (ZSE) in 2019. The sample size in this research included companies from all industries sectors in Zimbabwe listed on the Zimbabwe Stock Exchange. The research design follows the basic research approach as it provides evidence on the relationship between independent and dependent variables whilst examining the extent of Voluntary Disclosure of Intellectual Capital in a period of financial crisis. The following rules for determining the sample size were used;

- In multiple regression the sample size should be several times as large as the number of variables in the study (preferably 10 times or more).
- Generally a sample larger than 30 and less than 500 is appropriate for most research.

The study used 8 variables which enabled 80 elements to be selected for the targeted sample. The period of financial crisis had a number of closures and delisting of several companies which imposed a challenge of limited accessibility to complete annual reports for the 2017-2018 period (Head, 2019). Therefore the final sample size consisted of 44 companies. It is notable that the majority of prior studies in this field have worked with a sample of 20 with a few extending this number to 30 (Mkumbuzi, 2014). The research study looks at the financial statements published between December 2017 and December 2018. It focuses on the companies listed on the Zimbabwe Stock Exchange. Accordingly the companies listed on the Zimbabwe Stock Exchange (ZSE) are subject to disclosure and reporting requirements of the Companies Act (Chapter 24:03), International Accounting Standards and the ZSE listing rules (Mkumbuzi, 2014). Imperatively it is important to hinge the research design on the notion that the methodology chosen and applied is based on the fact that the

results of the empirical tests are not mutually exclusive and sample data follows a normal distribution (Majdalany & Henderson, 2010). Thus the conventional statistical methods best suit this research study.

In reliability testing, the absence of multicollinearity, random residuals and auto correlation suggests that the structural equation modelling would apply when the data is multivariate normal (Mkumbuzi, 2014). The proponent goes on to say that these conventional statistical procedures are also known as parametric tests. The tests involve the use of a sample statistic that is used to estimate the population parameter (April, K.A., Bosma, P. and Deglon, 2003). The estimation is based on a particular sample, population and a sampling distribution sample (Williams, 2001). The data in this study is only limited to parametric tests though non parametric tests such as Friedman's test, Wilcoxon signed rank test, Kruskal-Wallis (KW) test and Whitney – Mann-Wilcoxon (WMW) test can also be applied. These tests will however require interval data to be converted to rank-ordered data. This research paper was not limited to the year-end financial statements only but it also included other contents of the annual reports. Other previous studies carried out such as Guthrie and Petty (1999) served as the basis for the selection of Intellectual Capital attributes. Other attributes were adopted from those recommended for disclosure by the IAS committee.

Thus the extensive list of disclosures was not constrained by the exclusion of items likely to be irrelevant to a user group nor confined only to items previously included in similar studies. The number of items finally selected totalled 23 included under the IC framework. A numerical coding scheme was applied, similar to Guthrie *et al.* (1999). The quantitative research presents IC researchers with variables or proxies that are useful in identifying codes and concepts (Majdalany & Henderson, 2010). However, as almost all the information in the annual reports was of a discursive form and IC attributes were rarely quantified, a dichotomous approach was adopted in this study. This approach uses a procedure in which an item scores one if it is disclosed and zero if it is not disclosed (Sullivan, P.H. (Jr). and Sullivan, 2003). The total disclosure for a company is additive as follows;

$$TD = \sum X di$$

Where: d=0 if the item di is not disclosed

D=1 if the item $d1$ is disclosed

The number of occurrences for the same number of attributes was ignored in case that there were multiple mentions of the same attribute and a value of 1 was chosen to represent that the attribute was mentioned at least once.

Table 1.1: Independent Variables

Variable	Operationalization	Acronym
1. Turnover	Measured in terms of total goods sold or sales.	Turnover
2. Multiple listings	Dummy variable coded 1 if company is listed on more than one exchange.	Multiple listings
3. Gearing		Gearing
4. Industry listing	Dummy variable coded 1 if company is in a "High profile" sector on the Zimbabwe Stock Exchange; 0 otherwise.	Industry listing
5. Capital employed	Measured on the basis of the capital employed (Natural log)	CapitalEd

6. Profit before taxation	Measured in terms of profit before taxation(Natural log)	Profit
7. Audit committee financial expertise	Dummy variable coded 1 if at least one member of the audit committee has financial or accounting experience.0, otherwise.	AuditExpert
8. Proportion non-executive directors	The number of non-executive directors divided by the total number of directors on company’s board of directors at the preceding annual report date.	Propned
9. Audit type .0 Otherwise.	Dummy variable coded 1 if audit firm member of the “big five”	Audtype

Previous studies in several accounting and Intellectual Capital have induced content analysis of annual reports and this has proved to be a rigorous tested research instrument for Intellectual Capital studies(Olsson, 2001). Diverse empirical data has been able to be captured and organised throughout these studies(Olsson, 2001).In this study the Ordinary Least Squares Regression (OLS)Model was used to test for the hypothesised relationships jointly.This method has been considered applicable in this study due to the nature of the data given that the explanatory variables are measured on ratio and nominal scales while the total index (DI) is measured on a ratio scale.

Generally, ordinal scaled profit produce poor results with rank order data as compared to the OLS technique(Lev, 2001). The Ordinary Least Squares Regression (OLS) Model output is more easier to interpret and is often used to interpret the extent to which the amount of voluntary is a linear addictive function of some of the company characteristics chosen(Starovic, D. and Marr, 2003).In most cases the reliability of a chosen model is related to whether the basic assumptions of the regression analysis have been violated or not(Mkumbuzi, 2014).Basically, residual analysis is used in most cases to examine if any violations exist in a given model.(Mkumbuzi, 2014) In order to elucidate the linearity of the explanatory variables with the dependent variable, a plot of the predicted and residual values should show no relationship between them(Mkumbuzi, 2014). If the exist any pattern in the plot, this could indicate that linearity assumption has been violated(Lev, 2001). Reliability seeks to generalize the notion that the number of the independent observations required must be greater than the number of the regression co-efficient(Lev, 2001).The proposition has given light to various researchers and the ideas herein have led to a number of the general guidelines concerning the size of the model(Mkumbuzi, 2014).

In econometric analysis the most basic constraint entails that the error degrees of freedom should be positive having a maximum of 10 degrees of freedom(Mkumbuzi, 2014).This can be best explained below:

$$N-k-1 > 10$$

Where; N = Sample size and k= Number of predictors

To augment the above rule, a research study should have at least five observations on every predictor(Kent, P. and Ung, 2003). For instance this research has a maximum number of 8 predictors. In order to have 10 error degrees of freedom, this requires a sample size of 19 while the second rule requires a sample of 40. The minimum sample size tested in this current research is 44 and this satisfy the above two requirements.

In testing for multicollinearity the econometric principle states that a coefficient greater than 0.8 is indicative of severe correlation among the independent variables, a condition that is not acceptable in accepting the null hypothesis(Munyaradzi, 2014). Multicollinearity is the problem that arises when two or more of the independent variables in an equation are highly correlated (Munyaradzi, 2014). In practice, multicollinearity is checked by scanning the correlation matrix for high values. However, if correlation coefficient is less than 0.80 it does not seem to offer a serious threat to regression results (Mkumbuzi, 2014). The correlation matrix approach is normally used to test for multicollinearity(Mkumbuzi, 2014).

The research model developed:

$$DI = \beta_0 + \beta_1 D1 + \beta_2 D2 + \beta_3 D3 + \beta_4 D4 + \beta_5 D5 + CX_j + \epsilon_i \quad (1)$$

Where:

- DI = Disclosure index
- D1 = Multiple listings
- D2 = Profit after taxation
- D3 = Audit committee financial expertise
- D4 = Industry listing
- D5 = Audit type
- X1 = Gearing
- X2 = Turnover
- X3 = Capital employed
- X4 = Proportion non-executive directors
- εi = the stochastic disturbance Error term
- i = the ith observation
- Xj = Alternative continuous models
- D1-D5 = dummy o/i variables
- β0, β1, β2, β3, β4, β5, C= Estimated parameters

This section looked at the procedures that were used in the current research to find out on the link of different corporate governance characteristics on voluntary disclosure of Intellectual Capital in a period of financial crisis. The section described the criteria used on the selection of voluntary disclosure items to be included in the voluntary disclosure index. The current research used the parametric procedure in the form of Ordinary Least Squares.Before applying the robust OLS parametric procedure, step wise regression and reliability tests were taken so as to build the best regression model for explaining the extent of Voluntary disclosure of intellectual capital in a period of financial crisis.

While the ordinary least squares proves to be a robust parametric procedure a common risk associated with relying only on the OLS pertains to the coefficients that may be correlated with the error term. This implies that the might be sort of Endogeneity which makes the estimated coefficients a bit unbiased and this can lead to a potential opportunity to get rid of the unobserved random and fixed effects. Hence to deal with panel and cross sectional specifications, the issue of endogeneity need to be carefully considered. Thus to care

for the endogeneity and heterogeneity within the parameters, random and fixed models have been expressed below.

A Random effect relationship can be modelled as follows;

$$Y_a = \mu_t + a_1 + XaB + \varepsilon_t \quad \dots(2)$$

Similarly a simple Fixed Effect model can be represented as;

$$Y_a = a_1 + XaB + \varepsilon_t \quad \dots (3)$$

Accordingly, the efficiency of the stated models are tested under the LM (Lagrange Multiplier) and the Hausman Test as model selection tools used to test for the appropriateness of the models to see if Fixed Effect or Random Effect will yield robust and efficient estimators.

4. Empirical Results

This section focuses on the analysis of the research findings concerning the extent of voluntary disclosure both from industry and category standpoint. The current research brings summaries of the model results and correlation matrix which determined the association of the explanatory variables in examining the type and content of Intellectual Capital disclosure. Lastly it looks at the descriptive statistics on the extent of voluntary disclosure of Intellectual Capital.

4.1 Correlation Matrix

The current research used the spearman's correlations coefficients which were computed in order to determine the degree of association between capital employed, company turnover, multiple listing, gearing, profit, proportion of non-executive directors and the extent of intellectual capital reporting in corporate reports of Zimbabwe Stock Exchange listed companies under investigation. The econometric principle states that a coefficient greater than 0.8 is indicative of severe correlation among the independent variables, a condition that is not acceptable in accepting the null hypothesis. From the results on the table below, the researcher can therefore conclude that there is no severe multicollinearity among the variables included in the model as no variable was found with a coefficient exceeding 0.8. To this effect, Table 2 indicates that there are significant positive correlations which ranged from $r=0.667$ (at $p < 0.01$) which signifies that there is a relationship between the explanatory variables and the dependent variables that are investigated in the current research. A significance of $p = 0.05$ is the generally acceptable conventional level in sciences.

Table 1: Correlation Matrix

	D1	D2	D3	D4	D5
D1	1.0000				
D2	0.289**	1.0000			
D3	0.331**	0.470**	1.0000		
D4	0.681**	0.240**	0.426**	1.0000	
D5	0.359**	0.411**	0.418**	0.428**	1.0000

This research study was conducted on panel regression analysis with Random and Fixed effect for the years 2016 to 2018 and the empirical findings on the relationship between capital employed, company turnover, multiple listing, gearing, profit before taxation, proportion of non-executive

directors and the extent of intellectual capital reporting in corporate reports of Zimbabwe Stock Exchange listed companies are reported in Table 2 below:

Variables	Common effect	Random effect	Fixed effect
Intercept	10.31770 (7.432641)*	9.247334 (4.944321)*	8.337671 (2.481001)*
DI	0.384856 (3.293346)*	0.138059 (2.135743)**	0.130153 (1.795812)*
D2	-0.255678 (-1.552004)	-0.050827 (-0.614145)	-0.019893 (-0.223451)
D3	0.010484***	0.001941	5.400979
D4	-0.015741**	0.005607	-2.807627
D5	-0.023229	0.021740	-1.068511
R-squared	0.797334	0.703732	0.450046
Adj.R-squared	0.782435	0.681991	0.427310
F-statistic	54.53789*	32.31123 *	124.6778*
Hausman Test	14.341789 * (0.0134)	LM test	29.554567

The results presented in the table above represent that the estimated coefficient of the Disclosure Index that is the main variable of interest is statistically significantly different from zero with the expected sign in all of the three models, implying that VDIC is significantly and positively contributing towards the success of the firms under study for about 0.39% in the case of common effect model and 0.13% both in the cases of RE and FE models. The positive sign implies that with increasing disclosure of IC information, firms will experience increase in market capitalization accordingly.

Concerning model selection, both the Hausman and LM tests turned to be significant where the LM is very significant in favour of FE model while the Hausman is significant in favour of the RE model. However judging from the estimated coefficients and the overall models, all the three models produce relatively consistent results. It is quite reasonable to report the results of all the three models for fair judgment and assessment of a remarkably consistent model.

The research findings also highlighted that the average number of IC elements disclosed at the Zimbabwe Stock Exchange is 23% with an average of 29% for Relational Capital, 19% for Structural Capital and 17% for Human Capital. Relational Capital has the highest disclosure and most of the disclosed information is in relation to distribution channels, business collaborations, brands, customers, company names agreements and contracts. The existence of competitors may signify the low average numbers represented by Human Capital and Structural Capital as disclosure may be associated with certain risks though the benefits may outweigh the shortfalls. Therefore some companies may perceive the existence of competitors hence not willing to signal their intentions if they are likely going to have a negative impact on its reputation. The statistics on the average number of IC elements disclosed in this section may illustrate the lack of appreciation and knowledge of the impact of Voluntary disclosure of IC in a period of financial crisis. Table 1.1 shows the most disclosed information which relates to business collaborations (59%), innovativeness

(59%),management process(65%), customers(65%) and management philosophy (57%).

Table 1.2: Intellectual Capital analysis by category

	Mean	Min	Max
Human Capital	20%	6%	65%
Structural Capital	18%	0%	65%
Relational Capital	29%	12%	59%

Source: Research data 2019

Trademarks (0%),patents (0%),copyrights(0%), vocational qualifications (2%) and know-how(5%) were the least disclosed attributes. Generally, Intellectual Capital was not disclosed during this period of financial crisis.According to Mkumbuzi (2014) the summary of previous studies illustrated the lack of VDIC of the SC category with the exception of Guthrie et al. (1999) in Australia who found that this category ranked amongst the main areas disclosed. The proponent goes on to say that Brennan (1999) investigated 11 knowledge based companies in Ireland; these did not disclose IP to any extent but would have been expected to, particularly due to the nature of their business. (April, K.A., Bosma, P. and Deglon, 2003) also found similar results on her studies in South Africa with the least reported attributes being copyrights and patents. This can complicate decision making on the part of investors as it becomes difficult for them to determine if research and development among companies can result in the establishment of trademarks, copyrights and patents. Failure to disclose by most companies is intentional so as to run down against this type of analysis by several competitors and other stakeholders.

Considering the disclosure of Human Capital, the average was found to be 20%. This result can be linked to the very low vocational qualifications within the industry (11%). A few number of companies managed to disclose vocational and educational qualifications. Likewise, few companies failed to disclose know-how and work related knowledge.Mkumbuzi (2014) also noted that these findings are constant with Bozzolan et al. (2003), who found that HC (57 per cent) consisted mainly of employees' turnover, average age, etc. (Abeysekera, I. and Guthrie, 2003) found the most significant attribute to be entrepreneurial spirit in their Sri-Lankan HC study, whilst (April, K.A., Bosma, P. and Deglon, 2003) identified work related staff competencies to be more prevalent.(Goh, P.C. and Lim, 2004) also identified work related competencies as a high VDIC attribute. The study by Olsson (2001) in Sweden revealed that of the 18 companies, none reported more than 7 per cent of HC attributes. Although these were large companies, country differences may explain this variance.

Among the IC attributes disclosed, Relational Capital is the largest with (29%). In Zimbabwe, most of the companies value their traditional business channels and 33% of the companies listed at the Zimbabwe Stock Exchange disclosed this attribute. The Infrastructure assets (21%) encompassed relatively lower scores while management philosophy and management processes provided higher scores. The Relational Capital disclosure (29%) has the largest disclosure index among the IC attributes disclosed. According to Mkumbuzi (2014) these results are partially

constant with Brennan who discovered customers and business collaborations rank highly.(April, K.A., Bosma, P. and Deglon, 2003) founded a higher score for brands,customers and business collaborations. This implies that the voluntary disclosure of Relational Capital in Zimbabwe is relatively lower as compared to other studies.

Table 1.2: Industry analysis

Industry	Average disclosure
Banks and financial Institutions	0.31
Beverages	0.31
Chemicals	0.3
Diversified Industries	0.29
Construction and Building materials	0.28
Automotive	0.29
Forestry and paper	0.18
Insurance	0.25
Property investment	0.27
Leisure and hotels	0.28
General retailers	0.22
Food producers and retailers	0.23
Electronic and electrical equipment	0.25
Pharmaceuticals and biotech	0.33
Telecommunications	0.67
Steel and other	0.3
Utilities	0.33
Tobacco	0.66
Transport	0.2

Source: Research data 2019

The results also indicated that the banking and financial institutions with a disclosure rate of 31%, automotive industries (29%), chemicals (30%) and beverages (31%) all meet expectations based on the prior expectations. This analysis by industry also indicates that the biotech and pharmaceutical (33%), tobacco (66%) and telecommunications (67%) are the most disclosing industries which are fairly involved in Research and Development projects and therefore generate Intellectual Capital. Industries trading using the traditional tangible assets showed significantly lower disclosure indices and had little or no Intellectual Attributes.These are property investment (27%), Insurance (28%) and electronic (25%),Transport (20%) steel and other(30%).These results were constant with expectations.

In determining the direction and significance and nature of the bivariate relationships of the variables the current research used a correlation matrix. In the science of economics and social sciences, a significance of p=0.05 is the generally acceptable conventional level.The correlation matrix indicated that there is a significant positive correlation between the Disclosure Index (DI) and turnover,capital employed, profitability and high profile industries at 1% significance level while audit finance expertise and long term liabilities were significant at 5% significance level. Corporate governance and Multiple listings were insignificant of explaining the variation of voluntary intellectual capital disclosure in this period of financial crisis.

The current research adopted 3 regression models that were ran using the full model and two size proxies, capital employed and turnover.The results of the regression models

are as shown in the table below. The adjusted R-squared of 0.436 for the regression output indicates that the associated control variables multiple listings, capital employed, gearing, audit committee financial expertise and turnover are insignificant in explaining the variation in Intellectual Capital disclosure up to 43.6%. Research findings of Model 1 reflect that turnover, gearing and audit committee financial expertise have the highest explanatory potential. The results are also shown on Model 2 and Model 3 though capital employed is insignificant as a size variable. Corporate governance, multiple listings and capital employed are insignificant in explaining the variation in voluntary Intellectual Capital disclosure. It should be noted that the coefficient of turnover is statistically significant at the 1% significance level.

The current research highlights that the size measured in terms of turnover is a positive variable on the extent of voluntary disclosure of Intellectual Capital while capital employed is not significant in explaining the variation. These results are also consistent with other prior studies and hence the hypothesis in respect of turnover is confirmed and that of capital employed is rejected. The results also show that the multiple listing is insignificant in explaining the variation in voluntary disclosure of Intellectual Capital.

5. Conclusions and recommendations

This study investigated the voluntary disclosure of Intellectual Capital of 64 selected companies listed on the Zimbabwe Stock Exchange from December 2017 to December 2018. The primary objectives were to determine the extent of IC reporting in corporate reports in the context of Zimbabwe in a period of financial crisis and to assess if there is a relationship between capital employed, company turnover, multiple listing, gearing, profit before taxation, proportion of non-executive directors and the extent of intellectual capital reporting in corporate reports. The results from this study suggest that voluntary disclosure mainly occurs within the confines of Relational Capital attributes. Company turnover, multiple listing, gearing and committee financial expertise are relevant factors in explaining the differences in reporting behaviour amongst Zimbabwean companies.

The study has identified a number of hindrances with respect to the voluntary disclosure of Intellectual Capital. The methodology adopted has an element of content analysis. Though content analysis may prove to be useful and practical, the analysis has a relatively high number of subjective judgemental calls. This involves the application of judgement in deciding if an attribute has been mentioned or not. Another drawback is that companies may misinterpret the information in corporate reports due to the differences in understanding of Intellectual Capital between the various listed companies. In this scenario companies should take cognisance of the academic definitions and IAS specifically for the Intellectual attributes in question. Moreover to this, the age of the listed companies may also be relevant as mature companies such as Tongaat Hulets may have built up differential experience in corporate governance reporting over time.

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